

ISSUE 2026

# automation

The catalogue of the  
pe automation product group

**YEAR**  
**2026 - 2027**



**PE AUTOMATION CO.,LTD.**

Homepage: [www.pe-thai.com](http://www.pe-thai.com)

- Encoder ■ Sensor ■ Circular Connector ■ Industrial relay ■ MCB ■ Fuse holder
- Ethernet switches ■ Switching power supply ■ Signal tower light ■ Din-rail terminal
- EMI Filter ■ Redundancy module ■ Safety sensor ■ Vision sensor ■ Code reader
- Handheld scanner ■ VFD Inverter ■ Control transformer ■ Electronic circuit breaker
- Industrial PC ■ Product import and more..

A close-up photograph of an industrial control panel. In the foreground, a black terminal block is populated with several Velma relays. The relays are white and silver, with labels indicating specifications like '24VDC', '10A', and '125VAC'. Blue and orange wires are connected to the terminals. In the background, other industrial components like a yellow power supply and a grey control unit are visible, though out of focus. A dark grey diagonal overlay covers the bottom left portion of the image, containing the text 'A STRONG COMPANY FOR THE FUTURE' in white, bold, sans-serif capital letters.

A STRONG  
COMPANY  
FOR THE FUTURE



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**EU**  
**Standard**  
**Fast delivery**





### The Position and Motion Sensor Specialist

POSITAL is a manufacturer of sensors for motion control and safety assurance systems.

The company's products, which include rotary encoders, inclinometers and linear position sensors, are used in a wide range of settings, from manufacturing to mining, agriculture to energy.

POSITAL is a member of the international FRABA Group. FRABA Group is a market-leading enterprise that makes use of advanced product design and manufacturing process to ensure that its customers enjoy the benefits of technology leadership, choice, product quality and competitive prices.



### Incremental encoder

Many applications require a simple, cost effective solution for accurate positioning.

IXARC incremental encoders provide high resolution measurement using an incremental interface.

They are available with common configurations such as A, B, Z, and inverted signals available as HTL (Push-Pull) or TTL (RS422).

- Any PPR up to 16384 Available
- Flexible Scaling Functionality
- Compact Size Down to 36 mm Ø
- Optional Stainless Steel and Heavy Duty Housings Available
- High Shock and Vibration Resistance

### Absolute encoder

Motion control applications – ranging from factory automation to control systems for mobile machines – require precise, real-time information about the physical location of mechanical equipment. Absolute rotary encoders can provide precise and unambiguous measurements without losing track of their position due to a temporary loss of instrument power.

- Maintain Position Information When Power is Lost
- Wiegand Technology means No Battery Backup Necessary – Never Change Batteries
- Compact Size - Down to 36 mm Ø
- Stainless Steel, ATEX and SIL Encoders Available
- High Shock and Vibration Resistance

**PROGRAMMABLE  
INCREMENTAL ENCODER**


|                    |                  |                  |                  |                  |                  |
|--------------------|------------------|------------------|------------------|------------------|------------------|
| Technology         | Magnetic         | Magnetic         | Magnetic         | Magnetic         | Magnetic         |
| Housing size (mm.) | 36 mm.           | 40 mm.           | 50 mm.           | 58 mm.           | 58 mm.           |
| Shaft size (mm.)   | 6 mm.            | 6 mm.            | 8 mm.            | 6 mm.            | 6 mm.            |
| Pulses (PPR).      | 1 - 32768        | 1 - 32768        | 1 - 32768        | 1 - 32768        | 1 - 32768        |
| Output driver      | Push-pull / TTL  | Push-pull / TTL  | Push-pull / TTL  | Push-pull / TTL  | Push-pull / TTL  |
| Frequency          | 300 KHz.         | 300 KHz.         | 300 KHz.         | 300 KHz.         | 300 KHz.         |
| Shaft load         | A 5 Kg./R 12 Kg. | A 5 Kg./R 12 Kg. | A 5 Kg./R 12 Kg. | A 5 Kg./R 12 Kg. | A 5 Kg./R 12 Kg. |
| Connection         | Cable 2 M.       | Cable 2 M.       | Cable 2 M.       | Cable 5 M.       | M23 12-pin       |
| IP Protection      | IP54/65          | IP54/65          | IP54/65          | IP65/67/69K      | IP65/67/69K      |
| Technology         | Magnetic         | Magnetic         | Magnetic         | Magnetic         | Magnetic         |



|                    |                  |                  |                  |                  |                  |
|--------------------|------------------|------------------|------------------|------------------|------------------|
| Encoder Type       | Magnetic         | Magnetic         | Magnetic         | Magnetic         | Magnetic         |
| Housing size (mm.) | 58 mm.           | 58 mm.           | 58 mm.           | 58 mm.           | 58 mm.           |
| Shaft size (mm.)   | 10 mm.           | 10 mm.           | 10 mm.           | 10 mm.           | 10 mm.           |
| Pulses (PPR).      | 1 - 32768        | 1 - 32768        | 1 - 32768        | 1 - 32768        | 1 - 32768        |
| Output driver      | Push-pull / TTL  | Push-pull / TTL  | Push-pull / TTL  | Push-pull / TTL  | Push-pull / TTL  |
| Frequency          | 300 KHz.         | 300 KHz.         | 300 KHz.         | 300 KHz.         | 300 KHz.         |
| Shaft load         | A 5 Kg./R 12 Kg. | A 5 Kg./R 12 Kg. | A 5 Kg./R 12 Kg. | A 5 Kg./R 12 Kg. | A 5 Kg./R 12 Kg. |
| Connection         | Cable 5 M.       | M23 12-pin       | M12 8-pin        | M23 12-pin       | M23 12-pin       |
| IP Protection      | IP65/67/69K      | IP65/67/69K      | IP65/67/69K      | IP65/67/69K      | IP65/67/69K      |
| Technology         | Magnetic         | Magnetic         | Magnetic         | Magnetic         | Magnetic         |



|                    |                  |                  |                  |                  |                  |
|--------------------|------------------|------------------|------------------|------------------|------------------|
| Encoder Type       | Magnetic         | Magnetic         | Magnetic         | Fix-Pulses       | Fix-Pulses       |
| Housing size (mm.) | 38/42 mm.        | 58 mm.           | 58 mm.           | 58 mm.           | 58 mm.           |
| Shaft size (mm.)   | Hollow 6/8 mm.   | Hollow 10-15 mm. | Hollow 10-15 mm. | Hollow 10-15 mm. | Hollow 10-15 mm. |
| Pulses (PPR).      | 1 - 32768        | 1 - 32768        | 1 - 32768        | 1 - 32768        | 1 - 32768        |
| Output driver      | Push-pull / TTL  | Push-pull / TTL  | Push-pull / TTL  | Push-pull / TTL  | Push-pull / TTL  |
| Frequency          | 300 KHz.         | 300 KHz.         | 300 KHz.         | 300 KHz.         | 300 KHz.         |
| Shaft load         | A 5 Kg./R 12 Kg. | A 5 Kg./R 12 Kg. | A 5 Kg./R 12 Kg. | A 5 Kg./R 12 Kg. | A 5 Kg./R 12 Kg. |
| Connection         | Cable 5 M.       | M23 12-pin       | M12 8-pin        | M23 12-pin       | M23 12-pin       |
| IP Protection      | IP54/65          | IP65/67/69K      | IP65/67/69K      | IP65/67/69K      | IP65/67/69K      |
| Technology         | Magnetic         | Magnetic         | Magnetic         | Magnetic         | Magnetic         |

Request quotation please send an Email

## ABSOLUTE ENCODER



| Interface Type     |  |  |  |  |  |
|--------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Housing size (mm.) | 58 mm.                                                                            | 58 mm.                                                                            | 58 mm.                                                                            | 58 mm.                                                                              | 58 mm.                                                                              |
| Shaft type         | Solid / Hollow                                                                    | Solid / Hollow                                                                    | Solid / Hollow                                                                    | Solid / Hollow                                                                      | Solid / Hollow                                                                      |
| Type               | Single / Multi Turn                                                               | Single / Multi Turn                                                               | Single / Multi Turn                                                               | Single / Multi Turn                                                                 | Single / Multi Turn                                                                 |
| Resolution (Bit)   | 12 - 16 bit                                                                       | 12 - 16 bit                                                                       | 12 - 16 bit                                                                       | 12 - 16 bit                                                                         | 12 - 16 bit                                                                         |
| Revolution (Bit)   | 12 - 13 bit                                                                       | 12 - 13 bit                                                                       | 12 - 13 bit                                                                       | 12 - 13 bit                                                                         | 12 - 13 bit                                                                         |
| Speed (RPM)        | 3000 rpm.                                                                         | 3000 rpm.                                                                         | 3000 rpm.                                                                         | 3000 rpm.                                                                           | 3000 rpm.                                                                           |
| Shaft load         | A 5 Kg./R 12 Kg.                                                                  | A 5 Kg./R 12 Kg.                                                                  | A 5 Kg./R 12 Kg.                                                                  | A 5 Kg./R 12 Kg.                                                                    | A 5 Kg./R 12 Kg.                                                                    |
| Connection         | Connection CAP                                                                    | Connection CAP                                                                    | Connection CAP                                                                    | M12 Connector                                                                       | Connection CAP                                                                      |
| IP Protection      | IP67                                                                              | IP67                                                                              | IP67                                                                              | IP67                                                                                | IP67                                                                                |
| Technology         | Magnetic                                                                          | Magnetic                                                                          | Magnetic                                                                          | Magnetic                                                                            | Magnetic                                                                            |

| Interface Type     |  |  |  |  | <b>Parallel</b>     |
|--------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------|
| Housing size (mm.) | 58 mm.                                                                              | 58 mm.                                                                              | 58 mm.                                                                              | 58 mm.                                                                                | 58 mm.              |
| Shaft type         | Solid / Hollow                                                                      | Solid / Hollow                                                                      | Solid / Hollow                                                                      | Solid / Hollow                                                                        | Solid / Hollow      |
| Type               | Single / Multi Turn                                                                 | Single / Multi Turn                                                                 | Single / Multi Turn                                                                 | Single / Multi Turn                                                                   | Single / Multi Turn |
| Resolution (Bit)   | 12 - 16 bit                                                                         | 12 - 16 bit                                                                         | 12 - 16 bit                                                                         | 12 - 16 bit                                                                           | 8 - 16 bit          |
| Revolution (Bit)   | 12 - 15 bit                                                                         | 12 - 15 bit                                                                         | 12 - 13 bit                                                                         | 12 - 16 bit                                                                           | 8 - 13 bit          |
| Speed (RPM)        | 3000 rpm.                                                                           | 3000 rpm.                                                                           | 3000 rpm.                                                                           | 3000 rpm.                                                                             | 3000 rpm.           |
| Shaft load         | A 5 Kg./R 12 Kg.                                                                    | A 5 Kg./R 12 Kg.                                                                    | A 5 Kg./R 12 Kg.                                                                    | A 5 Kg./R 12 Kg.                                                                      | A 5 Kg./R 12 Kg.    |
| Connection         | M12 Connector                                                                       | Connection CAP                                                                      | Connection CAP                                                                      | M12 Connector                                                                         | Cable 5 - 10 M.     |
| IP Protection      | IP67                                                                                | IP67                                                                                | IP67                                                                                | IP67                                                                                  | IP67                |
| Technology         | Magnetic                                                                            | Magnetic                                                                            | Magnetic                                                                            | Magnetic                                                                              | Magnetic            |

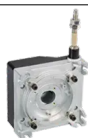
| Interface Type     |  |  |  |  |  |
|--------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Housing size (mm.) | 58 mm.                                                                              | 58 mm.                                                                              | 58 mm.                                                                              | 58 mm.                                                                                | 58 mm.                                                                                |
| Shaft type         | Solid / Hollow                                                                      | Solid / Hollow                                                                      | Solid / Hollow                                                                      | Solid / Hollow                                                                        | Solid / Hollow                                                                        |
| Type               | Single / Multi Turn                                                                 | Single / Multi Turn                                                                 | Single / Multi Turn                                                                 | Single / Multi Turn                                                                   | Single / Multi Turn                                                                   |
| Resolution (Bit)   | 12 - 16 bit                                                                         | 13 bit                                                                              | 12 - 16 bit                                                                         | 12 - 16 bit                                                                           | 12 - 16 bit                                                                           |
| Revolution (Bit)   | 12 - 15 bit                                                                         | 12 bit                                                                              | 12 - 20 bit                                                                         | 12 - 15 bit                                                                           | 8 - 13 bit                                                                            |
| Speed (RPM)        | 3000 rpm.                                                                           | 3000 rpm.                                                                           | 3000 rpm.                                                                           | 3000 rpm.                                                                             | 3000 rpm.                                                                             |
| Shaft load         | A 5 Kg./R 12 Kg.                                                                    | A 5 Kg./R 12 Kg.                                                                    | A 5 Kg./R 12 Kg.                                                                    | A 5 Kg./R 12 Kg.                                                                      | A 5 Kg./R 12 Kg.                                                                      |
| Connection         | M12 Connector                                                                       | Connection CAP                                                                      | Connection CAP                                                                      | M12 Connector                                                                         | M12 Connector                                                                         |
| IP Protection      | IP67                                                                                | IP67                                                                                | IP67                                                                                | IP67                                                                                  | IP67                                                                                  |
| Technology         | Magnetic                                                                            | Magnetic                                                                            | Magnetic                                                                            | Magnetic                                                                              | Magnetic                                                                              |

Request the quotation please contact us. email to [info@pe-thai.com](mailto:info@pe-thai.com)





|                       |                       |                       |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Flange Type           | Synchro - Solid Shaft | Synchro - Solid Shaft | Synchro - Solid Shaft | Synchro - Solid Shaft | Synchro - Solid Shaft |
| Flange Diameter       | 58 mm.                | 58 mm.                | 58 mm.                | 58 mm.                | 58 mm.                |
| Accuracy              | ±0.02 % FSO.          | ± 0.10 % FSO.         | ± 0.10 % FSO.         | ±0.02 % FSO.          | ±0.02 % FSO.          |
| Measurement Length    | 1.90 m (6.23')        | 2.00 m (6.56')        | 2.40 m (7.87')        | 3.00 m (9.84')        | 3.00 m (9.84')        |
| Wire Material         | Coated Polyamide      | Stainless Steel       | Coated Polyamide      | Coated Polyamide      | Stainless Steel       |
| Wire Diameter         | 0.45 mm               | 1.35 mm               | 0.45 mm               | 0.80 mm               | 1.35 mm               |
| Length per Revolution | 150 mm                | 200 mm                | 150.8 mm              | 260 mm                | 200 mm                |
| Max. Speed            | 2.0 m / s             | 8.0 m / s             | 1.0 m / s             | 2.0 m / s             | 8.0 m / s             |
| Wire Mounting         | Eyelet                | Eyelet                | Wireclip              | M4 Thread             | Eyelet                |
| Shaft Diameter        | 6 mm                  | 6 mm                  | 6 mm                  | 6 mm                  | 6 mm                  |



|                       |                       |                       |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Flange Type           | Synchro - Solid Shaft | Synchro - Solid Shaft | Synchro - Solid Shaft | Synchro - Solid Shaft | Synchro - Solid Shaft |
| Flange Diameter       | 58 mm.                | 58 mm.                | 58 mm.                | 58 mm.                | 58 mm.                |
| Accuracy              | ±0.012 % FSO.         | ±0.02 % FSO           | ± 0.20 % FSO.         | ±0.006 % FSO.         | ±0.05 % FSO.          |
| Measurement Length    | 3.00 m (9.84')        | 5.00 m (16.40')       | 5.00 m (16.40')       | 6.00 m (19.69')       | 7.50 m (24.61')       |
| Wire Material         | Plastic Coated        | Coated Polyamide      | Stainless Steel       | Stainless Steel       | Coated Polyamide      |
| Wire Diameter         | 0.87 mm               | 1.00 mm               | 1.35 mm               | 0.60 mm               | 0.45 mm               |
| Length per Revolution | 200 mm                | 315 mm                | 334.1 mm              | 200 mm                | 333.3 mm              |
| Max. Speed            | 0.8 m / s             | 2.0 m / s             | 8.0 m / s             | 3 m/s                 |                       |
| Wire Mounting         | M6 Thread             | Eyelet                | Eyelet                | M6 Thread             | Wireclip              |
| Shaft Diameter        | 6 mm                  | 6 mm                  | 6 mm                  | 6 mm                  | 6 mm                  |



|                       |                       |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Flange Type           | Synchro - Solid Shaft | Synchro - Solid Shaft | Synchro - Solid Shaft | Synchro - Solid Shaft |
| Flange Diameter       | 58 mm.                | 58 mm.                | 58 mm.                | 58 mm.                |
| Accuracy              | ± 0.10 % FSO          | ±0.01 % FSO           | ±0.01 % FSO           | ± 0.10 % FSO          |
| Measurement Length    | 10.00 m (32.81')      | 10.00 m (32.81')      | 15.00 m (49.21')      | 15.00 m (49.21')      |
| Wire Material         | Stainless Steel       | Coated Polyamide      | Coated Polyamide      | Stainless Steel       |
| Wire Diameter         | 1.35 mm               | 1.00 mm               | 1.00 mm               | 1.35 mm               |
| Length per Revolution | 334.1 mm              | 315 mm                | 315 mm                | 334.1 mm              |
| Max. Speed            | 8.0 m / s             | 2.0 m / s             | 2.0 m / s             | 6.0 m / s             |
| Wire Mounting         | Eyelet                | Eyelet                | Eyelet                | Eyelet                |
| Shaft Diameter        | 6 mm                  | 6 mm                  | 6 mm                  | 6 mm                  |

SCAN to Product Finder



Calculation Pulse / mm.

Pulse per mm. = Encoder PPR / mm. per turn

**\*\*Example\*\*** Pulse per mm. = 1500 PPR / 150 mm. per turn

**\*\*Example\*\*** Pulse per mm. = 10 PPR / 1 mm.

Calculation Resolutions / PPR

Revolutions per Pulses = mm. per turn / Encoder PPR

**\*\*Example\*\*** Revolutions per Pulses = 150 mm. per turn / 1500 PPR

**\*\*Example\*\*** Revolutions per Pulses = 0.1 mm. / 1 pulse

## INCLINOMETER (ANGLE SENSOR)

**NEXTGEN**  
TILTIX



AVAILABLE  
NOW

Inclinometers, also called tilt sensors are designed to measure the angle of an object with respect to the force of gravity. These tilt or level meters determine pitch and/or roll angle and output these values via the appropriate electrical interface. Inclinometers are easy to integrate to an application, because there is no need for mechanical linkages other than just the installation itself – a real advantage for design engineers. Posital developed several inclinometer types to have a suitable solution for different applications for each industry. Accurate measurement of the degree of tilt or inclination from a horizontal position is very important for many motion control systems or to ensure safety.

Well Protected up to IP69K

Rugged and Compact Design

Measurement Range  $\pm 80^\circ$  (Dual Axis) or  $360^\circ$  (Single Axis)

TILTIX DYNAMIC INCLINOMETER



Rotation of 1-Axis and 2-Axis



A dual axis sensor is used for horizontal mounting and is ideal for leveling applications. This version got two outputs, one for the X-Axis and one for the Y-Axis. Each of the axes show the tilt angle with respect to the field of gravity.



A single axis tilt measurement version with one axis output is intended for vertical mounting.



### Dynamic Inclinometers

- > CANopen & J1939
- > Integrated Accelerometer & Gyroscope
- > Filtering of Accelerations, Shocks & Vibrations
- > Single & Dual Axis, Pitch & Roll



### Heavy Duty Inclinometers

- > Up to IP69K
- >  $0.01^\circ$  Resolution,  $\pm 0.10^\circ$  Accuracy
- > Easy and Fast Mounting
- > ATEX 1&21 Versions Available



### Compact Inclinometers

- > IP67 Protection Class
- > Optimized Footprint
- > Cost Effective
- >  $0.01^\circ$  Resolution,  $\pm 0.10^\circ$  Accuracy



### Static Inclinometers

- > Single & Dual Axis
- > Measuring range: Up to  $360^\circ$  Single Axis, Up to  $\pm 180^\circ$  Dual Axis
- > Analog, CANopen, J1939, SSI, Modbus RTU
- > Vertical & Horizontal Mounting
- > Teach-In, Preset and Scaling Functions



## ENCODER ACCESSORIES



M12, M23 Female and Male Connectors

Straight and Right Angled Connectors

Wide Range of Cable Diameter

Cables Lengths: 1m to 10 m



Measuring Wheels coupled with rotary encoders are a simple way to measure direct linear motion.



UBIFAST Configuration Tool (for IXARC Encoders)

SSI2USB Interface Modules

Displays for Analog and Serial Interfaces

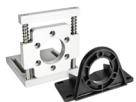


Ex-Proof Couplings

Ex-Proof Blind Plugs

Ex-Proof Cable Glands

Ex-Proof Draw Wires



Adapter flanges are generally used with POSITAL encoders to exactly fit into the customers' installation or control cabinet.



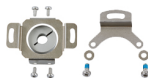
Couplings are used to attach the encoder shaft to the machines' moving shaft.



Draw Wires or Cable Pull adapters when combined with encoders enable to measure the linear position accurately and also communicate the position over the interface of your choice.



POSITAL displays provide a direct readout of position, rotational speed or angular displacement.



POSITAL provides torque support sets comprising of tethers, clamping discs and mounting screws.



Used in Hub Shaft

Used in Through Hollow Shaft



Profibus

CANopen

Devicenet


**POSITAL**

# We are

## Who we are and what we do

We are a traditional family-run company, shaped by values, headquartered in Neckarsulm and one of the market leaders in circular connectors for industrial and automation technology. We cooperate on 5 continents with 45 sales partners and employ 1,800 people worldwide. The binder Group includes the binder headquarters, 16 affiliated companies, an innovation and technology centre and two system service providers. We have locations in Germany, Austria, Switzerland, Hungary, France, the UK, the Netherlands, Sweden, China, Singapore and the USA.

We specialise in the production of a wide range of industrial connectors as well as built-in and cable-mounted connectors for automation technology. Our strengths lie in the individual development, design and automated manufacture of connectors at the customer's request. LED lights supplement our product portfolio. The product range extends from miniature connectors to multi-pin machine connectors. binder products are used in agricultural machines, construction machines and signalling systems, in mechanical engineering, medical technology and measurement technology, and in sensor and automation technology.



## Large product selection

Our selection of circular connectors ranges from miniature connectors to multi-pin power connectors. The use of binder connectors includes applications for the measuring and control technology and also automation.





**Subminiature connectors**



**Miniature connectors**



**Power connectors**



**Connectors for medical applications**



**Automation technology - Sensors and actuators**



**Automation technology - Data transmission**



**Automation technology - Voltage and Power Supply**



**Automation technology - Solenoid valve connectors**



**LED**



THE SPECIALIST FOR  
CIRCULAR CONNECTORS

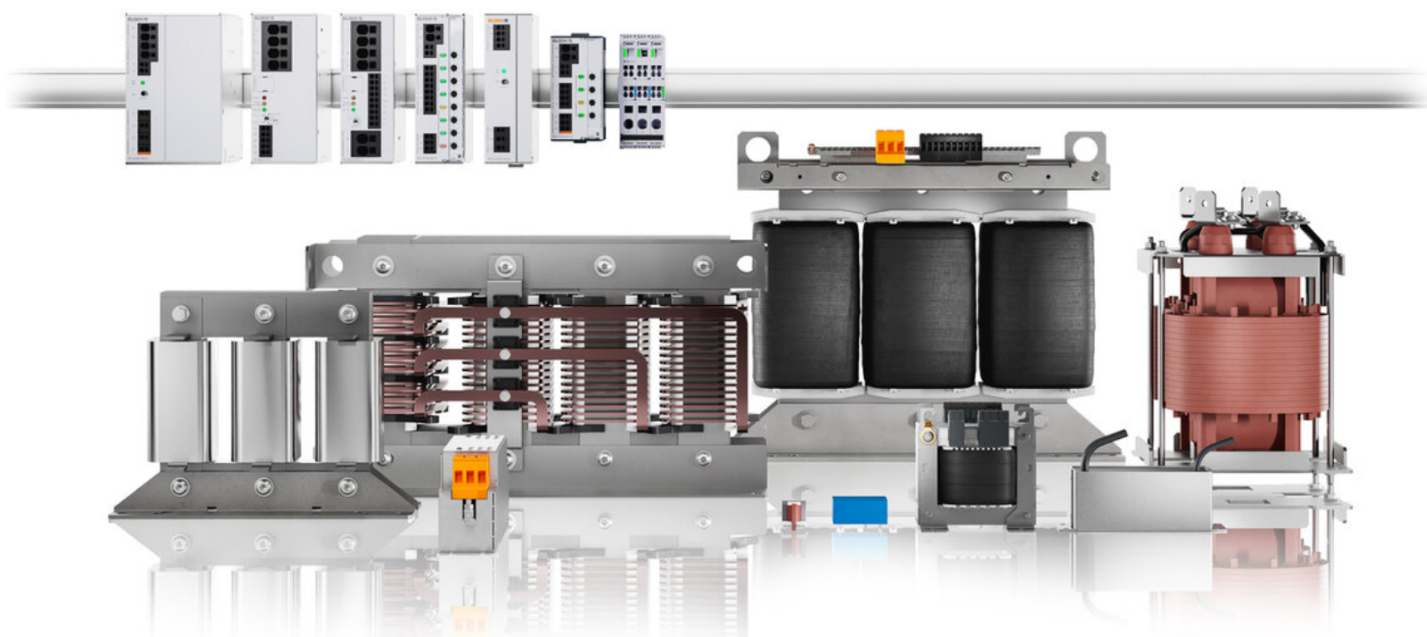
RUNDSTECKVERBINDER  
DES SPEZIALISTEN



# OUR PRODUCTS

 **made  
in  
Germany**

Whether transformers, power supplies, reactors, filters or components for the medium and high-frequency ranges, BLOCK products provide the perfect voltage for all areas of industry. We have plenty of opportunities in-house to continue our product developments, thanks to our own Development Center and the high level of vertical integration of our portfolio of premium quality, technologically convincing and powerful products.





## POWER ADVANCED POWER SUPPLIES SLIMMEST DESIGN AND MAXIMUM FLEXIBILITY

### 1-Phase **POWERBOOST**

#### PCC-1AC 12VDC



POWER ADVANCE

|                       |                               |                               |                               |
|-----------------------|-------------------------------|-------------------------------|-------------------------------|
| Model no.             | PCC-0112-100-0                | PCC-0112-100-2                | PCC-0112-150-2                |
| Input Voltage AC (DC) | 100 - 240 Vac (120 - 373 Vdc) | 100 - 240 Vac (120 - 373 Vdc) | 100 - 240 Vac (120 - 373 Vdc) |
| Output Voltage (DC)   | 10 - 15 Vdc                   | 10 - 15 Vdc                   | 10 - 15 Vdc                   |
| Current (Amp.)        | 10.0 A.                       | 10.0 A.                       | 15.0 A.                       |
| Max. Current (Amp.)   | 11.0 A.                       | 11.0 A.                       | 16.0 A.                       |
| Warranty              | 3 Years                       | 3 Years                       | 3 Years                       |

- Power boost
- Stabilizer
- Short circuit protection
- Over voltage protection
- Fast tripping
- Noise Filter

### 1-Phase **POWERBOOST**

#### PCC-1AC 24Vdc



POWER ADVANCE

POWER ADVANCE

POWER ADVANCE

|                       |                               |                               |                               |
|-----------------------|-------------------------------|-------------------------------|-------------------------------|
| Model no.             | PCC-0124-050-2                | PCC-0124-100-2                | PCC-0124-200-2                |
| Input Voltage AC (DC) | 100 - 240 Vac (120 - 373 Vdc) | 100 - 240 Vac (120 - 373 Vdc) | 100 - 240 Vac (120 - 373 Vdc) |
| Output Voltage (DC)   | 24 Vdc                        | 24 Vdc                        | 24 Vdc                        |
| Current (Amp.)        | 5.0 A.                        | 10.0 A.                       | 20.0 A.                       |
| Max. Current (Amp.)   | 5.5 A.                        | 11.0 A.                       | 22.0 A.                       |
| Warranty              | 3 Years                       | 3 Years                       | 3 Years                       |

- Power boost
- Stabilizer
- Short circuit protection
- Over voltage protection
- Fast tripping
- Noise Filter

### 1-Phase **PLASTIC HOUSING**

#### PM-1AC 12VDC



|                       |                              |                              |                              |
|-----------------------|------------------------------|------------------------------|------------------------------|
| Model no.             | PM-0112-020-0                | PM-0112-040-0                | PM-0112-070-0                |
| Input Voltage AC (DC) | 85 - 264 Vac (120 - 372 Vdc) | 85 - 264 Vac (120 - 372 Vdc) | 85 - 264 Vac (120 - 372 Vdc) |
| Output Voltage (DC)   | 12 Vdc                       | 12 Vdc                       | 12 Vdc                       |
| Current (Amp.)        | 2.0 A.                       | 4.0 A.                       | 7.0 A.                       |
| Max. Current (Amp.)   | 2.4 A.                       | 4.8 A.                       | 8.0 A.                       |
| Warranty              | 3 Years                      | 3 Years                      | 3 Years                      |

- Plastic housing
- Stabilizer
- Short circuit protection
- Over voltage protection
- Fast tripping
- Noise Filter



**1-Phase** PLASTIC HOUSING

**PM-1AC 24VDC**


|                       |                              |                              |                              |
|-----------------------|------------------------------|------------------------------|------------------------------|
| Model no.             | PM-0124-010-0                | PM-0124-020-0                | PM-0124-038-0                |
| Input Voltage AC (DC) | 85 - 264 Vac (120 - 372 Vdc) | 85 - 264 Vac (120 - 372 Vdc) | 85 - 264 Vac (120 - 372 Vdc) |
| Output Voltage (DC)   | 24 Vdc                       | 24 Vdc                       | 24 Vdc                       |
| Current (Amp.)        | 1.0 A.                       | 2.0 A.                       | 3.8 A.                       |
| Max. Current (Amp.)   | 1.4 A.                       | 2.4 A.                       | 4.2 A.                       |
| Warranty              | 3 Years                      | 3 Years                      | 3 Years                      |

- Stabilizer
- Short circuit protection
- Over voltage protection
- Fast tripping
- Noise Filter

**1-Phase** PLASTIC HOUSING

**PM-1AC 24/48VDC**


|                       |                              |                              |                              |
|-----------------------|------------------------------|------------------------------|------------------------------|
| Model no.             | PM-0124-040-0                | PM-0130-030-0                | PM-0148-020-0                |
| Input Voltage AC (DC) | 85 - 264 Vac (120 - 372 Vdc) | 85 - 264 Vac (120 - 372 Vdc) | 85 - 264 Vac (120 - 372 Vdc) |
| Output Voltage (DC)   | 24 Vdc                       | 30 Vdc                       | 48 Vdc                       |
| Current (Amp.)        | 4.0 A.                       | 3.0 A.                       | 2.0 A.                       |
| Max. Current (Amp.)   | 4.7 A.                       | 4.0 A.                       | 2.4 A.                       |
| Warranty              | 3 Years                      | 3 Years                      | 3 Years                      |

- Stabilizer
- Short circuit protection
- Over voltage protection
- Fast tripping
- Noise Filter

**1-Phase**
**High Performance**
**PC-1AC**


|                       |               |               |               |
|-----------------------|---------------|---------------|---------------|
| Model no.             | PC-0112-150-0 | PC-0124-050-0 | PC-0124-100-0 |
| Input Voltage AC (DC) | 85 - 264 Vac  | 85 - 264 Vac  | 85 - 264 Vac  |
| Output Voltage (DC)   | 12 Vdc        | 24 Vdc        | 24 Vdc        |
| Current (Amp.)        | 15.0 A.       | 5.0 A.        | 10.0 A.       |
| Max. Current (Amp.)   | 16.5 A.       | 5.5 A.        | 11.0 A.       |
| Warranty              | 3 Years       | 3 Years       | 3 Years       |

- Stabilizer
- Short circuit protection
- Over voltage protection
- Fast tripping
- Noise Filter

**1-Phase**
**High Performance**
**PC-1AC**


|                       |               |               |               |
|-----------------------|---------------|---------------|---------------|
| Model no.             | PC-0124-200-0 | PC-0148-050-0 | PC-0148-100-0 |
| Input Voltage AC (DC) | 85 - 264 Vac  | 85 - 264 Vac  | 85 - 264 Vac  |
| Output Voltage (DC)   | 24 Vdc        | 48 Vdc        | 48 Vdc        |
| Current (Amp.)        | 20.0 A.       | 5.0 A.        | 10.0 A.       |
| Max. Current (Amp.)   | 22.0 A.       | 5.5 A.        | 11.0 A.       |
| Warranty              | 3 Years       | 3 Years       | 3 Years       |

- Stabilizer
- Short circuit protection
- Over voltage protection
- Fast tripping
- Noise Filter

**1-Phase****PVSE-230**

|                       |                        |                         |                           |
|-----------------------|------------------------|-------------------------|---------------------------|
| Model no.             | PVSE 230/12-6          | PVSE 230/12-10          | PVSE 230/12-15            |
| Input Voltage AC (DC) | 85 - 264 Vac           | 85 - 264 Vac            | 85 - 264 Vac              |
| Output Voltage (DC)   | 12 Vdc                 | 12 Vdc                  | 12 Vdc                    |
| Current (Amp.)        | 6.0 A.                 | 10.0 A.                 | 15.0 A.                   |
| Power boost (Amp.)    | 12 A / 4 s (9 A / 8 s) | 20 A / 4 s (15 A / 8 s) | 30 A / 4 s (22.5 A / 8 s) |
| Warranty              | 3 Years                | 3 Years                 | 3 Years                   |

● Power boost   ● Stabilizer   ● Short circuit protection   ● Over voltage protection   ● Fast tripping   ● Noise Filter

**1-Phase****PVSE-230**

|                       |                           |                          |                         |
|-----------------------|---------------------------|--------------------------|-------------------------|
| Model no.             | PVSE 230/24-3             | PVSE 230/24-5            | PVSE 230/24-10          |
| Input Voltage AC (DC) | 85 - 264 Vac              | 85 - 264 Vac             | 85 - 264 Vac            |
| Output Voltage (DC)   | 24 Vdc                    | 24 Vdc                   | 24 Vdc                  |
| Current (Amp.)        | 3.0 A.                    | 5.0 A.                   | 10.0 A.                 |
| Power boost (Amp.)    | 6.5 A / 4 s (5.8 A / 8 s) | 10 A / 4 s (7.5 A / 8 s) | 20 A / 4 s (15 A / 8 s) |
| Warranty              | 3 Years                   | 3 Years                  | 3 Years                 |

● Power boost   ● Stabilizer   ● Short circuit protection   ● Over voltage protection   ● Fast tripping   ● Noise Filter

2-Phase

**PM-2AC**

|                       |                               |                               |                               |
|-----------------------|-------------------------------|-------------------------------|-------------------------------|
| Model no.             | PM-0224-038-0                 | PC-0224-050-0                 | PC-0224-100-0                 |
| Input Voltage AC (DC) | 180 - 575 Vac (254 - 800 Vdc) | 180 - 550 Vac (254 - 780 Vdc) | 180 - 550 Vac (254 - 780 Vdc) |
| Output Voltage (DC)   | 24 Vdc                        | 24 Vdc                        | 24 Vdc                        |
| Current (Amp.)        | 3.8 A.                        | 5.0 A.                        | 10.0 A.                       |
| Max. Current (Amp.)   | 3.8 A.                        | 5.5 A.                        | 11.0 A.                       |
| Warranty              | 3 Years                       | 3 Years                       | 3 Years                       |

- Stabilizer
- Short circuit protection
- Over voltage protection
- Fast tripping
- Noise Filter

3-Phase

**POWERBOOST**  
**POWER ADVANCE****PCC-3AC**

|                       |                               |                               |                               |
|-----------------------|-------------------------------|-------------------------------|-------------------------------|
| Model no.             | PCC-0324-050-2                | PCC-0324-100-2                | PCC-0324-200-0                |
| Input Voltage AC (DC) | 320 - 575 Vac (450 - 800 Vdc) | 320 - 575 Vac (450 - 800 Vdc) | 320 - 575 Vac (450 - 800 Vdc) |
| Output Voltage (DC)   | 24 Vdc                        | 24 Vdc                        | 24 Vdc                        |
| Current (Amp.)        | 5.0 A.                        | 10.0 A.                       | 20.0 A.                       |
| Max. Current (Amp.)   | 5.5.0 A.                      | 11.5 A.(15 A / 5s)            | 22.0 A.                       |
| Warranty              | 3 Years                       | 3 Years                       | 3 Years                       |

- Stabilizer
- Short circuit protection
- Over voltage protection
- Fast tripping
- Noise Filter

3-Phase

**POWERBOOST**  
**POWER ADVANCE****PCC-3AC**

|                       |                               |
|-----------------------|-------------------------------|
| Model no.             | PCC-0324-400-2                |
| Input Voltage AC (DC) | 320 - 575 Vac (450 - 800 Vdc) |
| Output Voltage (DC)   | 24 Vdc                        |
| Current (Amp.)        | 40.0 A.                       |
| Max. Current (Amp.)   | 42.0 A.                       |
| Warranty              | 3 Years                       |

- Stabilizer
- Short circuit protection
- Over voltage protection
- Fast tripping
- Noise Filter

3-Phase

**PCC-3AC****POWERBOOST**

|                       |                               |                               |                               |
|-----------------------|-------------------------------|-------------------------------|-------------------------------|
| Model no.             | PC-0324-100-0                 | PC-0324-100-2                 | PC-0324-200-0                 |
| Input Voltage AC (DC) | 320 - 575 Vac (450 - 800 Vdc) | 320 - 575 Vac (450 - 800 Vdc) | 320 - 575 Vac (450 - 800 Vdc) |
| Output Voltage (DC)   | 24 Vdc                        | 24 Vdc                        | 24 Vdc                        |
| Current (Amp.)        | 10.0 A.                       | 10.0 A.                       | 20.0 A.                       |
| Max. Current (Amp.)   | 11.0 A.                       | 11.5 A.(15 A / 5s)            | 22.0 A.                       |
| Warranty              | 3 Years                       | 3 Years                       | 3 Years                       |

- Stabilizer
- Short circuit protection
- Over voltage protection
- Fast tripping
- Noise Filter

3-Phase

## PC-3AC



POWERBOOST



POWERBOOST

|                       |                               |                               |                               |
|-----------------------|-------------------------------|-------------------------------|-------------------------------|
| Model no.             | PC-0324-200-2                 | PC-0324-400-0                 | PC-0324-400-2                 |
| Input Voltage AC (DC) | 320 - 575 Vac (450 - 800 Vdc) | 320 - 575 Vac (450 - 800 Vdc) | 320 - 575 Vac (450 - 800 Vdc) |
| Output Voltage (DC)   | 24 Vdc                        | 24 Vdc                        | 24 Vdc                        |
| Current (Amp.)        | 20.0 A.                       | 40.0 A.                       | 40.0 A.                       |
| Max. Current (Amp.)   | 22.0 A.(30 A / 5 s)           | 44.0 A.                       | 44.0 A.(60 A / 5 s)           |
| Warranty              | 3 Years                       | 3 Years                       | 3 Years                       |

- Stabilizer
- Short circuit protection
- Over voltage protection
- Fast tripping
- Noise Filter

3-Phase

## PC-3AC



POWERBOOST



POWERBOOST

|                       |                               |                               |                               |
|-----------------------|-------------------------------|-------------------------------|-------------------------------|
| Model no.             | PC-0348-200-0                 | PC-0348-200-2                 | PC-0360-160-2                 |
| Input Voltage AC (DC) | 320 - 575 Vac (450 - 800 Vdc) | 320 - 575 Vac (450 - 800 Vdc) | 320 - 575 Vac (450 - 800 Vdc) |
| Output Voltage (DC)   | 48 Vdc                        | 48 Vdc                        | 60 Vdc                        |
| Current (Amp.)        | 20.0 A.                       | 20.0 A.                       | 16.0 A.                       |
| Max. Current (Amp.)   | 22.0 A.                       | 22.0 A.(30 A / 5 s)           | 23 A / 5 s                    |
| Warranty              | 3 Years                       | 3 Years                       | 3 Years                       |

- Stabilizer
- Short circuit protection
- Over voltage protection
- Fast tripping
- Noise Filter

3-Phase

POWERBOOST

## PVSE 400



|                       |                               |                               |                               |
|-----------------------|-------------------------------|-------------------------------|-------------------------------|
| Model no.             | PVSE 400/24-10                | PVSE 400/24-20                | PVSE 400/24-40                |
| Input Voltage AC (DC) | 340 - 550 Vac (480 - 780 Vdc) | 340 - 550 Vac (480 - 780 Vdc) | 340 - 550 Vac (480 - 780 Vdc) |
| Output Voltage (DC)   | 24 Vdc                        | 24 Vdc                        | 24 Vdc                        |
| Current (Amp.)        | 10.0 A.                       | 20.0 A.                       | 40.0 A.                       |
| Max. Current (Amp.)   | 20 A / 4 s (15 A / 8 s)       | 40 A / 4 s (30 A / 8 s)       | 60 A / 4 s (50 A / 8 s)       |
| Warranty              | 3 Years                       | 3 Years                       | 3 Years                       |

- Stabilizer
- Short circuit protection
- Over voltage protection
- Fast tripping
- Noise Filter

3-Phase

POWERBOOST

## PVSE 400



|                       |                               |                               |                               |
|-----------------------|-------------------------------|-------------------------------|-------------------------------|
| Model no.             | PVSE 400/30-25                | PVSE 400/48-10                | PVSE 400/48-20                |
| Input Voltage AC (DC) | 340 - 550 Vac (480 - 780 Vdc) | 340 - 550 Vac (480 - 780 Vdc) | 340 - 550 Vac (480 - 780 Vdc) |
| Output Voltage (DC)   | 30 Vdc                        | 48 Vdc                        | 48 Vdc                        |
| Current (Amp.)        | 25.0 A.                       | 10.0 A.                       | 20.0 A.                       |
| Max. Current (Amp.)   | 45 A / 4 s (35 A / 8 s)       | 15 A / 4 s (12.5 A / 8 s)     | 30 A / 4 s (25 A / 8 s)       |
| Warranty              | 3 Years                       | 3 Years                       | 3 Years                       |

- Stabilizer
- Short circuit protection
- Over voltage protection
- Fast tripping
- Noise Filter

3-Phase **POWERBOOST**  
RS-232 interface / Display

## PVSB 400



| Model no.             | PVSB 400/24-10                | PVSB 400/24-20                | PVSB 400/24-40                |
|-----------------------|-------------------------------|-------------------------------|-------------------------------|
| Input Voltage AC (DC) | 340 - 550 Vac (480 - 780 Vdc) | 340 - 550 Vac (480 - 780 Vdc) | 340 - 550 Vac (480 - 780 Vdc) |
| Output Voltage (DC)   | 24 Vdc                        | 24 Vdc                        | 24 Vdc                        |
| Current (Amp.)        | 10.0 A.                       | 20.0 A.                       | 40.0 A.                       |
| Max. Current (Amp.)   | 20 A / 4 s (15 A / 8 s)       | 40 A / 4 s (30 A / 8 s)       | 60 A / 4 s (50 A / 8 s)       |
| Warranty              | 3 Years                       | 3 Years                       | 3 Years                       |

- Stabilizer
- Short circuit protection
- Over voltage protection
- Fast tripping
- Noise Filter

3-Phase **POWERBOOST**  
RS-232 interface / Display

## PVSL 400



| Model no.             | PVSL 400/24-10                | PVSL 400/24-20                | PVSL 400/24-40                |
|-----------------------|-------------------------------|-------------------------------|-------------------------------|
| Input Voltage AC (DC) | 340 - 550 Vac (480 - 780 Vdc) | 340 - 550 Vac (480 - 780 Vdc) | 340 - 550 Vac (480 - 780 Vdc) |
| Output Voltage (DC)   | 24 Vdc                        | 24 Vdc                        | 24 Vdc                        |
| Current (Amp.)        | 10.0 A.                       | 20.0 A.                       | 40.0 A.                       |
| Max. Current (Amp.)   | 20 A / 4 s (15 A / 8 s)       | 40 A / 4 s (30 A / 8 s)       | 60 A / 4 s (50 A / 8 s)       |
| Warranty              | 3 Years                       | 3 Years                       | 3 Years                       |

- Line monitoring
- Stabilizer
- Short circuit protection
- Over voltage protection
- Fast tripping
- Noise Filter



### Benefits

- › Stabilised and adjustable output voltage
- › Up to 200 % Real Power Boost for 4 seconds
- › Top Boost to trip conventional circuit breakers
- › DC OK signalling
- › Parallel connection option
- › Service-friendly spring-loaded connector system
- › Can be supplied with isolated DC OK signalling function
- › Panel installation on mounting rails





Benefits

- › Stabilised and adjustable output voltage
- › DC OK signalling via LEDs
- › Parallel connection option
- › Service-friendly spring-loaded connector system
- › Panel installation on mounting rails
- › 3 years warranty

1-Phase

PEL 230



|                       |                              |                              |                              |
|-----------------------|------------------------------|------------------------------|------------------------------|
| Model no.             | PEL 230/24-4                 | PEL 230/24-2.5               | PEL 230/24-1.3               |
| Input Voltage AC (DC) | 85 - 264 Vac (120 - 373 Vdc) | 85 - 264 Vac (120 - 373 Vdc) | 85 - 264 Vac (120 - 373 Vdc) |
| Output Voltage (DC)   | 24 Vdc                       | 24 Vdc                       | 24 Vdc                       |
| Current (Amp.)        | 4.0 A.                       | 2.5 A.                       | 1.3 A.                       |
| Max. Current (Amp.)   | 4.4 A                        | 2.7 A                        | 1.35 A                       |
| Warranty              | 3 Years                      | 3 Years                      | 3 Years                      |

- Short circuit protection    • Over voltage protection    • Fast tripping    • Noise Filter

1-Phase

PEL 230



|                       |                              |                              |                              |
|-----------------------|------------------------------|------------------------------|------------------------------|
| Model no.             | PEL 230/12-2                 | PEL 230/12-6.5               | PEL 230/5-5.5                |
| Input Voltage AC (DC) | 85 - 264 Vac (120 - 373 Vdc) | 85 - 264 Vac (120 - 373 Vdc) | 85 - 264 Vac (120 - 373 Vdc) |
| Output Voltage (DC)   | 12 Vdc                       | 12 Vdc                       | 5 Vdc                        |
| Current (Amp.)        | 2.0 A.                       | 6.5 A.                       | 5.5 A.                       |
| Max. Current (Amp.)   | 2.4 A                        | 7.0 A                        | 6.0 A                        |
| Warranty              | 3 Years                      | 3 Years                      | 3 Years                      |

- Short circuit protection    • Over voltage protection    • Fast tripping    • Noise Filter

## POWER ULTIMATE POWER SUPPLIES OPTIMALLY PROTECTED – FOR DEMANDING APPLICATIONS





Benefits

- › Power supply for challenging environmental conditions
- › Increased system availability thanks to integrated decoupling
- › Protective coating on circuit board
- › LED signaling and potential-free DC OK signal contact
- › Permanent 110% overload capacity (<45°C)
- › 150% power boost for 5 seconds
- › 3-year warranty

1-Phase **ULTIMATE**  
**PCE-1AC**



|                       |                             |                             |
|-----------------------|-----------------------------|-----------------------------|
| Model no.             | PCE-0124-100-2D             | PCE-0124-200-2D             |
| Input Voltage AC (DC) | 90 - 264 Vac (90 - 264 Vdc) | 90 - 264 Vac (90 - 264 Vdc) |
| Output Voltage (DC)   | 24 Vdc                      | 24 Vdc                      |
| Current (Amp.)        | 10.0 A.                     | 20.0 A.                     |
| Max. Current (Amp.)   | 11.5 A                      | 23.0 A                      |
| Warranty              | 3 Years                     | 3 Years                     |



- Power Boost 150%
- Short circuit protection
- Over voltage protection
- Fast tripping
- Noise Filter



# Charge and control unit





### PEL-4124-013-01

Capacitive UPS power supply • 1ph • IN: 200-240 Vac • OUT: 24 Vdc • 1,3 A



### PMC-0424-050-01

Capacitive uninterruptible power supply • IN: 24 Vdc • OUT: 24 Vdc 5 A • 0,98 kW internal capacity



### PMC-0424-050-03

horizontal for DIN TS35 standard rail • IN: 24 Vdc • OUT: 24 Vdc 5 A • 3,92 kW internal capacity



### PMC-0424-050-02

horizontal for DIN TS35 standard rail • IN: 24 Vdc • OUT: 24 Vdc 5 A • 1,96 kW internal capacity



### PCC-0524-200-0U

Charge and control unit • IN: 24 Vdc • OUT: 24 Vdc • 20 A



### PCC-0524-100-0U

Charge and control unit • IN: 24 Vdc • OUT: 24 Vdc • 10 A



### PCC-0524-100-00

Charge and control unit • IN: 24 Vdc • OUT: 24 Vdc • 10 A



### PCC-0524-200-00

Charge and control unit • IN: 24 Vdc • OUT: 24 Vdc • 20 A

## POWER ADVANCED POWER SUPPLIES SLIMMEST DESIGN AND MAXIMUM FLEXIBILITY

Maximum system availability, strong and flexible in any application, yet efficient and compact - the new power supplies of the POWER ADVANCED series. POWER ADVANCED combines all the features to meet the requirements of a wide range of applications and industries – a compact design with above-average electrical and mechanical robustness at the same time.





# UPS

Capacitive uninterruptible power supply  
UPS for 24VDC system



# Capacitive uninterruptible power supply



## Benefits

- › Up to 40 A output current
- › Long buffer times up to the minute range
- › Minimal maintenance due to long life of the ultra-capacitors
- › Parameterization via rotary switch or via USB interface
- › Shock and vibration-proof USB socket
- › Stabilized output voltage
- › 5 kW internal capacity
- › 3 years warranty

UPS Unit

## PC Series



|                   |                |                |               |
|-------------------|----------------|----------------|---------------|
| Model no.         | PC-0424-010-00 | PC-0424-017-0  | PC-0424-050-0 |
| Input Voltage DC  | 24 Vdc         | 24 Vdc         | 24 Vdc        |
| Output Voltage DC | 22 - 28 Vdc    | 22 - 28 Vdc    | 22 - 28 Vdc   |
| Current (Amp.)    | 20.0 A.        | 20.0 A.        | 20.0 A.       |
| Rated capacity    | 1 KW of load   | 1.7 KW of load | 5 KW of load  |
| Relay contact     | YES            | YES            | YES           |

\*\* ระยะเวลาการสำรองไฟ ขึ้นอยู่กับวัตต์ของโหลดทั้งหมด

## PCC Series Capacitive UPS power supply, single-phase

UPS Unit

## PCC Series



|                   |                    |
|-------------------|--------------------|
| Model no.         | PCC-4124-040-01    |
| Input Voltage DC  | 180 Vac to 264 Vac |
| Output Voltage DC | 23 - 28 Vdc        |
| Current (Amp.)    | 4.0 A.             |
| Rated capacity    | 2025 W of load     |
| Relay contact     | YES                |

\*\* ระยะเวลาการสำรองไฟ ขึ้นอยู่กับวัตต์ของโหลดทั้งหมด

# POWER STORAGE

## Battery module for control system 24VDC





## Benefits

- › Space-saving battery module
- › Temperature-controlled charging via the upstream charging and control unit
- › Pre-assembled connection cables



## Battery module

### PST Series



|                     |                 |                 |                 |
|---------------------|-----------------|-----------------|-----------------|
| Model no.           | PST-0124-032-00 | PST-0124-070-00 | PST-0124-070-10 |
| Input Voltage DC    | 24 Vdc          | 24 Vdc          | 24 Vdc          |
| Output Voltage DC   | 24 Vdc          | 24 Vdc          | 24 Vdc          |
| Current (Amp.)      | 20.0 A.         | 40.0 A.         | 40.0 A.         |
| Rated capacity      | 3.2 Ah          | 7 Ah            | 7 Ah            |
| Parallel connection | YES             | YES             | YES             |

## Battery module

### PST Series



|                     |                 |                 |
|---------------------|-----------------|-----------------|
| Model no.           | PST-0124-120-00 | PST-0124-070-10 |
| Input Voltage DC    | 24 Vdc          | 24 Vdc          |
| Output Voltage DC   | 24 Vdc          | 24 Vdc          |
| Current (Amp.)      | 40.0 A.         | 40.0 A.         |
| Rated capacity      | 12 Ah           | 12 Ah           |
| Parallel connection | YES             | YES             |

\*\* Battery สามารถขนส่งทางอากาศได้ และไม่ติดใบอนุญาตสรรพสามิต



## ELECTRONIC CIRCUIT BREAKERS

Given the growing trend toward automation and digitization of production processes, there is an increasing need, at control voltage levels of 24 V, to ensure power supply and distribution are monitored as well. Electronic circuit breakers can perform this task. They support selective protection of DC circuits and offer far more tailored protection against overcurrent and short circuits than conventional circuit breakers. BLOCK offers one of the widest ranges of electronic circuit breakers for reliable protection of small control systems – and these can also be used for larger machinery and system arrangements. Both the EasyB modular single-channel system and the multichannel circuit breakers in the Power Compact and Power Mini series set the right standards in these areas, even where applications require particularly powerful, robust or compact products. To help users find the best possible solution for their application at all times, all BLOCK circuit breakers are available with different tripping characteristics.

## PROTECT YOUR CONTROL SYSTEM SUPPORT 24VDC / 48VDC





## EasyB 1-Channel thermomagnetic

| Version       | Input voltage | Output current |
|---------------|---------------|----------------|
| EB-2724-010-0 | 24Vdc         | 1 A.           |
| EB-2724-020-0 | 24Vdc         | 2 A.           |
| EB-2724-030-0 | 24Vdc         | 3 A.           |
| EB-2724-040-0 | 24Vdc         | 4 A.           |
| EB-2724-060-0 | 24Vdc         | 6 A.           |
| EB-2724-080-0 | 24Vdc         | 8 A.           |
| EB-2724-100-0 | 24Vdc         | 10 A.          |



## EasyB 2-Channel thermomagnetic

| Version        | Input voltage | Output current |
|----------------|---------------|----------------|
| EB-2724-2020-0 | 24Vdc         | 2x1 A.         |
| EB-2724-2040-0 | 24Vdc         | 2x2 A.         |
| EB-2724-2060-0 | 24Vdc         | 2x3 A.         |
| EB-2724-2080-0 | 24Vdc         | 2x4 A.         |
| EB-2724-2120-0 | 24Vdc         | 2x6 A.         |
| EB-2724-2160-0 | 24Vdc         | 2x8 A.         |



## EasyB 1-Channel fast tripping characteristics

| Version        | Input voltage | Output current  |
|----------------|---------------|-----------------|
| EB-2724-010-0F | 24Vdc         | 1 A.NEC Class 2 |
| EB-2724-020-0F | 24Vdc         | 2 A.NEC Class 2 |
| EB-2724-030-0F | 24Vdc         | 3 A.NEC Class 2 |
| EB-2724-040-0F | 24Vdc         | 4 A.NEC Class 2 |
| EB-2724-060-0F | 24Vdc         | 6 A.            |
| EB-2724-080-0F | 24Vdc         | 8 A.            |
| EB-2724-100-0F | 24Vdc         | 10 A.           |



## EasyB 2-Channel fast tripping characteristics

| Version         | Input voltage | Output current    |
|-----------------|---------------|-------------------|
| EB-2724-2020-0F | 24Vdc         | 2x1 A.NEC Class 2 |
| EB-2724-2040-0F | 24Vdc         | 2x2 A.NEC Class 2 |
| EB-2724-2060-0F | 24Vdc         | 2x3 A.NEC Class 2 |
| EB-2724-2080-0F | 24Vdc         | 2x4 A.NEC Class 2 |
| EB-2724-2120-0F | 24Vdc         | 2x6 A.            |
| EB-2724-2160-0F | 24Vdc         | 2x8 A.            |



## EasyB 1-Channel Current-limiting

| Version       | Input voltage | Output current  |
|---------------|---------------|-----------------|
| EB-2824-010-0 | 24Vdc         | 1 A.NEC Class 2 |
| EB-2824-020-0 | 24Vdc         | 2 A.NEC Class 2 |
| EB-2824-030-0 | 24Vdc         | 3 A.NEC Class 2 |
| EB-2824-040-0 | 24Vdc         | 4 A.NEC Class 2 |
| EB-2824-060-0 | 24Vdc         | 6 A.            |
| EB-2824-080-0 | 24Vdc         | 8 A.            |
| EB-2824-100-0 | 24Vdc         | 10 A.           |



## EasyB 1-Channel current-limiting, comm. Adjustable trip current

| Version       | Input voltage | Output current         |
|---------------|---------------|------------------------|
| EB-0824-100-0 | 24Vdc         | 0.5 - 10 A, adjustable |



## EB-Communication

Communication modules for the EasyB series

Version

EB-MODBUS-RTU

EB-IO-LINK

EB-IO-LINK1



## ECONOMY SMART

| Version         | Input voltage | Output current              |
|-----------------|---------------|-----------------------------|
| PM-0712-200-0   | 12Vdc         | 2 ch. /2 - 10 A, adjustable |
| PM-0712-400-0   | 12Vdc         | 4 ch. /2 - 10 A, adjustable |
| PM-0724-120-0   | 24Vdc         | 2 ch. /1 - 6 A, adjustable  |
| PM-0724-200-0   | 24Vdc         | 2 ch. /2 - 10 A, adjustable |
| PM-0724-240-0   | 24Vdc         | 4 ch. /1 - 6 A, adjustable  |
| PM-0724-400-0   | 24Vdc         | 4 ch. /2 - 10 A, adjustable |
| PM-0724-400-0I1 | 24Vdc         | 4 ch. /1 - 10 A, adjustable |
| PM-0748-200-0   | 48Vdc         | 2 ch. /2 - 10 A, adjustable |
| PM-0748-400-0   | 48Vdc         | 4 ch. /2 - 10 A, adjustable |
| PC-0724-480-0   | 24Vdc         | 8 ch. /1 - 6 A, adjustable  |
| PC-0724-800-0I1 | 24Vdc         | 8 ch. /1 - 10 A, adjustable |
| PC-0748-800-0   | 48Vdc         | 8 ch. /2 - 10 A, adjustable |



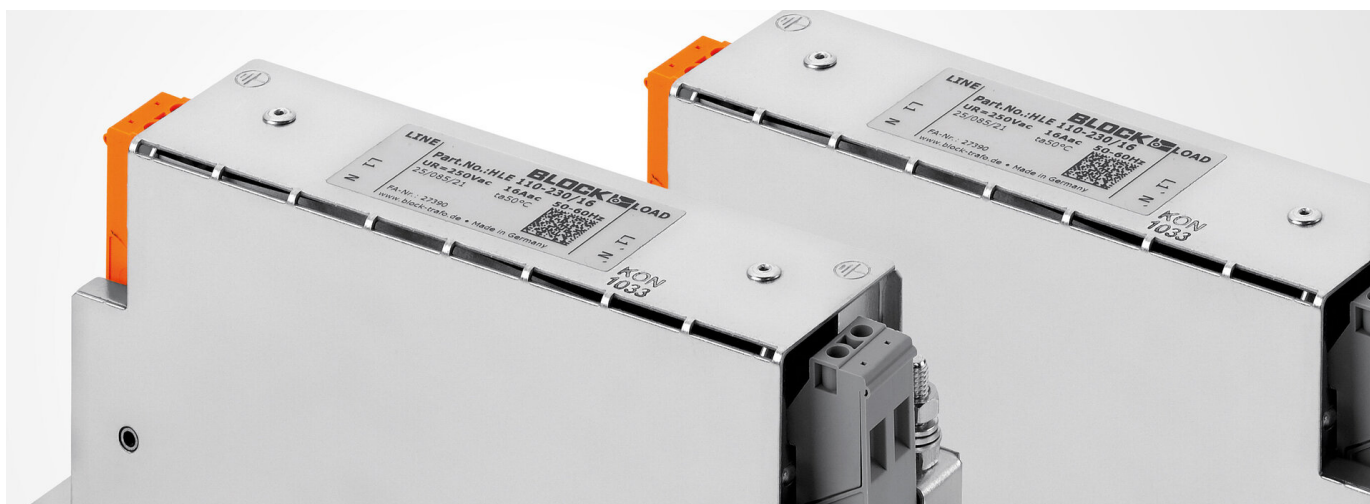
## BASIC SMART / Current-limiting

| Version       | Input voltage | Output current   |
|---------------|---------------|------------------|
| PM-0824-120-0 | 24Vdc         | 2 ch. /0.5 - 6 A |
| PM-0824-240-0 | 24Vdc         | 4 ch. /0.5 - 6 A |
| PC-0824-480-0 | 24Vdc         | 8 ch. /0.5 - 6 A |
| PM-0824-480-0 | 24Vdc         | 4 ch. /2 - 12 A  |

NEW  
TECHNOLOGY  
DC  
CONTROL



POWER SUPPLIES



## EMI FILTERS

Passive EMI filters from BLOCK are used to suppress the electromagnetic interference between the network and frequency inverter in the frequency range between 150 kHz and 30 MHz. They ensure compliance with the limit values required under residential and industrial standards.

In the line filter design, the passive EMI filter can also be combined with a line reactor, which also reduces low-frequency interference (harmonics).

### OVERVIEW

- › Attenuation of radio interference voltages  $\geq 150$  kHz
- › Compliance with the limit values required under residential and industrial standards
- › Flawless operation of 30 mA/300 mA ground fault circuit breakers through the use of low-leakage current filter solutions
- › Increased interference immunity for the system



**BERND EILERS**

Head of Power Quality  
Development





1-Phase

## HLE 110

Radio interference suppression filter, single-phase

250 Vac, 4 – 55 A, Leakage current 8.50 mA , For enhanced requirements

| Order no.      | Rate Voltage | Rate current | Leakage current (50Hz) |
|----------------|--------------|--------------|------------------------|
| HLE 110-230/4  | 250Vac       | 4 Amp.       | 8.50 mA.               |
| HLE 110-230/8  | 250Vac       | 8 Amp.       | 8.50 mA.               |
| HLE 110-230/12 | 250Vac       | 12 Amp.      | 8.50 mA.               |
| HLE 110-230/16 | 250Vac       | 16 Amp.      | 8.50 mA.               |
| HLE 110-230/20 | 250Vac       | 20 Amp.      | 8.50 mA.               |
| HLE 110-230/25 | 250Vac       | 25 Amp.      | 8.50 mA.               |
| HLE 110-230/30 | 250Vac       | 30 Amp.      | 8.50 mA.               |
| HLE 110-230/42 | 250Vac       | 42 Amp.      | 8.50 mA.               |
| HLE 110-230/55 | 250Vac       | 55 Amp.      | 8.50 mA.               |



1-Phase

## HLE 310

Radio interference suppression filter, single-phase Low leakage current

250 Vac, 4 – 55 A, Leakage current 8.50 mA , For enhanced requirements

| Order no.      | Rate Voltage | Rate current | Leakage current (50Hz) |
|----------------|--------------|--------------|------------------------|
| HLE 310-230/4  | 250Vac       | 4 Amp.       | <3.0 mA.               |
| HLE 310-230/8  | 250Vac       | 8 Amp.       | <3.0 mA.               |
| HLE 310-230/12 | 250Vac       | 12 Amp.      | <3.0 mA.               |
| HLE 310-230/16 | 250Vac       | 16 Amp.      | <3.0 mA.               |
| HLE 310-230/20 | 250Vac       | 20 Amp.      | <3.0 mA.               |
| HLE 310-230/25 | 250Vac       | 25 Amp.      | <3.0 mA.               |
| HLE 310-230/30 | 250Vac       | 30 Amp.      | <3.0 mA.               |
| HLE 310-230/42 | 250Vac       | 42 Amp.      | <3.0 mA.               |
| HLE 310-230/55 | 250Vac       | 55 Amp.      | <3.0 mA.               |



1-Phase

## HFE 104

Radio interference suppression filter, single-phase Low leakage current

250 Vac, 1 – 65 A, Leakage current 0.37 mA , For general requirements

| Order no.      | Rate Voltage | Rate current | Leakage current (50Hz) |
|----------------|--------------|--------------|------------------------|
| HFE 104-230/1  | 250Vac       | 1 Amp.       | 0.37 mA.               |
| HFE 104-230/2  | 250Vac       | 2 Amp.       | 0.37 mA.               |
| HFE 104-230/3  | 250Vac       | 3 Amp.       | 0.37 mA.               |
| HFE 104-230/6  | 250Vac       | 6 Amp.       | 0.37 mA.               |
| HFE 104-230/10 | 250Vac       | 10 Amp.      | 0.37 mA.               |
| HFE 104-230/20 | 250Vac       | 20 Amp.      | 0.37 mA.               |
| HFE 104-230/65 | 250Vac       | 65 Amp.      | 0.37 mA.               |



1-Phase

## HFE 156

Radio interference suppression filter, single-phase Low leakage current

250 Vac, 1 – 16 A, Leakage current 8 mA , For general requirements

| Order no.      | Rate Voltage | Rate current | Leakage current (50Hz) |
|----------------|--------------|--------------|------------------------|
| HFE 156-230/1  | 250Vac       | 1 Amp.       | 8 mA.                  |
| HFE 156-230/3  | 250Vac       | 3 Amp.       | 8 mA.                  |
| HFE 156-230/6  | 250Vac       | 6 Amp.       | 8 mA.                  |
| HFE 156-230/10 | 250Vac       | 10 Amp.      | 8 mA.                  |
| HFE 156-230/12 | 250Vac       | 12 Amp.      | 8 mA.                  |
| HFE 156-230/16 | 250Vac       | 16 Amp.      | 8 mA.                  |



1-Phase

## HFE 356

Radio interference suppression filter, single-phase Low leakage current  
250 Vac, 1 – 16 A, Leakage current 2 mA , For general requirements

| Order no.      | Rate Voltage | Rate current | Leakage current (50Hz) |
|----------------|--------------|--------------|------------------------|
| HFE 356-230/1  | 250Vac       | 1 Amp.       | 2 mA.                  |
| HFE 356-230/3  | 250Vac       | 3 Amp.       | 2 mA.                  |
| HFE 356-230/6  | 250Vac       | 6 Amp.       | 2 mA.                  |
| HFE 356-230/10 | 250Vac       | 10 Amp.      | 2 mA.                  |
| HFE 356-230/12 | 250Vac       | 12 Amp.      | 2 mA.                  |
| HFE 356-230/16 | 250Vac       | 16 Amp.      | 2 mA.                  |



1-Phase

## HFE 200

Radio interference suppression filter, single-phase Low leakage current  
250 Vac, 1 – 16 A, Leakage current 0.4 mA , For enhanced requirements

| Order no.      | Rate Voltage | Rate current | Leakage current (50Hz) |
|----------------|--------------|--------------|------------------------|
| HFE 200-230/1  | 250Vac       | 1 Amp.       | 0.4 mA.                |
| HFE 200-230/3  | 250Vac       | 3 Amp.       | 0.4 mA.                |
| HFE 200-230/6  | 250Vac       | 6 Amp.       | 0.4 mA.                |
| HFE 200-230/10 | 250Vac       | 10 Amp.      | 0.4 mA.                |
| HFE 200-230/12 | 250Vac       | 12 Amp.      | 0.4 mA.                |
| HFE 200-230/16 | 250Vac       | 16 Amp.      | 0.4 mA.                |



3-Phase

## HLD 110

Radio interference suppression filter, single-phase  
3 x 520 Vac, 3 x 8 – 3 x 250 A, Leakage current 20.00 - 37.00 mA, For enhanced requirements

| Order no.       | Rate Voltage | Rate current | Leakage current (50Hz) |
|-----------------|--------------|--------------|------------------------|
| HLD 110-500/8   | 3x520Vac     | 3x8 Amp.     | 20 mA.                 |
| HLD 110-500/12  | 3x520Vac     | 3x12 Amp.    | 20 mA.                 |
| HLD 110-500/16  | 3x520Vac     | 3x16 Amp.    | 21 mA.                 |
| HLD 110-500/30  | 3x520Vac     | 3x30 Amp.    | 29 mA.                 |
| HLD 110-500/42  | 3x520Vac     | 3x42 Amp.    | 20 mA.                 |
| HLD 110-500/55  | 3x520Vac     | 3x55 Amp.    | 30 mA.                 |
| HLD 110-500/75  | 3x520Vac     | 3x75 Amp.    | 22 mA.                 |
| HLD 110-500/100 | 3x520Vac     | 3x100 Amp.   | 30 mA.                 |
| HLD 110-500/130 | 3x520Vac     | 3x130 Amp.   | 22 mA.                 |
| HLD 110-500/180 | 3x520Vac     | 3x180 Amp.   | 31 mA.                 |
| HLD 110-500/250 | 3x520Vac     | 3x250 Amp.   | 37 mA.                 |



3-Phase

## HLD 310

Radio interference suppression filter, single-phase Low leakage current  
3 x 520 Vac, 3 x 8 – 3 x 250 A, Leakage current <0.4 mA, For enhanced requirements

| Order no.       | Rate Voltage | Rate current | Leakage current (50Hz) |
|-----------------|--------------|--------------|------------------------|
| HLD 310-500/8   | 3x520Vac     | 3x8 Amp.     | <0.4 mA.               |
| HLD 310-500/12  | 3x520Vac     | 3x12 Amp.    | <0.4 mA.               |
| HLD 310-500/16  | 3x520Vac     | 3x16 Amp.    | <0.4 mA.               |
| HLD 310-500/30  | 3x520Vac     | 3x30 Amp.    | <0.4 mA.               |
| HLD 310-500/42  | 3x520Vac     | 3x42 Amp.    | <0.4 mA.               |
| HLD 310-500/55  | 3x520Vac     | 3x55 Amp.    | <0.4 mA.               |
| HLD 310-500/75  | 3x520Vac     | 3x75 Amp.    | <0.4 mA.               |
| HLD 310-500/100 | 3x520Vac     | 3x100 Amp.   | <0.4 mA.               |
| HLD 310-500/130 | 3x520Vac     | 3x130 Amp.   | <0.4 mA.               |
| HLD 310-500/180 | 3x520Vac     | 3x180 Amp.   | <0.4 mA.               |
| HLD 310-500/250 | 3x520Vac     | 3x250 Amp.   | <0.4 mA.               |

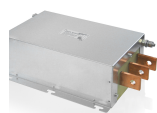


3-Phase

## HLD 710

Radio interference suppression filter, single-phase Low leakage current  
3 x 520 Vac, 3 x 8 – 3 x 250 A, Leakage current 6.00 - 7.00 mA, For enhanced requirements

| Order no.       | Rate Voltage | Rate current | Leakage current (50Hz) |
|-----------------|--------------|--------------|------------------------|
| HLD 710-500/8   | 3x520Vac     | 3x8 Amp.     | 6 mA.                  |
| HLD 710-500/12  | 3x520Vac     | 3x12 Amp.    | 6 mA.                  |
| HLD 710-500/16  | 3x520Vac     | 3x16 Amp.    | 6 mA.                  |
| HLD 710-500/30  | 3x520Vac     | 3x30 Amp.    | 6.50 mA.               |
| HLD 710-500/42  | 3x520Vac     | 3x42 Amp.    | 6.50 mA.               |
| HLD 710-500/55  | 3x520Vac     | 3x55 Amp.    | 6.50 mA.               |
| HLD 710-500/75  | 3x520Vac     | 3x75 Amp.    | 6.50 mA.               |
| HLD 710-500/100 | 3x520Vac     | 3x100 Amp.   | 6.50 mA.               |
| HLD 710-500/130 | 3x520Vac     | 3x130 Amp.   | 6.50 mA.               |
| HLD 710-500/180 | 3x520Vac     | 3x180 Amp.   | 7 mA.                  |
| HLD 710-500/250 | 3x520Vac     | 3x250 Amp.   | 7 mA.                  |



3-Phase

## HLD 103

Radio interference suppression filter, single-phase Low leakage current  
3 x 520 Vac, 3 x 270 – 3 x 1800 A, Leakage current 60.00 mA, For enhanced requirements

| Order no.        | Rate Voltage | Rate current | Leakage current (50Hz) |
|------------------|--------------|--------------|------------------------|
| HLD 103-500/270  | 3x520Vac     | 3x270 Amp.   | 570 mA.                |
| HLD 103-500/400  | 3x520Vac     | 3x400 Amp.   | 570 mA.                |
| HLD 103-500/750  | 3x520Vac     | 3x750 Amp.   | 570 mA.                |
| HLD 103-500/1000 | 3x520Vac     | 3x1000 Amp.  | 570 mA.                |
| HLD 103-500/1800 | 3x520Vac     | 3x1800 Amp.  | 570 mA.                |
| HLD 103-500/2500 | 3x520Vac     | 3x2500 Amp.  | 570 mA.                |



3-Phase

## HFD 156

Radio interference suppression filter, single-phase Low leakage current  
3 x 480 Vac, 3 x 3 – 3 x 16 A, Leakage current 1.00 mA, For general requirements

| Order no.      | Rate Voltage | Rate current | Leakage current (50Hz) |
|----------------|--------------|--------------|------------------------|
| HLD 156-400/3  | 3x480Vac     | 3x3 Amp.     | 1.0 mA.                |
| HLD 156-400/6  | 3x480Vac     | 3x6 Amp.     | 1.0 mA.                |
| HLD 156-400/10 | 3x480Vac     | 3x10 Amp.    | 1.0 mA.                |
| HLD 156-400/12 | 3x480Vac     | 3x12 Amp.    | 1.0 mA.                |
| HLD 156-400/16 | 3x480Vac     | 3x16 Amp.    | 1.0 mA.                |



3-Phase

## HFD 356

Radio interference suppression filter, single-phase Low leakage current  
3 x 480 Vac, 3 x 3 – 3 x 16 A, Leakage current 1.00 mA, For general requirements

| Order no.      | Rate Voltage | Rate current | Leakage current (50Hz) |
|----------------|--------------|--------------|------------------------|
| HLD 356-400/3  | 3x480Vac     | 3x3 Amp.     | 0.5 mA.                |
| HLD 356-400/6  | 3x480Vac     | 3x6 Amp.     | 0.5 mA.                |
| HLD 356-400/10 | 3x480Vac     | 3x10 Amp.    | 0.5 mA.                |
| HLD 356-400/12 | 3x480Vac     | 3x12 Amp.    | 0.5 mA.                |
| HLD 356-400/16 | 3x480Vac     | 3x16 Amp.    | 0.5 mA.                |



3-Phase

## HLD 810

Radio interference suppression filter, three-phase, for IT Network

3 x 520 Vac, 3 x 8 – 3 x 250 A, Leakage current 0 mA, For enhanced requirements

| Order no.       | Rate Voltage | Rate current | Leakage current (50Hz) |
|-----------------|--------------|--------------|------------------------|
| HLD 810-500/8   | 3x520Vac     | 8 Amp.       | 0 mA.                  |
| HLD 810-500/12  | 3x520Vac     | 12 Amp.      | 0 mA.                  |
| HLD 810-500/16  | 3x520Vac     | 16 Amp.      | 0 mA.                  |
| HLD 810-500/30  | 3x520Vac     | 30 Amp.      | 0 mA.                  |
| HLD 810-500/42  | 3x520Vac     | 42 Amp.      | 0 mA.                  |
| HLD 810-500/55  | 3x520Vac     | 55 Amp.      | 0 mA.                  |
| HLD 810-500/75  | 3x520Vac     | 75 Amp.      | 0 mA.                  |
| HLD 810-500/100 | 3x520Vac     | 100 Amp.     | 0 mA.                  |
| HLD 810-500/130 | 3x520Vac     | 130 Amp.     | 0 mA.                  |
| HLD 810-500/180 | 3x520Vac     | 180 Amp.     | 0 mA.                  |
| HLD 810-500/250 | 3x520Vac     | 250 Amp.     | 0 mA.                  |



3-Phase

## HFD 510

Radio interference filter, three-phase

3 x 520 Vac, 3 x 8 – 3 x 180 A, Leakage current 4.00 - 43.00 mA, For the highest requirements

| Order no.       | Rate Voltage | Rate current | Leakage current (50Hz) |
|-----------------|--------------|--------------|------------------------|
| HLD 510-500/8   | 3x520Vac     | 8 Amp.       | 4.0 mA.                |
| HLD 510-500/16  | 3x520Vac     | 16 Amp.      | 20.0 mA.               |
| HLD 510-500/25  | 3x520Vac     | 25 Amp.      | 18.0 mA.               |
| HLD 510-500/50  | 3x520Vac     | 50 Amp.      | 20.0 mA.               |
| HLD 510-500/80  | 3x520Vac     | 80 Amp.      | 33.0 mA.               |
| HLD 510-500/130 | 3x520Vac     | 130 Amp.     | 42.0 mA.               |
| HLD 510-500/180 | 3x520Vac     | 180 Amp.     | 43.0 mA.               |



3-Phase

## HFD 210

Radio interference filter, three-phase

3 x 520 Vac, 3 x 7 – 3 x 180 A, Leakage current 13.00 - 18.00 mA, For enhanced requirements

| Order no.       | Rate Voltage | Rate current | Leakage current (50Hz) |
|-----------------|--------------|--------------|------------------------|
| HLD 210-500/7   | 3x520Vac     | 7 Amp.       | 13.0 mA.               |
| HLD 210-500/16  | 3x520Vac     | 16 Amp.      | 14.0 mA.               |
| HLD 210-500/30  | 3x520Vac     | 30 Amp.      | 16.0 mA.               |
| HLD 210-500/42  | 3x520Vac     | 42 Amp.      | 16.0 mA.               |
| HLD 210-500/55  | 3x520Vac     | 55 Amp.      | 16.0 mA.               |
| HLD 210-500/75  | 3x520Vac     | 75 Amp.      | 16.0 mA.               |
| HLD 210-500/100 | 3x520Vac     | 100 Amp.     | 16.0 mA.               |
| HLD 210-500/130 | 3x520Vac     | 130 Amp.     | 18.0 mA.               |
| HLD 210-500/180 | 3x520Vac     | 180 Amp.     | 18.0 mA.               |



3-Phase

## HFD 500

Radio interference filter, three-phase

3 x 520 Vac, 3 x 8 – 3 x 110 A, Leakage current 18.00 - 66.00 mA, For general requirements

| Order no.   | Rate Voltage | Rate current | Leakage current (50Hz) |
|-------------|--------------|--------------|------------------------|
| HLD 500/8   | 3x520Vac     | 8 Amp.       | 18.0 mA.               |
| HLD 500/16  | 3x520Vac     | 16 Amp.      | 18.0 mA.               |
| HLD 500/25  | 3x520Vac     | 25 Amp.      | 34.0 mA.               |
| HLD 500/36  | 3x520Vac     | 36 Amp.      | 34.0 mA.               |
| HLD 500/50  | 3x520Vac     | 50 Amp.      | 34.0 mA.               |
| HLD 500/80  | 3x520Vac     | 80 Amp.      | 66.0 mA.               |
| HLD 500/110 | 3x520Vac     | 110 Amp.     | 66.0 mA.               |





## HLV 110

Radio interference suppression filter, three-phase with neutral conductor  
3 x 520 Vac, 3 x 8 – 3 x 250 A+N, 19.00 – 37.00 mA, For enhanced requirements

3-Phase

| Order no.       | Rate Voltage | Rate current | Leakage current (50Hz) |
|-----------------|--------------|--------------|------------------------|
| HLV 110-500/8   | 3x520Vac     | 3x8A+N       | 19.0 mA.               |
| HLV 110-500/12  | 3x520Vac     | 3x12A+N      | 19.0 mA.               |
| HLV 110-500/16  | 3x520Vac     | 3x16A+N      | 21.0 mA.               |
| HLV 110-500/30  | 3x520Vac     | 3x30A+N      | 21.0 mA.               |
| HLV 110-500/42  | 3x520Vac     | 3x42A+N      | 30.0 mA.               |
| HLV 110-500/55  | 3x520Vac     | 3x55A+N      | 22.0 mA.               |
| HLV 110-500/75  | 3x520Vac     | 3x75A+N      | 30.0 mA.               |
| HLV 110-500/100 | 3x520Vac     | 3x100A+N     | 22.0 mA.               |
| HLV 110-500/130 | 3x520Vac     | 3x130A+N     | 22.0 mA.               |
| HLV 110-500/180 | 3x520Vac     | 3x180A+N     | 31.0 mA.               |
| HLV 110-500/250 | 3x520Vac     | 3x250A+N     | 37.0 mA.               |



## HLV 310

Radio interference suppression filter, three-phase with neutral conductor, low leakage current  
3 x 520 Vac, 3 x 8 – 3 x 250 A+N, 19.00 – 37.00 mA, For enhanced requirements

3-Phase

| Order no.       | Rate Voltage | Rate current | Leakage current (50Hz) |
|-----------------|--------------|--------------|------------------------|
| HLV 310-500/8   | 3x520Vac     | 3x8A+N       | <1.0 mA.               |
| HLV 310-500/12  | 3x520Vac     | 3x12A+N      | <1.0 mA.               |
| HLV 310-500/16  | 3x520Vac     | 3x16A+N      | <1.0 mA.               |
| HLV 310-500/30  | 3x520Vac     | 3x30A+N      | <1.0 mA.               |
| HLV 310-500/42  | 3x520Vac     | 3x42A+N      | <1.0 mA.               |
| HLV 310-500/55  | 3x520Vac     | 3x55A+N      | <1.0 mA.               |
| HLV 310-500/75  | 3x520Vac     | 3x75A+N      | <1.0 mA.               |
| HLV 310-500/100 | 3x520Vac     | 3x100A+N     | <1.0 mA.               |
| HLV 310-500/130 | 3x520Vac     | 3x130A+N     | <1.0 mA.               |
| HLV 310-500/180 | 3x520Vac     | 3x180A+N     | <1.0 mA.               |
| HLV 310-500/250 | 3x520Vac     | 3x250A+N     | <1.0 mA.               |



## HFV 510

Radio interference suppression filter, three-phase with neutral conductor  
3 x 480 Vac, 3 x 16 – 3 x 80 A+N, Leakage current 15.00 - 22.00 mA, For the highest requirements

3-Phase

| Order no.      | Rate Voltage | Rate current | Leakage current (50Hz) |
|----------------|--------------|--------------|------------------------|
| HLV 510-400/16 | 3x520Vac     | 3x16A+N      | 15.0 mA.               |
| HLV 510-400/25 | 3x520Vac     | 3x25A+N      | 17.0 mA.               |
| HLV 510-400/35 | 3x520Vac     | 3x35A+N      | 22.0 mA.               |
| HLV 510-400/50 | 3x520Vac     | 3x50A+N      | 17.0 mA.               |
| HLV 510-400/80 | 3x520Vac     | 3x80A+N      | 19.0 mA.               |



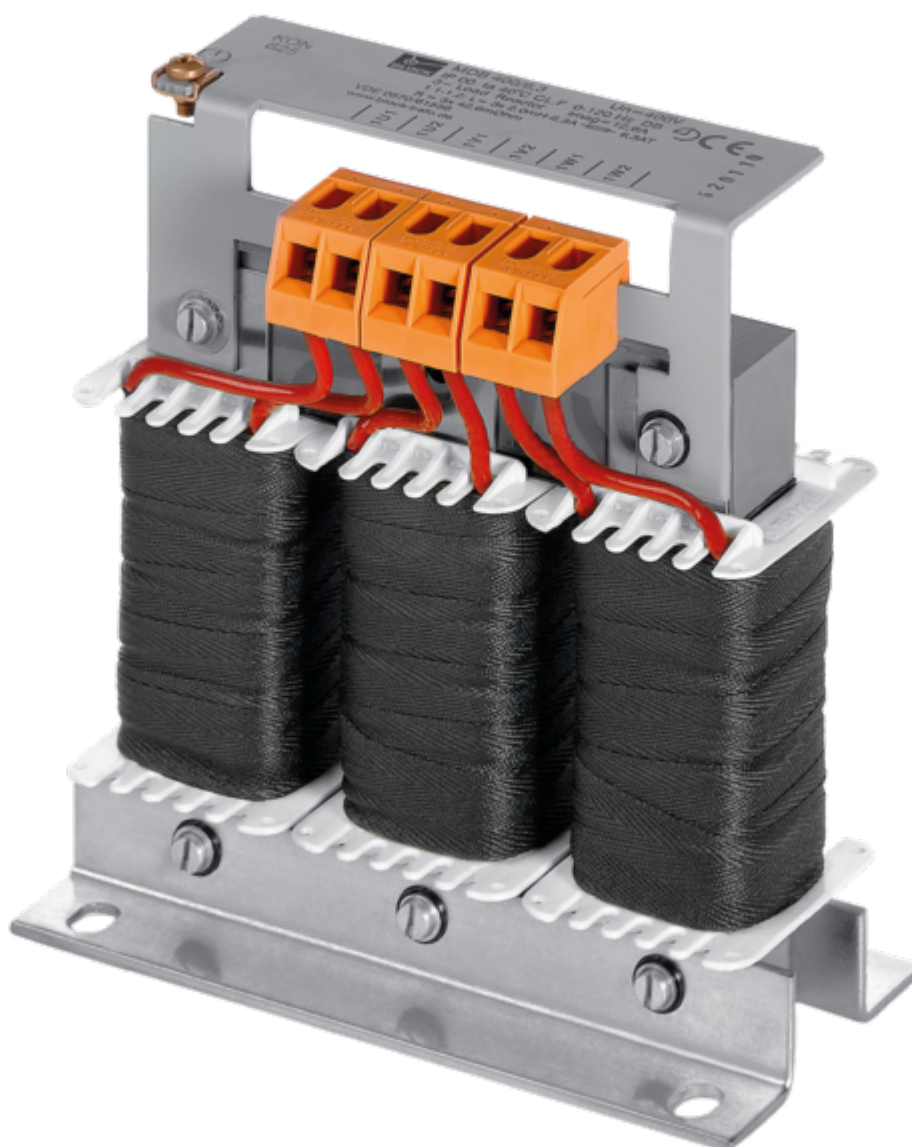
# Motor reactor

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## Benefits

- › High damping of edge steepness
- › High damping of inverter switching frequency
- › Reduction of leakage current
- › Long shielded cable lengths possible
- › High efficiency
- › Very good corrosion protection and low noise thanks to vacuum impregnation

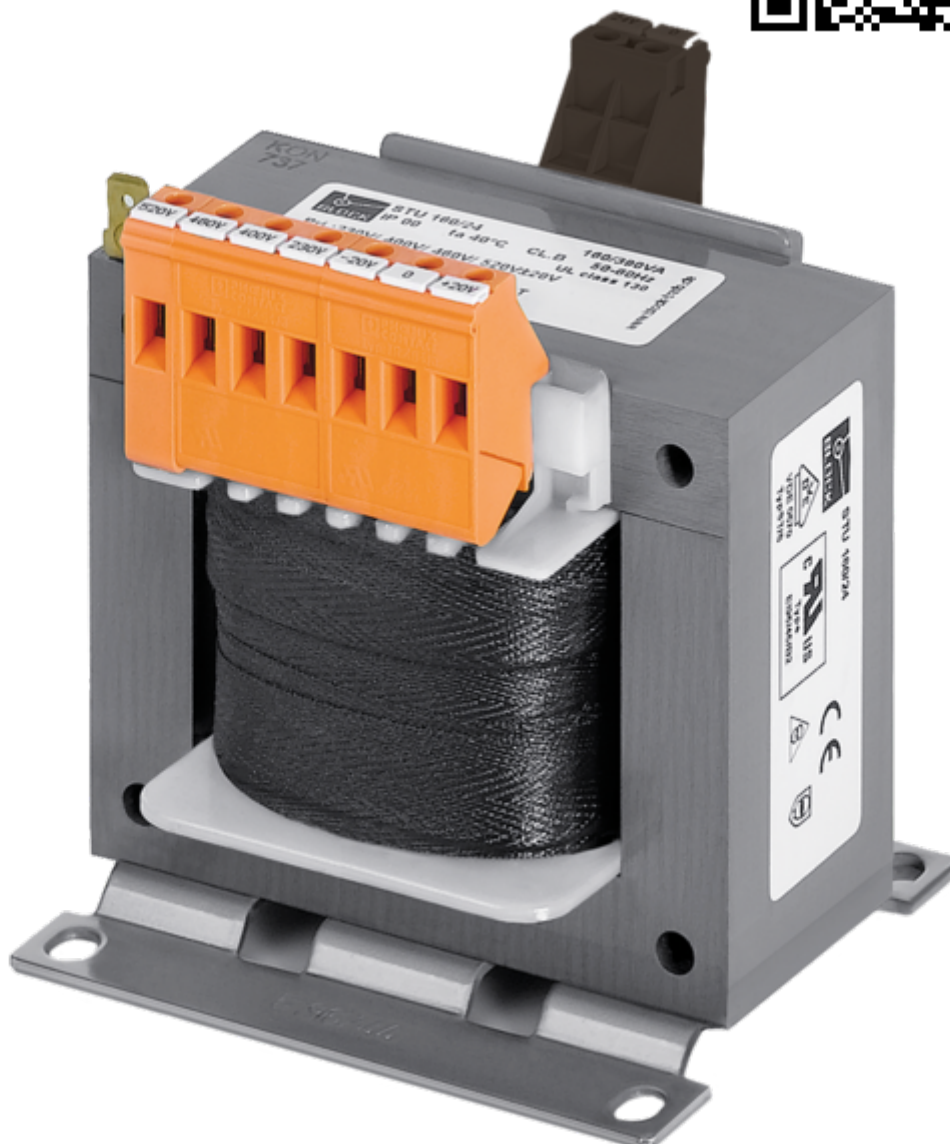


# CONTROL TRANSFORMERS

Control transformers with galvanic isolation are used for supplies of control systems with more than two consumers in accordance with EN 60204. Designed in accordance with VDE 0113, control transformers also provide continuous power in the event of short-term overloads. BLOCK's standard range includes power ratings of between 40 VA and 25,000 VA.

## OVERVIEW

- › Control transformer in accordance with VDE 0113
- › Power output: 40 VA to 25,000 VA
- › Supply of control systems in accordance with EN 60204



## Industrial Sensor

### IRSD

IRSD static/dynamic inductive ring sensors with IO-Link detect the smallest metal parts in feed tubes

[More >](#)



KGUTI Capacitive



OGWSD/OGWTI with IO-Link



Optical Miniature Sensors



LAT-45



LAT-52 Compact / LVHT-52



Fork light barriers with IO-Link



US with IO-Link



KNS Extended



IOL-Portable



**Made in Germany**





## OLK 71

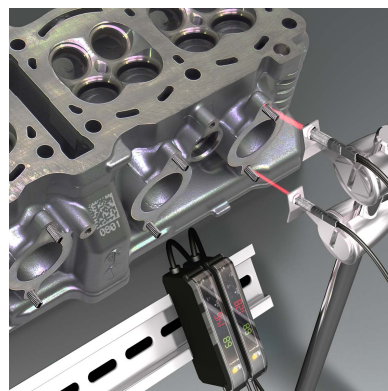
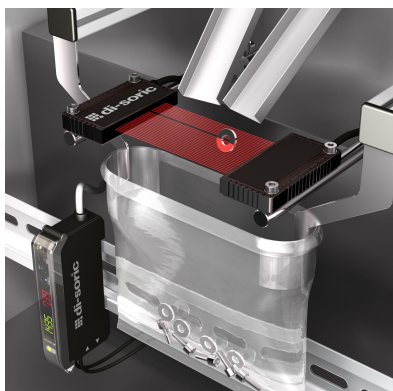
This fiber optic amplifier is characterized by its ease of use while maintaining maximum control. OLK 71 ... offer efficiency and high performance

- High operating distance, up to 4000 mm with a through-beam fiber and attachment opticx
- Two digital LED displays for threshold value and actual value
- Teach-in / fine manual adjustment
- Light / dark switching switchable
- Response time / timer function / offset function configuration
- Response time / timer function / offset function configuration
- PNP or NPN switching output
- M8 plug or connecting cable
- DIN rail mounting

| Order number | Emitted light, | Transistor PNP | Transistor NPN | Response time (ms)               | Connection |
|--------------|----------------|----------------|----------------|----------------------------------|------------|
| OLK 71 P3-T4 | Red 625 nm     | Yes            |                | 0.25 / 0.31 / 0.42 / 0.63 / 1.25 | M8 4-pin   |
| OLK 71 N3-T4 | Red 625 nm     |                | Yes            | 0.25 / 0.31 / 0.42 / 0.63 / 1.25 | M8 4-pin   |
| OLK 71 P3-3  | Red 625 nm     | Yes            |                | 0.25 / 0.31 / 0.42 / 0.63 / 1.25 | Cable 2M   |
| OLK 71 N3-3  | Red 625 nm     |                | Yes            | 0.25 / 0.31 / 0.42 / 0.63 / 1.25 | Cable 2M   |

- Maximum range through-beam / diffuse reflective 4000 mm / 250 mm
- Dimensions L 69 x H 33 x W 10.5 mm.
- Service voltage 12.....24 VDC
- Ambient temperature -10.....+55 °C
- Protection class IP54
- Casing material ABS / PC
- Mounting bracket enclosed, BW 70

**di-soric**  
SOLUTIONS.  
CLEVER.  
PRACTICAL.



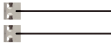


■ di-soric offers a wide range of fiber optic products with accessories.

The portfolio includes, among others, sensor probes made of stainless steel with bend protection, sensor probes with light bands for range monitoring and fiber optics for detection of the smallest parts.

| Order number       | Sizing | Design                                                                              | Light aperture | Range   | Resolutions | Lenght of fiber optic |
|--------------------|--------|-------------------------------------------------------------------------------------|----------------|---------|-------------|-----------------------|
| KLER-M4-T2-0.5     | M4     |    | Radial         | 200 mm. | 0.1 mm.     | 2000 mm.              |
| KLER-M4-T2-1       | M4     |    | Radial         | 400 mm. | 0.2 mm.     | 2000 mm.              |
| KLT-M3-B40-T2-0.5  | M3     |    | Axial          | 75 mm.  | 0.1 mm.     | 2000 mm.              |
| KLT-M3-B40-T2-0.5K | M3     |    | Axial          | 100 mm. | 0.05 mm.    | 2000 mm.              |
| KLT-M3-B90-T2-0.5  | M3     |  | Axial          | 75 mm.  | 0.1 mm.     | 2000 mm.              |
| KLT-M3-B90-T2-0.5K | M3     |  | Axial          | 100 mm. | 0.05 mm.    | 2000 mm.              |
| KLT-M3-S0.5-S0.25K | M3     |  | Axial          | 40 mm.  | 0.02 mm.    | 500 mm.               |
| KLT-M3-T2-0.5      | M3     |  | Axial          | 75 mm.  | 0.05 mm.    | 2000 mm.              |
| KLT-M3-T2-0.5K     | M3     |  | Axial          | 100 mm. | 0.05 mm.    | 2000 mm.              |
| KLT-M4-T2-0.5      | M4     |  | Axial          | 75 mm.  | 0.05 mm.    | 2000 mm.              |
| KLT-M4-T2-0.5K     | M4     |  | Axial          | 100 mm. | 0.05 mm.    | 2000 mm.              |
| KLT-M6-T2-1        | M6     |  | Axial          | 200 mm. | 0.1 mm.     | 2000 mm.              |
| KLT-M6-T2-1K       | M6     |  | Axial          | 250 mm. | 0.05 mm.    | 2000 mm.              |



| Order number         | Sizing   | Design                                                                              | Light aperture | Range    | Resolutions | Lenght of fiber optic |
|----------------------|----------|-------------------------------------------------------------------------------------|----------------|----------|-------------|-----------------------|
| KLTR-M4-T2-0.5       | M4       |    | Radial         | 60 mm.   | 0.1 mm.     | 2000 mm.              |
| KLTR-M4-T2-0.5K      | M4       |    | Radial         | 90 mm.   | 0.05 mm.    | 2000 mm.              |
| KLE-Q10M-1-0.5       | Cuboid   |    | Axial          | 200 mm.  | 0.05 mm.    | 1000 mm.              |
| KLEM-Q10-T1-4        | Cuboid   |    | Axial          | 200 mm.  | 0.1 mm.     | 1000 mm.              |
| KLEM-Q25K-T1-14      | Cuboid   |    | Axial          | 1000 mm. | 0.5 mm.     | 1000 mm.              |
| KLEMR-Q10-T1-4       | Cuboid   |    | Radial         | 200 mm.  | 0.1 mm.     | 1000 mm.              |
| KLEMR-Q38K-1-24      | Cuboid   |   | Radial         | 800 mm.  | 1 mm.       | 1000 mm.              |
| KLEMR-Q55K-1-46      | Cuboid   |  | Radial         | 800 mm.  | 1 mm.       | 1000 mm.              |
| KLTM-Q10-T1-5        | Cuboid   |  | Axial          | 100 mm.  | 0.1 mm.     | 1000 mm.              |
| KLTM-Q25K-T1-14      | Cuboid   |  | Axial          | 2400 mm. | 0.5 mm.     | 1000 mm.              |
| KLTM-Q38K-1-24       | Cuboid   |  | Radial         | 200 mm.  | 0.1 mm.     | 1000 mm.              |
| KLTVR-Q18-2-10       | Cuboid   |  | Radial         | 10 mm.   | 0.1 mm.     | 2000 mm.              |
| KLER-D3-30-S2-1      | Cylinder |  | Radial         | 600 mm.  | 0.2 mm.     | 2000 mm.              |
| KLER-D4.75-19-S2-0.5 | Cylinder |  | Radial         | 200 mm.  | 0.05 mm.    | 2000 mm.              |
| KLT-M6-T2-0.5-L20    | M6       |  | Axial          | 20 mm.   | 0.05 mm.    | 2000 mm.              |

| Order number      | Sizing | Design                                                                              | Light aperture | Range    | Resolutions | Lenght of fiber optic |
|-------------------|--------|-------------------------------------------------------------------------------------|----------------|----------|-------------|-----------------------|
| KLT-M6-T2-0.5-L35 | M6     |    | Axial          | 35 mm.   | 0.1 mm.     | 2000 mm.              |
| KLT-M6-T2-1.5NB   | M6     |    | Axial          | 400 mm.  | 0.3 mm.     | 2000 mm.              |
| KLE-M3-T2-0.5     | M3     |    | Axial          | 250 mm.  | 0.1 mm.     | 2000 mm.              |
| KLE-M3-T2-1       | M3     |    | Axial          | 1000 mm. | 0.2 mm.     | 2000 mm.              |
| KLE-M4-T2-0.5     | M4     |    | Axial          | 250 mm.  | 0.1 mm.     | 2000 mm.              |
| KLE-M4-T2-1       | M4     |    | Axial          | 1000 mm. | 0.2 mm.     | 2000 mm.              |
| KLE-M6-T2-1       | M6     |  | Axial          | 1000 mm. | 0.2 mm.     | 2000 mm.              |





## O-M18 Standard

The light barriers and diffuse reflective sensors in the O-M18 Standard series are ideal devices for economical and cost-efficient applications.

The sensors are alternatively available in a straight model or with 90° angled optics.

The plastic or metallic housing is distinguished by its short construction

### Diffuse Photo sensor

| Order number       | Light source | Color    | Wave    | Frequency | Output | Range (mm.) | Housing     | Protection | Connection    |
|--------------------|--------------|----------|---------|-----------|--------|-------------|-------------|------------|---------------|
| OT 18 FK 400 N3    | LED          | Infrared | 880 nm. | 1 KHz     | NPN    | 400 mm.     | Plastic ABS | IP67       | Cable 2 M.PVC |
| OT 18 FK 400 P3    | LED          | Infrared | 880 nm. | 1 KHz     | PNP    | 400 mm.     | Plastic ABS | IP67       | Cable 2 M.PVC |
| OT 18 FK 400 N3-B4 | LED          | Infrared | 880 nm. | 1 KHz     | NPN    | 400 mm.     | Plastic ABS | IP67       | M12 4-Pin     |
| OT 18 FK 400 P3-B4 | LED          | Infrared | 880 nm. | 1 KHz     | PNP    | 400 mm.     | Plastic ABS | IP67       | M12 4 Pin     |
| OT 18 FM 400 N3    | LED          | Infrared | 880 nm. | 1 KHz     | NPN    | 400 mm.     | Metal       | IP67       | Cable 2 M.PVC |
| OT 18 FM 400 P3    | LED          | Infrared | 880 nm. | 1 KHz     | PNP    | 400 mm.     | Metal       | IP67       | Cable 2 M.PVC |
| OT 18 FM 400 N3-B4 | LED          | Infrared | 880 nm. | 1 KHz     | NPN    | 400 mm.     | Metal       | IP67       | M12 4-Pin     |
| OT 18 FM 400 P3-B4 | LED          | Infrared | 880 nm. | 1 KHz     | PNP    | 400 mm.     | Metal       | IP67       | M12 4 Pin     |

### Retro-reflective Photo sensor

| Order number          | Light source | Color    | Wave    | Frequency | Output | Range (mm.) | Housing     | Protection | Connection    |
|-----------------------|--------------|----------|---------|-----------|--------|-------------|-------------|------------|---------------|
| OR 18-1 FK 5700 N3    | LED          | Infrared | 880 nm. | 1 KHz     | NPN    | 5700 mm.    | Plastic ABS | IP67       | Cable 2 M.PVC |
| OR 18-1 FK 5700 P3    | LED          | Infrared | 880 nm. | 1 KHz     | PNP    | 5700 mm.    | Plastic ABS | IP67       | Cable 2 M.PVC |
| OR 18-1 FK 5700 N3-B4 | LED          | Infrared | 880 nm. | 1 KHz     | NPN    | 5700 mm.    | Plastic ABS | IP67       | M12 4-Pin     |
| OR 18-1 FK 5700 P3-B4 | LED          | Infrared | 880 nm. | 1 KHz     | PNP    | 5700 mm.    | Plastic ABS | IP67       | M12 4 Pin     |
| OR 18-1 FM 5700 N3    | LED          | Infrared | 880 nm. | 1 KHz     | NPN    | 5700 mm.    | Metal       | IP67       | Cable 2 M.PVC |
| OR 18-1 FM 5700 P3    | LED          | Infrared | 880 nm. | 1 KHz     | PNP    | 5700 mm.    | Metal       | IP67       | Cable 2 M.PVC |
| OR 18-1 FM 5700 N3-B4 | LED          | Infrared | 880 nm. | 1 KHz     | NPN    | 5700 mm.    | Metal       | IP67       | M12 4-Pin     |
| OR 18-1 FM 5700 P3-B4 | LED          | Infrared | 880 nm. | 1 KHz     | PNP    | 5700 mm.    | Metal       | IP67       | M12 4 Pin     |

### Through-beam Photo sensor

| Order number          | Light source | Color    | Wave    | Frequency | Output | Range (mm.) | Housing     | Protection | Connection    |
|-----------------------|--------------|----------|---------|-----------|--------|-------------|-------------|------------|---------------|
| OES 18 FK 10000 N3    | LED          | Infrared | 880 nm. | 1 KHz     | NPN    | 10000 mm.   | Plastic ABS | IP67       | Cable 2 M.PVC |
| OES 18 FK 10000 P3    | LED          | Infrared | 880 nm. | 1 KHz     | PNP    | 10000 mm.   | Plastic ABS | IP67       | Cable 2 M.PVC |
| OES 18 FK 10000 N3-B4 | LED          | Infrared | 880 nm. | 1 KHz     | NPN    | 10000 mm.   | Plastic ABS | IP67       | M12 4-Pin     |
| OES 18 FK 10000 P3-B4 | LED          | Infrared | 880 nm. | 1 KHz     | PNP    | 10000 mm.   | Plastic ABS | IP67       | M12 4 Pin     |
| OES 18 FM 10000 N3    | LED          | Infrared | 880 nm. | 1 KHz     | NPN    | 10000 mm.   | Metal       | IP67       | Cable 2 M.PVC |
| OES 18 FM 10000 P3    | LED          | Infrared | 880 nm. | 1 KHz     | PNP    | 10000 mm.   | Metal       | IP67       | Cable 2 M.PVC |
| OES 18 FM 10000 N3-B4 | LED          | Infrared | 880 nm. | 1 KHz     | NPN    | 10000 mm.   | Metal       | IP67       | M12 4-Pin     |
| OES 18 FM 10000 P3-B4 | LED          | Infrared | 880 nm. | 1 KHz     | PNP    | 10000 mm.   | Metal       | IP67       | M12 4 Pin     |

# IO-Link



## O-21 Miniature

The very small and efficient light barriers and sensors in the O-21 miniature series with IO-Link can be easily integrated. The retroreflective sensors with background suppression are suited for detecting small and flat objects.

The retroreflective sensors feature a high functional reserve.

### Diffuse Photo sensor

| Order number  | Light source | Color | Wave    | Frequency | Output | Range (mm.) | Interface | Protection | Connection    |
|---------------|--------------|-------|---------|-----------|--------|-------------|-----------|------------|---------------|
| OT21-PS-2C    | LED          | Red   | 633 nm. | 1 KHz     | PNP    | 0 - 180 mm. | IO-Link   | IP67       | Cable 2 M.PVC |
| OT21-NS-2C    | LED          | Red   | 633 nm. | 1 KHz     | NPN    | 0 - 180 mm. | IO-Link   | IP67       | Cable 2 M.PVC |
| OT21-PS-0.3T3 | LED          | Red   | 633 nm. | 1 KHz     | PNP    | 0 - 180 mm. | IO-Link   | IP67       | M8 3- pin     |
| OT21-NS-0.3T3 | LED          | Red   | 633 nm. | 1 KHz     | NPN    | 0 - 180 mm. | IO-Link   | IP67       | M8 3- pin     |

### Background suppression sensor

| Order number    | Light source | Color | Wave    | Frequency | Output | Range (mm.) | Interface | Protection | Connection    |
|-----------------|--------------|-------|---------|-----------|--------|-------------|-----------|------------|---------------|
| OH21-15PS-2C    | LED          | Red   | 633 nm. | 1 KHz     | PNP    | 3 - 15 mm.  | IO-Link   | IP67       | Cable 2 M.PVC |
| OH21-15NS-2C    | LED          | Red   | 633 nm. | 1 KHz     | NPN    | 3 - 15 mm.  | IO-Link   | IP67       | Cable 2 M.PVC |
| OH21-50PS-2C    | LED          | Red   | 633 nm. | 1 KHz     | PNP    | 1 - 50 mm.  | IO-Link   | IP67       | Cable 2 M.PVC |
| OH21-50NS-2C    | LED          | Red   | 633 nm. | 1 KHz     | NPN    | 1 - 50 mm.  | IO-Link   | IP67       | Cable 2 M.PVC |
| OH21-80PS-2C    | LED          | Red   | 633 nm. | 1 KHz     | PNP    | 1 - 80 mm.  | IO-Link   | IP67       | Cable 2 M.PVC |
| OH21-80NS-2C    | LED          | Red   | 633 nm. | 1 KHz     | NPN    | 1 - 80 mm.  | IO-Link   | IP67       | Cable 2 M.PVC |
| OH21-15PS-0.3T3 | LED          | Red   | 633 nm. | 1 KHz     | PNP    | 3 - 15 mm.  | IO-Link   | IP67       | M8 3- pin     |
| OH21-15NS-0.3T3 | LED          | Red   | 633 nm. | 1 KHz     | NPN    | 3 - 15 mm.  | IO-Link   | IP67       | M8 3- pin     |
| OH21-50PS-0.3T3 | LED          | Red   | 633 nm. | 1 KHz     | PNP    | 1 - 50 mm.  | IO-Link   | IP67       | M8 3- pin     |
| OH21-50NS-0.3T3 | LED          | Red   | 633 nm. | 1 KHz     | NPN    | 1 - 50 mm.  | IO-Link   | IP67       | M8 3- pin     |
| OH21-80PS-0.3T3 | LED          | Red   | 633 nm. | 1 KHz     | PNP    | 1 - 80 mm.  | IO-Link   | IP67       | M8 3- pin     |
| OH21-80NS-0.3T3 | LED          | Red   | 633 nm. | 1 KHz     | NPN    | 1 - 80 mm.  | IO-Link   | IP67       | M8 3- pin     |

### Retroreflective sensor

| Order number  | Light source | Color | Wave    | Frequency | Output | Range (mm.)   | Interface | Protection | Connection    |
|---------------|--------------|-------|---------|-----------|--------|---------------|-----------|------------|---------------|
| OR21-PS-2C    | LED          | Red   | 633 nm. | 1 KHz     | PNP    | 20 - 1800 mm. | IO-Link   | IP67       | Cable 2 M.PVC |
| OR21-NS-2C    | LED          | Red   | 633 nm. | 1 KHz     | NPN    | 20 - 1800 mm. | IO-Link   | IP67       | Cable 2 M.PVC |
| OR21-PS-0.3T3 | LED          | Red   | 633 nm. | 1 KHz     | PNP    | 20 - 1800 mm. | IO-Link   | IP67       | M8 3- pin     |
| OR21-NS-0.3T3 | LED          | Red   | 633 nm. | 1 KHz     | NPN    | 20 - 1800 mm. | IO-Link   | IP67       | M8 3- pin     |

### Through-beam sensor

| Order number  | Light source | Color | Wave    | Frequency | Output | Range (mm.) | Interface | Protection | Connection    |
|---------------|--------------|-------|---------|-----------|--------|-------------|-----------|------------|---------------|
| OS21-2C       | LED          | Red   | 633 nm. | 1 KHz     | PNP    | Emitter     | IO-Link   | IP67       | Cable 2 M.PVC |
| OS21-2C-0.3T3 | LED          | Red   | 633 nm. | 1 KHz     | NPN    | Emitter     | IO-Link   | IP67       | Cable 2 M.PVC |
| OE21-PS-2C    | LED          | Red   | 633 nm. | 1 KHz     | PNP    | 3000 mm.    | IO-Link   | IP67       | Cable 2 M.PVC |
| OE21-NS-2C    | LED          | Red   | 633 nm. | 1 KHz     | NPN    | 3000 mm.    | IO-Link   | IP67       | Cable 2 M.PVC |



## Fork light barriers

di-soric fork light barriers operate on the functional principle of through-beam sensors. They are delivered ready to install and do not have to be adjusted afterward. Fork light barriers are used wherever small objects or object positions must be detected quickly, precisely and with any type of surface.

### Infrared beam sensor

| Order number  | Light source | Color    | Res.   | Frequency | Output  | Fork Open | Interface | Protection | Connection |
|---------------|--------------|----------|--------|-----------|---------|-----------|-----------|------------|------------|
| OGU 005 G3-T3 | LED          | Infrared | 0.2 mm | 10 KHz    | PNP/NPN | 5 mm      | IO-Link   | IP67       | M8 3-Pin   |
| OGU 010 G3-T3 | LED          | Infrared | 0.2 mm | 10 KHz    | PNP/NPN | 10 mm     | IO-Link   | IP67       | M8 3-Pin   |
| OGU 020 G3-T3 | LED          | Infrared | 0.3 mm | 5 KHz     | PNP/NPN | 20 mm     | IO-Link   | IP67       | M8 3-Pin   |
| OGU 021 G3-T3 | LED          | Red      | 0.3 mm | 5 KHz     | PNP/NPN | 20 mm     | IO-Link   | IP67       | M8 3-Pin   |
| OGU 030 G3-T3 | LED          | Infrared | 0.3 mm | 5 KHz     | PNP/NPN | 30 mm     | IO-Link   | IP67       | M8 3-Pin   |
| OGU 031 G3-T3 | LED          | Red      | 0.3 mm | 5 KHz     | PNP/NPN | 30 mm     | IO-Link   | IP67       | M8 3-Pin   |
| OGU 041 G3-T3 | LED          | Red      | 0.3 mm | 5 KHz     | PNP/NPN | 40 mm     | IO-Link   | IP67       | M8 3-Pin   |
| OGU 050 G3-T3 | LED          | Infrared | 0.3 mm | 5 KHz     | PNP/NPN | 50 mm     | IO-Link   | IP67       | M8 3-Pin   |
| OGU 051 G3-T3 | LED          | Red      | 0.3 mm | 5 KHz     | PNP/NPN | 50 mm     | IO-Link   | IP67       | M8 3-Pin   |
| OGU 061 G3-T3 | LED          | Red      | 0.3 mm | 5 KHz     | PNP/NPN | 60 mm     | IO-Link   | IP67       | M8 3-Pin   |
| OGU 071 G3-T3 | LED          | Red      | 0.3 mm | 5 KHz     | PNP/NPN | 70 mm     | IO-Link   | IP67       | M8 3-Pin   |
| OGU 080 G3-T3 | LED          | Infrared | 0.3 mm | 5 KHz     | PNP/NPN | 80 mm     | IO-Link   | IP67       | M8 3-Pin   |
| OGU 081 G3-T3 | LED          | Red      | 0.3 mm | 5 KHz     | PNP/NPN | 80 mm     | IO-Link   | IP67       | M8 3-Pin   |
| OGU 091 G3-T3 | LED          | Red      | 0.3 mm | 5 KHz     | PNP/NPN | 90 mm     | IO-Link   | IP67       | M8 3-Pin   |
| OGU 101 G3-T3 | LED          | Red      | 0.5 mm | 5 KHz     | PNP/NPN | 100 mm    | IO-Link   | IP67       | M8 3-Pin   |
| OGU 120 G3-T3 | LED          | Infrared | 0.5 mm | 5 KHz     | PNP/NPN | 120 mm    | IO-Link   | IP67       | M8 3-Pin   |
| OGU 121 G3-T3 | LED          | Red      | 0.5 mm | 5 KHz     | PNP/NPN | 120 mm    | IO-Link   | IP67       | M8 3-Pin   |
| OGU 171 G3-T3 | LED          | Red      | 0.5 mm | 5 KHz     | PNP/NPN | 170 mm    | IO-Link   | IP67       | M8 3-Pin   |
| OGU 221 G3-T3 | LED          | Red      | 0.5 mm | 5 KHz     | PNP/NPN | 220 mm    | IO-Link   | IP67       | M8 3-Pin   |
| OGU 251G3-T3  | LED          | Red      | 0.5 mm | 5 KHz     | PNP/NPN | 250 mm    | IO-Link   | IP67       | M8 3-Pin   |

### Laser beam sensor

| Order number       | Light source | Color | Res.    | Frequency | Output  | Fork Open | Interface | Protection | Connection |
|--------------------|--------------|-------|---------|-----------|---------|-----------|-----------|------------|------------|
| OGUL 031 G3-T3     | Laser        | Red   | 0.05 mm | 5 KHz     | PNP/NPN | 30 mm     | IO-Link   | IP67       | M8 3-Pin   |
| OGUL 031 G3-T3/V4A | Laser        | Red   | 0.05 mm | 5 KHz     | PNP/NPN | 30 mm     | IO-Link   | IP67       | M8 3-Pin   |
| OGUL 081 G3-T3     | Laser        | Red   | 0.05 mm | 5 KHz     | PNP/NPN | 80 mm     | IO-Link   | IP67       | M8 3-Pin   |
| OGUL 081 G3-T3/V4A | Laser        | Red   | 0.05 mm | 5 KHz     | PNP/NPN | 80 mm     | IO-Link   | IP67       | M8 3-Pin   |
| OGUL 121 G3-T3     | Laser        | Red   | 0.05 mm | 5 KHz     | PNP/NPN | 121 mm    | IO-Link   | IP67       | M8 3-Pin   |
| OGUL 121 G3-T3/V4A | Laser        | Red   | 0.05 mm | 5 KHz     | PNP/NPN | 121 mm    | IO-Link   | IP67       | M8 3-Pin   |





Angled light barriers

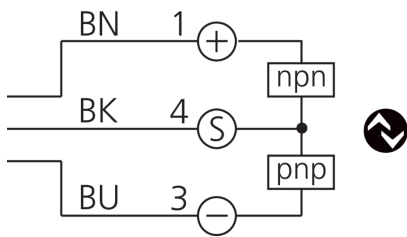
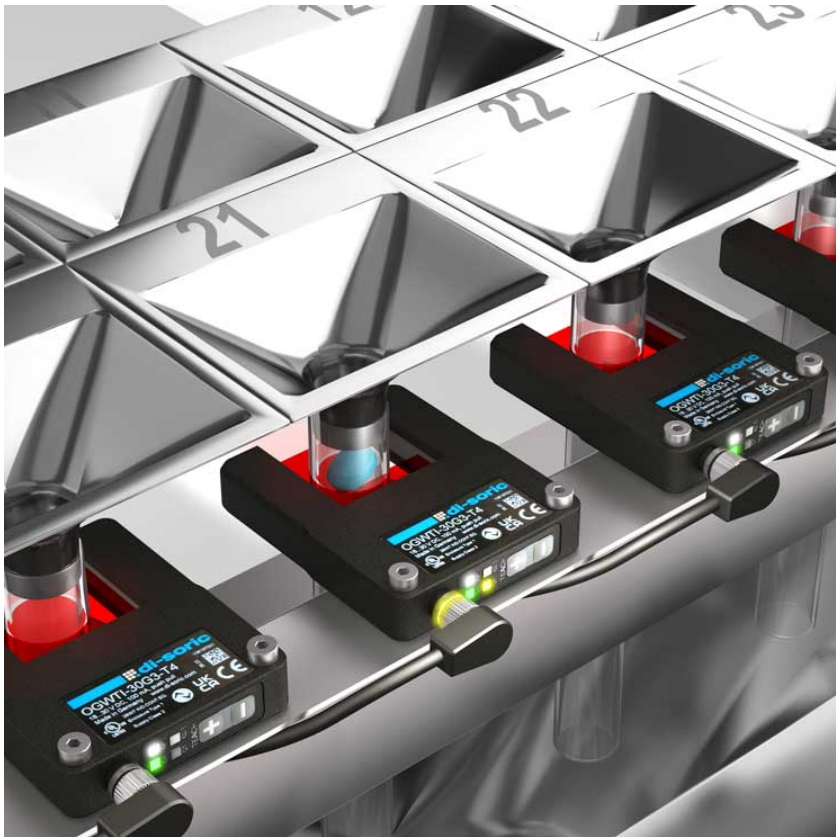
Angled light barriers from di-soric work according to the through-beam principle. They are used, preferably in tight spaces, for fast, surface-independent detection of objects. Since transmitter, receiver and the electronics are located in one housing, they can be mounted quickly. Costly brackets and time-consuming adjustments can be avoided.

Infrared beam sensor

| Order number  | Light source | Color    | Res.   | Frequency | Output  | Leg length | Interface | Protection | Connection |
|---------------|--------------|----------|--------|-----------|---------|------------|-----------|------------|------------|
| OGL 050 G3-T3 | Laser        | Infrared | 0.3 mm | 5 KHz     | PNP/NPN | 50/50 mm   | IO-Link   | IP67       | M8 3-Pin   |
| OGL 051 G3-T3 | Laser        | Red      | 0.3 mm | 5 KHz     | PNP/NPN | 50/50 mm   | IO-Link   | IP67       | M8 3-Pin   |
| OGL 080 G3-T3 | Laser        | Infrared | 0.3 mm | 5 KHz     | PNP/NPN | 80/80 mm   | IO-Link   | IP67       | M8 3-Pin   |
| OGL 081 G3-T3 | Laser        | Red      | 0.3 mm | 5 KHz     | PNP/NPN | 80/80 mm   | IO-Link   | IP67       | M8 3-Pin   |
| OGL 120 G3-T3 | Laser        | Infrared | 0.3 mm | 5 KHz     | PNP/NPN | 120/120 mm | IO-Link   | IP67       | M8 3-Pin   |
| OGL 121 G3-T3 | Laser        | Red      | 0.3 mm | 5 KHz     | PNP/NPN | 120/120 mm | IO-Link   | IP67       | M8 3-Pin   |

Laser beam sensor

| Order number   | Light source | Color | Res.    | Frequency | Output  | Leg length | Interface | Protection | Connection |
|----------------|--------------|-------|---------|-----------|---------|------------|-----------|------------|------------|
| OGLL 051 G3-T3 | Laser        | Red   | 0.05 mm | 5 KHz     | PNP/NPN | 50/50 mm   | IO-Link   | IP67       | M8 3-Pin   |
| OGLL 081 G3-T3 | Laser        | Red   | 0.05 mm | 5 KHz     | PNP/NPN | 80/80 mm   | IO-Link   | IP67       | M8 3-Pin   |
| OGLL 121 G3-T3 | Laser        | Red   | 0.05 mm | 5 KHz     | PNP/NPN | 120/120 mm | IO-Link   | IP67       | M8 3-Pin   |







## Frame light barriers

Our frame light barriers detect mostly small objects in a small to medium-sized detection field. They are used wherever metallic or non-metallic objects are to be detected not only periodically, but across a range, quickly and independent of surface.

### Frame design

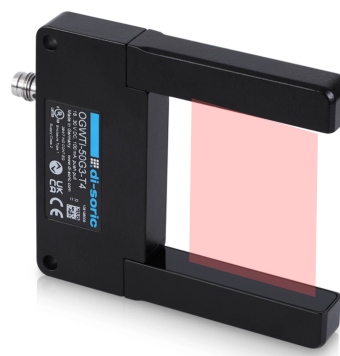
| Order number   | Detection Range | Res.Dyn | Response time | Output    | Interface | Protection | Connection |
|----------------|-----------------|---------|---------------|-----------|-----------|------------|------------|
| OGWSD-25G3-T3  | 25 x 22 mm      | 0.7 mm  | 0.05 ms.      | Push-Pull | IO-Link   | IP67       | M8 3-Pin   |
| OGWSD-40G3-T3  | 40 x 49 mm      | 0.7 mm  | 0.05 ms.      | Push-Pull | IO-Link   | IP67       | M8 3-Pin   |
| OGWSD-70G3-T3  | 70 x 62 mm      | 1.5 mm  | 0.05 ms.      | Push-Pull | IO-Link   | IP67       | M8 3-Pin   |
| OGWSD-100G3-T3 | 100 x 92 mm     | 2.5 mm  | 0.05 ms.      | Push-Pull | IO-Link   | IP67       | M8 3-Pin   |
| OGWSD-150G3-T3 | 150 x 142 mm    | 3.0 mm  | 0.05 ms.      | Push-Pull | IO-Link   | IP67       | M8 3-Pin   |
| OGWSD-250G3-T3 | 250 x 242 mm    | 5.0 mm  | 0.05 ms.      | Push-Pull | IO-Link   | IP67       | M8 3-Pin   |
| OGWSD-300G3-T3 | 300 x 397.5 mm  | 5.0 mm  | 0.05 ms.      | Push-Pull | IO-Link   | IP67       | M8 3-Pin   |

### Fork design

| Order number   | Detection Range | Res.Dyn | Response time | Output    | Interface | Protection | Connection |
|----------------|-----------------|---------|---------------|-----------|-----------|------------|------------|
| OGWTI-30G3-T4  | 30 x 30 mm      | 0.7 mm  | 0.05 ms.      | Push-Pull | IO-Link   | IP67       | M8 3-Pin   |
| OGWTI-50G3-T4  | 50 x 50 mm      | 1.0 mm  | 0.05 ms.      | Push-Pull | IO-Link   | IP67       | M8 3-Pin   |
| OGWTI-80G3-T4  | 80 x 80 mm      | 1.5 mm  | 0.05 ms.      | Push-Pull | IO-Link   | IP67       | M8 3-Pin   |
| OGWTI-100G3-T4 | 100 x 100 mm    | 2.5 mm  | 0.05 ms.      | Push-Pull | IO-Link   | IP67       | M8 3-Pin   |



Frame design



Fork design



### Inductive proximity sensors

Our inductive proximity sensors offer a wide range of solutions for modern industrial applications. Our designs from Ø 3 mm to M50 and in compact, cubic variants (miniaturized to 40 x 40 mm) offer you the ideal solution for any requirement.

In addition to our large standard portfolio, our product range also includes full-metal variants and pressure-resistant sensors up to 500 bar.

Our inductive proximity sensors with analog output, enable precise measurement and control in production and testing process.



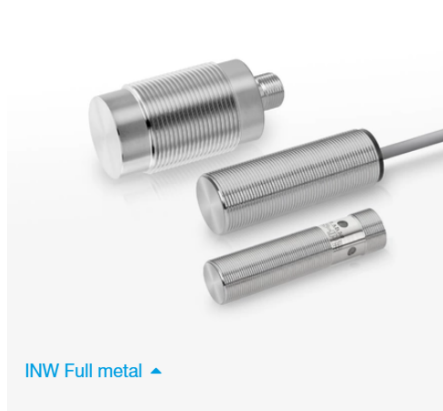
INS Standard ▲



INM Miniature ▲



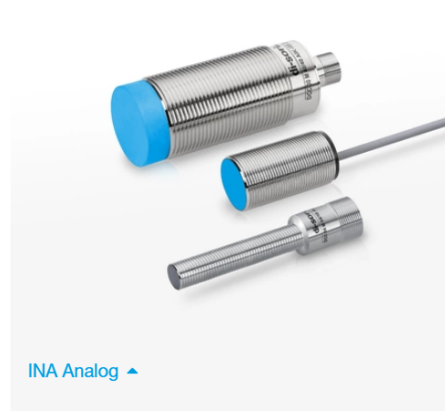
INE Industrial ▲



INW Full metal ▲



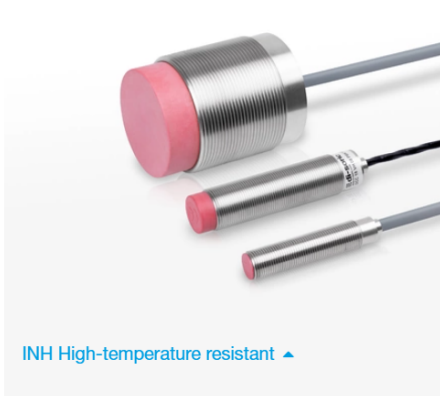
INQ Cubic Model ▲



INA Analog ▲



INP High-pressure resistant ▲



INH High-temperature resistant ▲



## Inductive ring sensors

Our inductive ring and wire breakage sensors detect the smallest metallic parts that are conveyed in supply tubes for further processing. In the case of parts that are fed very quickly, the integrated pulse stretching generates an output signal that can be easily analyzed. All devices from di-soric are reliably protected against overload, short-circuit and polarity reversal.



IRSD Static/Dynamic ▲



IRB Standard ▲



IRDB Inductive wire-break sensors ▲



Inductive fill level sensor / Pendulum switch ▲



Inductive tube sensors ▲





### Label sensors

Using our sensors for label detection in a forked construction, labels can be positioned precisely at high belt speeds.

Calibrated to different and varied label materials (paper, metallic, transparent, thin/thick), they are available with different functional principles (optical/capacitive/ultrasonic).

## SMART SENSOR

- Auto Teaching
- High responsetime
- Push-pull (Auto connect NPN/PNP)
- High quality & Made in Germany

#### Optical Label sensor / Auto Teach

| Order number            | Type    | Fork Open | Frequency | Output              | Protection | Connection | Design                                                                                                                                                                      |
|-------------------------|---------|-----------|-----------|---------------------|------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OGUTI 002 FP3K-TSSL     | Optical | 2 mm      | 3 KHz     | PNP                 | IP67       | M8 4-Pin   |       |
| OGUTI 002 G4K-TSSL      | Optical | 2 mm      | 3 KHz     | Push-pull (PNP/NPN) | IP67       | M8 4-Pin   |                                                                                                                                                                             |
| OGUTI 002 P3K-TSSL      | Optical | 2 mm      | 3 KHz     | PNP                 | IP67       | M8 4-Pin   |       |
| OGUTI 002 PN3K-TSSL     | Optical | 2 mm      | 3 KHz     | PNP+NPN             | IP67       | M8 4-Pin   |                                                                                                                                                                             |
| OGUTI 005/50 FG3K-TSSL  | Optical | 5 mm      | 3 KHz     | Push-pull           | IP67       | M8 4-Pin   |   |
| OGUTI 005/50 G3K-TSSL   | Optical | 5 mm      | 3 KHz     | Push-pull           | IP67       | M8 4-Pin   |                                                                                                                                                                             |
| OGUTI 005/100 FP3K-TSSL | Optical | 5 mm      | 3 KHz     | PNP                 | IP67       | M8 4-Pin   |   |
| OGUTI 005/100 P3K-TSSL  | Optical | 5 mm      | 3 KHz     | PNP                 | IP67       | M8 4-Pin   |                                                                                                                                                                             |
| OGUTI 005/100 PN3K-TSSL | Optical | 5 mm      | 3 KHz     | PNP                 | IP67       | M8 4-Pin   |                                                                                                                                                                             |

#### Ultrasonic Label sensor / Auto Teach + IO-Link

| Order number      | Type       | Fork Open | Frequency | Output    | Protection | Connection | Design                                                                                                                                                                      |
|-------------------|------------|-----------|-----------|-----------|------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UGUTI 6/70 G6-B5  | Ultrasonic | 6 mm      | 250 us    | Push-pull | IP67       | M12 5-Pin  |   |
| UGUTI 6/70 G6-RB5 | Ultrasonic | 6 mm      | 250 us    | Push-pull | IP67       | M12 5-Pin  |                                                                                                                                                                             |

#### Capacitive Label sensor / Auto Teach + IO-Link

| Order number     | Type       | Fork Open | Frequency | Output    | Protection | Connection | Design                                                                                                                                                                                                                                                            |
|------------------|------------|-----------|-----------|-----------|------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KGUTI50-1-G3-T3  | Ultrasonic | 0.4 mm    | 250 us    | Push-pull | IP67       | M8 3-Pin   |    |
| KGUTI50-1-G3-T4  | Ultrasonic | 0.4 mm    | 250 us    | Push-pull | IP67       | M8 4-Pin   |                                                                                                                                                                                                                                                                   |
| KGUTI80-1-G3-B4  | Ultrasonic | 0.6 mm    | 250 us    | Push-pull | IP67       | M12 4-Pin  |                                                                                                                                                                                                                                                                   |
| KGUTI80-1-G3-RB4 | Ultrasonic | 0.6 mm    | 250 us    | Push-pull | IP67       | M12 4-Pin  |                                                                                                                                                                                                                                                                   |

Technical support please contact  
info@pe-thai.com

## Ultrasonic barriers/sensors

The US ultrasonic barriers and sensors reliably detect transparent, light and dark objects, as well as reflective objects. They are ideally suited for use in dusty and dirty environments. Sensors with IO-Link are available.



US-M8 ▲



US-M12 ▲



US-Q12 ▲



US-M18 ▲



US-M30 ▲





VISION SENSOR  
**CS-60**  
Vision sensors

Our Vision sensors can be operated intuitively and are commissioned within minutes without training. They can be used out of the box, and have extensive software tools and standardized interfaces available for communication with peripherals.

**SMART VISION SENSOR**  
**EASY SETUP**  
FREE SOFTWARE N-Vision



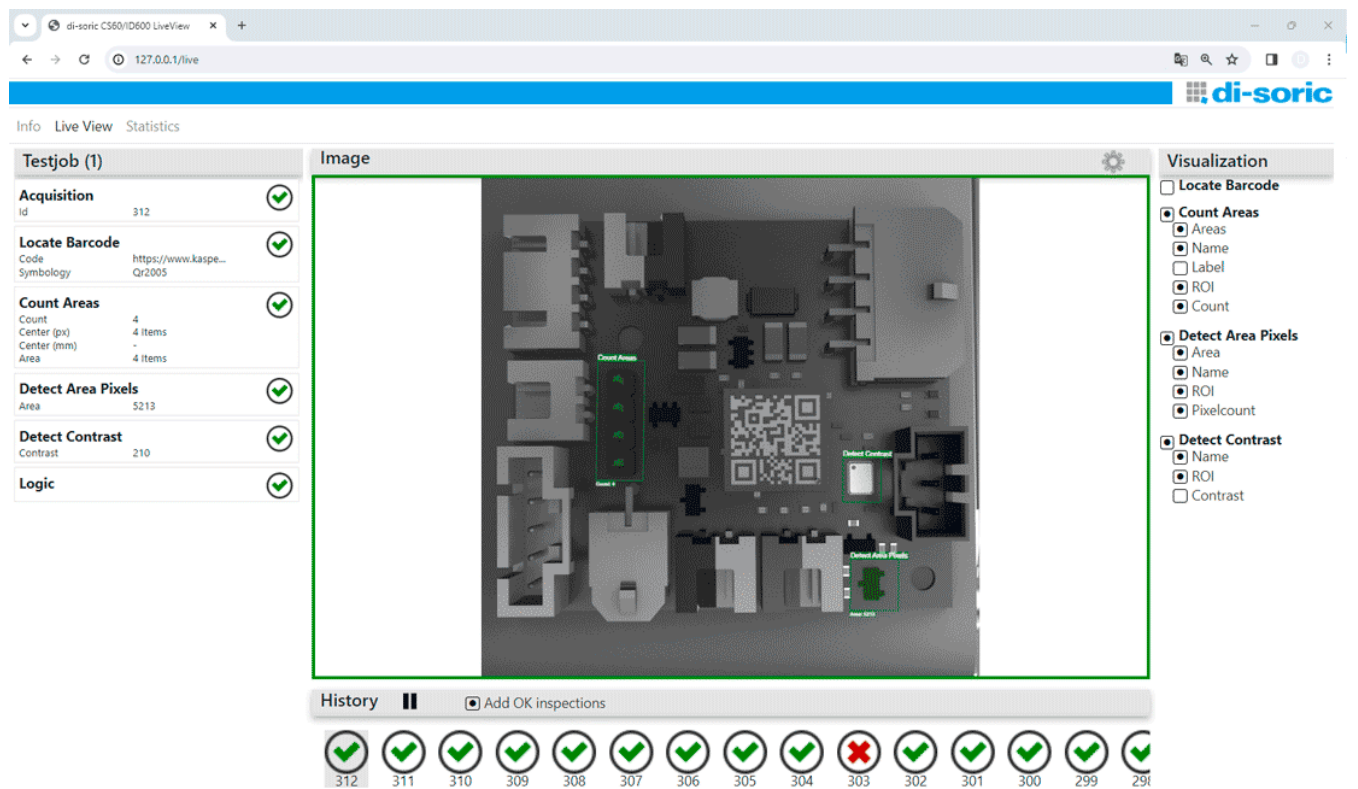
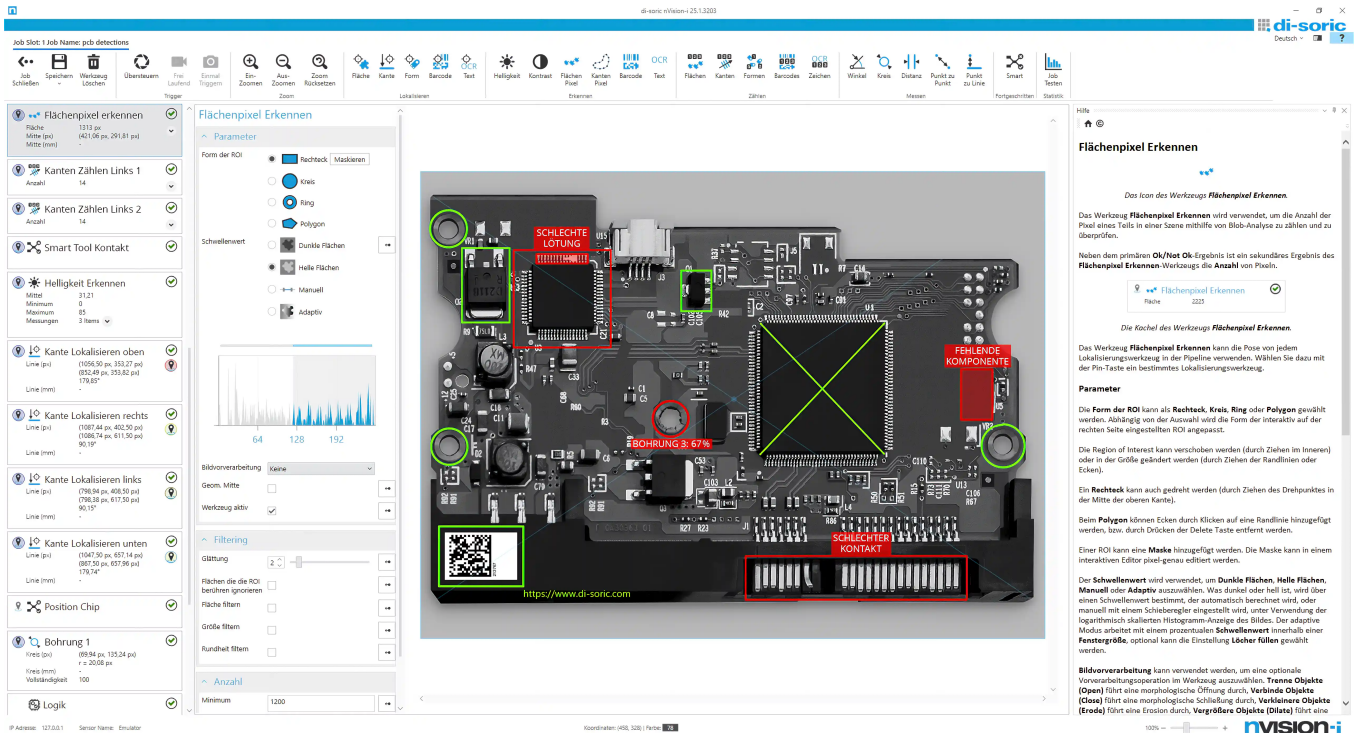
 Ethernet/IP

- **CS-60** Smart vision sensor
- **ID-600** 1D-2D Code reader
- **n-Vision** Software configuration





## The configuration software of our vision sensors CS-60



## Handheld scanner & Mobile computer



## HANDHELD SCANNER



### QuickScan 2200 Series

Entry-level handheld imagers for corded applications using...



### PowerScan 9100 Series

PowerScan 9100 linear imagers offer state-of-the-art...



### QuickScan 2100 Series

Entry level line of handheld 1D corded and cordless...



### QuickScan 2500 Series

The superior performance affordably



### Gryphon 4200 Series

The premium range of 1D scanners for general purpose...



### Gryphon 4500 Series

Gryphon 4500 2D series is the premium range of hand held...



### Heron 3400

Cordless imagers offer an innovative and unique design



### Heron 3100

Cordless linear imager offering an innovative and unique...



### TD1100

Cordless linear imager for a cost-effective solution



### PowerScan 9600 Series

When top flexibility meets extreme reliability



### PowerScan 9500 Series

Your job is simple: aim, trigger, decode



### PowerScan 9600 RFID Series

See beyond the visible



### Datalogic Connect

One Platform. Infinite Insights



### FBC9080 Fieldbus Converter

A small industrial gateway integrates Datalogic handheld...



### SD9030 Dongle

SD9030 Dongle for Datalogic STAR Cordless Systems



- Warranty for trigger reading 10,000,000 time
- Green spot for completed reading
- High quality of material
- Power scan 9600 with industrial protocol

**DATALOGIC**

LEADING OF HANDHELD SCANNER



# Fixed Retail Scanners common applications



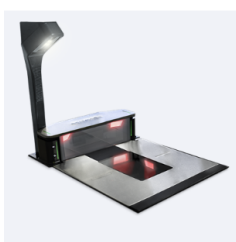
**Magellan 35xxHSi**

In-counter, horizontal single-plane readers with imaging...



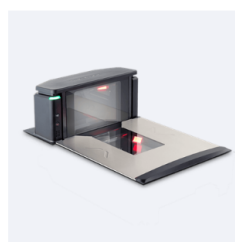
**Magellan 34xxVSi**

On-counter, vertical single-plane readers with imaging...



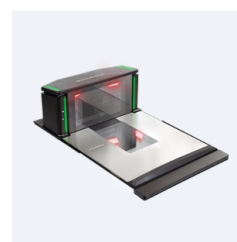
**Magellan 9900i**

With a unique scanner style, the 9900i offers an...



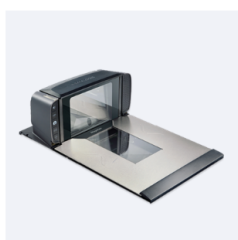
**Magellan 9550i**

45% faster, less power than a lightbulb



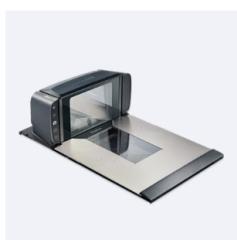
**Magellan 9600i**

Rugged design, industry-leading scan performance and new...



**Magellan 9400i**

Magellan 9400i imagers read 1D/2D barcodes and Digimarc...



**Magellan 9300i**

The Magellan 9300i imagers have horizontal and vertical...



**Magellan 9800i**

Magellan 9800i imager with low bonnet reads 1D, 2D &...



**Magellan 900i**

Powerful Scanning in the Palm of Your Hand



**Magellan 1500i**

A high performing presentation scanner for a variety of...



**Datalogic Connect**

One Platform. Infinite Insights



**LaneHawk LH5000**

Loss prevention detects and recognizes bottom-of-the-basket...



More detail  
Please scan

- **Check-out at the Store:** Attended lanes or self check-out

In grocery applications, for instance, scanners must adapt to the store layout. Retailers must deliberate solutions suitable for multiple installation, for both attended and unattended point-of-sales. The common denominator in all of them is the accuracy and easiness in identifying the purchased item. With unparalleled scanning capability, our bi-optic scanners are the perfect fit for high volume check-out applications. Maximized reading area is achieved by the Datalogic fixed scanners with 5th and 6th axis multi-plane reading models. Seamless reading provides maximum throughput for both 1D and 2D barcodes at full sweep scanning speeds, without the need of item orientation based on code type.

Datalogic superior scalability provides best fit in any check-out application. Perfect for attended lanes or self check-out applications, our **Single-Plane** and **Multi-Plane scanner** models are adopted by the top-leading system integrator brands. Solution customization for 100% satisfaction, Datalogic can customize the **Single-Plane** or **Multi-Plane scanners** to individual customer requirements.

Datalogic can customize **Single-Plane** or **Multi-Plane scanners** according to the individual customers' needs, tailoring the solution for 100% satisfaction.

- **Loss Prevention**

Datalogic is also able to offer the BOB (bottom-of-basket) **loss prevention system**, integrated into the retailer's POS creating a powerful solution to quickly and effectively increase store profits in real-time. This device detects and recognize items that pass by the camera and send their GTIN information directly to the POS. Before payment, the cashier verifies the items that were found under the basket, adds those items and then finalizes the transaction.

- **Non-Food Check-Out**

In Non-Food, where traditionally no multi-plane scanners are needed the same winning features are carried into the **Single-Plane** and **Presentation Scanner** models.

The **Presentation Scanner** model pairs imaging scanning expertise developed for our larger scanners with an innovative, compact design to create the most powerful presentation scanner on the market.

This need for ease of use and convenient footprint is also provided by some of the Datalogic **handheld scanner** solutions.

# Mobile Computers Common Applications

|                                                                                                                                                                                |                                                                                                                                                                                    |                                                                                                                                                                                          |                                                                                                                                                                            |                                                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p><b>Memor K20-25</b></p> <p>The smart key-based mobile computers: where versatility...</p> |  <p><b>Memor 12-17</b></p> <p>Enterprise Grade Power in a Pocket-Sized Design</p>                 |  <p><b>Memor 30-35</b></p> <p>Elevating Performance, Redefining Value</p>                               |  <p><b>Memor 11</b></p> <p>The most versatile companion for your workforce!</p>         |  <p><b>Joya Touch 22</b></p> <p>The Ultimate Self-Shopping Companion</p>                                        |
|  <p><b>Skorpio X5</b></p> <p>Get the most advanced key-based mobile computer</p>               |  <p><b>Memor K</b></p> <p>Pocketable and powerful Android mobile computer</p>                     |  <p><b>Memor 17HC</b></p> <p>Enterprise-Grade Power in a Pocket-Sized Design</p>                        |  <p><b>Rhino II</b></p> <p>Rhino II vehicle mount computers for ruggedness in the...</p> |  <p><b>SH15 Blackline / SH21 Blackline</b></p> <p>The SH15/SH21 Blackline can be used in any industrial...</p> |
|  <p><b>CODiScan</b></p> <p>Wearable Scanners, Lightweight Size, Heavyweight Performance</p> |  <p><b>Datalogic Shield</b></p> <p>Android security patches/updates for Datalogic mobile...</p> |  <p><b>Datalogic Mobility Suite</b></p> <p>Software suite to solve enterprise mobility challenges</p> |  <p><b>Shopevolution</b></p> <p>Is transforming the Omni-Channel Retail Experience</p> |  <p><b>Datalogic Connect</b></p> <p>One Platform. Infinite Insights</p>                                       |

**Mobile computers** are full independent computers that integrates all the necessary peripherals and interfaces needed for collecting, manage, and store the data gathered via barcodes. Mobile computer integrates, in a small form factor, all the necessary components of a computer, such as a display, a Wi-Fi system, an operating system (Windows® or Android™), a keyboard (virtual or physical), a battery and a professional scan engine. In addition to these features, every Datalogic mobile computer sports a rugged enclosure, able to withstand drop from various heights and to work in harsh situations. The rugged enclosure allows the devices to operate in all kind of professional conditions and resist to shocks, direct waterjets or very dusty environments.

Mobile devices are the daily companion in activities like inventory, price check, pick and drop, assisted sales, delivery, quality control, curb-side pick-up, etc. With Datalogic's versatile portfolio of **mobile computers**, customers can get a solution for a full array of barcode reading needs. From printed 1D and 2D barcodes, to Direct Part Marking (DPM), to Digimarc® packaging, Datalogic offers a solution for nearly every barcode reading application.

**Mobile computers** support enterprises to improve efficiency and reliability on all their tracking activities in every area of the company. In retail companies, they can be used in the store floor for activities such as price check, inventory, or assisted sales. In the back room, mobile devices are used for any inventory or stock rotation activities. For T&L companies they play a crucial role being the business companion of every worker. From the docking locations where goods are unloaded, through the warehouse and other areas of the facilities, up to the point of delivery, operators use **mobile computers** for every bit of the process. In the manufacturing segment, they allow workers to track all the assets used for assembly or for building, and to check inventory in the warehouse. In the healthcare segment, **mobile computers** are becoming the trusted work companion of nurses and other operators for the bed-side point of care activities. Once the patient barcode is read, hospital staff can see all the information related to that patient.

# Stationary Industrial Scanners Common Applications

**Stationary industrial scanning solutions** are specifically designed for applications that are not permanently monitored by operators and are used in a wide variety of industries. Stationary position scanners offer various options for how output data can be used and interface with your business PCs, servers, or ERP, in virtually any fieldbus protocol, providing real value on how your organization uses this business intelligence data. With Datalogic's versatile portfolio of **stationary industrial scanners**, customers can get a solution for a full array of barcode reading needs. From printed 1D and 2D barcodes, to Direct Part Marking (DPM), to Digimarc™ packaging, Datalogic offers a solution for nearly every **barcode reading application**. Whether your application requires image-based, single-plane, omni-direction, or line scan barcode reading capabilities, Datalogic has you covered.

**Stationary industrial scanning** allows innovative companies to increase their throughput, improve their accuracy, and add a high level of traceability to their manufacturing, warehousing, logistic, and distribution processes. Integrating **stationary industrial scanners** in these types of applications provides a cost-effective way to increase and improve internal processes without the hassle of adding additional personnel and overhead. Since 1972, Datalogic helps you maximize your organizations capabilities with innovative stationary industrial scanning technologies.



**Matrix 120**

The smallest ultra-compact industrial 2D imager



**Matrix 220**

Simplicity, Flexibility & Performance



**Matrix 320 Series**

Empower your Traceability and Boost your Productivity with...



**AV Series: AV500/AV900**

High-performance industrial imagers for either attended or...



**TC1200**

Linear CCD reader for OEM applications



**Blade Series**

Providing Cutting Edge Traceability



**Mid-Range Scanners:  
DS5100/DS6400**

High performance, powerful industrial laser scanning for...



**Long-Range Scanners:  
DS8110/DX8210**

Linear and omnidirectional laser scanners for all your...



**Short-Range Scanners:  
DS2100N - 2K Series/DS2400N - 2K Series**

Industrial short-range laser scanning for Automated...



**8K HD 12K ULTRA HD**

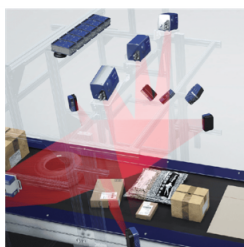
**AV7000 8K & 12K**

The World's Best High Performance Linear Cameras



**STS320**

The first-in-class system to address demanding tire...



**MFDS**

Efficient data collection for non-conveyable parcels



**CBX Series:  
CBX100/CBX500/CBX800**

for connecting simple cabling reader devices, high...



**Fieldbus ToolKit**

Primary development kit for Datalogic Fieldbus powered...



**QL Series**

A complete list of accessories dedicated to 1D & 2D code...



## Charging and paying has never been so easy

Saving up to 20% of battery life using our latest **Enterprise Battery Saver** while customizing your charging experience to suit your working day – with Memor 12-17. Customers can choose how they charge their devices, from a fast **USB-C cable** for quick top-ups to a stable **Wired charging** cradles for enterprise grade charging and data communication, or the convenience of **Wireless charging** cradles for contactless, carefree and frictionless operations. If your business requires an easy payment acceptance solution, then Memor 12-17 is the perfect choice thanks to **Multi-Side NFC reading technology**.



## Maximize your investment with Memor 12-17

Memor 12-17 has been designed with longevity in mind – that's why customers will enjoy an industry-leading **4+4 years** of comprehensive hardware and software support, up to **Android 18**. Front-line workers will also be able to count on continuous updates and access to cutting-edge tools from our **Datalogic Mobility Suite**, as well as different levels of coverage against damages thanks to our **Ease of Care program**. Additionally, the Memor 12-17 demonstrates a commitment to sustainability through **eco-friendly accessories and packaging**.

## Fast and easy scanning for every type of environment

Memor 12-17 improves front-line tasks flow and barcode scanning accuracy thanks to its immediate real-time feedback provided by the latest **Datalogic Halogen 2121DL scan engine** with our **Green Spot**, while simplifying scanning in variable lighting conditions thanks to the advanced **DeepSight™ decoding technology**.

Memor 12-17 is **GS1 Digital Link-ready**, helping retailers to get ready for the benefit of the latest revolution in barcode innovation.





## MACHINE VISION

Smart cameras, industrial cameras and vision processors are suitable to read barcodes or characters (OCR), recognize patterns, detect defects and locating parts, guide robots' arms, control assembling and manufacturing lines.



## SENSORS

Photoelectric, inductive, capacitive, ultrasonic sensors are essential in industrial automation to detect the presence of objects or parts, inspect the integrity or correct assembly, measuring dimensions, distance or positioning.



## SAFETY & GUIDANCE

Safety light curtains and laser scanners are mandatory for operator's protection in hazardous areas, plants or machinery, robotic cells and AGV. Lidars and encoders add guidance, location, navigation and positioning features.


**DATA SENSING**  
 easing automation challenges

**OUR EXPERTISE  
MAKES YOUR WORK  
EASIER**

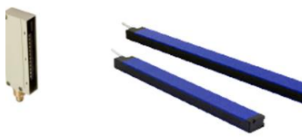
[DOWNLOAD](#)


**Made in EU**



**MACHINE VISION, SENSORS & SAFETY**

**DATA SENSING**  
 easing automation challenges



Area sensors



Capacitive sensors



Inductive sensors



Photoelectric sensors



Sensor accessories



Ultrasonic sensors



Specialties



Smart cameras



Vision processors



Cameras



Accessories



Safety light curtains



Safety sensors



Lidars



Accessories



Safety control units



Safety laser scanners



Encoders





# DS4 Base

## DETECTION AND MEASUREMENT AREA SENSOR



**DS4 Base**  
DETECTION/MEASUREMENT AREA SENSORS

Basic version of detection and measurement area sensors designed for simple applications. Reliable performance and ease of use ensure detection and measurement in industrial applications.

- Detection height from 300 to 1500 mm
- 5, 10, 25 mm pitch
- Operating distance up to 13 m
- IO-Link configuration
- Digital and analogue output (0...10 V or 4...20 mA)
- Basic configuration by wire



## CODE DESCRIPTION

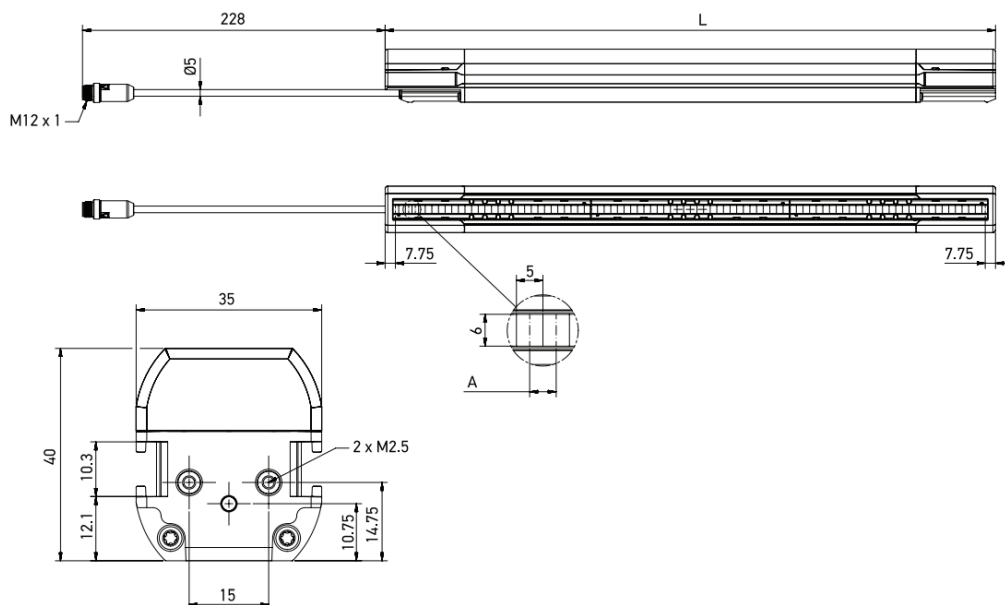
|                     |      | DS4 - 05 - 300 - B 05 - JA             |  |  |  |  |  |
|---------------------|------|----------------------------------------|--|--|--|--|--|
| series              | DS4  | Area sensors detection and measurement |  |  |  |  |  |
|                     | 05   | 5 mm                                   |  |  |  |  |  |
|                     | 10   | 10 mm                                  |  |  |  |  |  |
| pitch               | 25   | 25 mm                                  |  |  |  |  |  |
|                     | 0300 | 300 mm                                 |  |  |  |  |  |
|                     | 0450 | 450 mm                                 |  |  |  |  |  |
| controlled height   | 0600 | 600 mm                                 |  |  |  |  |  |
|                     | 0750 | 750 mm                                 |  |  |  |  |  |
|                     | 0900 | 900 mm                                 |  |  |  |  |  |
|                     | 1050 | 1050 mm                                |  |  |  |  |  |
|                     | 1200 | 1200 mm                                |  |  |  |  |  |
|                     | 1350 | 1350 mm                                |  |  |  |  |  |
|                     | 1500 | 1500 mm                                |  |  |  |  |  |
| model               | B    | Model                                  |  |  |  |  |  |
| receiver plug (M12) | 05   | 5 poles                                |  |  |  |  |  |
| output              | JA   | Analogue V/A, IO-Link, Digital         |  |  |  |  |  |

## TECHNICAL SPECIFICATIONS

DS4-05-\*\*\*\*-B05-JA



| GENERAL DATA              |                                                                                                                                                |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating principle       | Emitter + Receiver                                                                                                                             |
| Detection capability      | 10 mm                                                                                                                                          |
| MONITORED AREA            |                                                                                                                                                |
| Nominal sensing distance  | 0.2 ... 5 m                                                                                                                                    |
| Controlled height         | 300 ... 1500 mm                                                                                                                                |
| EMISSION DATA             |                                                                                                                                                |
| Emission                  | Infrared (850 nm)                                                                                                                              |
| INPUT/OUTPUT              |                                                                                                                                                |
| Output type               | PNP or NPN or Push-Pull , 0...10V, 4...20 mA IO-Link                                                                                           |
| IO-LINK                   |                                                                                                                                                |
| IO-Link version           | IO-Link V1.1.3                                                                                                                                 |
| Transmission rate         | 230400 bits/s COM 3                                                                                                                            |
| Minimum cycle time        | 2 ms                                                                                                                                           |
| DeviceID DEC              | 2                                                                                                                                              |
| Process Data input length | 32 Bytes                                                                                                                                       |
| Process data output l     | 8 Bits                                                                                                                                         |
| HMI/UI                    |                                                                                                                                                |
| LED Indicators (TX)       | Green (Power ON), Yellow (Emission range) Red (Test, failure), Blue (Emission range)                                                           |
| LED Indicators (RX)       | Green (Power ON), Yellow (Status output, Connection Active) Red (Hardware Errors, module occupied)                                             |
| MECHANICAL DATA           |                                                                                                                                                |
| Dimensions                | 35 x 40 x (307.5 ... 1507.5) mm                                                                                                                |
| Material                  | Aluminium / PBT                                                                                                                                |
| Housing material          | Aluminium                                                                                                                                      |
| Active part material      | PMMA                                                                                                                                           |
| Optic window material     | PMMA                                                                                                                                           |
| Connections               | M12 5 poles + 200 mm length cable TPU (TX), M12 5 poles + 200 mm length cable TPU (RX) (DS4-**-****B05-JA)                                     |
| Weight                    | 1.40 Kg/m (single bar, without package)                                                                                                        |
| ENVIRONMENTAL DATA        |                                                                                                                                                |
| Operating Temperature     | -30 ... 55 °C (without freeze)                                                                                                                 |
| Storage temperature max.  | -30 ... 70 °C                                                                                                                                  |
| Mechanical protection     | IP65 IP67                                                                                                                                      |
| Shocks and vibrations     | 10 mm / 3g, 5 ... 150 Hz frequency, (EN 60068-2-6 / Class 3M7 IEC TR 60721-4-3); 25g x 6 ms x 600 (EN 60068-2-27 / Class 3M7 IEC TR 60721-4-3) |
| Humidity                  | 15 ... 95 % (without freeze)                                                                                                                   |







# DS4 Standard

## DETECTION AND MEASUREMENT AREA SENSOR



Versatile area sensors for detecting and measuring in various industrial applications. Conveniently configured using IO-Link and wirelessly programmable through AppGUI for detailed parameter adjustments and advanced setups.

- Detection height from 300 to 3000 mm
- 5, 10, 25 mm pitch
- Operating distance up to 13 m

- IO-Link or Wi-Fi App GUI configuration for monitoring, quick setting and advanced functions
- Digital and analogue output (0...10 V or 4...20 mA)
- Transparent object detection
- Crossed or parallel beams
- Communication interface: RS 485 and Ethernet TCP/IP
- 3 configurable digital I/Os



**DS4 Standard**  
DETECTION/MEASUREMENT AREA SENSORS

### CODE DESCRIPTION

|                     |      |                                                         |  |  |  |  |
|---------------------|------|---------------------------------------------------------|--|--|--|--|
|                     |      | DS4 - 05 - 300 - S 08 - JE                              |  |  |  |  |
| series              | DS4  | Area sensors detection and measurement                  |  |  |  |  |
| pitch               | 05   | 5 mm                                                    |  |  |  |  |
|                     | 10   | 10 mm                                                   |  |  |  |  |
|                     | 25   | 25 mm                                                   |  |  |  |  |
| controlled height   | 0300 | 300 mm                                                  |  |  |  |  |
|                     | 0450 | 450 mm                                                  |  |  |  |  |
|                     | 0600 | 600 mm                                                  |  |  |  |  |
|                     | 0750 | 750 mm                                                  |  |  |  |  |
|                     | 0900 | 900 mm                                                  |  |  |  |  |
|                     | 1050 | 1050 mm                                                 |  |  |  |  |
|                     | 1200 | 1200 mm                                                 |  |  |  |  |
|                     | 1350 | 1350 mm                                                 |  |  |  |  |
|                     | 1500 | 1500 mm                                                 |  |  |  |  |
|                     | 1650 | 1650 mm                                                 |  |  |  |  |
|                     | 1800 | 1800 mm                                                 |  |  |  |  |
|                     | 1950 | 1950 mm                                                 |  |  |  |  |
|                     | 2100 | 2100 mm                                                 |  |  |  |  |
|                     | 2250 | 2250 mm                                                 |  |  |  |  |
|                     | 2400 | 2400 mm                                                 |  |  |  |  |
|                     | 2550 | 2550 mm                                                 |  |  |  |  |
|                     | 2700 | 2700 mm                                                 |  |  |  |  |
|                     | 2850 | 2850 mm                                                 |  |  |  |  |
|                     | 3000 | 3000 mm                                                 |  |  |  |  |
| model               | S    | Standard                                                |  |  |  |  |
| receiver plug (M12) | 08   | 8 poles                                                 |  |  |  |  |
|                     | 12   | 8 poles + 4 poles                                       |  |  |  |  |
| output              | JZ   | Analogue V/A, IO-Link, Digital outputs, RS 485          |  |  |  |  |
|                     | JE   | Analogue V/A, IO-Link, Digital outputs, ETHERNET TCP/IP |  |  |  |  |

## TECHNICAL SPECIFICATIONS

|                                | DS4-**-****-S08-JZ                                                                                                                             |  | DS4-**-****-S12-JE                                                                                                                                                       |  |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                                |                                                               |  |                                                                                        |  |
| GENERAL DATA                   |                                                                                                                                                |  |                                                                                                                                                                          |  |
| Operating principle            | Emitter + Receiver                                                                                                                             |  |                                                                                                                                                                          |  |
| MONITORED AREA                 |                                                                                                                                                |  |                                                                                                                                                                          |  |
| Nominal sensing distance       | 0.2 ... 13 m                                                                                                                                   |  |                                                                                                                                                                          |  |
| Controlled height              | 300 ... 3000 mm                                                                                                                                |  |                                                                                                                                                                          |  |
| EMISSION DATA                  |                                                                                                                                                |  |                                                                                                                                                                          |  |
| Emission                       | Infrared (850nm)                                                                                                                               |  |                                                                                                                                                                          |  |
| FUNCTIONS                      |                                                                                                                                                |  |                                                                                                                                                                          |  |
| Available functions            | Advanced functions:<br>Transparent object<br>Blanking<br>Pattern match                                                                         |  |                                                                                                                                                                          |  |
| INPUT/OUTPUT                   |                                                                                                                                                |  |                                                                                                                                                                          |  |
| Output type                    | PNP or NPN or Push-Pull , 0...10 V, 4..20 mA, IO-Link, RS485                                                                                   |  | PNP or NPN or Push-Pull , 0...10 V, 4..20 mA, IO-Link, Ethernet TCP/IP                                                                                                   |  |
| Baud rate                      | 2400/9600/19200/28400/57600/115200/230400/576000/921600 Default: 57600                                                                         |  |                                                                                                                                                                          |  |
| IO-LINK                        |                                                                                                                                                |  |                                                                                                                                                                          |  |
| IO-Link version                | IO-Link V1.1.3                                                                                                                                 |  |                                                                                                                                                                          |  |
| Transmission rate              | 230400 bits/s (COM3)                                                                                                                           |  |                                                                                                                                                                          |  |
| Minimum cycle time             | 2 ms                                                                                                                                           |  |                                                                                                                                                                          |  |
| DeviceID DEC                   | 1                                                                                                                                              |  |                                                                                                                                                                          |  |
| Process Data input length      | 32 Bytes                                                                                                                                       |  |                                                                                                                                                                          |  |
| Process data output l          | 8 Bits                                                                                                                                         |  |                                                                                                                                                                          |  |
| HMI/UI                         |                                                                                                                                                |  |                                                                                                                                                                          |  |
| LED Indicators (TX)            | Green (Power ON), Yellow (Emission range) Red (Test, failure, Firmware ongoing update), Blue (Emission range, Firmware update completed)       |  |                                                                                                                                                                          |  |
| LED Indicators (RX)            | Green (Power ON), Yellow (Status output, Connection and teach-in active) Red (Hardware Errors, Invalid confiuration, module optical occupied)  |  |                                                                                                                                                                          |  |
| ELECTRICAL DATA                |                                                                                                                                                |  |                                                                                                                                                                          |  |
| Supply voltage                 | 19.2 ... 28.8 Vdc                                                                                                                              |  |                                                                                                                                                                          |  |
| Maximum No-load absorption     | 360 mA(emitter and receiver)                                                                                                                   |  |                                                                                                                                                                          |  |
| Power consumption - Emitter    | ≤ 2 W                                                                                                                                          |  |                                                                                                                                                                          |  |
| Power consumption - Receiver   | ≤ 5 W                                                                                                                                          |  |                                                                                                                                                                          |  |
| Maximum DC output voltage drop | 2.5 V @ IL=100mA                                                                                                                               |  |                                                                                                                                                                          |  |
| Maximum DC load current        | 100 mA                                                                                                                                         |  |                                                                                                                                                                          |  |
| MECHANICAL DATA                |                                                                                                                                                |  |                                                                                                                                                                          |  |
| Dimensions                     | 35 x 40 x (307.5 ... 3009) mm                                                                                                                  |  |                                                                                                                                                                          |  |
| Material                       | Aluminium / PBT                                                                                                                                |  |                                                                                                                                                                          |  |
| Housing material               | Aluminium                                                                                                                                      |  |                                                                                                                                                                          |  |
| Optic window material          | PMMA                                                                                                                                           |  |                                                                                                                                                                          |  |
| Connections                    | M12 5 poles + 200 mm length cable TPU (TX),<br>M12 8 poles + 200 mm length cable TPU (RX)<br>(DS4-**-****-S08-JZ)                              |  | M12 5 poles + 200 mm length cable TPU (TX),<br>M12 8 poles + 200 mm length cable TPU (RX), M12 4<br>poles D code + 150 mm length cable TPU (ETH)<br>(DS4-**-****-S12-JE) |  |
| Weight                         | 1.40 Kg/m single bar, without package                                                                                                          |  |                                                                                                                                                                          |  |
| ENVIRONMENTAL DATA             |                                                                                                                                                |  |                                                                                                                                                                          |  |
| Operating Temperature          | -30 ... 55 °C (without freeze)                                                                                                                 |  |                                                                                                                                                                          |  |
| Storage temperature max.       | -30 ... 70 °C                                                                                                                                  |  |                                                                                                                                                                          |  |
| Mechanical Protection          | IP65 IP67                                                                                                                                      |  |                                                                                                                                                                          |  |
| Shocks and vibrations          | 10 mm / 3g, 5 ... 150 Hz frequency, (EN 60068-2-6 / Class 3M7 IEC TR 60721-4-3); 25g x 6 ms x 600 (EN 60068-2-27 / Class 3M7 IEC TR 60721-4-3) |  |                                                                                                                                                                          |  |
| Humidity                       | 15 ... 95 % (no freeze)                                                                                                                        |  |                                                                                                                                                                          |  |



## CX2 series

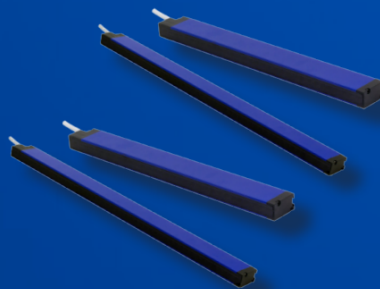
Area sensors with high resolution and compact housing with digital and analogue output



Area sensor  
high resolution

## features

- Parallel beams and floating crossbeams with variable amplitude
- Synchronization by cable. Pitch 5, 10 and 20mm
- Control height up 480mm (pitch 5mm) and up 960mm (pitch 10mm and 20mm)
- Maximum operating distance up to 3m (for 5mm pitch) and 6m (for 10mm and 20 pitch)
- Digital outputs NPN and PNP ; analogue current output (4...20mA) and analogue voltage output (0..10V), mix outputs : digital PNP and analogue voltage output (0..10V)
- Adjustment by teach-in , 2 levels of adjustment
- Blanking function . Available analogue versions TOP BEAM



web contents



- Application notes
- Photos
- Catalogue / Manuals



## code description

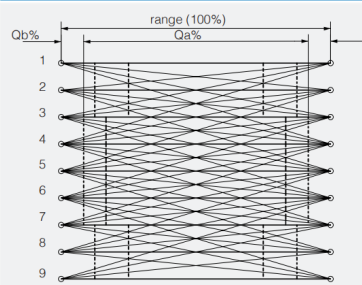
|                  | CX2 | E                                                                               | 0 | R | B | / | 05 | - | 016 | V |
|------------------|-----|---------------------------------------------------------------------------------|---|---|---|---|----|---|-----|---|
| series           | CX2 | Area Sensor cubic section                                                       |   |   |   |   |    |   |     |   |
| emitter          | E   | Emitter                                                                         |   |   |   |   |    |   |     |   |
| emitter type     | 0   | Emitter with I/O standard configuration                                         |   |   |   |   |    |   |     |   |
| receiver         | R   | Receiver                                                                        |   |   |   |   |    |   |     |   |
| receiver type    | A   | Receiver with two analogue outputs (voltage 0...10 V and current 4...20 mA)     |   |   |   |   |    |   |     |   |
|                  | B   | Receiver with two digital outputs (NPN and PNP)                                 |   |   |   |   |    |   |     |   |
|                  | F   | Receiver with one digital output PNP and one analogue output (voltage 0...10 V) |   |   |   |   |    |   |     |   |
| pitch            | 05  | Pitch 5 mm                                                                      |   |   |   |   |    |   |     |   |
|                  | 10  | Pitch 10 mm                                                                     |   |   |   |   |    |   |     |   |
|                  | 20  | Pitch 20 mm                                                                     |   |   |   |   |    |   |     |   |
| height           | 016 | Controlled height 160 mm                                                        |   |   |   |   |    |   |     |   |
|                  | 032 | Controlled height 320 mm                                                        |   |   |   |   |    |   |     |   |
|                  | 048 | Controlled height 480 mm                                                        |   |   |   |   |    |   |     |   |
|                  | 064 | Controlled height 640 mm                                                        |   |   |   |   |    |   |     |   |
|                  | 080 | Controlled height 800 mm                                                        |   |   |   |   |    |   |     |   |
|                  | 096 | Controlled height 960 mm                                                        |   |   |   |   |    |   |     |   |
| output           | V   | Output cable length 220 mm with M12 pigtail                                     |   |   |   |   |    |   |     |   |
| special function | TB  | Analogue reading last led TOP BEAM (CX2RA)                                      |   |   |   |   |    |   |     |   |

### MDO (Minimum Detectable Object)

| beams                  | step (mm) | resolution <sup>(1)</sup> (mm) | qa 17 beams | qa 32 beams |                                                                               |
|------------------------|-----------|--------------------------------|-------------|-------------|-------------------------------------------------------------------------------|
| crossed <sup>(2)</sup> | 5         | 2,5                            | -           | 93%         | <p>range (100%)</p> <p>Qb%</p> <p>Qa%</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> |
|                        | 10        | 5                              | 93%         |             |                                                                               |
| parallel               | 5         | 5                              | -           |             |                                                                               |
|                        | 10        | 10                             |             |             |                                                                               |
|                        | 20        | 20                             |             |             |                                                                               |

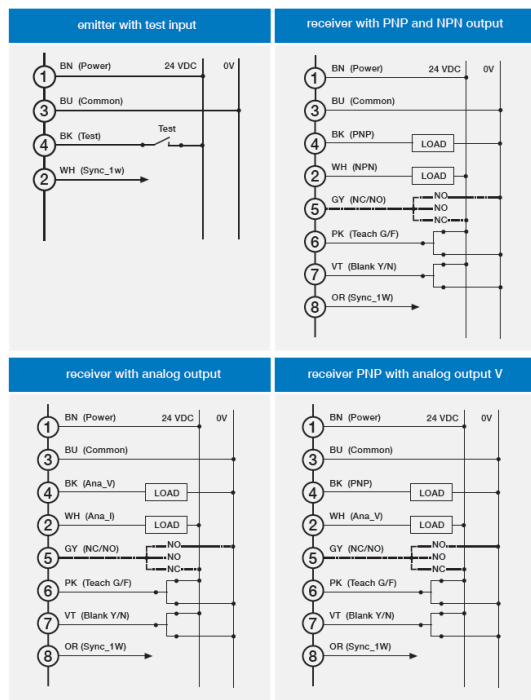
<sup>(1)</sup> = resolution detected with Teach Gross

(2) = the optics cross beam allows detection of objects with a very small diameter or very thin (such as a sheet of paper or an envelope). For those targets with small diameter, the detecting resolution is less effective exactly in the centre between Emitter and Receiver (see Resolution) as well as at the ends of detection area (near to the sensors); the mentioned detection is obtained in the central area Qa with a width equal to a certain % of the distance between the 2 sensors.



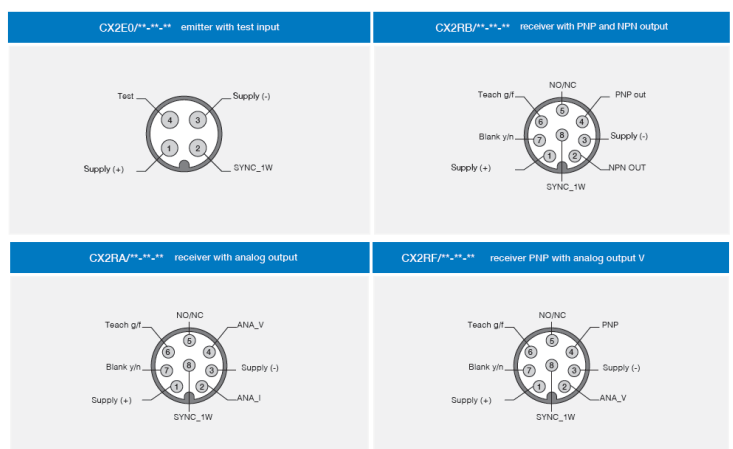
|                              | CX2E*R*/**-***V                                                                                                                                |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
|                              |                                                               |
| nominal sensing distance     | 0.1 ... 3 m (beam pitch 5 mm)<br>0.3 ... 6 m (beam pitch 10 mm)                                                                                |
| emission                     | 850 nm (beam pitch 5mm)<br>880 nm (beam pitch ≥10mm)                                                                                           |
| operating voltage            | 16.8...30 Vdc                                                                                                                                  |
| ripple                       | < 1.2 Vpp                                                                                                                                      |
| power consumption (receiver) | 1...2.5 W                                                                                                                                      |
| power consumption (emitter)  | 1...3 W                                                                                                                                        |
| output                       | 1 x PNP, 1 x NPN (CX2E0RB); 1 x analogue voltage output, 1 x analog current output (CX2E0RA);<br>1 x PNP, 1 X analogue vltage output (CX2E0RF) |
| output current               | < 100 mA                                                                                                                                       |
| output voltage drop          | < 1.5 V @ 100 mA                                                                                                                               |
| minimum load resistance      | 280 Ω                                                                                                                                          |
| leakage current              | ≤ 10 µA                                                                                                                                        |
| tolerated capacitive load    | < 0.7 µF                                                                                                                                       |
| power on delay               | < 3 sec <sup>(1)</sup>                                                                                                                         |
| Teach-In                     | (0.5 x N beams) sec                                                                                                                            |
| response time                | ((0.2 x (N beams - 1)) + 1) x 2 ms                                                                                                             |
| operating temperature        | -10°C...55°C                                                                                                                                   |
| storage temperature          | -25°C...60°C                                                                                                                                   |
| artificial light rejection   | IEC EN 60947-5-2                                                                                                                               |
| ambient light rejection      | IEC EN 60947-5-2                                                                                                                               |
| IP mechanical protection     | IP67                                                                                                                                           |
| humidity                     | 95% max (no condensation)                                                                                                                      |
| vibrations                   | IEC EN 60947-5-2                                                                                                                               |
| shocks                       | IEC EN 60947-5-2                                                                                                                               |
| cable length                 | < 20 m                                                                                                                                         |
| connectors / cables          | 1 x M12, 4 poles, male (CX2E),<br>1 x M12, 8 poles, male (CX2R)                                                                                |
| housing material             | painted aluminium RAL5002                                                                                                                      |
| optic materials              | PMMA                                                                                                                                           |

<sup>(1)</sup> Power on delay with blanking function: (1 x N beams) sec



|    |                    |    |                  |
|----|--------------------|----|------------------|
| G  | coarse calibration | F  | fine calibration |
| BK | black              | BU | blue             |
| BN | brown              | GY | gray             |
| RD | red                | WH | white            |
| PK | pink               | VT | violet           |
| OR | orange             |    |                  |

## plugs





## C12 series

M12 cylindrical capacitive sensors



### features

- DC supply voltage
- High noise immunity
- Shielded and unshielded models
- Adjustable sensitivity by Teach-in button
- Plastic housing



M12 cylindrical  
inductives

### web contents



- Application notes
- Photos
- Catalogue / Manuals



### available models

|              |            |                            |
|--------------|------------|----------------------------|
| series       | <b>C12</b> | M12 capacitive sensor      |
| housing      | <b>P</b>   | Plastic housing            |
| output state | <b>0</b>   | NO/NC                      |
| output logic | <b>0</b>   | PNP/NPN                    |
|              | <b>3</b>   | Sensing distance up to 8mm |
| connect.     | <b>E</b>   | M12 plug exit              |
|              | <b>A</b>   | 2 m cable exit             |

**C12 P / 0 0 - 3 E**

|                             | <b>C12P/00-3A</b>                                                |
|-----------------------------|------------------------------------------------------------------|
|                             |                                                                  |
| nominal sensing distance    | 0,5...4 mm (shielded); 0,5...8 mm (unshielded)                   |
| hysteresis                  | ≤ 20%                                                            |
| repeatability               | 5%                                                               |
| operating voltage           | 10 ... 40 Vcc                                                    |
| max ripple content          | ≤ 10 %                                                           |
| no-Load supply current      | ≤ 12 mA                                                          |
| load current                | ≤ 200 mA (minimum operational current: ≥ 1mA)                    |
| leakage current             | ≤ 0,3 mA                                                         |
| output voltage drop Ud      | 2.5 Vmax @ IL= 200 mA                                            |
| output type                 | NPN or PNP - NO or NC                                            |
| switching frequency         | ≤ 15 Hz                                                          |
| power on delay              | ≤ 200 ms                                                         |
| power supply protections    | polarity reversal, impulsive overvoltage                         |
| output protection           | autoreset short circuit, overvoltage (dc models)                 |
| sensitivity adjustment      | •                                                                |
| storage temperature         | -20 ... +85° C                                                   |
| operating temperature range | -25 ... +80° C (without freeze)                                  |
| temperature drift           | ≤ 20 %                                                           |
| EMC                         | in conformity with the EMC Directive, according to IEC 60947-5-2 |
| protection degree           | IP67 (IEC 60529) NEMA 1,3,4,6,13                                 |
| LEDs                        | yellow (output status Lon/Don)                                   |
| housing material            | thermoplastic polyester                                          |
| active head material        | polyester                                                        |
| weight                      | 30 g M12 connector / 110 g cable                                 |





## C18 series

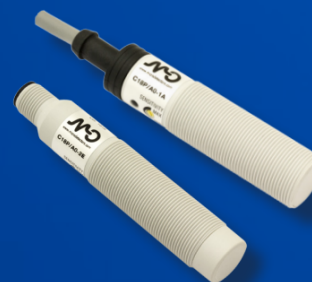
M18 cylindrical capacitive sensors



M18 cylindrical

### features

- DC or AC supply voltage
- High noise immunity
- Shielded and unshielded models
- Adjustable sensitivity
- Plastic housing



### web contents



- Application notes
- Photos
- Catalogue / Manuals



### available models

|              |     |                              | C18 | P | / | B | P | - | 1 | E |
|--------------|-----|------------------------------|-----|---|---|---|---|---|---|---|
| series       | C18 | M18 capacitive sensor        |     |   |   |   |   |   |   |   |
| housing      | P   | Plastic housing              |     |   |   |   |   |   |   |   |
| output state | B   | NO + NC complementary output |     |   |   |   |   |   |   |   |
|              | A   | NO output                    |     |   |   |   |   |   |   |   |
|              | C   | NC output                    |     |   |   |   |   |   |   |   |
| output logic | P   | PNP logic                    |     |   |   |   |   |   |   |   |
|              | N   | NPN logic                    |     |   |   |   |   |   |   |   |
|              | 0   | SCR output                   |     |   |   |   |   |   |   |   |
| distance     | 1   | 3...8 mm shielded models     |     |   |   |   |   |   |   |   |
|              | 2   | 3...12 mm unshielded models  |     |   |   |   |   |   |   |   |
| connect.     | E   | M12 plug exit                |     |   |   |   |   |   |   |   |
|              | A   | 2 m cable exit               |     |   |   |   |   |   |   |   |

### available models

| supply       | installation | connections | distance  | NPN NO + NC | PNP NO + NC | NO         | NC         |
|--------------|--------------|-------------|-----------|-------------|-------------|------------|------------|
| 10...40 Vcc  | shielded     | cable 2 m   | 3...8 mm  | C18P/BN-1A  | C18P/BP-1A  | -          | -          |
|              |              | M12         |           | C18P/BN-1E  | C18P/BP-1E  | -          | -          |
|              | unshielded   | cable 2 m   | 3...12 mm | C18P/BN-2A  | C18P/BP-2A  | -          | -          |
|              |              | M12         |           | C18P/BN-2E  | C18P/BP-2E  | -          | -          |
| 20...250 Vac | shielded     | cable 2 m   | 3...8 mm  | -           | -           | C18P/A0-1A | C18P/C0-1A |
|              |              | M12         |           | -           | -           | C18P/A0-1E | C18P/C0-1E |
|              | unshielded   | cable 2 m   | 3...12 mm | -           | -           | C18P/A0-2A | C18P/C0-2A |
|              |              | M12         |           | -           | -           | C18P/A0-2E | C18P/C0-2E |



## C30 series

M30 cylindrical  
capacitive sensors



M30 cylindrical

### features

- DC or AC supply voltage
- High noise immunity
- Shielded and unshielded models
- Adjustable sensitivity
- Metallic or plastic housing



### web contents



- Application notes
- Photos
- Catalogue / Manuals



### code description

|              |     |                              | C30 | P | / | B | P | - | 1 | E |
|--------------|-----|------------------------------|-----|---|---|---|---|---|---|---|
| series       | C30 | M30 capacitive sensor        |     |   |   |   |   |   |   |   |
| housing      | P   | Plastic housing              |     |   |   |   |   |   |   |   |
|              | M   | Metal housing                |     |   |   |   |   |   |   |   |
| output state | B   | NO + NC complementary output |     |   |   |   |   |   |   |   |
|              | 0   | NO / NC selectable output    |     |   |   |   |   |   |   |   |
| output logic | P   | PNP logic                    |     |   |   |   |   |   |   |   |
|              | N   | NPN logic                    |     |   |   |   |   |   |   |   |
|              | 0   | SCR output                   |     |   |   |   |   |   |   |   |
| distance     | 1   | 2...16 mm shielded models    |     |   |   |   |   |   |   |   |
|              | 2   | 4...25 mm unshielded models  |     |   |   |   |   |   |   |   |
| connect.     | E   | M12 plug exit                |     |   |   |   |   |   |   |   |
|              | A   | 2 m cable exit               |     |   |   |   |   |   |   |   |

### available models

| supply       | housing         | installation | distance (mm) | connections | NPN NO + NC | PNP NO + NC | SCR NO + NC |
|--------------|-----------------|--------------|---------------|-------------|-------------|-------------|-------------|
| 10...40 Vcc  | stainless steel | shielded     | 2...16        | 2 m plug    | C30M/BN-1A  | C30M/BP-1A  | -           |
|              |                 | unshielded   | 4...25        | 2 m plug    | C30M/BN-2A  | C30M/BP-2A  | -           |
|              |                 | shielded     | 2...16        | M12         | C30M/BN-1E  | C30M/BP-1E  | -           |
|              |                 | unshielded   | 4...25        | M12         | C30M/BN-2E  | C30M/BP-2E  | -           |
|              | plastic         | shielded     | 2...16        | 2 m plug    | C30P/BN-1A  | C30P/BP-1A  | -           |
|              |                 | unshielded   | 4...25        | 2 m plug    | C30P/BN-2A  | C30P/BP-2A  | -           |
|              |                 | shielded     | 2...16        | M12         | C30P/BN-1E  | C30P/BP-1E  | -           |
|              |                 | unshielded   | 4...25        | M12         | C30P/BN-2E  | C30P/BP-2E  | -           |
| 20...250 Vac | stainless steel | shielded     | 2...16        | 2 m plug    | -           | -           | C30M/00-1A  |
|              |                 | unshielded   | 4...25        | 2 m plug    | -           | -           | C30M/00-2A  |
|              |                 | shielded     | 2...16        | M12         | -           | -           | C30M/00-1E  |
|              |                 | unshielded   | 4...25        | M12         | -           | -           | C30M/00-2E  |
|              | plastic         | shielded     | 2...16        | 2 m plug    | -           | -           | C30P/00-1A  |
|              |                 | unshielded   | 4...25        | 2 m plug    | -           | -           | C30P/00-2A  |
|              |                 | shielded     | 2...16        | M12         | -           | -           | C30P/00-1E  |
|              |                 | unshielded   | 4...25        | M12         | -           | -           | C30P/00-2E  |



## AE series

### M8 cylindrical inductive sensors



M8 cylindrica

## features

- Extremely reduced measure
- Metal housing
- LED status indicator 360° visible
- IP 67 housing protection
- ATEX models, cat. 3, available on request
- Complete protection against electrical damages
- Standard and long distance models
- Standard and short body housing



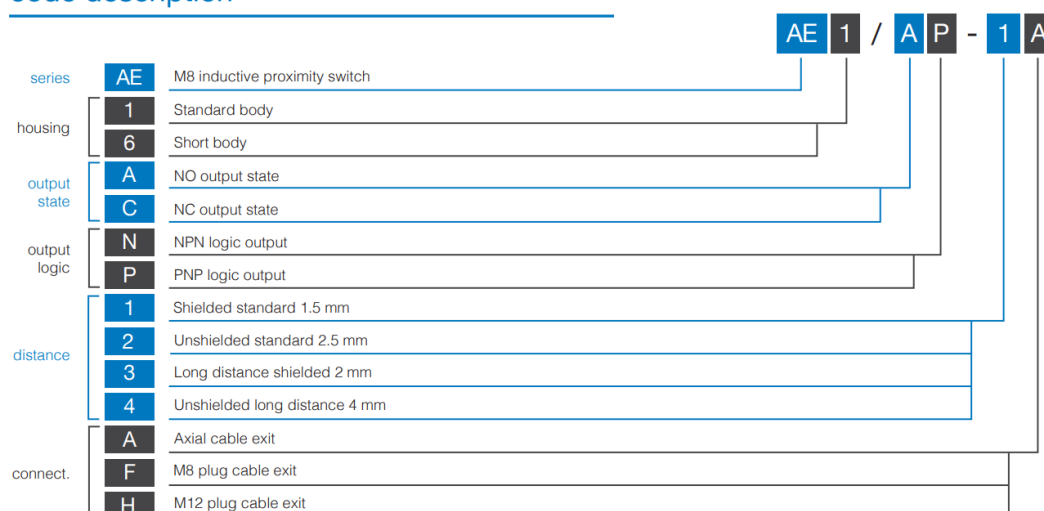
web contents



- **Application notes**
- **Photos**
- **Catalogue / Manuals**



## code description



(\*) ATEX models available, contact our Sales Dept. for further information.

available models

standard housing

| diameter | installation | distance      | plug  | distance (mm) | NPN/NO    | NPN/NC    | PNP/NO    | PNP/NC    |
|----------|--------------|---------------|-------|---------------|-----------|-----------|-----------|-----------|
| M8       | shielded     | standard      | cable | 1.5           | AE1/AN-1A | AE1/CN-1A | AE1/AP-1A | AE1/CP-1A |
|          |              |               | M8    |               | AE1/AN-1F | AE1/CN-1F | AE1/AP-1F | AE1/CP-1F |
|          |              |               | M12   |               | AE1/AN-1H | AE1/CN-1H | AE1/AP-1H | AE1/CP-1H |
|          | unshielded   |               | cable | 2.5           | AE1/AN-2A | AE1/CN-2A | AE1/AP-2A | AE1/CP-2A |
|          |              |               | M8    |               | AE1/AN-2F | AE1/CN-2F | AE1/AP-2F | AE1/CP-2F |
|          |              |               | M12   |               | AE1/AN-2H | AE1/CN-2H | AE1/AP-2H | AE1/CP-2H |
|          | shielded     | long distance | cable | 2             | AE1/AN-3A | AE1/CN-3A | AE1/AP-3A | AE1/CP-3A |
|          |              |               | M8    |               | AE1/AN-3F | AE1/CN-3F | AE1/AP-3F | AE1/CP-3F |
|          |              |               | M12   |               | AE1/AN-3H | AE1/CN-3H | AE1/AP-3H | AE1/CP-3H |
|          | unshielded   |               | cable | 4             | AE1/AN-4A | AE1/CN-4A | AE1/AP-4A | AE1/CP-4A |
|          |              |               | M8    |               | AE1/AN-4F | AE1/CN-4F | AE1/AP-4F | AE1/CP-4F |
|          |              |               | M12   |               | AE1/AN-4H | AE1/CN-4H | AE1/AP-4H | AE1/CP-4H |

## available models

### short housing

| diameter | installation | distance      | plug  | distance (mm) | NPN/NO    | NPN/NC    | PNP/NO    | PNP/NC    |
|----------|--------------|---------------|-------|---------------|-----------|-----------|-----------|-----------|
| M8       | shielded     | standard      | cable | 1.5           | AE6/AN-1A | AE6/CN-1A | AE6/AP-1A | AE6/CP-1A |
|          |              |               | M8    |               | AE6/AN-1F | AE6/CN-1F | AE6/AP-1F | AE6/CP-1F |
|          | unshielded   |               | cable | 2.5           | AE6/AN-2A | AE6/CN-2A | AE6/AP-2A | AE6/CP-2A |
|          |              |               | M8    |               | AE6/AN-2F | AE6/CN-2F | AE6/AP-2F | AE6/CP-2F |
|          | shielded     | long distance | cable | 2             | AE6/AN-3A | AE6/CN-3A | AE6/AP-3A | AE6/CP-3A |
|          |              |               | M8    |               | AE6/AN-3F | AE6/CN-3F | AE6/AP-3F | AE6/CP-3F |
|          | unshielded   |               | cable | 4             | AE6/AN-4A | AE6/CN-4A | AE6/AP-4A | AE6/CP-4A |
|          |              |               | M8    |               | AE6/AN-4F | AE6/CN-4F | AE6/AP-4F | AE6/CP-4F |

|                             | AE*/**-1*                                                                         | AE*/**-2*                                                                         | AE*/**-3*                                                                           | AE*/**-4*                                                                           |
|-----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                             |  |  |  |  |
| nominal sensing distance    | 1.5 mm                                                                            | 2.5 mm                                                                            | 2 mm                                                                                | 4 mm                                                                                |
| operating distance          | 0...1.21 mm                                                                       | 0...2.02 mm                                                                       | 0...1.62 mm                                                                         | 0...3.24 mm                                                                         |
| hysteresis                  | 1...20% Sr                                                                        |                                                                                   |                                                                                     |                                                                                     |
| standard target             | 8x8 mm FE360                                                                      |                                                                                   |                                                                                     | 12x12 mm FE360                                                                      |
| repeatability               | 5%                                                                                |                                                                                   |                                                                                     |                                                                                     |
| operating voltage           | 10...30 Vdc                                                                       |                                                                                   |                                                                                     |                                                                                     |
| max ripple content          | ≤ 10%                                                                             |                                                                                   |                                                                                     |                                                                                     |
| output type                 | NPN or PNP - NO or NC                                                             |                                                                                   |                                                                                     |                                                                                     |
| output current              | ≤ 200 mA                                                                          |                                                                                   |                                                                                     |                                                                                     |
| output voltage drop         | ≤ 1.8 V @ 200 mA                                                                  |                                                                                   |                                                                                     |                                                                                     |
| no-load supply current      | 10 mA                                                                             |                                                                                   |                                                                                     |                                                                                     |
| leakage current             | ≤ 10 µA                                                                           |                                                                                   |                                                                                     |                                                                                     |
| switching frequency         | 5 kHz                                                                             |                                                                                   |                                                                                     |                                                                                     |
| power on delay              | 50 ms                                                                             |                                                                                   |                                                                                     |                                                                                     |
| ambient temperature range   | -25...+70 °C                                                                      |                                                                                   |                                                                                     |                                                                                     |
| temperature drift of Sr     | 10%                                                                               |                                                                                   |                                                                                     |                                                                                     |
| short-circuit protection    | •                                                                                 |                                                                                   |                                                                                     |                                                                                     |
| voltage reversal protection | •                                                                                 |                                                                                   |                                                                                     |                                                                                     |
| induction protection        | •                                                                                 |                                                                                   |                                                                                     |                                                                                     |
| shocks and vibrations       | IEC 60947-5-2                                                                     |                                                                                   |                                                                                     |                                                                                     |
| weight                      | 20 g connector / 45 g cable                                                       |                                                                                   |                                                                                     |                                                                                     |
| LEDs                        | yellow LED output state                                                           |                                                                                   |                                                                                     |                                                                                     |
| protection degree           | IP 67 ( EN60529 )                                                                 |                                                                                   |                                                                                     |                                                                                     |
| EMC                         | in conformity with the EMC Directive, according to IEC 60947-5-2                  |                                                                                   |                                                                                     |                                                                                     |
| housing material            | nickel-plated brass                                                               |                                                                                   |                                                                                     |                                                                                     |
| active head material        | PBT                                                                               |                                                                                   |                                                                                     |                                                                                     |
| connection                  | cable 2 m PVC / plug M8 or M12                                                    |                                                                                   |                                                                                     |                                                                                     |
| tightening torque           | 3 Nm                                                                              |                                                                                   |                                                                                     |                                                                                     |



## AE series

### M8 cylindrical inductive sensors



## AM series

M12 cylindrical inductive sensors



M12 cylindrical

### features

- Wide range of models: standard, short body, long distance
- Output: cable, M12 and M8 plug cable exit
- Models with 2, 3 wires
- ATEX models, cat. 3, available on request

### web contents



- Application notes
- Photos
- Catalogue / Manuals



### code description <sup>(\*)</sup>

|              |  |  |    |                                |   |   |   |   |   |   |
|--------------|--|--|----|--------------------------------|---|---|---|---|---|---|
|              |  |  | AM | 1                              | / | A | P | - | 1 | A |
| series       |  |  | AM | M12 inductive proximity switch |   |   |   |   |   |   |
| housing      |  |  | 1  | Standard body                  |   |   |   |   |   |   |
|              |  |  | 6  | Short body                     |   |   |   |   |   |   |
| output state |  |  | A  | NO output state                |   |   |   |   |   |   |
|              |  |  | C  | NC output state                |   |   |   |   |   |   |
| output logic |  |  | N  | NPN logic output               |   |   |   |   |   |   |
|              |  |  | 0  | 2 wires version                |   |   |   |   |   |   |
|              |  |  | B  | NO + NC complementary version  |   |   |   |   |   |   |
|              |  |  | P  | PNP logic output               |   |   |   |   |   |   |
| distance     |  |  | 1  | Shielded standard 2 mm         |   |   |   |   |   |   |
|              |  |  | 2  | Unshielded standard 4 mm       |   |   |   |   |   |   |
|              |  |  | 3  | Long distance shielded 4 mm    |   |   |   |   |   |   |
|              |  |  | 4  | Unshielded long distance 8 mm  |   |   |   |   |   |   |
| connect.     |  |  | A  | Axial cable exit               |   |   |   |   |   |   |
|              |  |  | C  | Right angle cable exit         |   |   |   |   |   |   |
|              |  |  | F  | M8 plug cable exit             |   |   |   |   |   |   |
|              |  |  | H  | M12 plug cable exit            |   |   |   |   |   |   |

<sup>(\*)</sup> ATEX models available, contact our Sales Dept. for further information.

### available models

#### standard housing

| diameter | installation | distance      | connection    | distance (mm) | NPN/NO    | PNP/NO    | NPN/NC    | PNP/NC    |           |
|----------|--------------|---------------|---------------|---------------|-----------|-----------|-----------|-----------|-----------|
| M12      | shielded     | standard      | cable         | 2             | AM1/AN-1A | AM1/AP-1A | AM1/CN-1A | AM1/CP-1A |           |
|          |              |               | cable 90°     |               | AM1/AN-1C | AM1/AP-1C | AM1/CN-1C | AM1/CP-1C |           |
|          |              |               | M8            |               | AM1/AN-1F | AM1/AP-1F | AM1/CN-1F | AM1/CP-1F |           |
|          |              |               | M12           |               | AM1/AN-1H | AM1/AP-1H | AM1/CN-1H | AM1/CP-1H |           |
|          | unshielded   | standard      | cable         | 4             | AM1/AN-2A | AM1/AP-2A | AM1/CN-2A | AM1/CP-2A |           |
|          |              |               | cable 90°     |               | AM1/AN-2C | AM1/AP-2C | AM1/CN-2C | AM1/CP-2C |           |
|          |              |               | M8            |               | AM1/AN-2F | AM1/AP-2F | AM1/CN-2F | AM1/CP-2F |           |
|          |              |               | M12           |               | AM1/AN-2H | AM1/AP-2H | AM1/CN-2H | AM1/CP-2H |           |
|          | shielded     | long distance | cable         | 8             | AM1/AN-3A | AM1/AP-3A | AM1/CN-3A | AM1/CP-3A |           |
|          |              |               | M12           |               | AM1/AN-3H | AM1/AP-3H | AM1/CN-3H | AM1/CP-3H |           |
|          | unshielded   |               | long distance |               | cable     | AM1/AN-4A | AM1/AP-4A | AM1/CN-4A | AM1/CP-4A |
|          |              |               |               |               | M12       | AM1/AN-4H | AM1/AP-4H | AM1/CN-4H | AM1/CP-4H |



## available models

### short housing

| diameter | installation | distance      | connection | distance (mm) | NPN/NO    | PNP/NO    | NPN/NC    | PNP/NC    |
|----------|--------------|---------------|------------|---------------|-----------|-----------|-----------|-----------|
| M12      | shielded     | standard      | cable      | 2             | AM6/AN-1A | AM6/AP-1A | AM6/CN-1A | AM6/CP-1A |
|          |              |               | cable 90°  |               | AM6/AN-1C | AM6/AP-1C | AM6/CN-1C | AM6/CP-1C |
|          |              |               | M12        |               | AM6/AN-1H | AM6/AP-1H | AM6/CN-1H | AM6/CP-1H |
|          | unshielded   |               | cable      | 4             | AM6/AN-2A | AM6/AP-2A | AM6/CN-2A | AM6/CP-2A |
|          |              |               | cable 90°  |               | AM6/AN-2C | AM6/AP-2C | AM6/CN-2C | AM6/CP-2C |
|          |              |               | M12        |               | AM6/AN-2H | AM6/AP-2H | AM6/CN-2H | AM6/CP-2H |
|          | shielded     | long distance | cable      | 4             | AM6/AN-3A | AM6/AP-3A | AM6/CN-3A | AM6/CP-3A |
|          |              |               | M12        |               | AM6/AN-3H | AM6/AP-3H | AM6/CN-3H | AM6/CP-3H |
|          | unshielded   |               | cable      | 8             | AM6/AN-4A | AM6/AP-4A | AM6/CN-4A | AM6/CP-4A |
|          |              |               | M12        |               | AM6/AN-4H | AM6/AP-4H | AM6/CN-4H | AM6/CP-4H |

## available models

### DC 2 wires models

| diameter | installation | distance      | connection | distance (mm) | NO - NPN/PNP |           |
|----------|--------------|---------------|------------|---------------|--------------|-----------|
| M12      | shielded     | standard      | cable      | 2             | AM1/A0-1A    |           |
|          |              |               | M12        |               | AM1/A0-1H    |           |
|          | unshielded   |               | cable      | 4             | AM1/A0-2A    |           |
|          |              |               | M12        |               | AM1/A0-2H    |           |
|          | shielded     | long distance | cable      |               | 4            | AM1/A0-3A |
|          |              |               | M12        |               |              | AM1/A0-3H |
|          | unshielded   |               | cable      | 8             | AM1/A0-4A    |           |
|          |              |               | M12        |               | AM1/A0-4H    |           |

## available models

### 4 wires models

| diameter | installation | distance      | connection | distance<br>(mm) | short housing |           | standard housing |           |
|----------|--------------|---------------|------------|------------------|---------------|-----------|------------------|-----------|
|          |              |               |            |                  | NPN/NO+NC     | PNP/NO+NC | NPN/NO+NC        | PNP/NO+NC |
| M12      | shielded     | standard      | cable      | 2                | AM6/BN-1A     | AM6/BP-1A | AM1/BN-1A        | AM1/BP-1A |
|          |              |               | M12        |                  | AM6/BN-1H     | AM6/BP-1H | AM1/BN-1H        | AM1/BP-1H |
|          | unshielded   |               | cable      | 4                | AM6/BN-2A     | AM6/BP-2A | AM1/BN-2A        | AM1/BP-2A |
|          |              |               | M12        |                  | AM6/BN-2H     | AM6/BP-2H | AM1/BN-2H        | AM1/BP-2H |
|          | shielded     | long distance | cable      | 4                | AM6/BN-3A     | AM6/BP-3A | AM1/BN-3A        | AM1/BP-3A |
|          |              |               | M12        |                  | AM6/BN-3H     | AM6/BP-3H | AM1/BN-3H        | AM1/BP-3H |
|          | unshielded   |               | cable      | 8                | AM6/BN-4A     | AM6/BP-4A | AM1/BN-4A        | AM1/BP-4A |
|          |              |               | M12        |                  | AM6/BN-4H     | AM6/BP-4H | AM1/BN-4H        | AM1/BP-4H |



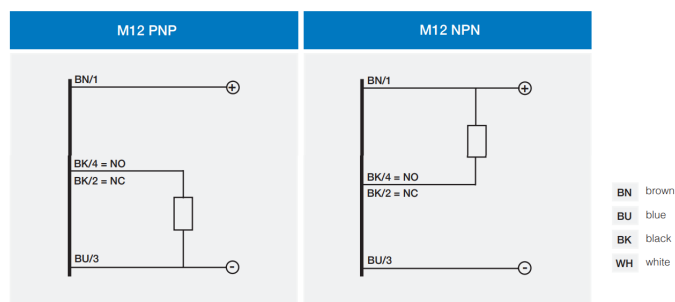
## AM series

M12 cylindrical inductive sensors

|                             | AM*/**-1*                                                                                                   | AM*/**-2*                                                                         | AM*/**-3*                                                                           | AM*/**-4*                                                                           |
|-----------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                             |                            |  |  |  |
| nominal sensing distance Sn | 2 mm                                                                                                        | 4 mm                                                                              | 4 mm                                                                                | 8 mm                                                                                |
| operating distance          | 0...1.6 mm                                                                                                  | 0...3.2 mm                                                                        | 0...3.2 mm                                                                          | 0...6.4 mm                                                                          |
| hysteresis                  | 1...20%                                                                                                     |                                                                                   |                                                                                     |                                                                                     |
| standard target             | 12x12 mm FE 360                                                                                             |                                                                                   |                                                                                     | 24x24 mm FE 360                                                                     |
| repeatability               | 5% UB 20-30 V Ta = 23°C ± 5°C                                                                               |                                                                                   |                                                                                     |                                                                                     |
| operating voltage           | 10...30 Vdc                                                                                                 |                                                                                   |                                                                                     |                                                                                     |
| max ripple content          | ≤ 10%                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
| output type                 | NPN or PNP - NO or NC (3 wires models), NPN/PNP - NO (2 wires models), NPN or PNP - NO+ NC (4 wires models) |                                                                                   |                                                                                     |                                                                                     |
| output current              | ≤ 200 mA ( 3...100 mA for 2 wires versions)                                                                 |                                                                                   |                                                                                     |                                                                                     |
| output voltage drop         | ≤ 1.8 V @ 200 mA (2,8 V @ 100 mA for 2 wires versions)                                                      |                                                                                   |                                                                                     |                                                                                     |
| no-load supply current      | 10 mA                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
| leakage current             | 10 µA (0.8 mA for 2 wires versions)                                                                         |                                                                                   |                                                                                     |                                                                                     |
| switching frequency         | 2 kHz (1.5 kHz for 2 wires)                                                                                 |                                                                                   | 2 kHz (750 Hz for 2 wires)                                                          |                                                                                     |
| power on delay              | 50 ms                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
| ambient temperature range   | -25...+70 °C                                                                                                |                                                                                   |                                                                                     |                                                                                     |
| temperature drift of Sr     | 10%                                                                                                         |                                                                                   |                                                                                     |                                                                                     |
| short-circuit protection    | ●                                                                                                           |                                                                                   |                                                                                     |                                                                                     |
| voltage reversal protection | ●                                                                                                           |                                                                                   |                                                                                     |                                                                                     |
| induction protection        | ●                                                                                                           |                                                                                   |                                                                                     |                                                                                     |
| shocks and vibrations       | IEC/EN60947-5-2                                                                                             |                                                                                   |                                                                                     |                                                                                     |
| weight                      | 30 g connector (20 g short body)<br>70 g cable (60 g short body)                                            |                                                                                   |                                                                                     |                                                                                     |
| LEDs                        | yellow LED output state                                                                                     |                                                                                   |                                                                                     |                                                                                     |
| protection degree           | IP67 <sup>(1)</sup> ( EN60529 )                                                                             |                                                                                   |                                                                                     |                                                                                     |
| EMC                         | in conformity with the EMC Directive, according to IEC 60947-5-2                                            |                                                                                   |                                                                                     |                                                                                     |
| housing material            | nickel-plated brass                                                                                         |                                                                                   |                                                                                     |                                                                                     |
| active head material        | PBT                                                                                                         |                                                                                   |                                                                                     |                                                                                     |
| connection                  | cable 2 m PVC - plug M8 or M12                                                                              |                                                                                   |                                                                                     |                                                                                     |
| tightening torque           | 10 Nm                                                                                                       |                                                                                   |                                                                                     |                                                                                     |

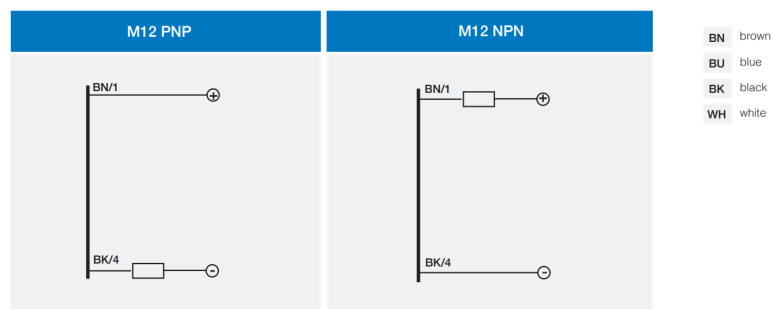
## electrical diagrams of connections

3 wires versions



## electrical diagrams of connections

2 wires versions





## AK series

M18 cylindrical inductive sensors



### features

- Wide range of models: standard, long distance
- Output: cable, M12 and plug cable exit
- Models with 2, 3, and 4 wires
- ATEX models, cat. 3, available on request
- Models with complementary output (NO+NC)



### web contents

- Application notes
- Photos
- Catalogue / Manuals



M18 cylindrical

### code description<sup>(\*)</sup>

|              | AK | 1                               | / | A | P | - | 1 | A |
|--------------|----|---------------------------------|---|---|---|---|---|---|
| series       | AK | M18 inductive proximity switch  |   |   |   |   |   |   |
| housing      | 1  | Standard body                   |   |   |   |   |   |   |
|              | 6  | Short body                      |   |   |   |   |   |   |
| output state | A  | NO output state                 |   |   |   |   |   |   |
|              | C  | NC output state                 |   |   |   |   |   |   |
|              | B  | NO and NC complementary outputs |   |   |   |   |   |   |
| output logic | N  | NPN logic output                |   |   |   |   |   |   |
|              | 0  | 2 wires version                 |   |   |   |   |   |   |
|              | P  | PNP logic output                |   |   |   |   |   |   |
| distance     | 1  | Shielded standard 5 mm          |   |   |   |   |   |   |
|              | 2  | Unshielded standard 8 mm        |   |   |   |   |   |   |
|              | 3  | Long distance shielded 8 mm     |   |   |   |   |   |   |
|              | 4  | Unshielded long distance 12 mm  |   |   |   |   |   |   |
| connect.     | A  | Axial cable exit                |   |   |   |   |   |   |
|              | C  | Right angle cable exit          |   |   |   |   |   |   |
|              | H  | M12 plug cable exit             |   |   |   |   |   |   |

<sup>(\*)</sup> ATEX models available, contact our Sales Dept. for further information.

## available models

### standard housing

| diameter | installation | distance      | exit      | distance (mm) | NPN/NO    | PNP/NO    | NPN/NC    | PNP/NC    |
|----------|--------------|---------------|-----------|---------------|-----------|-----------|-----------|-----------|
| M18      | shielded     | standard      | cable     | 5             | AK1/AN-1A | AK1/AP-1A | AK1/CN-1A | AK1/CP-1A |
|          |              |               | cable 90° |               | AK1/AN-1C | AK1/AP-1C | AK1/CN-1C | AK1/CP-1C |
|          |              |               | M12       |               | AK1/AN-1H | AK1/AP-1H | AK1/CN-1H | AK1/CP-1H |
|          | unshielded   |               | cable     | 8             | AK1/AN-2A | AK1/AP-2A | AK1/CN-2A | AK1/CP-2A |
|          |              |               | cable 90° |               | AK1/AN-2C | AK1/AP-2C | AK1/CN-2C | AK1/CP-2C |
|          |              |               | M12       |               | AK1/AN-2H | AK1/AP-2H | AK1/CN-2H | AK1/CP-2H |
|          | shielded     | long distance | cable     |               | AK1/AN-3A | AK1/AP-3A | AK1/CN-3A | AK1/CP-3A |
|          |              |               | M12       |               | AK1/AN-3H | AK1/AP-3H | AK1/CN-3H | AK1/CP-3H |
|          | unshielded   |               | cable     | 12            | AK1/AN-4A | AK1/AP-4A | AK1/CN-4A | AK1/CP-4A |
|          |              |               | M12       |               | AK1/AN-4H | AK1/AP-4H | AK1/CN-4H | AK1/CP-4H |

## available models

### short housing

| diameter | installation | distance      | exit  | distance (mm) | NPN/NO    | PNP/NO    | NPN/NO + NC | PNP/NO + NC |
|----------|--------------|---------------|-------|---------------|-----------|-----------|-------------|-------------|
| M18      | shielded     | standard      | cable | 5             | AK6/AN-1A | AK6/AP-1A | AK6/BN-1A   | AK6/BP-1A   |
|          | unshielded   |               |       | 8             | AK6/AN-2A | AK6/AP-2A | AK6/BN-2A   | AK6/BP-2A   |
|          | shielded     | long distance |       |               | AK6/AN-3A | AK6/AP-3A | AK6/BN-3A   | AK6/BP-3A   |
|          | unshielded   |               |       | 12            | AK6/AN-4A | AK6/AP-4A | AK6/BN-4A   | AK6/BP-4A   |
|          | shielded     | standard      | M12   | 5             | AK6/AN-1H | AK6/AP-1H | AK6/BN-1H   | AK6/BP-1H   |
|          | unshielded   |               |       | 8             | AK6/AN-2H | AK6/AP-2H | AK6/BN-2H   | AK6/BP-2H   |
|          | shielded     | long distance |       |               | AK6/AN-3H | AK6/AP-3H | AK6/BN-3H   | AK6/BP-3H   |
|          | unshielded   |               |       | 12            | AK6/AN-4H | AK6/AP-4H | AK6/BN-4H   | AK6/BP-4H   |

## available models

### DC 2 wires models

| diameter | installation | distance      | exit  | distance (mm) | NO - PNP/NPN |
|----------|--------------|---------------|-------|---------------|--------------|
| M18      | shielded     | standard      | cable | 5             | AK1/A0-1A    |
|          |              |               | M12   |               | AK1/A0-1H    |
|          | unshielded   |               | cable | 8             | AK1/A0-2A    |
|          |              |               | M12   |               | AK1/A0-2H    |
|          | shielded     | long distance | cable |               | AK1/A0-3A    |
|          |              |               | M12   |               |              |
|          | unshielded   |               | cable | AK1/A0-4A     |              |
|          |              |               | M12   |               | AK1/A0-4H    |
|          |              |               |       |               |              |

|                             | AK1/**-1*                                                                         | AK1/**-2*                                                                         | AK1/**-3*                                                                           | AK1/**-4*                                                                           |
|-----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                             |  |  |  |  |
| nominal sensing distance    | 5 mm                                                                              | 8 mm                                                                              | 8 mm                                                                                | 12 mm                                                                               |
| operating distance          | 0...4 mm                                                                          | 0...6.5 mm                                                                        | 0...6.5 mm                                                                          | 0...9.7 mm                                                                          |
| hysteresis                  | 1...20%                                                                           |                                                                                   |                                                                                     |                                                                                     |
| standard target             | 18 x 18 mm FE 360                                                                 | 24 x 24 mm FE 360                                                                 |                                                                                     | 36 x 36 mm FE 360                                                                   |
| repeatability               | 5%                                                                                |                                                                                   |                                                                                     |                                                                                     |
| operating voltage           | 10...30 Vdc                                                                       |                                                                                   |                                                                                     |                                                                                     |
| output type                 | NPN or PNP - NO or NC (3 wires models), NPN/PNP- NO (2 wires models)              |                                                                                   |                                                                                     |                                                                                     |
| max ripple content          | ≤ 10%                                                                             |                                                                                   |                                                                                     |                                                                                     |
| output current              | ≤ 400 mA ( 3...100 mA or 2 wires versions)                                        |                                                                                   |                                                                                     |                                                                                     |
| output voltage drop         | ≤ 1V @ 400 mA (2.8 V @ 100 mA or 2 wires versions)                                |                                                                                   |                                                                                     |                                                                                     |
| no-load supply current      | 20 mA                                                                             |                                                                                   |                                                                                     |                                                                                     |
| leakage current             | 10 µA (0.8 mA or 2 wires versions)                                                |                                                                                   |                                                                                     |                                                                                     |
| switching frequency         | 600 Hz (300 Hz for 2 wires)                                                       |                                                                                   | 300 Hz (150 Hz for 2 wires)                                                         |                                                                                     |
| power on delay              | 50 ms                                                                             |                                                                                   |                                                                                     |                                                                                     |
| ambient temperature range   | -25...+70 °C                                                                      |                                                                                   |                                                                                     |                                                                                     |
| temperature drift of Sr     | 10%                                                                               |                                                                                   |                                                                                     |                                                                                     |
| short-circuit protection    | ●                                                                                 |                                                                                   |                                                                                     |                                                                                     |
| voltage reversal protection | ●                                                                                 |                                                                                   |                                                                                     |                                                                                     |
| induction protection        | ●                                                                                 |                                                                                   |                                                                                     |                                                                                     |
| shocks and vibrations       | IEC 60947-5-2                                                                     |                                                                                   |                                                                                     |                                                                                     |
| weight                      | 55 g connector<br>130 g cable                                                     |                                                                                   |                                                                                     |                                                                                     |
| LEDs                        | yellow LED output state                                                           |                                                                                   |                                                                                     |                                                                                     |
| protection degree           | IP 67 <sup>(1)</sup> ( EN60529 )                                                  |                                                                                   |                                                                                     |                                                                                     |
| EMC                         | in conformity with the EMC Directive<br>according to IEC 60947-5-2                |                                                                                   |                                                                                     |                                                                                     |
| housing material            | nickel-plated brass                                                               |                                                                                   |                                                                                     |                                                                                     |
| active head material        | PBT                                                                               |                                                                                   |                                                                                     |                                                                                     |
| connection                  | cable 2 m PVC - plug M12                                                          |                                                                                   |                                                                                     |                                                                                     |
| tightening torque           | 25 Nm                                                                             |                                                                                   |                                                                                     |                                                                                     |

<sup>(1)</sup> Protection guaranteed only with plug cable well mounted

|                             | AK6/**-1*                                                                           | AK6/**-2*                                                                           | AK6/**-3*                                                                             | AK6/**-4*                                                                             |
|-----------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                             |  |  |  |  |
| nominal sensing distance    | 5 mm                                                                                | 8 mm                                                                                | 8 mm                                                                                  | 12 mm                                                                                 |
| operating distance          | 0...4 mm                                                                            | 0...6.5 mm                                                                          | 0...6.5 mm                                                                            | 0...9.7 mm                                                                            |
| hysteresis                  | 0...20%                                                                             |                                                                                     |                                                                                       |                                                                                       |
| standard target             | 18x18 mm FE 360                                                                     | 24x24 mm FE 360                                                                     |                                                                                       | 36x36 mm FE 360                                                                       |
| repeatability               | 5% Ub 20-30V Ta=23°C±5°C                                                            |                                                                                     |                                                                                       |                                                                                       |
| operating voltage           | 10...30 Vdc                                                                         |                                                                                     |                                                                                       |                                                                                       |
| ripple                      | ≤ 10 %                                                                              |                                                                                     |                                                                                       |                                                                                       |
| output current              | ≤ 400 mA                                                                            |                                                                                     |                                                                                       |                                                                                       |
| output voltage drop         | ≤ 1.5 V @ 400 mA                                                                    |                                                                                     |                                                                                       |                                                                                       |
| no-load current             | ≤ 10 mA                                                                             |                                                                                     |                                                                                       |                                                                                       |
| logic output                | PNP or NPN                                                                          |                                                                                     |                                                                                       |                                                                                       |
| output state                | NO or NO+NC                                                                         |                                                                                     |                                                                                       |                                                                                       |
| leakage current             | 10 µA                                                                               |                                                                                     |                                                                                       |                                                                                       |
| switching frequency         | 2,5 KHz                                                                             | 2 KHz                                                                               | 2,5 KHz                                                                               | 2 KHz                                                                                 |
| power on delay              | ≤ 50 ms                                                                             |                                                                                     |                                                                                       |                                                                                       |
| temperature range           | -25°C...+70°C                                                                       |                                                                                     |                                                                                       |                                                                                       |
| temperature drift           | ≤ 10%                                                                               |                                                                                     |                                                                                       |                                                                                       |
| short circuit protection    | ● (autoreset)                                                                       |                                                                                     |                                                                                       |                                                                                       |
| induction protection        | ●                                                                                   |                                                                                     |                                                                                       |                                                                                       |
| voltage reversal protection | ●                                                                                   |                                                                                     |                                                                                       |                                                                                       |

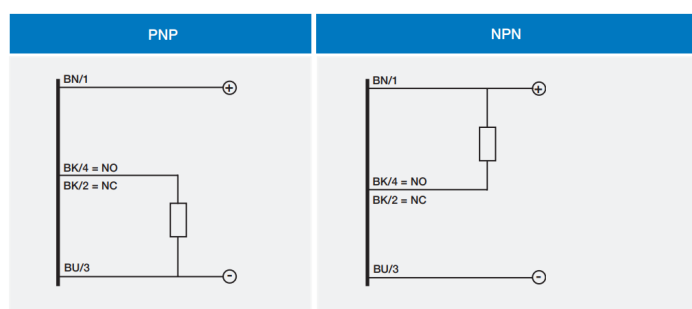


|                             | AK6/**-1*                                                                         | AK6/**-2*                                                                         | AK6/**-3*                                                                           | AK6/**-4*                                                                           |
|-----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                             |  |  |  |  |
| nominal sensing distance    | 5 mm                                                                              | 8 mm                                                                              | 8 mm                                                                                | 12 mm                                                                               |
| operating distance          | 0...4 mm                                                                          | 0...6.5 mm                                                                        | 0...6.5 mm                                                                          | 0...9.7 mm                                                                          |
| hysteresys                  | 0...20%                                                                           |                                                                                   |                                                                                     |                                                                                     |
| standard target             | 18x18 mm FE 360                                                                   | 24x24 mm FE 360                                                                   |                                                                                     | 36x36 mm FE 360                                                                     |
| repeatability               | 5% Ub 20-30V Ta=23°C±5°C                                                          |                                                                                   |                                                                                     |                                                                                     |
| operating voltage           | 10...30 Vdc                                                                       |                                                                                   |                                                                                     |                                                                                     |
| ripple                      | ≤ 10 %                                                                            |                                                                                   |                                                                                     |                                                                                     |
| output current              | ≤ 400 mA                                                                          |                                                                                   |                                                                                     |                                                                                     |
| output voltage drop         | ≤ 1.5 V @ 400 mA                                                                  |                                                                                   |                                                                                     |                                                                                     |
| no-load current             | ≤ 10 mA                                                                           |                                                                                   |                                                                                     |                                                                                     |
| logic output                | PNP or NPN                                                                        |                                                                                   |                                                                                     |                                                                                     |
| output state                | NO or NO+NC                                                                       |                                                                                   |                                                                                     |                                                                                     |
| leakage current             | 10 µA                                                                             |                                                                                   |                                                                                     |                                                                                     |
| switching frequency         | 2,5 KHz                                                                           | 2 KHz                                                                             | 2,5 KHz                                                                             | 2 KHz                                                                               |
| power on delay              | ≤ 50 ms                                                                           |                                                                                   |                                                                                     |                                                                                     |
| temperature range           | -25°C...+70°C                                                                     |                                                                                   |                                                                                     |                                                                                     |
| temperature drift           | ≤ 10%                                                                             |                                                                                   |                                                                                     |                                                                                     |
| short circuit protection    | ● (autoreset)                                                                     |                                                                                   |                                                                                     |                                                                                     |
| induction protection        | ●                                                                                 |                                                                                   |                                                                                     |                                                                                     |
| voltage reversal protection | ●                                                                                 |                                                                                   |                                                                                     |                                                                                     |
| EMC                         | in conformity with the EMC Directive, according to IEC 60947-5-2                  |                                                                                   |                                                                                     |                                                                                     |
| shocks and vibrations       | IEC 60947-5-2                                                                     |                                                                                   |                                                                                     |                                                                                     |
| protection degree           | IP67                                                                              |                                                                                   |                                                                                     |                                                                                     |
| housing material            | nickelplated brass                                                                |                                                                                   |                                                                                     |                                                                                     |
| active head material        | PBT                                                                               |                                                                                   |                                                                                     |                                                                                     |
| LEDs                        | output on (yellow LED)                                                            |                                                                                   |                                                                                     |                                                                                     |
| connections                 | M12 connector, 2 m PVC cable                                                      |                                                                                   |                                                                                     |                                                                                     |
| tightening torque           | 25 Nm                                                                             |                                                                                   |                                                                                     |                                                                                     |

<sup>1)</sup> Protection guaranteed only with plug cable well mounted

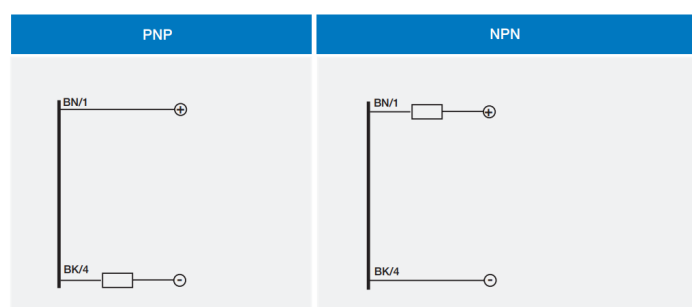
## electrical diagrams of connections

3 wires versions



## electrical diagrams of connections

2 wires versions



# AK1 Series

BN brown  
BU blue  
BK black  
WH white



## AT series

M30 cylindrical inductive sensors



### features

- Wide range of models: standard, long distance
- Output: cable, M12 and plug cable exit
- Models with 2, 3, and 4 wires
- ATEX models, cat. 3, available on request
- Models with complementary output (NO + NC)
- Complete protection against electrical damages



### web contents

- Application notes
- Photos
- Catalogue / Manuals



M30 cylindrical inductives

### code description (\*)

|              |    |                                | AT | 1 | / | A | P | - | 1 | A |
|--------------|----|--------------------------------|----|---|---|---|---|---|---|---|
| series       | AT | M30 inductive proximity switch |    |   |   |   |   |   |   |   |
| housing      | 1  | Standard body                  |    |   |   |   |   |   |   |   |
|              | 6  | Short body                     |    |   |   |   |   |   |   |   |
| output state | A  | NO output state                |    |   |   |   |   |   |   |   |
|              | C  | NC output state                |    |   |   |   |   |   |   |   |
|              | B  | NO+NC complementary output     |    |   |   |   |   |   |   |   |
| output logic | N  | NPN logic output               |    |   |   |   |   |   |   |   |
|              | 0  | 2 wires version                |    |   |   |   |   |   |   |   |
|              | P  | PNP logic output               |    |   |   |   |   |   |   |   |
| distance     | 1  | Shielded standard 10 mm        |    |   |   |   |   |   |   |   |
|              | 2  | Unshielded standard 15 mm      |    |   |   |   |   |   |   |   |
|              | 3  | Long distance shielded 15 mm   |    |   |   |   |   |   |   |   |
|              | 4  | Long distance unshielded 20 mm |    |   |   |   |   |   |   |   |
| connect.     | A  | Axial cable exit               |    |   |   |   |   |   |   |   |
|              | B  | Axial cable exit with tang     |    |   |   |   |   |   |   |   |
|              | H  | M12 plug cable exit            |    |   |   |   |   |   |   |   |

(\*) ATEX models available, contact our Sales Dept. for further information.

### available models

#### 4 wires standard housing

| diameter | installation | distance      | plug | distance (mm) | PNP/NO+NC |
|----------|--------------|---------------|------|---------------|-----------|
| M30      | shielded     | standard      | M12  | 10            | AT1/BP-1H |
|          | unshielded   |               |      | 15            | AT1/BP-2H |
|          | shielded     | long distance |      |               | AT1/BP-3H |
|          | unshielded   |               |      | 20            | AT1/BP-4H |

## available models

### 3 wires standard housing

| diameter | installation | distance      | plug            | distance (mm) | NPN/NO    | NPN/NC    | PNP/NO    | PNP/NC    |
|----------|--------------|---------------|-----------------|---------------|-----------|-----------|-----------|-----------|
| M30      | shielded     | standard      | cable           | 10            | AT1/AN-1A | AT1/CN-1A | AT1/AP-1A | AT1/CP-1A |
|          |              |               | cable with tang |               | AT1/AN-1B | AT1/CN-1B | AT1/AP-1B | AT1/CP-1B |
|          |              |               | M12             |               | AT1/AN-1H | AT1/CN-1H | AT1/AP-1H | AT1/CP-1H |
|          | unshielded   |               | cable           | 15            | AT1/AN-2A | AT1/CN-2A | AT1/AP-2A | AT1/CP-2A |
|          |              |               | cable with tang |               | AT1/AN-2B | AT1/CN-2B | AT1/AP-2B | AT1/CP-2B |
|          |              |               | M12             |               | AT1/AN-2H | AT1/CN-2H | AT1/AP-2H | AT1/CP-2H |
|          | shielded     | long distance | cable           |               | AT1/AN-3A | AT1/CN-3A | AT1/AP-3A | AT1/CP-3A |
|          |              |               | M12             |               | AT1/AN-3H | AT1/CN-3H | AT1/AP-3H | AT1/CP-3H |
|          | unshielded   |               | cable           | 20            | AT1/AN-4A | AT1/CN-4A | AT1/AP-4A | AT1/CP-4A |
|          |              |               | M12             |               | AT1/AN-4H | AT1/CN-4H | AT1/AP-4H | AT1/CP-4H |

## available models

### DC 2 wires models

| diameter | installation | distance      | plug  | distance (mm) | NO        |           |
|----------|--------------|---------------|-------|---------------|-----------|-----------|
| M30      | shielded     | standard      | cable | 10            | AT1/A0-1A |           |
|          |              |               | M12   |               | AT1/A0-1H |           |
|          | unshielded   |               | cable | 15            | AT1/A0-2A |           |
|          |              |               | M12   |               | AT1/A0-2H |           |
|          | shielded     | long distance | cable |               | 20        | AT1/A0-3A |
|          |              |               | M12   |               |           | AT1/A0-3H |
|          | unshielded   |               | cable | 20            | AT1/A0-4A |           |
|          |              |               | M12   |               | AT1/A0-4H |           |

## available models

### short housing

| diameter | plug  | distance      | installation | distance (mm) | NPN/NO    | PNP/NO    | NPN/NO+NC | PNP/NO+NC |
|----------|-------|---------------|--------------|---------------|-----------|-----------|-----------|-----------|
| M30      | cable | standard      | shielded     | 10            | AT6/AN-1A | AT6/AP-1A | AT6/BN-1A | AT6/BP-1A |
|          |       |               | unshielded   | 15            | AT6/AN-2A | AT6/AP-2A | AT6/BN-2A | AT6/BP-2A |
|          |       | long distance | shielded     |               | AT6/AN-3A | AT6/AP-3A | AT6/BN-3A | AT6/BP-3A |
|          |       |               | unshielded   | 20            | AT6/AN-4A | AT6/AP-4A | AT6/BN-4A | AT6/BP-4A |
|          | M12   | standard      | shielded     | 10            | AT6/AN-1H | AT6/AP-1H | AT6/BN-1H | AT6/BP-1H |
|          |       |               | unshielded   | 15            | AT6/AN-2H | AT6/AP-2H | AT6/BN-2H | AT6/BP-2H |
|          |       | long distance | shielded     |               | AT6/AN-3H | AT6/AP-3H | AT6/BN-3H | AT6/BP-3H |
|          |       |               | unshielded   | 20            | AT6/AN-4H | AT6/AP-4H | AT6/BN-4H | AT6/BP-4H |

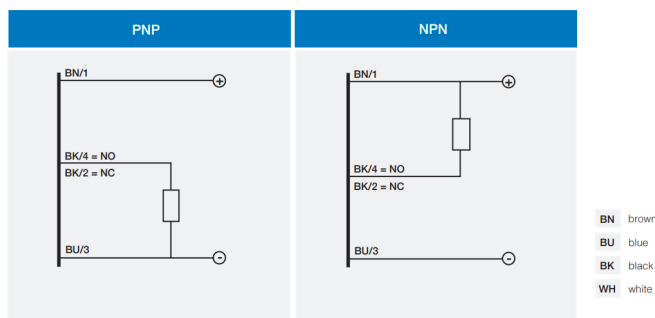
## technical specification

|                             | AT*/**-1*                                                                                             | AT*/**-2*                                                                         | AT*/**-3*                                                                           | AT*/**-4*                                                                           |
|-----------------------------|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                             |                      |  |  |  |
| nominal sending distance    | 10 mm                                                                                                 | 15 mm                                                                             | 15 mm                                                                               | 20 mm                                                                               |
| operating distance          | 0...8.1 mm                                                                                            | 0...12.1 mm                                                                       | 0...12.1 mm                                                                         | 0...16.2 mm                                                                         |
| hysteresis                  | 1...20%                                                                                               |                                                                                   |                                                                                     |                                                                                     |
| standard target             | 30 x 30 mm FE 360                                                                                     | 45 x 45 mm FE 360                                                                 | 45 x 45 mm FE 360                                                                   | 60 x 60 mm FE 360                                                                   |
| repeatability               | 5% U <sub>B</sub> 20-30 V Ta = 23°C ± 5°C                                                             |                                                                                   |                                                                                     |                                                                                     |
| operating voltage           | 10...30 Vdc                                                                                           |                                                                                   |                                                                                     |                                                                                     |
| output type                 | NPN or PNP - NO or NC (3 wires models), PNP - NO + NC (4 wires models), NPN/PNP - NO (2 wires models) |                                                                                   |                                                                                     |                                                                                     |
| max ripple content          | ≤ 10%                                                                                                 |                                                                                   |                                                                                     |                                                                                     |
| output current              | ≤ 400 mA ( 3...100 mA for 2 wires versions)                                                           |                                                                                   |                                                                                     |                                                                                     |
| output voltage drop         | ≤ 1V @ 400 mA (2.8 V @ 100 mA for 2 wires versions)                                                   |                                                                                   |                                                                                     |                                                                                     |
| no-load supply current      | 20 mA                                                                                                 |                                                                                   |                                                                                     |                                                                                     |
| leakage current             | 10 µA / 0,8 mA for 2 wires versions                                                                   |                                                                                   |                                                                                     |                                                                                     |
| switching frequency         | 200 Hz / 100 Hz for 2 wires versions                                                                  |                                                                                   | 200 Hz / 100 Hz for 2 wires versions                                                |                                                                                     |
| power on delay              | 100 ms (50 ms for 2 wires versions)                                                                   |                                                                                   |                                                                                     |                                                                                     |
| ambient temperature range   | -25...+70 °C                                                                                          |                                                                                   |                                                                                     |                                                                                     |
| temperature drift of Sr     | 10%                                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| short-circuit protection    | ●                                                                                                     |                                                                                   |                                                                                     |                                                                                     |
| voltage reversal protection | ●                                                                                                     |                                                                                   |                                                                                     |                                                                                     |
| induction protection        | ●                                                                                                     |                                                                                   |                                                                                     |                                                                                     |
| shocks and vibrations       | IEC 60947-5-2 / 7.4                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| weight                      | 150 g connector, 230 g cable                                                                          |                                                                                   |                                                                                     |                                                                                     |
| LEDs                        | yellow LED output state                                                                               |                                                                                   |                                                                                     |                                                                                     |
| protection degree           | IP 67 <sup>(1)</sup> ( EN60529 )                                                                      |                                                                                   |                                                                                     |                                                                                     |
| EMC                         | in conformity with the EMC Directive according to IEC 60947-5-2                                       |                                                                                   |                                                                                     |                                                                                     |
| shocks and vibrations       | IEC 60947-5-2                                                                                         |                                                                                   |                                                                                     |                                                                                     |
| housing material            | nickel-plated brass                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| active head material        | PBT                                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| connection                  | cable 2 m PVC - plug M12                                                                              |                                                                                   |                                                                                     |                                                                                     |
| tightening torque           | 50 Nm                                                                                                 |                                                                                   |                                                                                     |                                                                                     |

<sup>1)</sup> Protection guaranteed only with plug cable well mounted.

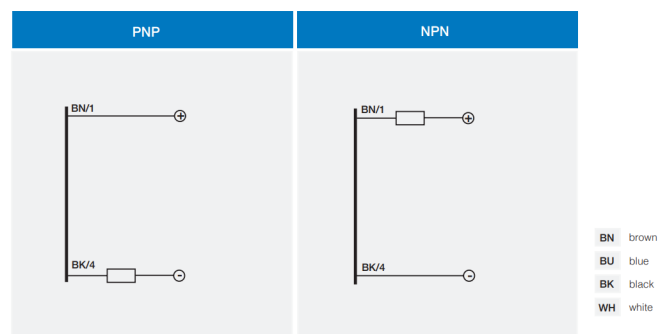
### electrical diagrams of connections

3 wires versions



### electrical diagrams of connections

2 wires versions



TUBULAR SENSORS



**S5 SERIES**

The **S5** series offers a range of plastic tubular M18 photoelectric sensors. The most varied optic functions can be chosen amongst the fixed focus or diffuse proximity models with short, medium or long operating distances reaching 60 cm; the 4 m retroreflex, 3 m polarised retroreflex and 1 m for detection of transparent materials; the 12 m through beam and models with fibre-optic connection. Different versions with either axial or radial optics are available. The series offers connector or cable connection, 3 wire Vac versions or 4 wire Vdc versions with complete configuration of the NPN/ PNP output and dark/light mode. A red LED indicating the output status is visible on the bottom side of the sensor. The versions with trimmer adjustment present also a green LED signalling the switching stability according to the received signal's intensity. The rugged ABS housing always guarantees IP67 protection.



SENSORS



**MODEL SELECTION AND ORDER INFORMATION**

|                                   | AXIAL OPTIC VERSIONS       |                            | RADIAL OPTIC VERSIONS     |                           |
|-----------------------------------|----------------------------|----------------------------|---------------------------|---------------------------|
| 4 WIRE CONNECTION<br>10-30Vdc     | 4 POLE CABLE               | M12 CONN.                  | 4 POLE CABLE              | M12 CONN.                 |
| Short distance diffuse proximity  | S5-5-C10-30<br>(G5210530)  | S5-5-C10-32<br>(G5210532)  | S5-5-C10-35<br>(G5210535) | S5-5-C10-37<br>(G5210537) |
| Medium distance diffuse proximity | S5-5-C35-30<br>(G5210630)  | S5-5-C35-32<br>(G5210632)  | S5-5-C35-35<br>(G5210635) | S5-5-C35-37<br>(G5210637) |
| Long distance diffuse proximity   | S5-5-C60-30<br>(952051640) | S5-5-C60-32<br>(952051650) | --                        | --                        |
| Fixed focus proximity             | S5-5-D15-30<br>(G5210430)  | S5-5-D15-32<br>(G5210432)  | S5-5-D15-35<br>(G5210435) | S5-5-D15-37<br>(G5210437) |
| Retroreflex                       | S5-5-A4-30<br>(G5210230)   | S5-5-A4-32<br>(G5210232)   | --                        | --                        |
| Polarised retroreflex             | S5-5-B3-30<br>(G5210730)   | S5-5-B3-32<br>(G5210732)   | S5-5-B3-35<br>(G5210735)  | S5-5-B3-37<br>(G5210737)  |
| Retroreflex for transparents      | S5-5-T1-30<br>(952051680)  | S5-5-T1-32<br>(952051690)  | --                        | --                        |
| Through beam receiver             | S5-5-F12-30<br>(G5210130)  | S5-5-F12-32<br>(G5210132)  | S5-5-F8-35<br>(G5210135)  | S5-5-F8-37<br>(G5210137)  |
| Through beam emitter              | S5-5-G12-00<br>(G5210000)  | S5-5-G12-02<br>(G5210002)  | S5-5-G8-05<br>(G5210005)  | S5-5-G8-07<br>(G5210007)  |
| Fibre-optic amplifier             | S5-5-E1-30<br>(G5210830)   | S5-5-E1-32<br>(G5210832)   | --                        | --                        |
| 3 WIRE CONNECTION<br>10-30Vdc     | 4 POLE CABLE               | M12 CONN.                  | 4 POLE CABLE              | M12 CONN.                 |
| Fixed focus proximity             | --                         | S5-5-D50-92<br>(952051940) | --                        | --                        |
| 3 WIRE CONNECTION<br>15 - 264 Vac | CABLE - dark mode          | CABLE - light mode         | CABLE - dark mode         | CABLE - light mode        |
| Short distance diffuse proximity  | S5-1-C8-10<br>(G5110510)   | S5-1-C8-20<br>(G5110520)   | S5-1-C8-15<br>(G5110515)  | S5-1-C8-25<br>(G5110525)  |
| Medium distance diffuse proximity | S5-1-C30-10<br>(G5110610)  | S5-1-C30-20<br>(G5110620)  | S5-1-C30-15<br>(G5110615) | S5-1-C30-25<br>(G5110625) |
| Fixed focus proximity             | S5-1-D15-10<br>(G5110410)  | S5-1-D15-20<br>(G5110420)  | --                        | --                        |
| Retroreflex                       | S5-1-A2-10<br>(G5110210)   | S5-1-A2-20<br>(G5110220)   | S5-1-A2-15<br>(G5110215)  | S5-1-A2-25<br>(G5110225)  |
| Through beam receiver             | S5-1-F8-10<br>(G5110110)   | S5-1-F8-20<br>(G5110120)   | --                        | --                        |
| Through beam emitter              | S5-1-G8-00<br>(G5110000)   |                            | S5-1-G8-05<br>(G5110005)  |                           |

# SL5



The SL5 with its concentrated class 1 laser emission is the ideal solution for very small objects edetection reaching very long operating distances.

- Visible red class 1 laser emission
- Proximity models for high-resolution detections
- Retroreflex and through beam versions for long operating distances
- Trimmer sensitivity adjustment and stability Led

## Laser beam Class 1 Photoelectric sensor

| MODEL             | DESCRIPTION                                                                                |
|-------------------|--------------------------------------------------------------------------------------------|
| <b>SL5-5-C-92</b> | Photoelectric Sensor Tubular M18 Red Laser emission Proximity pnp light - M12              |
| <b>SL5-5-B-82</b> | Photoelectric Sensor Tubular M18 Red Laser emission Retro Reflex polarized pnp dark - M12  |
| <b>SL5-5-F-82</b> | Photoelectric Sensor Tubular M18 Red Laser emission Receiver pnp dark - M12                |
| <b>SL5-5-G-82</b> | Photoelectric Sensor Tubular M18 Red Laser emission Emitter - M12                          |
| <b>SL5-5-F-92</b> | Photoelectric Sensor Tubular M18 Red Laser emission Receiver pnp light - M12               |
| <b>SL5-5-B-92</b> | Photoelectric Sensor Tubular M18 Red Laser emission Retro Reflex polarized pnp light - M12 |
| <b>SL5-5-C-82</b> | Photoelectric Sensor Tubular M18 Red Laser emission Proximity pnp dark - M12               |





# S3N

## MINI PHOTOELECTRIC SENSOR SERIES



**S3N**  
PHOTOELECTRIC CUBIC SENSORS

Top performances series in a very rugged and miniaturized standard housing. Complete solution for any detection application in any automation industry. Available with trimmer and Teach-in models with high connectivity features thanks to extended IO-Link communication.

- Bright LED and Safe Laser emission models
- Smart BGS and clear detection functions
- Single, Double trimmer & Push Button models
- Long distance detection models
- Very fast and very precise RGB Contrast sensor
- Cable, M8 connector, Pigtail M8 and M12 connection
- Rugged IP67 Plastic miniature case
- IO-Link with extended Smart Tasks



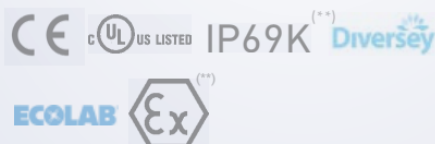
## CODE DESCRIPTION

|                      |  | S3N        | - | P | R | - | 5 | - | B | 0 | 1 | - | P | L |
|----------------------|--|------------|---|---|---|---|---|---|---|---|---|---|---|---|
| series               |  | <b>S3N</b> |   |   |   |   |   |   |   |   |   |   |   |   |
| housing              |  | <b>P</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
| emission             |  | <b>R</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
|                      |  | <b>H</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
| connection           |  | <b>2</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
|                      |  | <b>3</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
|                      |  | <b>4</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
|                      |  | <b>5</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
|                      |  | <b>6</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
| function             |  | <b>B</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
|                      |  | <b>C</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
|                      |  | <b>FG</b>  |   |   |   |   |   |   |   |   |   |   |   |   |
|                      |  | <b>M</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
|                      |  | <b>T</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
|                      |  | <b>W</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
| distance             |  | <b>0</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
|                      |  | <b>1</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
|                      |  | <b>5</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
| adjustment           |  | <b>1</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
|                      |  | <b>3</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
| output               |  | <b>P</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
|                      |  | <b>N</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
|                      |  | <b>0</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
| output configuration |  |            |   |   |   |   |   |   |   |   |   |   |   |   |
|                      |  |            |   |   |   |   |   |   |   |   |   |   |   |   |
|                      |  | <b>L</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
|                      |  | <b>D</b>   |   |   |   |   |   |   |   |   |   |   |   |   |
|                      |  | <b>Z</b>   |   |   |   |   |   |   |   |   |   |   |   |   |

# S8

**DATALOGIC**


**IO-Link<sup>(\*)</sup>**  
 New ASIC



## COMPACT SIZE AND HIGH PERFORMANCE FOR THE MOST CHALLENGING DETECTION APPLICATIONS LINKED TO YOUR INDUSTRY 4.0 APPLICATIONS

- Compact dimensions (14x42x25 mm)
- Background suppression for transparent and shiny objects
- Contrast sensors up to 25 kHz switching frequency
- Extremely focused spot, under 1 mm (LASER model)
- Very high resolution LASER models
- INOX AISI 316L model
- Extended IO-Link parametrization with counter
- All output fully PNP/NPN/PP IO-Link configurable
- IO-link COM2
- IO-Link dual channel with no jitter addition

### APPLICATIONS

- Processing and Packaging machinery
- Beverage/Food/ Cosmetics/Pharmaceutical industries
- Electronics assembling

(\*\*) Stainless steel models.  
 ATEXII 3DG

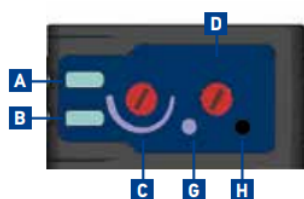
| S8                                                |           |                                                       |
|---------------------------------------------------|-----------|-------------------------------------------------------|
| <b>Through beam</b>                               |           | 0...25 m                                              |
| <b>Polarized retroreflective</b>                  |           | 0,1...5 m                                             |
| <b>Polarized retroreflective (coaxial)</b>        |           | 0...10 m (class 1 LASER - B51,B53...OZ)               |
| <b>Retroreflective for transparent (coaxial)</b>  |           | 0...0,8 m (T51), 0...2 m (T53...OZ, T50)              |
| <b>Diffuse proximity</b>                          |           | 0...500 mm                                            |
| <b>Background suppression</b>                     |           | 50...300 mm                                           |
|                                                   |           | 20...200 mm (class 1 LASER)                           |
| <b>Background suppression for clear detection</b> |           | 100...300 mm (LED)                                    |
|                                                   |           | 50...150 mm (class 1 LASER)                           |
| <b>Contrast sensor</b>                            |           | 10 mm (Wxx, W03...OZ)                                 |
| <b>Luminescence sensor</b>                        |           | 10...30 mm (U03, U03...OZ)                            |
| <b>Power supply</b>                               | Vdc       | 12...30 V                                             |
|                                                   | Vac       |                                                       |
|                                                   | Vac/dc    |                                                       |
| <b>Output</b>                                     | PNP       | •                                                     |
|                                                   | NPN       | •                                                     |
|                                                   | NPN/PNP   | IO-Link PNP/NPN/Push Pull (S8...B53/T53/W03/U03...OZ) |
|                                                   | relay     |                                                       |
|                                                   | other     | IO-Link dual channel COM2 2,3ms cycle time            |
| <b>Connection</b>                                 | cable     | •                                                     |
|                                                   | connector | •                                                     |
|                                                   | pig-tail  | •                                                     |
| <b>Approximate dimensions (mm)</b>                |           | 14x42x25                                              |
| <b>Housing material</b>                           |           | ABS, Stainless Steel AISI 316L                        |
| <b>Mechanical protection</b>                      |           | IP69K (Stainless Steel AISI 316L vers.), IP67         |

## TECHNICAL DATA

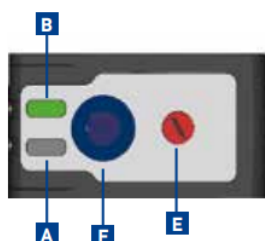
|                                              |                                                                                                                   |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Power supply</b>                          | 12 ... 30 Vdc (battery inversion protected)                                                                       |
| <b>Ripple</b>                                | 2 Vpp max.                                                                                                        |
| <b>Consumption (output current excluded)</b> | 30 mA; 35 mA (mod. S8...M01); 20 mA (mod. S8...F), 15 mA (mod. S8...G) max.; 40mA max. all IO-Link Models         |
| <b>Light emission</b>                        | red LED 660 nm (mod. S8...B01/C/M/G/T)                                                                            |
|                                              | RGB LEDs: blue 465 nm, green 520 nm, red 630nm with automatic selection (mod. S8...W)                             |
|                                              | UV LED 375 nm (mod. S8...U)                                                                                       |
|                                              | red Laser 645..665 nm (mod. S8...B51/B53/M) Class 1                                                               |
| <b>Sensitivity Setting</b>                   | 8-turn distance adjustment trimmer (mod. S8...M53/M)                                                              |
|                                              | teach-in push button (mod. S8...B53/B53...OZ/M53/W03/W03...OZ/W13/T53/T53...OZ/U03/U03...OZ)                      |
|                                              | remote input (mod. S8...M53)                                                                                      |
|                                              | mono-turn trimmer (mod. S8...B01/C/F/M/T51)                                                                       |
| <b>Operating mode</b>                        | automatic auto adjustment (mod. S8...W/T50)                                                                       |
|                                              | remote input (mod. S8...M53)                                                                                      |
|                                              | LIGHT / DARK mono-turn trimmer (mod. S8...B/C/F/T51/T53/U)                                                        |
|                                              | yellow OUTPUT LED (all models excl. mod. S8...G), OUTPUT/ALARM LED (mod. S8...M53/M/C)                            |
| <b>Indicators</b>                            | green POWER LED                                                                                                   |
| <b>Output</b>                                | PNP or NPN N.O. ; PNP/NPN/Push Pull fully configurable outputs for all IO-Link models (S8...B53/T53/W03/U03...OZ) |
| <b>Output current</b>                        | 100 mA (overload protection and short circuit)                                                                    |
| <b>Saturation voltage</b>                    | 2 V max.                                                                                                          |
| <b>Response time</b>                         | 1 ms (mod. S8...M53/M)                                                                                            |
|                                              | 500 µs (mod. S8...B/F/C)                                                                                          |
|                                              | 250 µs (mod. S8...T/T53...OZ IO-Link)                                                                             |
|                                              | 100 µs (Laser vers. mod. S8...M)                                                                                  |
|                                              | 50 µs (mod. S8...W00/W03/W03...OZ IO-Link and Laser mod. S8...B51/B53...OZ IO-Link)                               |
|                                              | 20 µs (mod. S8...W13)                                                                                             |
|                                              | 250 µs...1 ms (mod. S8...U) and U03...OZ IO-Link                                                                  |
| <b>Switching frequency</b>                   | 500 Hz (mod. S8...M53/M)                                                                                          |
|                                              | 1 kHz (mod. S8...B/F/C)                                                                                           |
|                                              | 2 kHz (mod. S8...T/T53...OZ IO-Link)                                                                              |
|                                              | 5 kHz (Laser vers. mod. S8...M)                                                                                   |
|                                              | 10kHz (mod. S8...W00/W03/W03...OZ IO-Link and Laser mod. S8...B51/B53...OZ IO-Link)                               |
|                                              | 25 kHz (mod. S8...W13)                                                                                            |
|                                              | 500 Hz...2 kHz (mod. S8...U) and U03...OZ IO-Link                                                                 |
| <b>Communication</b>                         | IO-Link COM2 V1.1.2 2,3ms cycle time                                                                              |
| <b>Connection</b>                            | M8 4-pole connector, 150 mm length Ø 4 mm cable with M12 4-pole connector (pig-tail vers.)                        |
| <b>Dielectric strength</b>                   | 1500 VAC 1 min between electronic parts and housing                                                               |
| <b>Insulating resistance</b>                 | >20 MΩ 500 VDC between electronic parts and housing                                                               |
| <b>Mechanical protection</b>                 | IP67, IP69K (mod. S8-M)                                                                                           |
| <b>Ambient light rejection</b>               | according to EN 60947-5-2                                                                                         |
| <b>Vibrations</b>                            | 0.5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6)                                            |
| <b>Shock resistance</b>                      | 11 ms (30 G) 6 shocks per every axis (EN60068-2-27)                                                               |
| <b>Housing material</b>                      | ABS, Stainless Steel AISI 316L                                                                                    |
| <b>Optical window material</b>               | window in PMMA; lens in PC                                                                                        |
| <b>Operating temperature</b>                 | -10 ... 55 °C                                                                                                     |
| <b>Storage temperature</b>                   | -20 ... 70 °C                                                                                                     |
| <b>Weight</b>                                | 12 g max. conn. vers., 50 g pig-tail vers., 70 g max. (mod. S8-M)                                                 |

## INDICATOR AND SETTING

S8...B01/B51//C/F/M/T51



S8...B53/T53/U/W



- A Output status LED
- B Ready LED or Power ON LED
- C Sensitivity adjustment trimmer
- D Dark/light trimmer
- E Delay trimmer
- F SET push-button
- G Light
- H Dark

Note : T50 has no settings, only indicators

# MODEL SELECTION AND ORDER INFORMATION

| CLEAR DETECTION                           |            |                |              |        |                |           |
|-------------------------------------------|------------|----------------|--------------|--------|----------------|-----------|
| HOUSING                                   | OPTIC TYPE | LIGHT EMISSION | CONNECTION   | OUTPUT | MODEL          | ORDER NO. |
| METAL<br>Stainless Steel (INOX AISI 316L) | Axial      | LASER          | M8 connector | PNP    | S8-MH-5-M53-PP | 950801451 |
|                                           |            | LED            |              |        | S8-MR-5-M53-PP | 950801600 |
| PLASTIC<br>ABS                            |            | LASER          |              |        | S8-PH-5-M53-PP | 950801381 |
|                                           |            | LED            |              |        | S8-PR-5-M53-PP | 950801590 |

| RETROREFLECTIVE FOR TRASPARENT            |            |                  |              |                   |                                                                                                               |           |
|-------------------------------------------|------------|------------------|--------------|-------------------|---------------------------------------------------------------------------------------------------------------|-----------|
| HOUSING                                   | OPTIC TYPE | LIGHT EMISSION   | CONNECTION   | OUTPUT            | MODEL                                                                                                         | ORDER NO. |
| METAL<br>Stainless Steel (INOX AISI 316L) | Coaxial    | LED              | M8 connector | NPN               | S8-MR-5-T50-NH                                                                                                | 950801330 |
|                                           |            |                  |              | PNP               | S8-MR-5-T50-PH                                                                                                | 950801320 |
|                                           |            |                  | M8 connector | NPN               | S8-MR-5-T53-NN                                                                                                | 950801310 |
|                                           |            |                  |              | PNP               | S8-MR-5-T53-PP *                                                                                              | 950801300 |
| PLASTIC<br>ABS                            |            |                  | pig-tail     | NPN               | S8-PR-3-T51-NN                                                                                                | 950801130 |
|                                           |            |                  |              | PNP               | S8-PR-3-T51-PP                                                                                                | 950801120 |
|                                           |            |                  | M8 connector | PNP/NPN/Push Pull | S8-PR-5-T53-OZ<br> IO-Link | 950800005 |
|                                           |            |                  | M8 connector | NPN               | S8-PR-5-T51-NN                                                                                                | 950801050 |
|                                           |            |                  |              | PNP               | S8-PR-5-T51-PP                                                                                                | 950801040 |
|                                           |            |                  | M8 connector | NPN               | S8-PR-5-T53-NN                                                                                                | 950801290 |
|                                           | PNP        | S8-PR-5-T53-PP * |              | 950801280         |                                                                                                               |           |

\*Note: With Auto adaptive function

| POLARIZED RETROREFLECTIVE                    |            |                |              |                   |                |                |                                                                                               |           |
|----------------------------------------------|------------|----------------|--------------|-------------------|----------------|----------------|-----------------------------------------------------------------------------------------------|-----------|
| HOUSING                                      | OPTIC TYPE | LIGHT EMISSION | CONNECTION   | OUTPUT            | MODEL          | ORDER NO.      |                                                                                               |           |
| METAL<br>Stainless Steel<br>(INOX AISI 316L) | Coaxial    | LASER          | M8 connector | NPN               | S8-MH-5-B51-NN | 950801490      |                                                                                               |           |
|                                              |            |                |              | PNP               | S8-MH-5-B51-PP | 950801480      |                                                                                               |           |
|                                              | Axial      | LED            |              | NPN               | S8-MR-5-B01-NN | 950801420      |                                                                                               |           |
|                                              |            |                |              | PNP               | S8-MR-5-B01-PP | 950801410      |                                                                                               |           |
| PLASTIC<br>ABS                               | Coaxial    | LASER          | pig-tail     | NPN               | S8-PH-3-B51-NN | 950801090      |                                                                                               |           |
|                                              |            |                |              | PNP               | S8-PH-3-B51-PP | 950801080      |                                                                                               |           |
|                                              |            |                | M8 connector | NPN               | S8-PH-5-B51-NN | 950801010      |                                                                                               |           |
|                                              |            |                |              | PNP               | S8-PH-5-B51-PP | 950801000      |                                                                                               |           |
|                                              |            |                |              | PNP/NPN/Push Pull |                | S8-PH-5-B53-OZ |  IO-Link | 950800006 |
|                                              |            |                |              |                   |                |                |                                                                                               |           |
|                                              | Axial      | LED            | pig-tail     | NPN               | S8-PR-3-B01-NN | 950801190      |                                                                                               |           |
|                                              |            |                |              | PNP               | S8-PR-3-B01-PP | 950801180      |                                                                                               |           |
|                                              |            |                | M8 connector | NPN               | S8-PR-5-B01-NN | 950801170      |                                                                                               |           |
|                                              |            |                |              | PNP               | S8-PR-5-B01-PP | 950801160      |                                                                                               |           |

| BACKGROUND SUPPRESSION                       |            |                |              |        |                |           |
|----------------------------------------------|------------|----------------|--------------|--------|----------------|-----------|
| HOUSING                                      | OPTIC TYPE | LIGHT EMISSION | CONNECTION   | OUTPUT | MODEL          | ORDER NO. |
| METAL<br>Stainless Steel<br>(INOX AISI 316L) | Axial      | LASER          | M8 connector | NPN    | S8-MH-5-M01-NN | 950801470 |
|                                              |            |                |              | PNP    | S8-MH-5-M01-PP | 950801460 |
|                                              |            | LED            |              | NPN    | S8-MR-5-M01-NN | 950801400 |
|                                              |            |                |              | PNP    | S8-MR-5-M01-PP | 950801390 |
| PLASTIC<br>ABS                               |            | LASER          | pig-tail     | NPN    | S8-PH-3-M01-NN | 950801110 |
|                                              |            |                |              | PNP    | S8-PH-3-M01-PP | 950801100 |
|                                              |            |                | M8 connector | NPN    | S8-PH-5-M01-NN | 950801030 |
|                                              |            |                |              | PNP    | S8-PH-5-M01-PP | 950801020 |
|                                              |            | LED            | pig-tail     | NPN    | S8-PR-3-M01-NN | 950801230 |
|                                              |            |                |              | PNP    | S8-PR-3-M01-PP | 950801220 |
|                                              |            |                | M8 connector | NPN    | S8-PR-5-M01-NN | 950801210 |
|                                              |            |                |              | PNP    | S8-PR-5-M01-PP | 950801200 |

| THROUGH BEAM                                 |            |                |              |         |                |           |
|----------------------------------------------|------------|----------------|--------------|---------|----------------|-----------|
| HOUSING                                      | OPTIC TYPE | LIGHT EMISSION | CONNECTION   | OUTPUT  | MODEL          | ORDER NO. |
| METAL<br>Stainless Steel<br>(INOX AISI 316L) | Axial      | LED            | M8 connector | NPN     | S8-MR-5-F01-NN | 950801570 |
|                                              |            |                |              | PNP     | S8-MR-5-F01-PP | 950801560 |
|                                              |            |                |              | emitter | S8-MR-5-G00-XG | 950801580 |
| PLASTIC<br>ABS                               |            |                | pig-tail     | NPN     | S8-PR-3-F01-NN | 950801530 |
|                                              |            |                |              | PNP     | S8-PR-3-F01-PP | 950801520 |
|                                              |            |                |              | emitter | S8-PR-3-G00-XG | 950801550 |
|                                              |            |                | M8 connector | NPN     | S8-PR-5-F01-NN | 950801510 |
|                                              |            |                |              | PNP     | S8-PR-5-F01-PP | 950801500 |
|                                              |            |                |              | emitter | S8-PR-5-G00-XG | 950801540 |

| CONTRAST (RGB LED EMISSION LIGHT)            |            |                     |                       |                       |                                                                                                                |                |                |           |
|----------------------------------------------|------------|---------------------|-----------------------|-----------------------|----------------------------------------------------------------------------------------------------------------|----------------|----------------|-----------|
| HOUSING                                      | OPTIC TYPE | SWITCHING FREQUENCY | CONNECTION            | OUTPUT                | MODEL                                                                                                          | ORDER NO.      |                |           |
| METAL<br>Stainless Steel<br>(INOX AISI 316L) | Coaxial    | 10 kHz              | M8 connector          | PNP                   | S8-MR-5-W00-PH *                                                                                               | 950801360      |                |           |
|                                              |            |                     |                       | NPN                   | S8-MR-5-W00-NH *                                                                                               | 950801370      |                |           |
|                                              |            |                     |                       | PNP                   | S8-MR-5-W03-PP                                                                                                 | 950801340      |                |           |
|                                              |            |                     |                       | NPN                   | S8-MR-5-W03-NN                                                                                                 | 950801350      |                |           |
| PLASTIC<br>ABS                               |            |                     | M12 pig-tail (150 mm) | PNP                   | S8-PR-3-W03-PP                                                                                                 | 950801140      |                |           |
|                                              |            |                     |                       | NPN                   | S8-PR-3-W03-NN                                                                                                 | 950801150      |                |           |
|                                              |            |                     |                       | M8 connector          | PNP                                                                                                            | S8-PR-5-W03-PP | 950801060      |           |
|                                              |            |                     |                       |                       | NPN                                                                                                            | S8-PR-5-W03-NN | 950801070      |           |
|                                              |            |                     |                       |                       | PNP/NPN/Push Pull<br> IO-Link | S8-PR-5-W03-OZ | 950800004      |           |
|                                              |            |                     |                       |                       | M8 connector                                                                                                   | PNP            | S8-MR-5-W13-PP | 950801670 |
|                                              |            |                     |                       |                       |                                                                                                                | NPN            | S8-MR-5-W13-NN | 950801680 |
|                                              |            |                     |                       |                       |                                                                                                                | PNP            | S8-PR-5-W13-PP | 950801650 |
|                                              |            |                     |                       |                       |                                                                                                                | NPN            | S8-PR-5-W13-NN | 950801660 |
| METAL<br>Stainless Steel<br>(INOX AISI 316L) |            |                     | 25 kHz                | M12 pig-tail (150 mm) | PNP                                                                                                            | S8-PR-3-W13-PP | 950801690      |           |
|                                              |            |                     |                       |                       | NPN                                                                                                            | S8-PR-3-W13-NN | 950801700      |           |
| PLASTIC<br>ABS                               |            |                     |                       |                       |                                                                                                                |                |                |           |

| LUMINESCENCE (UV LED EMISSION LIGHT)         |            |                                                                |              |                                                                                                                |                |           |
|----------------------------------------------|------------|----------------------------------------------------------------|--------------|----------------------------------------------------------------------------------------------------------------|----------------|-----------|
| HOUSING                                      | OPTIC TYPE | SETTINGS                                                       | CONNECTION   | OUTPUT                                                                                                         | MODEL          | ORDER NO. |
| METAL<br>Stainless Steel<br>(INOX AISI 316L) | Coaxial    | Teach-in push-button;<br>L/D trimmer selector;<br>Remote Input | M8 connector | PNP                                                                                                            | S8-MR-5-U03-PP | 950801630 |
|                                              |            |                                                                |              | NPN                                                                                                            | S8-MR-5-U03-NN | 950801640 |
| PNP                                          |            |                                                                |              | S8-PR-5-U03-PP                                                                                                 | 950801610      |           |
| NPN                                          |            |                                                                |              | S8-PR-5-U03-NN                                                                                                 | 950801620      |           |
| PLASTIC<br>ABS                               |            |                                                                | pig-tail     | PNP/NPN/Push Pull<br> IO-Link | S8-PR-5-U03-OZ | 950800007 |
|                                              |            |                                                                |              | PNP                                                                                                            | S8-PR-3-U03-PP | 950801710 |
|                                              | NPN        | S8-PR-3-U03-NN                                                 |              | 950801720                                                                                                      |                |           |

| MODEL         | FUNCTION                              | ORDER No. |
|---------------|---------------------------------------|-----------|
| ST-S8-FRM     | mounting bracket for standard frame   | 95ACC7860 |
| ST-5072       | mounting bracket                      | 95ACC1470 |
| R4K           | IP69K plastic reflector 51 x 61 mm    | 95A151220 |
| ST-S8-TL-LD46 | TL-LD46 adapting bracket              | 95ACC3430 |
| ST-S8-S3Z     | S8-miniature sensors adapting bracket | 95ACC3440 |
| ST-0387       | Adapter bracket S8/S41                | 95ACC3410 |

| IO-LINK CONNECTIVITY |                                          |           |
|----------------------|------------------------------------------|-----------|
| MODEL                | DESCRIPTION                              | ORDER No. |
| CBX-8IOL-EIP         | CBX-8IOL-EIP 8P IOL M12 EIP MASTER       | 95ACC8180 |
| CBX-8IOL-PNIO        | CBX-8IOL-PNIO 8P IOL M12 PROFINET MASTER | 95ACC8190 |

## CABLES

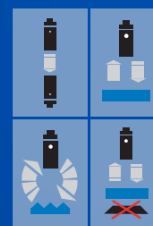
| TYPE                                     | DESCRIPTION                                                                                                | LENGTH | MODEL         | ORDER No. |
|------------------------------------------|------------------------------------------------------------------------------------------------------------|--------|---------------|-----------|
| Axial M8 Connector                       | 4-pole, grey, P.V.C.                                                                                       | 3 m    | CS-B1-02-G-03 | 95A251420 |
|                                          |                                                                                                            | 5 m    | CS-B1-02-G-05 | 95A251430 |
|                                          |                                                                                                            | 7 m    | CS-B1-02-G-07 | 95A251440 |
|                                          |                                                                                                            | 10 m   | CS-B1-02-G-10 | 95A251480 |
|                                          | 4-pole, P.U.R.                                                                                             | 2 m    | CS-B1-02-R-02 | 95A251620 |
|                                          |                                                                                                            | 5 m    | CS-B1-02-R-05 | 95A251640 |
| Radial M8 Connector                      | 4-pole, grey, P.V.C.                                                                                       | 3 m    | CS-B2-02-G-03 | 95A251450 |
|                                          |                                                                                                            | 5 m    | CS-B2-02-G-05 | 95A251460 |
|                                          |                                                                                                            | 7 m    | CS-B2-02-G-07 | 95A251470 |
|                                          |                                                                                                            | 10 m   | CS-B2-02-G-10 | 95A251530 |
|                                          | 4-pole, P.U.R.                                                                                             | 2 m    | CS-B2-02-R-02 | 95A251630 |
|                                          |                                                                                                            | 5 m    | CS-B2-02-R-05 | 95A251650 |
| Axial M12-M/M8-F Double Headed Connector | 4-pole, PVC<br> IO-Link | 3 m    | CS-H1-02-B-03 | 95ACC0008 |





## QF series

Metallic cubic miniaturized photoelectric sensors  
For harsh environments or food and beverage applications



Metallic cubic  
miniaturized

### features

- AISI 316L Stainless steel housing
- IP67-IP68-IP69K protection degree
- Totally protected against electrical damages
- Complementary outputs (NO + NC)
- CE e cULus listed approval



### web content

- Application notes
- Photos
- Catalogue / Manuals

IP69K ECOLAB<sup>®</sup> cUL<sup>®</sup>US CE

### code description

|              |    | QF R N / B P - 1 F                                                                                         |  |  |  |  |  |  |  |  |  |
|--------------|----|------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|
| series       | QF | Metallic cubic miniaturized photoelectric sensors for harsh environments or food and beverage applications |  |  |  |  |  |  |  |  |  |
| emission     | I  | Infrared emission                                                                                          |  |  |  |  |  |  |  |  |  |
|              | R  | Red emission                                                                                               |  |  |  |  |  |  |  |  |  |
| model        | 4  | Direct reflection 200 mm (wide spot)                                                                       |  |  |  |  |  |  |  |  |  |
|              | 8  | Direct reflection 1000 mm                                                                                  |  |  |  |  |  |  |  |  |  |
|              | S  | Background suppression                                                                                     |  |  |  |  |  |  |  |  |  |
|              | N  | Polarized                                                                                                  |  |  |  |  |  |  |  |  |  |
|              | H  | Emitter                                                                                                    |  |  |  |  |  |  |  |  |  |
|              | D  | Receiver                                                                                                   |  |  |  |  |  |  |  |  |  |
| output       | 0  | Emitter                                                                                                    |  |  |  |  |  |  |  |  |  |
|              | B  | Complementary outputs (NO + NC)                                                                            |  |  |  |  |  |  |  |  |  |
| logic output | N  | NPN logic output                                                                                           |  |  |  |  |  |  |  |  |  |
|              | P  | PNP logic output                                                                                           |  |  |  |  |  |  |  |  |  |
| housing      | 1  | Stainless steel AISI 316L                                                                                  |  |  |  |  |  |  |  |  |  |
| connection   | A  | Cable (length 2m)                                                                                          |  |  |  |  |  |  |  |  |  |
|              | F  | Plug M8 4 poles                                                                                            |  |  |  |  |  |  |  |  |  |

### available models

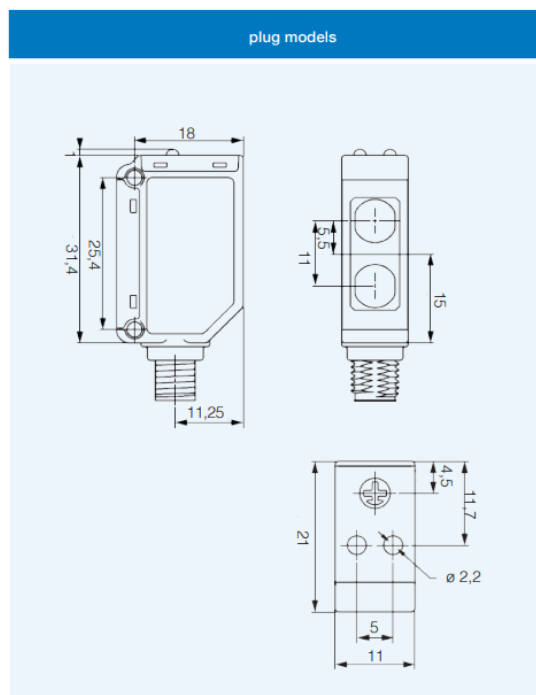
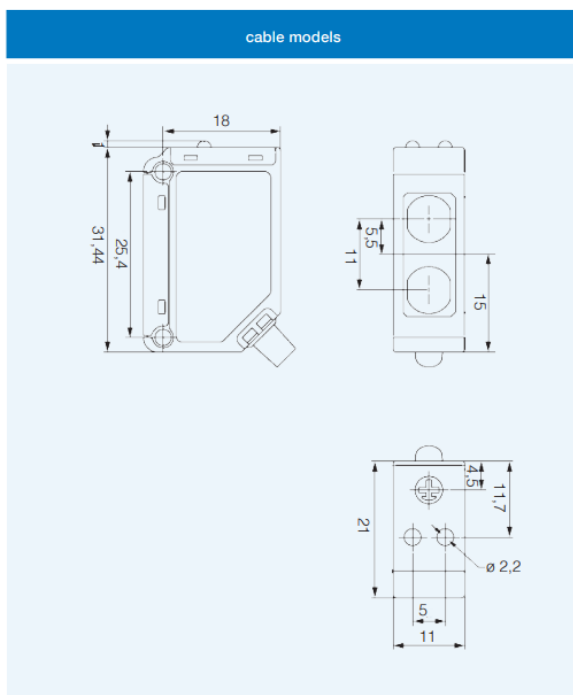
| model                  | distance | emission | adjustment | housing  | cable       |             | plug M8     |             |            |
|------------------------|----------|----------|------------|----------|-------------|-------------|-------------|-------------|------------|
|                        |          |          |            |          | NPN (NO+NC) | PNP (NO+NC) | NPN (NO+NC) | PNP (NO+NC) |            |
| diffuse reflection     | 200 mm   | infrared | ●          | metallic | QFI4/BN-1A  | QFI4/BP-1A  | QFI4/BN-1F  | QFI4/BP-1F  |            |
|                        | 1000 mm  | red      |            |          | QFR8/BN-1A  | QFR8/BP-1A  | QFR8/BN-1F  | QFR8/BP-1F  |            |
| background suppression | 200 mm   |          |            |          | QFRS/BN-1A  | QFRS/BP-1A  | QFRS/BN-1F  | QFRS/BP-1F  |            |
| polarized              | 6 m      |          |            |          | QFRN/BN-1A  | QFRN/BP-1A  | QFRN/BN-1F  | QFRN/BP-1F  |            |
| emitter                | 15 m     | infrared |            |          | -           | QFIH/00-1A  | -           | QFIH/00-1F  | -          |
| riceiver               | 15 m     | infrared |            |          | ●           | QFID/BN-1A  | QFID/BP-1A  | QFID/BN-1F  | QFID/BP-1F |



## technical specification

|                                | diffuse reflection                                                                |              | background suppression                                                            | polarized                                                                          | emitter                                                                             | receiver                   |
|--------------------------------|-----------------------------------------------------------------------------------|--------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------|
|                                | QFI4/B*-1*                                                                        | QFR8/B*-1*   | QFRS/B*-1*                                                                        | QFRN/B*-1*                                                                         | QFIH/00-1*                                                                          | QFID/B*-1*                 |
|                                |  |              |  |  |  |                            |
| nominal sensing distance (Sn)  | 200 mm (wide angle)                                                               | 1 m          | 25...200 mm                                                                       | 6 m                                                                                | 15 m                                                                                |                            |
| scanning adjustment range (Sr) | 20...200 mm                                                                       | 0,1..1 m     | 25...200 mm                                                                       | 1,7...6 m                                                                          | -                                                                                   | -                          |
| hysteresis                     | ≤ 20%                                                                             |              | ≤ 10%                                                                             | ≤ 20%                                                                              | -                                                                                   | ≤ 20%                      |
| emission                       | Infrared (850 nm)                                                                 | Red (617 nm) |                                                                                   | Red (625 nm)                                                                       | Infrared(850 nm)                                                                    | -                          |
| supply voltage                 | 10...30Vdc                                                                        |              |                                                                                   |                                                                                    |                                                                                     |                            |
| ripple                         | ≤ 10%                                                                             |              |                                                                                   |                                                                                    |                                                                                     |                            |
| no-load supply current         | ≤ 25 mA                                                                           |              | ≤ 40 mA                                                                           | ≤ 25 mA                                                                            |                                                                                     | ≤ 20 mA                    |
| load current                   | ≤ 100 mA                                                                          |              |                                                                                   |                                                                                    |                                                                                     |                            |
| leakage current                | 100 µA                                                                            |              |                                                                                   |                                                                                    |                                                                                     |                            |
| output voltage drop            | 2 Vdc @ 100 mA                                                                    |              |                                                                                   |                                                                                    |                                                                                     |                            |
| output type                    | PNP or NPN (NO + NC)                                                              |              |                                                                                   | PNP or NPN (NO + NC)                                                               |                                                                                     | PNP or NPN (NO + NC)       |
| switching frequency            | 1 kHz                                                                             |              | 500 Hz                                                                            | 1 kHz                                                                              |                                                                                     | 500 Hz                     |
| power on delay                 | 30 ms                                                                             |              |                                                                                   | 30ms                                                                               | 30ms                                                                                | 200ms                      |
| operating temperature range    | -25°C...+60°C (without freeze)                                                    |              |                                                                                   |                                                                                    |                                                                                     |                            |
| power supply protection        | polarity reversal, transient                                                      |              |                                                                                   |                                                                                    |                                                                                     |                            |
| output electrical protection   | short circuit (auto reset)                                                        |              |                                                                                   |                                                                                    | -                                                                                   | short circuit (auto reset) |
| sensing adjustment             | Trimmer (210°)                                                                    |              |                                                                                   | Trimmer (210°)                                                                     | -                                                                                   | Trimmer (210°)             |
| protection degree              | IP68, IP69K                                                                       |              |                                                                                   |                                                                                    |                                                                                     |                            |
| EMC                            | conformity with the EMC directive according to EN 60947-5-2                       |              |                                                                                   |                                                                                    |                                                                                     |                            |
| external light interference    | ≤ 10.000 lux                                                                      |              |                                                                                   | ≤ 10.000 lux                                                                       |                                                                                     | ≤ 10.000 lux               |
| housing material               | Stainless steel AISI 316L                                                         |              |                                                                                   |                                                                                    |                                                                                     |                            |
| optical material               | PPSU                                                                              |              |                                                                                   |                                                                                    |                                                                                     |                            |
| weight (approximate)           | ≤ 100gr (cable); ≤ 65gr (plug)                                                    |              |                                                                                   |                                                                                    |                                                                                     |                            |

## dimensions (mm)



IP69K



# SH4

TYPE 4  
SAFETY LIGHT  
CURTAINS

# SH4

## TYPE 4 SAFETY LIGHT CURTAINS



- Complete type 4 safety light curtains line
- Finger (14 mm), hand (30 mm), or body protection
- Improved performance and features
- Compact profile (35 x 40 mm)
- Wide range scalable in Base, Standard and Advanced models
- Simultaneous muting and blanking
- Innovative wireless monitoring and configuration system
- Optical two beams synchronization and anti-interference coding

- Base functions: alignment, automatic restart
- Standard functions: manual restart, EDM
- Standard Muting functions: 2-signals mono and bidirectional muting, override
- Advanced functions: partial muting, dynamic partial muting, 4-signals muting, reduced resolution, multiple fixed or floating blanking zones
- Active/Passive version for body protection



### CODE DESCRIPTION

|                              |      |                                              | SH | 4 | - | 14 | - | 0300 | - | SM | - | AP | - | 8 | - | 5 |
|------------------------------|------|----------------------------------------------|----|---|---|----|---|------|---|----|---|----|---|---|---|---|
| series                       | SH   | Safety light curtain                         |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
| type                         | 4    | Type 4                                       |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
| detection capability         | 14   | Finger: 14 mm                                |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
|                              | 30   | Hand: 30 mm                                  |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
|                              | 2    | Body: 2 Beams                                |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
|                              | 3    | Body: 3 Beams                                |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
|                              | 4    | Body: 4 Beams                                |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
| monitored height             | 0300 | 300 mm                                       |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
|                              | ...  |                                              |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
|                              | 2250 | 2250 mm                                      |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
| functionality                | B    | Base                                         |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
|                              | S    | Standard                                     |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
|                              | SM   | Standard muting                              |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
|                              | A    | Advanced                                     |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
|                              | C    | Cascade                                      |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
| optical structure            |      | Emitter and receiver                         |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
|                              | AP   | Active side and retroreflective passive side |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
| receiver main connector      | 5    | 5-pins male M12                              |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
|                              | 8    | 8-pins male M12                              |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
|                              | 12   | 12-pins male M12                             |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
| receiver secondary connector |      | No connector                                 |    |   |   |    |   |      |   |    |   |    |   |   |   |   |
|                              | 5    | 5-pin female M12                             |    |   |   |    |   |      |   |    |   |    |   |   |   |   |

## TECHNICAL FEATURES

|                                                                            | SH4-14-****-***-*                                                                                                                                                                                                                                                                                                                                                                                                                                               | SH4-30-****-***-*                                                                   |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                |  |
| Protection                                                                 | finger                                                                                                                                                                                                                                                                                                                                                                                                                                                          | hand                                                                                |
| Type ( EN61496-1 )                                                         | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                     |
| PL ( EN ISO 13849-1 )                                                      | e                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                     |
| SIL ( IEC 61508 )                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                     |
| Optical structure                                                          | Emitter and Receiver                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                     |
| Protected height                                                           | 300...2250 mm (with 150 mm steps)                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                     |
| Detection capability                                                       | 14 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 30 mm                                                                               |
| Operating range                                                            | 0.2 ... 10 m                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.2 ... 20 m                                                                        |
| Operating distance using muting arms (SG-F1/G1-ARMS and SG-F2/G2-ARMS)     | 0.5 ... 7 m                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                     |
| Operating distance using reflective muting arms (SH4-T-ARMS or SH4-L-ARMS) | 0.5 ... 3 m                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                     |
| Dead Zone                                                                  | No dead zone                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                     |
| Cascade connection                                                         | Up to 3 units                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                     |
| Power supply (Vdc)                                                         | 24 Vdc $\pm$ 20%                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                     |
| Transmitter consumption                                                    | 3.5 W max                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                     |
| Receiver consumption                                                       | 5.5 W max (without load)                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                     |
| Safe Outputs                                                               | 2 OSSD, with short circuit protection                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                     |
| Auxiliary Outputs                                                          | 2 PNP, with short circuit protection                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                     |
| Output current                                                             | 250 mA max / each output, 500 mA max total outputs                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                     |
| Capacitive load                                                            | 1 $\mu$ F @ 24Vdc max                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                     |
| Leakage current                                                            | < 1 mA                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     |
| Response time                                                              | from 12 to 30 ms (14 mm res)                                                                                                                                                                                                                                                                                                                                                                                                                                    | from 10 to 19 ms (30 mm res)                                                        |
| Cables length                                                              | 30 m                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                     |
| Electrical protection                                                      | Class III                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                     |
| Light source                                                               | Infrared LED (850 nm wavelength)                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                     |
| Effective aperture angle (EAA)                                             | < $\pm$ 2.5° at 3 m                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                     |
| Operating temperature                                                      | -30 ... +55 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                     |
| Storage temperature                                                        | -30 ... +70 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                     |
| Temperature class                                                          | T6                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                     |
| Humidity                                                                   | 15 ... 95 % (no condensation)                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                     |
| Mechanical protection                                                      | IP65, IP 67 (EN 60529)                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     |
| Vibrations resistance                                                      | 10 mm / 3 g, 5 ... 150 Hz frequency (EN 60068-2-6 / Class 3M7 IEC TR 60721-4-3)                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                     |
| Shock resistance                                                           | 25 g x 6 ms x 600 (EN 60068-2-27 / Class 3M7 IEC TR 60721-4-3)                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                     |
| Weight                                                                     | 1.4 Kg/m (single bar, without package)                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     |
| Housing Material                                                           | Painted aluminium (yellow RAL 1003)                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                     |
| Caps and covers material                                                   | PBT                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                     |
| Window material                                                            | MAKROLON AR 7099 Clear PC                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                     |
| Functions BASE models (SH4-*-B-*)                                          | Automatic Restart                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                     |
| Functions STANDARD models (SH4-*-S-*)                                      | Manual / Automatic Restart, Reset, External Device Monitoring (EDM), Alignment mode                                                                                                                                                                                                                                                                                                                                                                             |                                                                                     |
| Functions STANDARD MUTING models (SH4-*-SM-*)                              | Manual / Automatic Restart, Reset, External Device Monitoring (EDM), Alignment mode, 2-signals T Muting / L Muting, Muting dependent Override, Partial muting (half protection height), Muting input filtering and timeout setting, Anti-interference coding                                                                                                                                                                                                    |                                                                                     |
| Functions ADVANCED models (SH4-*-A-*)                                      | Manual / Automatic Restart, Reset, External Device Monitoring (EDM), Alignment mode, 2-signals T Muting / L Muting, Muting dependent Override, Partial muting (half protection height), Muting input filtering and timeout setting, Anti-interference coding, 4-signals Muting, Dynamic partial muting, Partial Muting (at beams level), Fixed Blanking, External signal fixed blanking teach-in, Floating Blanking, Reduced resolution, Integrated laser aimer |                                                                                     |
| Functions CASCADE models (SH4-*-C-*)                                       | Cascade models acquire the same functions of the main unit to which they are connected (STANDARD MUTING or ADVANCED)                                                                                                                                                                                                                                                                                                                                            |                                                                                     |
| Configuration BASE models (SH4-*-B-*) and STANDARD models (SH4-*-S-*)      | By Wiring                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                     |
| Configuration STANDARD MUTING models (SH4-*-SM-*)                          | By DIP-Switches                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                     |
| Configuration ADVANCED models (SH4-*-A-*)                                  | By DATASENSING SH4 DESIGNER and wi-fi connection                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                     |

|                                                                            | SH4-2-0500-**-***                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SH4-3-0800-**-*** | SH4-4-****-**-*** |
|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------|
|                                                                            | <br>body                                                                                                                                                                                                                                                                                                                                                                                        |                   |                   |
| Protection                                                                 | body                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                   |                   |
| Type ( EN61496-1 )                                                         | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                   |
| PL ( EN ISO 13849-1 )                                                      | e                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                   |
| SIL ( IEC 61508 )                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                   |
| Optical structure                                                          | Emitter and Receiver                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                   |                   |
| Protected height                                                           | 500 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 800 mm            | 900 or 1200 mm    |
| Detection capability                                                       | 500 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 400 mm            | 300 or 400 mm     |
| Operating range                                                            | Short range: 0.5 ... 15 m (default value); Long range: 5 ... 70 m (selectable)                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                   |
| Operating distance using muting arms (SG-F1/G1-ARMS and SG-F2/G2-ARMS)     | 0.5 ... 7 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                   |                   |
| Operating distance using reflective muting arms (SH4-T-ARMS or SH4-L-ARMS) | 0.5 ... 3 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                   |                   |
| Dead Zone                                                                  | 130 mm Distance from bottom to first beam                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |                   |
| Cascade connection                                                         | Not possible                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                   |                   |
| Power supply (Vdc)                                                         | 24 Vdc $\pm$ 20%                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                   |                   |
| Transmitter consumption                                                    | 3.5 W max                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |                   |
| Receiver consumption                                                       | 5.5 W max (without load)                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                   |                   |
| Safe Outputs                                                               | 2 OSSD, with short circuit protection                                                                                                                                                                                                                                                                                                                                                                                                                                            |                   |                   |
| Auxiliary Outputs                                                          | 2 PNP, with short circuit protection                                                                                                                                                                                                                                                                                                                                                                                                                                             |                   |                   |
| Output current                                                             | 250 mA max / each output, 500 mA max total outputs                                                                                                                                                                                                                                                                                                                                                                                                                               |                   |                   |
| Capacitive load                                                            | 1 uF @ 24Vdc max                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                   |                   |
| Leakage current                                                            | < 1 mA                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                   |                   |
| Response time                                                              | from 12 to 15 ms                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                   |                   |
| Cables length                                                              | 30 m receiver; 50 m transmitter                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   |                   |
| Electrical protection                                                      | Class III                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |                   |
| Light source                                                               | Infrared LED (850 nm wavelength)                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                   |                   |
| Effective aperture angle (EAA)                                             | < $\pm$ 2.5° at 3 m                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   |                   |
| Operating temperature                                                      | -30 ... +55 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                   |
| Storage temperature                                                        | -30 ... +70 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                   |
| Temperature class                                                          | T6                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                   |                   |
| Humidity                                                                   | 15 ... 95 % (no condensation)                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                   |                   |
| Mechanical protection                                                      | IP65, IP 67 (EN 60529)                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                   |                   |
| Vibrations resistance                                                      | 10 mm / 3 g, 5 ... 150 Hz frequency (EN 60068-2-6 / Class 3M7 IEC TR 60721-4-3)                                                                                                                                                                                                                                                                                                                                                                                                  |                   |                   |
| Shock resistance                                                           | 25 g x 6 ms x 600 (EN 60068-2-27 / Class 3M7 IEC TR 60721-4-3)                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                   |
| Weight                                                                     | 1.4 Kg/m (single bar, without package)                                                                                                                                                                                                                                                                                                                                                                                                                                           |                   |                   |
| Housing Material                                                           | Painted aluminium (yellow RAL 1003)                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   |                   |
| Caps and covers material                                                   | PBT                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   |                   |
| Window material                                                            | MAKROLON AR 7099 Clear PC                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |                   |
| Functions BASE models (SH4-*-B-*)                                          | Automatic Restart                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                   |
| Functions STANDARD models (SH4-*-S-*)                                      | Manual / Automatic Restart, Reset, External Device Monitoring (EDM), Alignment mode                                                                                                                                                                                                                                                                                                                                                                                              |                   |                   |
| Functions STANDARD MUTING models (SH4-*-SM-*)                              | Manual / Automatic Restart, Reset, External Device Monitoring (EDM), Alignment mode, 2-signals T Muting / L Muting, Muting dependent Override, Partial muting (half protection height), Muting input filtering and timeout setting, Anti-interference coding                                                                                                                                                                                                                     |                   |                   |
| Functions ADVANCED models (SH4-*-A-*)                                      | Manual / Automatic Restart, Reset, External Device Monitoring (EDM), Alignment mode, 2-signals T Muting / L Muting, Muting dependent Override, Partial muting (half protection height), Muting input filtering and timeout setting, Anti-interference coding, 4-signals Muting, Dynamic partial muting, Partial Muting (at beams level), Fixed Blanking, External signal fixed blanking teach-in, Floating Blanking, Reduced resolution, Integrated red LED aimers for each beam |                   |                   |
| Configuration BASE models (SH4-*-B-*) and STANDARD models (SH4-*-S-*)      | By Wiring                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |                   |
| Configuration STANDARD MUTING models (SH4-*-SM-*)                          | By DIP-Switches                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   |                   |
| Configuration ADVANCED models (SH4-*-A-*)                                  | By DATASENSING SH4 DESIGNER and wi-fi connection                                                                                                                                                                                                                                                                                                                                                                                                                                 |                   |                   |

# SLIM



Highest mechanical flexibility for a perfect fit into machine structures

Simple commissioning and maintenance

High functional performance

- SLIM profile: 15 x 32 mm
- Pigtail cable with 5-pole M12 connectors
- Same cable for Emitter and Receiver
- No Dead Zone
- 14, 24 and 34 mm resolution
- 34 different protection lengths, with 30 mm modularity
- 3 different brackets shapes
- Cascadable up to 3 units
- Auto/Manual restart and EDM function configuration by wiring
- LED display messages diagnosis

## APPLICATIONS

- Primary packaging machinery (packing, filling, labelling, etc...)
- Cutting machinery
- Automatic assembly machines and lines
- Automatic and semi-automatic quality inspection machinery
- Material handling machinery
- Bending and metal-working machinery
- Process lines



## INDUSTRIES

- Food & Beverage
- Electronics
- Automotive
- Metal working

|        | FINGER | HAND | ARM | BODY |
|--------|--------|------|-----|------|
| Type 2 | x      | x    |     |      |
| Type 4 | x      | x    |     |      |

**SL2 - 14 - 0150 - E**

| TYPE |        |
|------|--------|
| 2    | Type 2 |
| 4    | Type 4 |

| RESOLUTION |                |
|------------|----------------|
| 14         | Finger : 14 mm |
| 24         | Hand: 24 mm    |
| 34         | Hand: 34 mm    |

| MONITORED HEIGHT |         |
|------------------|---------|
| 0150             | 150 mm  |
| 0210             | 210 mm  |
| 0270             | 270 mm  |
| 0300             | 300 mm  |
| ...              |         |
| 1200             | 1200 mm |

| VERSION |              |
|---------|--------------|
| E       | EDM, Restart |

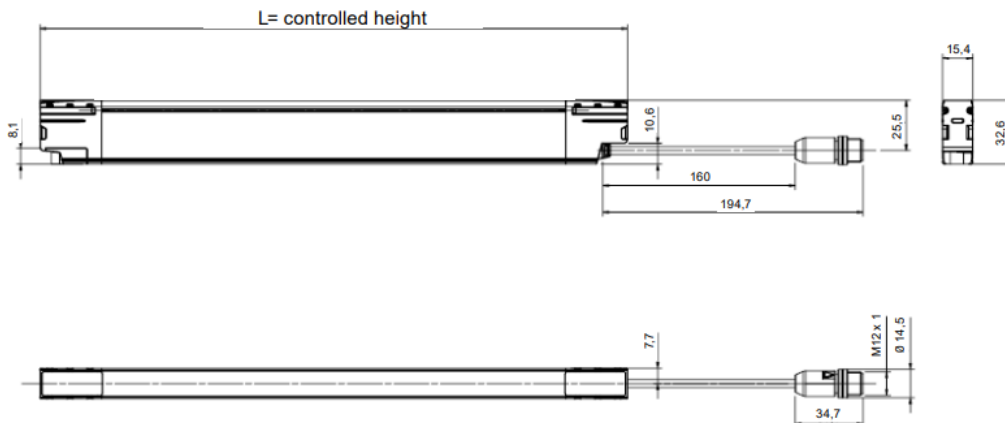
## TECHNICAL DATA

|                                   | SL2<br>[SL2-xx-xxxx-E]                                                                                                                                             | SL4<br>[SL4-xx-xxxx-E] |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| GENERAL DATA                      |                                                                                                                                                                    |                        |
| Type (EN61496-1)                  | 2                                                                                                                                                                  | 4                      |
| PL (EN ISO 13849-1)               | c                                                                                                                                                                  | e                      |
| SIL (IEC 61508)                   | 1                                                                                                                                                                  | 3                      |
| Resolution                        | 14 - 24 - 34 mm                                                                                                                                                    |                        |
| Protected heights                 | 150<br>210<br>270 ... 1200 (with 30 mm steps)                                                                                                                      |                        |
| Operating distance                | 0.2 ...6 m                                                                                                                                                         |                        |
| ELECTRICAL DATA                   |                                                                                                                                                                    |                        |
| Power supply (Vdd)                | 24 Vdc ± 20%                                                                                                                                                       |                        |
| Outputs                           | 2 PNP                                                                                                                                                              |                        |
| Output current                    | 0.3 A max / each output                                                                                                                                            |                        |
| Capacitive load                   | 1 uF @ 24Vdc max                                                                                                                                                   |                        |
| Response time*                    | RT = 7 ... 17 ms (14 mm resolution)<br>RT = 7 ... 13 ms (24 mm resolution)<br>RT = 7 ... 15 ms (34 mm resolution)<br>Cascade Response time (up to 3 units) <= 20ms |                        |
| Cables length (for power supply)  | 20 m max                                                                                                                                                           |                        |
| MECHANICAL AND ENVIRONMENTAL DATA |                                                                                                                                                                    |                        |
| Operating temperature             | -10 ...+55 °C                                                                                                                                                      |                        |
| Storage temperature               | -25° ... 70°C                                                                                                                                                      |                        |
| Humidity                          | 15 ... 95 % (no condensation)                                                                                                                                      |                        |
| Mechanical protection             | IP65 (EN 60529)                                                                                                                                                    |                        |
| Housing material                  | Painted Aluminium, Painted Zamak                                                                                                                                   |                        |
| Window material                   | PMMA                                                                                                                                                               |                        |
| FUNCTIONS                         |                                                                                                                                                                    |                        |
|                                   | Manual/Automatic restart                                                                                                                                           |                        |
|                                   | External Device Monitoring (EDM)                                                                                                                                   |                        |
|                                   | Alignment mode                                                                                                                                                     |                        |
| NOTE                              |                                                                                                                                                                    |                        |

NOTE

\* Response time is dependent on height: for more details refer to product manual

## DIMENSIONS



| MODEL         | L (mm) |
|---------------|--------|
| SLx-yy-0150-E | 150    |
| SLx-yy-0210-E | 210    |
| SLx-yy-0270-E | 270    |
| SLx-yy-0300-E | 300    |
| SLx-yy-0330-E | 330    |
| SLx-yy-0360-E | 360    |
| SLx-yy-0390-E | 390    |
| SLx-yy-0420-E | 420    |
| SLx-yy-0450-E | 450    |
| SLx-yy-0480-E | 480    |
| SLx-yy-0510-E | 510    |
| SLx-yy-0540-E | 540    |
| SLx-yy-0570-E | 570    |
| SLx-yy-0600-E | 600    |
| SLx-yy-0630-E | 630    |
| SLx-yy-0660-E | 660    |
| SLx-yy-0690-E | 690    |
| SLx-yy-0720-E | 720    |
| SLx-yy-0750-E | 750    |
| SLx-yy-0780-E | 780    |
| SLx-yy-0810-E | 810    |
| SLx-yy-0840-E | 840    |
| SLx-yy-0870-E | 870    |
| SLx-yy-0900-E | 900    |
| SLx-yy-0930-E | 930    |
| SLx-yy-0960-E | 960    |
| SLx-yy-0990-E | 990    |
| SLx-yy-1020-E | 1020   |
| SLx-yy-1050-E | 1050   |
| SLx-yy-1080-E | 1080   |
| SLx-yy-1110-E | 1110   |
| SLx-yy-1140-E | 1140   |
| SLx-yy-1170-E | 1170   |
| SLx-yy-1200-E | 1200   |





**SG Body Compact Base / Muting** SAFETY LIGHT CURTAINS

# SG Body Compact Base / Muting

## COMPACT TYPE 2 AND TYPE 4 SAFETY LIGHT GRID FOR BODY DETECTION



Safety light curtain with compact housing and long operating range, ideal for access or perimeter control. Integrated muting and override functions.

- Body access detection
- Perimeter control
- Rapid solution for access control with muting

- Easy installation and alignment
- L and T muting models provided with Retroreflective Muting Arms
- Two, three or four beams for body protection
- Controlled heights of 500, 800, 900 and 1200 mm
- Long operating distance: up to 50 m
- Simple configuration through DIP switches
- Integrated muting lamp (only on muting models)



## CODE DESCRIPTION

|                       |            |                                                                   |
|-----------------------|------------|-------------------------------------------------------------------|
|                       |            | <b>SG 2 - S2 - 050 - PP - X</b>                                   |
| serie                 | <b>SG</b>  | SG Body Compact Base / Muting                                     |
| type                  | <b>2</b>   | Type 2                                                            |
|                       | <b>4</b>   | Type 4                                                            |
| beams and muting arms | <b>S2</b>  | 2 beams                                                           |
|                       | <b>S3</b>  | 3 beams                                                           |
|                       | <b>S4</b>  | 4 beams                                                           |
|                       | <b>T2</b>  | 2 Beams with T muting arms (RRX)                                  |
|                       | <b>T3</b>  | 3 Beams with T muting arms (RRX)                                  |
|                       | <b>L2</b>  | 2 Beams with L muting arms (RRX)                                  |
|                       | <b>L3</b>  | 2 Beams with L muting arms (RRX)                                  |
| monitored height      | <b>050</b> | 500 mm (2 beams)                                                  |
|                       | <b>080</b> | 800 mm (3 beams)                                                  |
|                       | <b>090</b> | 900 mm (4 beams)                                                  |
|                       | <b>120</b> | 1200 mm (4 beams)                                                 |
| output                | <b>PP</b>  |                                                                   |
| functionality         | <b>X</b>   | Basic (automatic restart)                                         |
|                       | <b>E</b>   | Standard (auto/manual restart, EDM)                               |
|                       | <b>W</b>   | Integrated Muting, configurable with DIP switches, two connectors |
|                       | <b>N</b>   | Integrated Muting, configurable with DIP switches, one connector  |

# Body Compact Base / Muting

SAFETY LIGHT CURTAINS

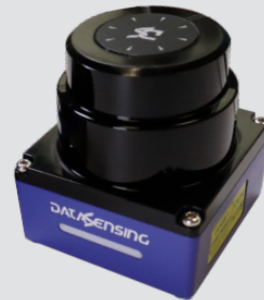
|                               | SG*-2-***-PP-*                                                                                                                                                                                                                                                                                     | SG*-3-***-PP-*       | SG*-4-090-PP-*        | SG*-4-120-PP-*                            |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------------|-------------------------------------------|
|                               | <div><div></div><div></div><div></div></div> |                      |                       |                                           |
| GENERAL DATA                  |                                                                                                                                                                                                                                                                                                    |                      |                       |                                           |
| Operating principle           | Emitter + Receiver                                                                                                                                                                                                                                                                                 |                      |                       |                                           |
| Detection capability          | 500 mm                                                                                                                                                                                                                                                                                             | 400 mm               | 300 mm                |                                           |
| MONITORED AREA                |                                                                                                                                                                                                                                                                                                    |                      |                       |                                           |
| Nominal sensing distance      | 0.5 ... 50 m                                                                                                                                                                                                                                                                                       |                      |                       |                                           |
| Controlled height             | 500 mm                                                                                                                                                                                                                                                                                             | 800 mm               | 900 mm                | 1200 mm                                   |
| EMISSION DATA                 |                                                                                                                                                                                                                                                                                                    |                      |                       |                                           |
| Emission                      | Infrared LED (880nm)                                                                                                                                                                                                                                                                               |                      |                       |                                           |
| Effective beam angle          | ≤ ±2.5 ° (SG4-**-***-PP-*), ≤ ±5 ° (SG2-**-***-PP-*)                                                                                                                                                                                                                                               |                      |                       |                                           |
| FUNCTIONS                     |                                                                                                                                                                                                                                                                                                    |                      |                       |                                           |
| Available functions           | Automatic Restart (SG*-**-***-PP-X), Manual/Automatic Restart, EDM (SG*-**-***-PP-E), Manual/Automatic Restart, EDM, L/T Muting, Override (SG*-**-***-PP-W), Manual/Automatic Restart, EDM, L/T Muting, Partial Muting, Override, Range Reduction (on TX) (SG*-**-***-PP-N)                        |                      |                       |                                           |
| Included accessories          | Standard "L" Mounting Brackets: 4 pcs kit                                                                                                                                                                                                                                                          |                      |                       | Standard "L" Mounting Brackets: 6 pcs kit |
| SAFETY PARAMETERS             |                                                                                                                                                                                                                                                                                                    |                      |                       |                                           |
| Type                          | 2 (SG2-**-***-PP-*), 4 (SG4-**-***-PP-*)                                                                                                                                                                                                                                                           |                      |                       |                                           |
| PL                            | c (SG2-**-***-PP-*), e (SG4-**-***-PP-*)                                                                                                                                                                                                                                                           |                      |                       |                                           |
| SIL                           | SIL 1 (IEC 61508) (SG2-**-***-PP-*), SIL 3 (IEC 61508) (SG4-**-***-PP-*)                                                                                                                                                                                                                           |                      |                       |                                           |
| INPUT/OUTPUT                  |                                                                                                                                                                                                                                                                                                    |                      |                       |                                           |
| Output type                   | 2 x PNP (OSSD safety output)                                                                                                                                                                                                                                                                       |                      |                       |                                           |
| ELECTRICAL DATA               |                                                                                                                                                                                                                                                                                                    |                      |                       |                                           |
| Supply voltage                | 24 Vdc ±20%                                                                                                                                                                                                                                                                                        |                      |                       |                                           |
| Power consumption - Emitter   | ≤ 0.9 W                                                                                                                                                                                                                                                                                            |                      |                       |                                           |
| Power consumption - Receiver  | ≤ 2.2 W without load                                                                                                                                                                                                                                                                               |                      |                       |                                           |
| Maximum DC load current       | 500 mA each output                                                                                                                                                                                                                                                                                 |                      |                       |                                           |
| Capacitive load tolerated     | ≤ 65 nF                                                                                                                                                                                                                                                                                            |                      |                       |                                           |
| Equivalent resistive load     | ≥ 56 Ω                                                                                                                                                                                                                                                                                             |                      |                       |                                           |
| MECHANICAL DATA               |                                                                                                                                                                                                                                                                                                    |                      |                       |                                           |
| Dimensions                    | 35 x 41.9 x (664) mm                                                                                                                                                                                                                                                                               | 35 x 41.9 x (964) mm | 35 x 41.9 x (1064) mm | 35 x 41.9 x (1364) mm                     |
| Material                      | Painted aluminum / PMMA / PC Lexan 943A                                                                                                                                                                                                                                                            |                      |                       |                                           |
| Connections                   | M12-4 poles (emitter) M12-5 poles (receiver) (SG4-**-***-PP-X), M12-4 poles (emitter) M12-8 poles (receiver) (SG*-**-***-PP-E/N), M12-4 poles + M12-5 poles (emitter) M12-8 poles + M12-5 poles (receiver) (SG*-**-***-PP-W)                                                                       |                      |                       |                                           |
| Length of cables (Power)      | ≤ 50 m                                                                                                                                                                                                                                                                                             |                      |                       |                                           |
| CERTIFICATIONS                |                                                                                                                                                                                                                                                                                                    |                      |                       |                                           |
| Shocks                        | 16 ms (10 G) 1,000 shocks per axis (EN 60068-2-29)                                                                                                                                                                                                                                                 |                      |                       |                                           |
| Vibrations                    | Width 0.35 mm, frequency 10 ... 55Hz; 20 sweep per axis, 1 octave/min (EN 60068-2-6)                                                                                                                                                                                                               |                      |                       |                                           |
| Electromagnetic compatibility | IEC EN 60947-5-2                                                                                                                                                                                                                                                                                   |                      |                       |                                           |
| ENVIRONMENTAL DATA            |                                                                                                                                                                                                                                                                                                    |                      |                       |                                           |
| Operating Temperature         | 0 ... 55 °C                                                                                                                                                                                                                                                                                        |                      |                       |                                           |
| Storage temperature max.      | -25 ... 70 °C                                                                                                                                                                                                                                                                                      |                      |                       |                                           |
| Mechanical Protection         | IP65                                                                                                                                                                                                                                                                                               |                      |                       |                                           |
| Humidity                      | 15 ... 95 % no condensation                                                                                                                                                                                                                                                                        |                      |                       |                                           |
| Ambient light immunity        | According to IEC 61496-2                                                                                                                                                                                                                                                                           |                      |                       |                                           |

**DATA SENSING**  
easing automation challenges



# LGS-A10

## COMPACT LIDAR SCANNER FOR COLLISION AVOIDANCE AND OBJECT DETECTION



**LGS-A10**  
COMPACT LIDAR

Very Compact, reliable and rugged Lidar for collision avoidance and for object detection available also for outdoor applications. Very easy to install and use.

### APPLICATIONS

- Automated Guided Vehicles (AGV)
- Automated Mobile Robots (AMR)
- Automated Guided Forklifts (AGF)
- Automated manufacturing machines
- Automated processing lines
- Agriculture and transportation equipment
- Earth moving machines

- ToF technology on infrared laser
- 2D Measurement data stream available
- 360° measurement for all-round scanning
- Very Compact design suitable also for smaller machines
- High precision and reliable measurement up to 25 meters
- Up to 225000 measured points per second
- Up to 25 Hz selectable rotation frequency
- 0.25° angle resolution
- Dimensions: 65 x 65 x 70 mm
- 10 m x 360° detection field
- 3 simultaneous detection outputs
- Up to 16 zone sets
- 5 selectable detection capabilities
- 10 selectable response times
- Output response time min = 80 ms



## CODE DESCRIPTION

|                     |            |                      |   |          |           |
|---------------------|------------|----------------------|---|----------|-----------|
|                     |            | <b>LGS</b>           | - | <b>A</b> | <b>10</b> |
| series              | <b>LGS</b> | Lidar                |   |          |           |
| model               | <b>A</b>   | Anti-collision lidar |   |          |           |
| max detection range | <b>10</b>  | 10 m detection range |   |          |           |

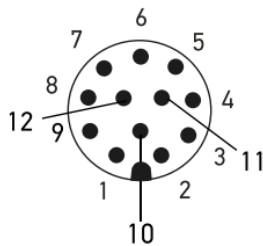


**LGS-A10**  
COMPACT LIDAR

## TECHNICAL SPECIFICATIONS

| LGS-A10                                   |                                              |
|-------------------------------------------|----------------------------------------------|
| <b>GENERAL DATA</b>                       |                                              |
| Operating principle                       | Lidar / pulsed TOF                           |
| Description                               | LGS-A10                                      |
| Diagnostic                                | Motor / Temperature / Voltage                |
| Transmitted Data                          | angle of each measuring point                |
|                                           | distance of each measuring point             |
|                                           | signal strenght of each measuring point      |
|                                           | time stamp in ms each 24h/cycle              |
| <b>MEASURING PERFORMANCES</b>             |                                              |
| Nominal sensing distance                  | 25 m                                         |
| range @ 10% of remission                  | 0.1 ... 10 m                                 |
| range @ 80% remission                     | 0.1 ... 25 m                                 |
| Scan Angle                                | 360 °                                        |
| Minimum distance of detection             | 0.1 m                                        |
| Measurement accuracy                      | ± 30 mm @ 80% (0.4-25 m)                     |
| Repeatability                             | ≤20 mm @ 80% (0.4-25 m)                      |
| Angular resolution                        | 0.25° @10Hz / 0.5° @15Hz / 1° @25Hz          |
| <b>DETECTION CAPABILITIES</b>             |                                              |
| Detection range                           | 10 m                                         |
| N. of selectable detection capabilities   | 5                                            |
| N. of zone sets                           | 16                                           |
| N. of simultaneous detections             | 3                                            |
| Response time                             | min. 80 ms                                   |
| <b>EMISSION</b>                           |                                              |
| Emission                                  | Laser Infrared                               |
| Laser wavelenght                          | 905 ± 20 (IR) nm                             |
| <b>FUNCTIONS</b>                          |                                              |
| Selectable scanning frequency             | 10/15/25 Hz                                  |
| Selectable output response time           | up to 10 values for each scanning frequency  |
| Selectable detection capabilities         | from 1 to 5 adjacent beams                   |
| <b>INPUT/OUTPUT</b>                       |                                              |
| Ethernet Output type                      | IEEE 802.3u 100Mbps Ethernet                 |
| N. of inputs for zone set switching       | 4                                            |
| N. of digital outputs                     | 3                                            |
| <b>COMMUNICATION</b>                      |                                              |
| Communication protocol                    | TCP/IP                                       |
| Measurement data transfer protocol        | UDP                                          |
| Ethernet connector                        | M12 4P Female, KEY D                         |
| Network Interface                         | 10/100 Mbit/s Ethernet                       |
| <b>HMI/UI</b>                             |                                              |
| Configuration and monitoring interface(s) | LGS Pro                                      |
| LED indicators                            | Power (Green) / Fault (Red) / Outputs status |

| LGS-A10                          |                                    |
|----------------------------------|------------------------------------|
| ELECTRICAL DATA                  |                                    |
| Supply voltage                   | 9 ... 30 Vdc                       |
| Power consumption (25°C)         | < 5W @15Hz (without outputs loads) |
| Input Max current                | 50 mA                              |
| Input Voltage Min for ON status  | 0 V                                |
| Input Voltage Max for OFF status | VDC-0.1 V                          |
| Input Impedence                  | 6.8 KΩ                             |
| Input max switching frequency    | 2 / 3 / 5 Hz                       |
| Input protection                 | 36 V                               |
| Output Max load current          | 50 mA                              |
| Output Voltage Min ON Status     | 0.7 V                              |
| Output Voltage Max OFF Status    | VDC                                |
| Output Voltage Drop Max          | 30 V                               |
| Output Max Capacitive Load       | 1 µF                               |
| Output Max Inductive Load        | 2.2 mH                             |
| Output Max Switching Frequency   | 2,5 / 3,5 / 6 Hz                   |
| Output Protection                | 85° C                              |
| MECHANICAL DATA                  |                                    |
| Dimensions                       | 65x65x70 mm                        |
| Material                         | Metal - Aluminium / PC             |
| Weight                           | <500 g                             |
| ENVIRONMENTAL DATA               |                                    |
| Operating Temperature            | -10 ... 60 °C                      |
| Mechanical Protection            | IP67                               |
| Storage temperature max.         | -20 ... 70 °C                      |
| Ambient light immunity           | >80000 lux                         |



| POWER AND I/O |          |              |                    |
|---------------|----------|--------------|--------------------|
| PIN #         | PIN NAME | WIRING COLOR | CONNECTION DIAGRAM |
| 1             | +VCC     | Brown        |                    |
| 2             | GND      | Blue         |                    |
| 3             | INPUT 1  | White        |                    |
| 4             | INPUT 2  | Green        |                    |
| 5             | INPUT 3  | Pink         |                    |
| 6             | INPUT 4  | Yellow       |                    |
| 7             | GND I/O  | Black        |                    |
| 8             | OUT_1    | Grey         |                    |
| 9             | +VDC_I/O | Red          |                    |
| 10            | OUT_2    | Violet       |                    |
| 11            | OUT_3    | Grey/Pink    |                    |
| 12            | OUT_4    | Red/Blue     |                    |



**DATA SENSING**  
easing automation challenges



**LGS-N25**  
COMPACT LIDAR

# LGS-N25

## COMPACT LIDAR SCANNER FOR VEHICLES GUIDANCE AND OBJECT PROFILING



Very Compact, reliable and rugged Lidar for navigation of automated guided vehicles and for object profiling available also for outdoor applications. Very easy to install and use.

### APPLICATIONS

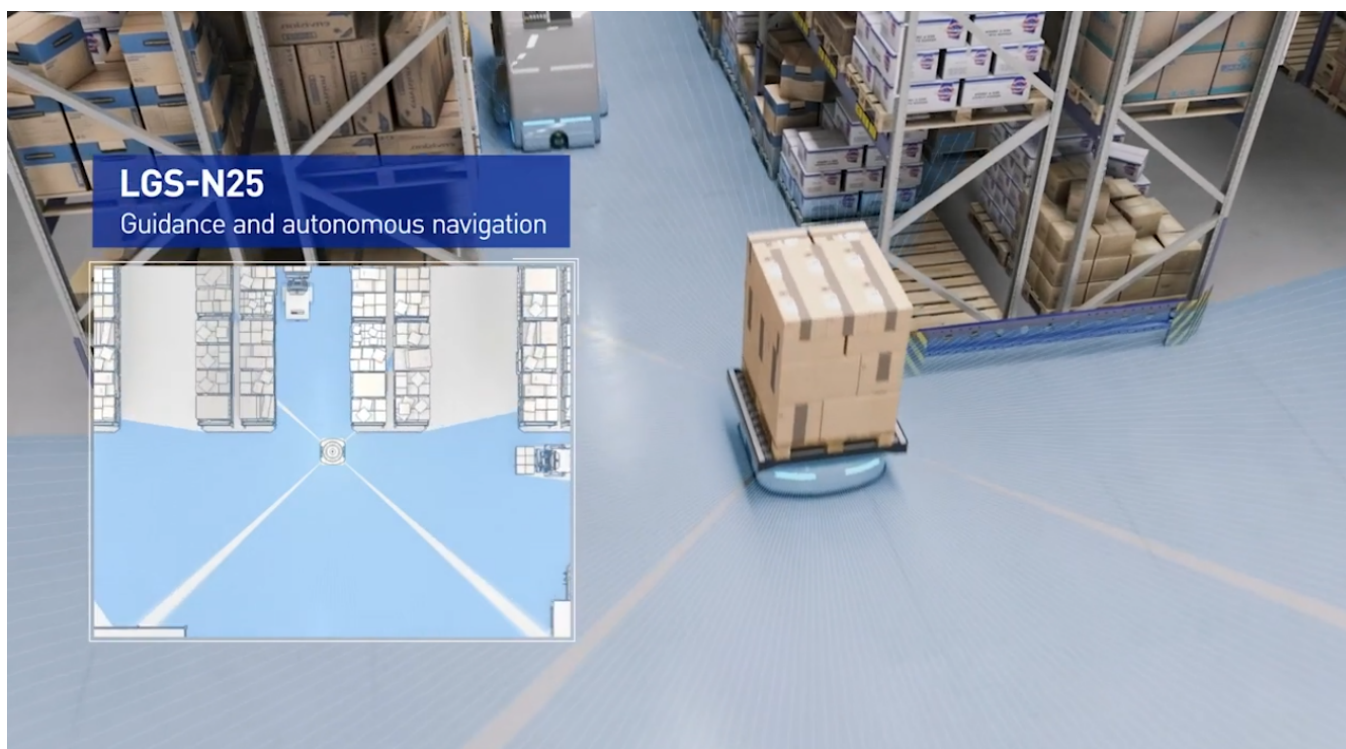
- Automated Guided Vehicles (AGV)
- Automated Mobile Robots (AMR)
- Automated Guided Forklifts (AGF)
- Automated manufacturing machines

- ToF technology on infrared laser
- 2D Measurement data for natural navigation and for object profiling
- 360° measurement for all-round scanning
- Very Compact design suitable also for smaller machines
- High precision and reliable measurement up to 25 meters
- Up to 225000 measured points per second
- Up to 25 Hz selectable rotation frequency
- 0.25° angle resolution
- Dimensions: 65 x 65 x 70 mm



## CODE DESCRIPTION

|                       |            |                                       |   |          |           |
|-----------------------|------------|---------------------------------------|---|----------|-----------|
|                       |            | <b>LGS</b>                            | - | <b>N</b> | <b>25</b> |
| series                | <b>LGS</b> | Lidar                                 |   |          |           |
| model                 | <b>N</b>   | Lidar guidance scanner for navigation |   |          |           |
| max measurement range | <b>25</b>  | 25 m (with 80% reflectivity)          |   |          |           |







# Enhanced Laser Sentinel

## SAFETY LASER SCANNER



LASER SENTINEL is the innovative solution for safe area protection in a large variety of applications in automation and intralogistic industries. It offers a complete and flexible solution for the safeguard of robotic cells, automated guided vehicles and general machinery.

- Safety laser scanner based on Time Of Flight measurement
- More than 72 m2 safely monitored, with 5.5 m over 275°
- High detection performances in compact size
- Advanced dust filtering
- Easy programming with intuitive Graphic User Interface
- Dimensions (w,d,h): 102 , 112.5, 152 mm

- I/O connection with standard M12 cables
- Up to 3 simultaneous safety zones
- 2 Warning zones up to 40 m
- 30/40/50/70/150 mm selectable detection capability
- Up to 70 zone sets
- Partial dynamic muting
- Metal brackets allowing full orientation and fast replacement
- Advanced measurement data protocol
- Colour graphic display for monitoring and diagnostics
- Speed measurement with encoder in



## CODE DESCRIPTION

|                  | SLS - M 3 - E - 08 E |                                       |  |  |  |  |  |  |  |  |
|------------------|----------------------|---------------------------------------|--|--|--|--|--|--|--|--|
| series           | <b>SLS</b>           | Enhanced laser Sentinel               |  |  |  |  |  |  |  |  |
| model            | <b>SA</b>            | Standalone, 6 zones sets              |  |  |  |  |  |  |  |  |
|                  | <b>M</b>             | Master, 10 zones sets                 |  |  |  |  |  |  |  |  |
|                  | <b>R</b>             | Slave (or remote)                     |  |  |  |  |  |  |  |  |
| max safety range | <b>5</b>             | 5.5 m                                 |  |  |  |  |  |  |  |  |
|                  | <b>3</b>             | 3 m                                   |  |  |  |  |  |  |  |  |
| encoder inputs   | <b>E</b>             | encoder inputs on secondary connector |  |  |  |  |  |  |  |  |
|                  |                      | not present                           |  |  |  |  |  |  |  |  |
| I/O connectors   | <b>08</b>            | M12 8-pin male                        |  |  |  |  |  |  |  |  |
|                  | <b>0812</b>          | M12 8-pin male or M12 12-pin male     |  |  |  |  |  |  |  |  |
|                  | <b>1708</b>          | M12 17-pin male and M12 8-pin male    |  |  |  |  |  |  |  |  |
| enhanced version | <b>E</b>             | Enhanced version                      |  |  |  |  |  |  |  |  |
|                  |                      | Standard Enhanced version (*)         |  |  |  |  |  |  |  |  |



## Enhanced Laser Sentinel

## TECHNICAL SPECIFICATIONS

|                                                                        | SLS-SA*-08                             | SLS-M*-0812-E             | SLS-M*-1708-E                         | SLS-M5-E-1708-E                | SLS-R*-E       |
|------------------------------------------------------------------------|----------------------------------------|---------------------------|---------------------------------------|--------------------------------|----------------|
| FEATURES AND PERFORMANCES                                              |                                        |                           |                                       |                                |                |
| Detection capability                                                   | 30/40/50/70/150 mm selectable          |                           |                                       |                                |                |
| Angular resolution min                                                 | 0.1 °                                  |                           |                                       |                                | 0.5 °          |
| Safety range with detection capability = 30 mm                         | 0.05 ... 2.5 m                         |                           |                                       |                                |                |
| Safety range with detection capability = 40 mm                         | 0.05 ... 3m                            |                           |                                       |                                |                |
| Safety range with detection capability = 50 mm                         | 0.05 ... 4 m                           |                           |                                       |                                |                |
| Safety range with detection capability = 70 mm                         | 0.05 ... 5.5 m                         |                           |                                       |                                |                |
| Safety range with detection capability = 150 mm                        | 0.05 ... 5.5 m                         |                           |                                       |                                |                |
| Max warning zone range                                                 | 40 m @ 90% remission target ( white )  |                           |                                       |                                |                |
| Max simultaneous safety zones                                          | 1                                      | 2 M12 12 p. connector     | 3                                     | Not applicable                 |                |
| Response time                                                          | 62 ... 1202 ms                         |                           |                                       |                                |                |
| Tolerance zone                                                         | 100 mm                                 |                           |                                       |                                |                |
| Supplement for retroreflectors on scan plane in front of a safety zone | 200 mm                                 |                           |                                       |                                |                |
| NUMBER OF ZONESET                                                      |                                        |                           |                                       |                                |                |
| With 1 safety zone min                                                 |                                        | 3<br>M12-8 p. connector   | 20<br>M12-17 p. connector             |                                |                |
| With 1 safety zone max                                                 | 3                                      | 10<br>M12-12 p connector  | 70<br>M12-17 p. + M12-8 p. connectors |                                |                |
| With 1 safety zone + 1 warning zone min                                |                                        | 2<br>M12-8 p. connector   | 20<br>M12-17 p. connector             |                                |                |
| With 1 safety zone + 1 warning zone max                                | 2                                      | 6<br>M12-12 p. connector  | 70<br>M12-17 p. + M12-8 p. connectors |                                |                |
| With 1 safety zone + 2 warning zone min                                |                                        | 3<br>M12-12 p. connector  | 20<br>M12-17 p. connector             |                                |                |
| With 1 safety zone + 2 warning zone max                                |                                        | 3<br>M12-12 p. connector  | 70<br>M12-17 p. + M12-8 p. connectors |                                |                |
| With 2 safety zone min                                                 |                                        | 3<br>M12-17 p. connector  | 20<br>M12-17 p. connector             |                                |                |
| With 2 safety zone max                                                 |                                        | 3<br>M12-12 p connector   | 70<br>M12-17 p. + M12-8 p. connectors |                                |                |
| With 2 safety zone + 1 warning zone min                                |                                        | 2<br>M12-12 p. connector  | 10<br>M12-17 p. connector             |                                |                |
| With 2 safety zone + 1 warning zone max                                |                                        | 2<br>M12-12 p. connector  | 70<br>M12-17 p. + M12-8 p. connectors |                                |                |
| With 2 safety zone + 2 warning zone min                                |                                        | 1<br>M12-12 p. connector  | 6<br>M12-17 p. connector              |                                |                |
| With 2 safety zone + 2 warning zone max                                |                                        | 1<br>M12-12 p. connector  | 70<br>M12-17 p. + M12-8 p. connectors |                                |                |
| With 3 safety zone min                                                 |                                        | 2<br>M12-12 p. connector  | 10<br>M12-17 p. connector             |                                |                |
| With 3 safety zone max                                                 |                                        | 2<br>M12-12 p. connector  | 70<br>M12-17 p. + M12-8 p. connectors |                                |                |
| ELECTRICAL DATA                                                        |                                        |                           |                                       |                                |                |
| Power Supply                                                           | 24 Vdc ± 20%                           |                           |                                       |                                |                |
| Power consumption                                                      | 8 W @24 V, Single device, without load |                           |                                       |                                |                |
| CONFIGURABLE INPUT/OUTPUT                                              |                                        |                           |                                       |                                |                |
| OSSD                                                                   | 1x2                                    | 2x2<br>M12-8 p. connector | 3x2                                   |                                |                |
| Configurable input max                                                 | 0                                      | 2                         | 12                                    | 12<br>4 HF inputs for encoders | Not applicable |
| Configurable output max                                                | 0                                      |                           | 2                                     | Not applicable                 |                |
| Configurable input/output max                                          | 3                                      | 1                         | 4                                     | Not applicable                 |                |
| High-speed inputs (100 kHz)                                            | Not applicable                         |                           |                                       | 4                              | Not applicable |
| COMMUNICATION                                                          |                                        |                           |                                       |                                |                |
| Network Interface                                                      | 10/100 Mbit/s Ethernet                 |                           |                                       |                                | Not applicable |
| HMI/UI                                                                 |                                        |                           |                                       |                                |                |
| Configuration and monitoring interfaces                                | DL Sentinel 3.2x                       |                           |                                       |                                |                |
| LED indicators                                                         | OSSD / Warning / Interlock             |                           |                                       |                                |                |



## SMART-VS

959970009

Smart-VS-EV-6-400-WH-0-AA

Smart Vision Sensor Cubic EVolution Model with 50 images handling and fast response time AI Assisted setting Anomaly detection and 6 classes classifier 400mm distance 4 config out M12-8pin connector THE SMART SOLUTION FOR ALL PRESENCE, ORIENTATION AND QUALITY VERIFICATION APPLICATIONS IN INDUSTRIAL AUTOMATION

## SMART SENSOR

- No programing software
- Easy to use & installation



These applications illustrate the flexibility and practicality of the Smart VS series in real-world industrial automation.

- No vision tool programming required
- No need of machine vision skills
- Deterministic response time
- Reduced cost of ownership and maintenance
- Electronic focus control
- Up to 400mm operating distance
- Bright and visible Red LED pointer
- Powerful white polarized light illuminator
- Green/Red LED Spot for GOOD/NO-GOOD part
- Ethernet TCP/IP communication
- Easy and Intuitive WEB Server GUI for mai



**AI INSIDE**

Ready to work



**DATA SENSING**  
easing automation challenges



**P3x**  
SMART CAMERAS

# P3x

## SMART CAMERA



- qHD (960 x 540), 2MP (1920 x 1080) and 5MP (2560 x 1936) resolution imager options both available in monochrome and color
  - Field interchangeable lenses, illuminators and filters
  - Two embedded illuminator sizes: 14-LED compact and 36-LED high power both integrating TIR lenses to deliver maximum brightness onto the field of view available in 4 different colors (white, blue, red and IR)
  - Lens options: Micro-video (6, 8, 12.5 and 17.5 mm) or C-Mount
  - Innovative 360° software configurable visual feedback
  - Top industrial grade: -10 to 50 °C / 14 to 122 °F operating temperature,
- IP65/67 rating
  - Powered by IMPACT software suite with 100+ inspection tools
  - Add-on licenses to run even the most advanced Datalogic algorithms



### CODE DESCRIPTION

|                 |           |                                 |    |   |   |   |   |   |   |   |   |   |   |   |    |
|-----------------|-----------|---------------------------------|----|---|---|---|---|---|---|---|---|---|---|---|----|
|                 |           |                                 | P3 | 2 | M | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | ML |
| series          | <b>P3</b> | Smart camera                    |    |   |   |   |   |   |   |   |   |   |   |   |    |
| resolution      | <b>0</b>  | qHD (960 x 540 pixels)          |    |   |   |   |   |   |   |   |   |   |   |   |    |
|                 | <b>2</b>  | 2 MP (1920 x 1080 pixels)       |    |   |   |   |   |   |   |   |   |   |   |   |    |
|                 | <b>5</b>  | 5 MP (2560 x 1936 pixels)       |    |   |   |   |   |   |   |   |   |   |   |   |    |
| mono / color    | <b>M</b>  | Monochrome                      |    |   |   |   |   |   |   |   |   |   |   |   |    |
|                 | <b>C</b>  | Color                           |    |   |   |   |   |   |   |   |   |   |   |   |    |
| imager type     | <b>0</b>  | qHD (960 x 540 pixels) color    |    |   |   |   |   |   |   |   |   |   |   |   |    |
|                 | <b>1</b>  | qHD (960 x 540 pixels) mono     |    |   |   |   |   |   |   |   |   |   |   |   |    |
|                 | <b>6</b>  | 2 MP (1920 X 1080 pixels) color |    |   |   |   |   |   |   |   |   |   |   |   |    |
|                 | <b>7</b>  | 2 MP (1920 X 1080 pixels) mono  |    |   |   |   |   |   |   |   |   |   |   |   |    |
|                 | <b>8</b>  | 5 MP (2560 x 1936 pixels) mono  |    |   |   |   |   |   |   |   |   |   |   |   |    |
|                 | <b>9</b>  | 5 MP (2560 x 1936 pixels) color |    |   |   |   |   |   |   |   |   |   |   |   |    |
| lens mount type | <b>ML</b> | Micro Video lens                |    |   |   |   |   |   |   |   |   |   |   |   |    |
|                 | <b>CM</b> | C-Mount lens                    |    |   |   |   |   |   |   |   |   |   |   |   |    |

## SMART VISION SENSOR **P3x**

- Software IMPACT (free license)
- Option: Deep learning software





# MX-E SERIES

**DATALOGIC**



**GIG**  
VISION

## Industrial Vision Processor for multi cameras

The MX-E Series of Industrial Vision Processors provides the highest performance in image processing with unmatched flexibility through GigE multi-camera connectivity support.

The MX-E Series allows users to choose the level of system performance and complexity based on their application needs. Three different MX-E models are available, each featuring the latest processors and high speed PoE (Power over Ethernet) camera ports.

MX-E vision processors are equipped with NPN or PNP digital I/O and power up to 8 Gigabit PoE cameras.

The MX-E25 is an entry-level, affordable processor capable of connecting to 2 cameras. The MX-E25 offers a cost effective means to migrate from smart camera applications to an industrial vision system.

The MX-E45 is a rugged and compact industrial vision processor that features multi-core processors and up to 4 cameras. The MX-E45's long-life embedded components provide a robust and reliable vision system for critical inspection applications.

The MX-E90 extends the power and performance of the MX-E Series to applications that demand faster and higher resolution cameras. With its quad-core processor it can dedicate a full processing core to up to 4 cameras. With the capability to connect up to 8 cameras, it allows users to extend their capability and yet reduce the total cost of ownership due to less hardware.

Powered by IMPACT, the MX-E Series is the ideal solution for the deployment of industrial vision systems with multiple independent inspection points.

## TECHNICAL DATA

|                                                     | <i><b>MX-E25</b></i>                                             | <i><b>MX-E45</b></i>                 | <i><b>MX-E90</b></i>                                                            |
|-----------------------------------------------------|------------------------------------------------------------------|--------------------------------------|---------------------------------------------------------------------------------|
| <i><b>CPU</b></i>                                   | Intel Celeron<br>1.7 GHz – dual core                             | Intel Celeron<br>2.4 GHz – dual core | Intel Core i7-3.8 GHz<br>Quad Core + HT                                         |
| <i><b>System Memory</b></i>                         | 8 GB DDR4 RAM                                                    |                                      | 32 GB DDR4 RAM                                                                  |
| <i><b>Storage</b></i>                               | 128 GB SATA SSD (MLC)                                            |                                      |                                                                                 |
| <i><b>Graphics</b></i>                              | Intel® HD Graphics 510 (1920x1200 resolution) - DisplayPort, DVI |                                      | Intel® HD Graphics 630<br>(1920 x 1200 resolution) - VGA, DVI                   |
| <i><b>Camera Imager Limit</b></i>                   | 5Mpix or lower                                                   | None                                 |                                                                                 |
| <i><b>Network Interface</b></i>                     | 2x LAN ports - 10/100/1000 Mbps Base-T                           |                                      |                                                                                 |
| <i><b>Serial Communications</b></i>                 | 1x RS-232 serial port                                            |                                      | 2x RS-232 serial port                                                           |
| <i><b>Keyboard/Mouse</b></i>                        | 4x USB 3.0 ports                                                 |                                      | 8x USB 3.0 ports                                                                |
| <i><b>Comm Connectivity</b></i>                     | Supports EtherNet/IP, Profinet, Modbus TCP and OPC               |                                      |                                                                                 |
| <i><b>I/O</b></i>                                   | 16 in -16 out, PNP card or NPN card, 200µs response time         |                                      | 16 in -16 out - single I/O card<br>configurable PNP/NPN,<br>100µs response time |
| <i><b>Operating System</b></i>                      | Windows 10 IoT Enterprise                                        |                                      |                                                                                 |
| <i><b>Supply Voltage</b></i>                        | 24 VDC +/- 25%                                                   |                                      |                                                                                 |
| <i><b>Nominal Current Draw</b></i>                  | 5.5 A @ 24 VDC                                                   |                                      |                                                                                 |
| <i><b>Dimensions</b></i>                            | 270 (H) x 130 (W) x 255 (D) mm - 10.6 (H) x 5.1 (W) x 10 (D) in  |                                      | 145 (H) x 192 (W) x 230 (D) mm -<br>5.7 (H) x 7.56 (W) x 9.05 (D) in            |
| <i><b>Weight</b></i>                                | 2.05 Kg                                                          |                                      | 4.45 Kg                                                                         |
| <i><b>Housing</b></i>                               | Galvanized plate - plastic                                       |                                      | Metal                                                                           |
| <i><b>Operating Temperature</b></i>                 | 0 to 50 °C / 32 to 122 °F                                        |                                      |                                                                                 |
| <i><b>Operating Humidity</b></i>                    | 5 to 95% (non-condensing)                                        |                                      |                                                                                 |
| <i><b>Mechanical Protection</b></i>                 | IP20                                                             |                                      |                                                                                 |
| <i><b>Fanless</b></i>                               | Yes                                                              | No                                   |                                                                                 |
| <i><b>Certification<br/>(Safety Compliance)</b></i> | CE/FCC, c-UL-us, KCC                                             |                                      |                                                                                 |



## PART NUMBER KEY

| MODEL           | PROCESSING POWER                                                                                                                                                                                                            | NUMBER OF PORTS                                                                                                                           | I/O TYPE                                                                       | OPERATING SYSTEM |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------|
| <b>MX-E</b>     | XX                                                                                                                                                                                                                          | X                                                                                                                                         | X                                                                              | X                |
|                 | 25 = Celeron - 1.7 GHz dual Core<br>45 = Celeron - 2.4 GHz dual Core<br>90 = i7 - 3.8 GHz Quad Core + HT                                                                                                                    | 2 = 2x - 1000 Mbps Base-T, PoE camera ports<br>4 = 4x - 1000 Mbps Base-T, PoE camera ports<br>8 = 8x - 1000 Mbps Base-T, PoE camera ports | P = 16 IN - 16 OUT PNP<br>N = 16 IN - 16 OUT NPN<br>B = 16 IN - 16 OUT PNP/NPN | 2 = WIN10        |
| <b>Examples</b> | MX-E25-2-P-2 = MX-E25 with 2 camera ports, PNP I/O, WIN10 OS<br>MX-E90-4-B-2 = MX-E90 with 4 camera ports, configurable PNP/NPN I/O, WIN10 OS<br>NOTE: For all possible combinations, see the MX-E Series Part Number list. |                                                                                                                                           |                                                                                |                  |

## MX-E SERIES

### AREA SCAN CAMERAS



The MX-E Series supports a series of grayscale and color cameras utilizing the GigE Vision standard. Thanks to their small housing, the cameras allow for easy installation in locations where space is constrained.

The cameras are the ideal solution for fast embedded vision system integration and ensures an outstanding price/performance ratio. High resolution and frame rate guarantee superior image acquisition for tackling most complex machine vision applications.

**DATA LOGIC**

## TECHNICAL DATA

| GRAYSCALE MODEL | COLOR MODEL | RESOLUTION  | IMAGER      | SHUTTER | FRAME RATE (FPS) | PoE |
|-----------------|-------------|-------------|-------------|---------|------------------|-----|
| E101            | E101C       | 640 x 480   | 1/4" CMOS   | Global  | 376              | •   |
| E151            | E151C       | 1280 x 1024 | 1/2" CMOS   | Global  | 88               | •   |
| E181            | E181C       | 1920 x 1200 | 2/3" CMOS   | Global  | 50               | •   |
| M197            | M197C       | 2592 x 1944 | 1/2.5" CMOS | Rolling | 14               | •   |
| E198            | E198C       | 2448 x 2048 | 2/3" CMOS   | Global  | 23               | •   |

## MX-E SERIES

### LINE SCAN CAMERAS



The MX-E Series supports a series of grayscale line scan cameras utilizing the GigE Vision standard. These cameras are for applications that need high resolution and the object is very long or an endless web of material.

The cameras are the ideal solution for printing machines to inspect printed images such as a continuous web or the printing around a circular object.

**DATA LOGIC**

## TECHNICAL DATA

| LINE SCAN |            |                |                 |         |         |           |
|-----------|------------|----------------|-----------------|---------|---------|-----------|
| MODEL     | RESOLUTION | MAX. LINE RATE | PIXEL SIZE      | C-MOUNT | F-MOUNT | M42-MOUNT |
| M565      | 2048       | 51 KHz         | 7 µm x 7 µm     | •       | •       | •         |
| M570      | 4096       | 26 KHz         | 7 µm x 7 µm     |         | •       | •         |
| M575      | 6144       | 17 KHz         | 7 µm x 7 µm     |         | •       | •         |
| M580      | 8192       | 12 KHz         | 3.5 µm x 3.5 µm |         | •       | •         |



# MX-G

## VISION PROCESSOR

Deep learning feature



- Rugged, industrial, GPU-powered vision processor
- Running both PEKAT VISION (deep learning) and IMPACT (rule-based) machine vision software
- Training and inference on the edge, no need of additional PC, Server or Cloud computing
- Compatible with a wide range of cameras from VGA up to very high resolution
- Supporting up to four Power over Ethernet (PoE) camera ports – PoE compliant cameras
- Integrated Profinet and Ethernet/IP industrial fieldbus
- 16 IN + 16 OUT software configurable digital I/Os that can work either PNP or NPN mode

## CODE DESCRIPTION

|           | MX-G | 2000                                  | - | 4 | - | B | - | 2 |
|-----------|------|---------------------------------------|---|---|---|---|---|---|
| series    | MX-G | Vision Processor                      |   |   |   |   |   |   |
| processor | 2000 | Intel Core i5-12500TE - RTX A4000 GPU |   |   |   |   |   |   |
| ports     | 4    | 4 ports                               |   |   |   |   |   |   |
| PNP/NPN   | B    | PNP/NPN                               |   |   |   |   |   |   |
| O.S.      | 2    | Windows 10                            |   |   |   |   |   |   |

## TECHNICAL SPECIFICATIONS

|                       | MX-G2000-4-B-2                                                 |
|-----------------------|----------------------------------------------------------------|
| <b>GENERAL DATA</b>   |                                                                |
| Description           | MX-G2000-4-B-2, 4 GIG-E, PNP/NPN, WIN10                        |
| CPU                   | Intel Core i5-12500TE - 6-core                                 |
| GPU                   | Nvidia RTX A4000 GPU - 16GB                                    |
| Storage               | 512 GB M.2 NVMe SSD                                            |
| System Memory         | 32 GB SO-DIMM DDR4 2666 MHz                                    |
| Operating System      | Windows 10 IOT Enterprise 2021 LTSC                            |
| Graphics              | 2x DisplayPort (Full-size, DP 1.4, DP++, HDMI 1.4)             |
| Keyboard / Mouse      | 6x USB 3.2 Gen 2 Type-A                                        |
| <b>INPUT/OUTPUT</b>   |                                                                |
| I/O                   | 16 IN / 16 OUT opto-isolated PNP or NPN, 200µs response time   |
| <b>COMMUNICATION</b>  |                                                                |
| Comm. Connectivity    | Supports EtherNet/IP, Profinet, Modbus TCP, OPC and HTTP       |
| Serial Communications | 2x RS-232 serial port                                          |
| Camera Interface      | 4x 1000 Mbps Base-T, PoE camera ports (Up to 15 W per channel) |
| Network Interface     | 2x LAN ports - 2.5 Gbit/s Ethernet                             |

| ELECTRICAL DATA         |                                                                                      |
|-------------------------|--------------------------------------------------------------------------------------|
| Supply voltage          | 12 ... 48 Vdc                                                                        |
| Power consumption       | 100 W (typical, 480W maximum)                                                        |
| MECHANICAL DATA         |                                                                                      |
| Dimensions              | 267 x 240 x 143 mm (10.5 x 9.45 x 5.60 in.)                                          |
| Housing material        | Aluminum-magnesium alloy housing                                                     |
| Weight                  | 7.5 Kg                                                                               |
| TEST/CERTIFICATIONS     |                                                                                      |
| Shocks                  | k20G peak acceleration (11 ms duration) with SSD (IEC60068-2-27 EMC: CE/FCC Class A) |
| Vibrations              | 5~500Hz, 1.5Grms@with SSD (IEC60068-2-64)                                            |
| ENVIRONMENTAL DATA      |                                                                                      |
| Operating Temperature   | -40 ... 50 °C (-40...+122 °F)                                                        |
| Mechanical Protection   | IP20                                                                                 |
| Storage temperature max | -40 ... 85 °C (-40...+185 °F)                                                        |

## AVAILABLE MODELS

| CPU                               | System Memory | Storage | Keyboard / Mouse           | Operating System                         | Model                                |
|-----------------------------------|---------------|---------|----------------------------|------------------------------------------|--------------------------------------|
| Intel Core i5-12500TE<br>- 6-core | 32 GB         | 512 GB  | 6x USB 3.2 Gen 2<br>Type-A | Windows 10 IOT Enter-<br>prise 2021 LTSC | <b>MX-G2000-4-B-2</b><br>(959910007) |



## MX-G

**959910007**

**MX-G2000-4-B-2, 4 GIG-E, PNP/NPN, WIN10**

THE MX-G2000 IS HIGH-END VISION PROCESSOR PROVIDING A COMPREHENSIVE SOLUTION FOR INDUSTRIAL VISUAL INSPECTION AND QUALITY CONTROL POWERED BY BOTH DEEP LEARNING AND RULE-BASED ALGORITHMS.



# MX-G

Deep learning | Vision processor



## FC8 series

Ultrasonic fork sensors for label detection



### features

- Ultrasonic fork sensor for transparent labels, any opaque material with connector M8 4-pole
- Teach-in models with dynamic and remote teach
- Ultrasonic technology
- Small size easy to locate; aluminum case
- NPN and PNP, Lo/Do total configurable
- Width slit detection 3 mm; depth slit detection 69 mm
- Maximum switching frequency 1.500 Hz



Ultrasonic  
fork sensors

### web contents

- Application notes
- Photos
- Catalogue / Manuals



### code description

|                  | FC8 | U                                     | / | 0 | P | - | M3 | 07 | - | 1 | F |
|------------------|-----|---------------------------------------|---|---|---|---|----|----|---|---|---|
| series           | FC8 | Ultrasonic fork for labels            |   |   |   |   |    |    |   |   |   |
| technology       | U   | Ultrasonic                            |   |   |   |   |    |    |   |   |   |
| output           | 0   | Lo/Do output selectable, remote teach |   |   |   |   |    |    |   |   |   |
| PNP / NPN output | P   | PNP digital output                    |   |   |   |   |    |    |   |   |   |
|                  | N   | NPN digital output                    |   |   |   |   |    |    |   |   |   |
| width            | M3  | Width slit detection 3 mm             |   |   |   |   |    |    |   |   |   |
| depth            | 07  | Depth slit detection 69 mm            |   |   |   |   |    |    |   |   |   |
| housing          | 1   | Metal housing - aluminium             |   |   |   |   |    |    |   |   |   |
| plug             | F   | M8 plug 4 pin                         |   |   |   |   |    |    |   |   |   |

### available models

| supply      | installation | PNP             | NPN             | NPN / PNP       |
|-------------|--------------|-----------------|-----------------|-----------------|
| 12...24 Vdc | M8 4 pins    | FC8U/0P-M307-1F | FC8U/0N-M307-1F | FC8U/0B-M307-1F |

## Label sensor for transparent label





**FC7 series**  
Photoelectric fork sensors  
for labels detection



Fork sensors  
for labels detection

**features**

- Dinamic Teach-in or control panel and manual adjustment with "+/-" buttons
- Minimum object detection 2 mm (gap between labels), 2 mm (label size)
- Infrared emission
- Light/Dark switching, selectable by button
- Switching frequency 10 kHz
- M8 connectors (4 pins): PNP or NPN, LO/DO selectable
- -20 ...+60 °C temperature range



**web contents**



- Application notes
- Photos
- Catalogue / Manuals



**code description**

|                  | FC7 | I                                     | / | 0 | P | - | M3 | 04 | - | 0 | F |
|------------------|-----|---------------------------------------|---|---|---|---|----|----|---|---|---|
| series           | FC7 | Fork for labels                       |   |   |   |   |    |    |   |   |   |
| emission         | I   | LED Infrared emission                 |   |   |   |   |    |    |   |   |   |
| output           | 0   | LO/DO output selectable, remote teach |   |   |   |   |    |    |   |   |   |
| PNP / NPN output | P   | PNP digital output                    |   |   |   |   |    |    |   |   |   |
|                  | N   | NPN digital output                    |   |   |   |   |    |    |   |   |   |
|                  | B   | NPN / PNP digital output              |   |   |   |   |    |    |   |   |   |
| width            | M3  | Width slit detection 3 mm             |   |   |   |   |    |    |   |   |   |
| depth            | 04  | Depth slit detection 42 mm            |   |   |   |   |    |    |   |   |   |
| housing          | 0   | Thermoplastic case                    |   |   |   |   |    |    |   |   |   |
| plug             | F   | M8 plug 4 pin                         |   |   |   |   |    |    |   |   |   |

**available models**

| supply      | installation | PNP             | NPN             | NPN / PNP       |
|-------------|--------------|-----------------|-----------------|-----------------|
| 12...24 Vdc | M8 4 pins    | FC7I/0P-M304-0F | FC7I/0N-M304-0F | FC7I/0B-M304-0F |

**Label sensor for paper label**







## FC6 series

Photoelectric fork for objects detection with regulation

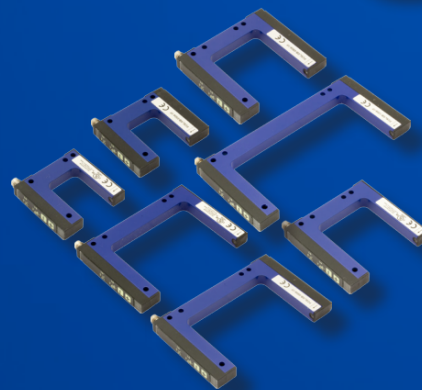


### features

- Simple and accurate adjustment manually by +/- buttons
- Infrared emission; LASER emission class 1
- Metal housing
- Light/Dark switching, selectable by button
- Minimum size object detection 0,2 mm (FC6I) and 0,05 mm (FC6L)
- -20...+60 °C temperature range
- M8 connectors (4pins): PNP/NPN, LO/DO
- Switching frequency 10 kHz

### web contents

- Application notes
- Photos
- Catalogue / Manuals



fork for objects detection  
with regulation



### code description

FC6 L / 0 B - 03 04 - 1 F

|                      |     |                             |
|----------------------|-----|-----------------------------|
| series               | FC6 | Fork for objects            |
| emission             | L   | LASER emission (670 nm)     |
|                      | I   | LED Infrared emission       |
| output               | 0   | State (LO/DO) selectable    |
| output               | B   | Digital output (NPN/PNP)    |
| width slit detection | M2  | Width slit detection 2 mm   |
|                      | M5  | Width slit detection 5 mm   |
|                      | 01  | Width slit detection 15 mm  |
|                      | 03  | Width slit detection 30 mm  |
|                      | 05  | Width slit detection 50 mm  |
|                      | 08  | Width slit detection 80 mm  |
|                      | 12  | Width slit detection 120 mm |
| depth                | 04  | Depth slit detection 42 mm  |
|                      | 06  | Depth slit detection 59 mm  |
|                      | 10  | Depth slit detection 95 mm  |
| housing              | 1   | Metal housing - Aluminum    |
| plug                 | F   | Plug M8 4 pin               |

### Application



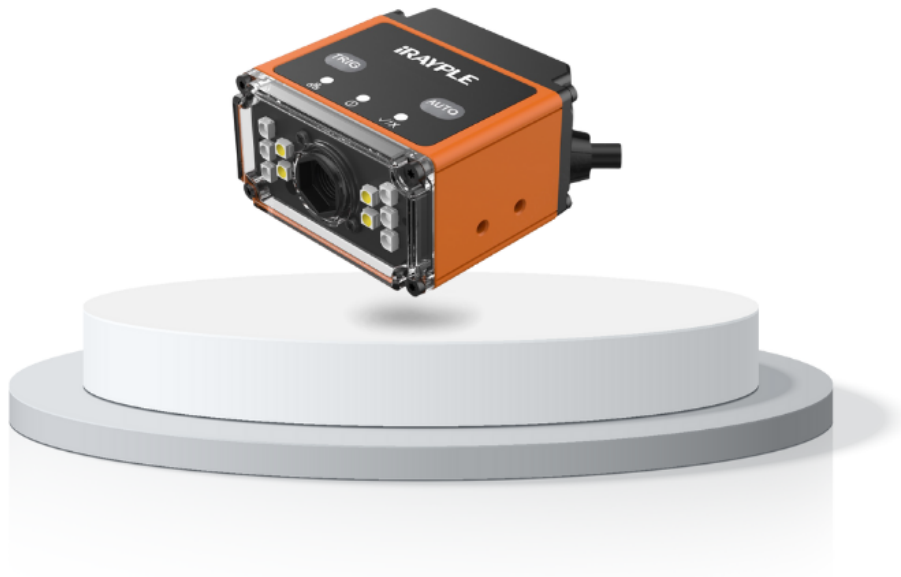
## available models

| supply      | installation | width (mm) | depth (mm) | FC6I, NPN - PNP,<br>LO/DO selectable | FC6L, NPN - PNP,<br>LO/DO selectable |
|-------------|--------------|------------|------------|--------------------------------------|--------------------------------------|
| 12...24 Vdc | M8 4 pins    | 2          | 42         | FC6I/0B-M204-1F                      | FC6L/0B-M204-1F                      |
|             |              |            | 59         | FC6I/0B-M206-1F                      | FC6L/0B-M206-1F                      |
|             |              |            | 95         | FC6I/0B-M210-1F                      | FC6L/0B-M210-1F                      |
|             |              | 5          | 42         | FC6I/0B-M504-1F                      | FC6L/0B-M504-1F                      |
|             |              |            | 59         | FC6I/0B-M506-1F                      | FC6L/0B-M506-1F                      |
|             |              |            | 95         | FC6I/0B-M510-1F                      | FC6L/0B-M510-1F                      |
|             |              | 15         | 42         | FC6I/0B-0104-1F                      | FC6L/0B-0104-1F                      |
|             |              |            | 59         | FC6I/0B-0106-1F                      | FC6L/0B-0106-1F                      |
|             |              |            | 95         | FC6I/0B-0110-1F                      | FC6L/0B-0110-1F                      |
|             |              | 30         | 42         | FC6I/0B-0304-1F                      | FC6L/0B-0304-1F                      |
|             |              |            | 59         | FC6I/0B-0306-1F                      | FC6L/0B-0306-1F                      |
|             |              |            | 95         | FC6I/0B-0310-1F                      | FC6L/0B-0310-1F                      |
|             |              | 50         | 42         | FC6I/0B-0504-1F                      | FC6L/0B-0504-1F                      |
|             |              |            | 59         | FC6I/0B-0506-1F                      | FC6L/0B-0506-1F                      |
|             |              |            | 95         | FC6I/0B-0510-1F                      | FC6L/0B-0510-1F                      |
|             |              | 80         | 42         | FC6I/0B-0804-1F                      | FC6L/0B-0804-1F                      |
|             |              |            | 59         | FC6I/0B-0806-1F                      | FC6L/0B-0806-1F                      |
|             |              |            | 95         | FC6I/0B-0810-1F                      | FC6L/0B-0810-1F                      |
|             |              | 120        | 42         | FC6I/0B-1204-1F                      | FC6L/0B-1204-1F                      |
|             |              |            | 59         | FC6I/0B-1206-1F                      | FC6L/0B-1206-1F                      |
|             |              |            | 95         | FC6I/0B-1210-1F                      | FC6L/0B-1210-1F                      |

## Specification

|                              | FC6L/**-**-**                                                                       | FC6I/**-**-**           |
|------------------------------|-------------------------------------------------------------------------------------|-------------------------|
|                              |  |                         |
| nominal sensing distance     | 2...120 mm                                                                          |                         |
| minimum detectable object    | 0.05 mm                                                                             | 0.2 mm                  |
| emission                     | red LASER 670 nm,<br>modulated, class 1                                             | infrared LED, modulated |
| external lighth interference | 10,000 lux<br>(5,000 lux incandescent lamp)                                         |                         |
| operating voltage            | 12 ... 24 Vdc<br>(with protection against reverse polarity)                         |                         |
| max ripple content           | 10%                                                                                 |                         |
| no-load supply current       | 40 mA                                                                               |                         |
| load current                 | 100 mA                                                                              |                         |
| output voltage drop          | ≤ 2 V @ IL = 100 mA                                                                 |                         |
| switching frequency          | 10 kHz                                                                              |                         |
| power supply protections     | inverse-polarity protected<br>short-circuit output protected                        |                         |
| temperature range            | - 20 ...+ 50 °C                                                                     | - 20 ...+ 60 °C         |
| storage temperature          | - 30 ...+ 80 °C                                                                     |                         |
| protection degree            | IP65 (EN60529)                                                                      |                         |
| housing material             | painted aluminium and polyamide/glass                                               |                         |
| plug                         | M8 4 pin                                                                            |                         |
| weight (approximate)         | 55...128 g                                                                          |                         |

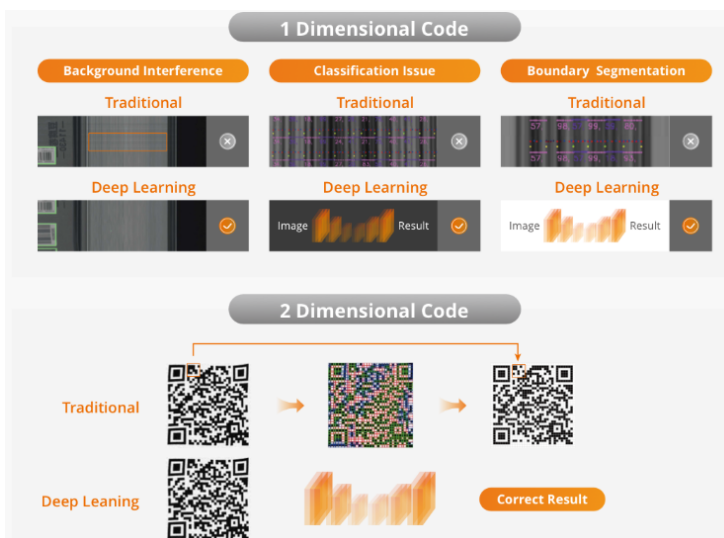
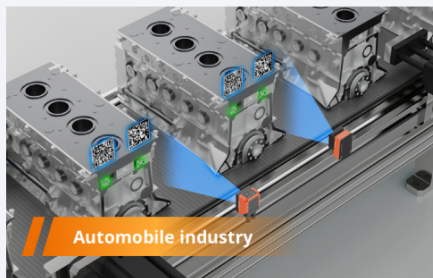
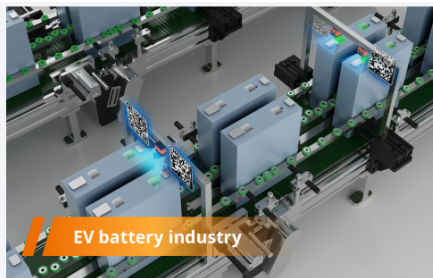
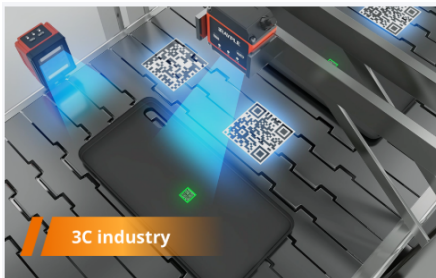
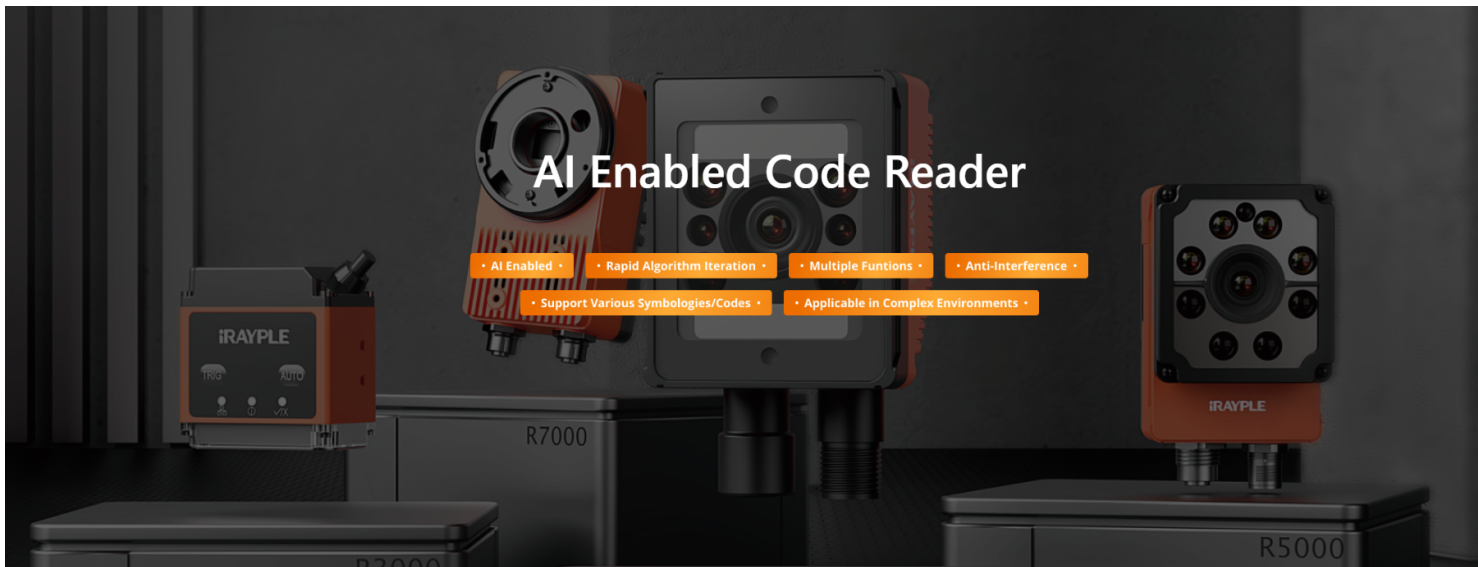
- Coder reader
- Smart vision sensor



### Easy Configuration with One-click Training

The one-click training function adapts to the environmental conditions of the application scene and automatically adjusts the lighting, focus, image, and code reading algorithm. This significantly reduces the user's tuning time and makes the tune process more convenient.





The decoding rate is the most critical indicator of code reading. Deep learning End-to-End Technology uses global features of 1D and 2D codes to accurately locate them. The algorithm accurately determines the module boundary and combines decoding with peripheral module information and global character information of the code. This improves accuracy and reduces interference, distortion, and soiling.



## R3000 Series

The 3000 series stands as an introductory-level code reader, distinguished by its ingeniously compact design that harmonizes perfectly with confined spaces. It boasts a seamless integration of optics and illumination, culminating in a user-friendly deployment experience.

[AI-enabled Technology >](#)

| Product Model       | Resolution  | Network Port  | Max. Frame rate | Max. Read Speed | Light Source type    | Operating Distance |
|---------------------|-------------|---------------|-----------------|-----------------|----------------------|--------------------|
| R3004MG-05H-WEE01E  | 640 × 512   | 100M Ethernet | 60 fps          | 42 codes/s      | White                |                    |
| R3004MG-05-DEE110E  | 640 × 512   | 100M Ethernet | 60 fps          | 42 codes/s      | Red/white dual light |                    |
| R3004MG-05H-DEE01E  | 640 × 512   | 100M Ethernet | 60 fps          | 42 codes/s      | Red/white dual light |                    |
| R3013MG-05-DEE110E  | 1280 × 1024 | 100M Ethernet | 60 fps          | 31 codes/s      | Red/white dual light |                    |
| R3013MG-05H-WEE01E  | 1280 × 1024 | 100M Ethernet | 60 fps          | 31 codes/s      | White                |                    |
| R3013MG-05H-DEE01E  | 1280 × 1024 | 100M Ethernet | 60 fps          | 31 codes/s      | Red/white dual light |                    |
| R3013MU-05-DEE110E  | 1280 × 1024 | USB2.0        | 60 fps          | 31/s            | Red/white dual light |                    |
| R3013MU-05H-DEE01E  | 1280 × 1024 | USB2.0        | 60 fps          | 31/s            | Red/white dual light |                    |
| R3013MU-05H-WEE01E  | 1280 × 1024 | USB2.0        | 60 fps          | 31/s            | White                |                    |
| R3016PMG-07H-WGN01E | 1440 × 1080 | 100M Ethernet | 60 fps          | 50 codes/s      | White                |                    |
| R3016PMG-07H-RGF01E | 1440 × 1080 | 100M Ethernet | 60 fps          | 50 codes/s      | Red                  |                    |
| R3016PMG-16H-RGF01E | 1440 × 1080 | 100M Ethernet | 60 fps          | 50 codes/s      | Red                  |                    |
| R3016PMG-16H-WGN01E | 1440 × 1080 | 100M Ethernet | 60 fps          | 50 codes/s      | White                |                    |

## High Decoding Rate

**Self-developed AI Algorithms Enable Robust Decoding Across Diverse and Challenging Scenarios**

- AI Enable Algorithm, accurate positioning, stable decoding time and accurate decoding
- Multi-configuration polling
- Optional image saving conditions facilitate data traceability and management

[Learn more](#)



## R4000 Series

AI-enabled R4000 series code readers achieve high decoding rates and support various 1D and 2D codes, even in complex scenarios. They feature three fully integrated illumination options: transparent, polarized, and diffused lights, each with R, G, and B color options, making them adaptable to a wide range of applications. Rotatable connectors and a compact design allow for easy installation in space-

*\*AI-enabled*



[AI-enabled Technology >](#)

| Product Model                      | Resolution  | Network Port  | Max. Frame rate | Max. Read Speed | Operating Distance | Product Status |
|------------------------------------|-------------|---------------|-----------------|-----------------|--------------------|----------------|
| R4013MG-12M-RGG01E                 | 1280 × 1024 | 100M Ethernet | 60 fps          | 60 codes/s      |                    | Listed         |
| R4013MG-12M-WGG01E                 | 1280 × 1024 | 100M Ethernet | 60 fps          | 60 codes/s      |                    | Listed         |
| R4013MG-07M-WGG01E                 | 1280 × 1024 | 100M Ethernet | 60 fps          | 60 codes/s      |                    | Listed         |
| R4013MG-07M-RGG01E                 | 1280 × 1024 | 100M Ethernet | 60 fps          | 60 codes/s      |                    | Listed         |
| <a href="#">R4013MG-12M-BGG01E</a> | 1280 × 1024 | 100M Ethernet | 60 fps          | 60 codes/s      |                    | Listed         |
| R4013MG-07M-BGG01E                 | 1280 × 1024 | 100M Ethernet | 60 fps          | 60 codes/s      |                    | Listed         |

## Flexible Deployment

**Small size and rotatable connectors meet flexible installation demands**

- Small size, and rotatable connectors flexible for installation
- Multi-camera networking, single camera summary output, easy to operate
- EasyID Setup & Debugging Tool, minimal set up

[Learn more](#)



## Flexible Deployment

**Small size and rotatable connectors meet flexible installation demands**

- Small size, and rotatable connectors flexible for installation
- Multi-camera networking, single camera summary output, easy to operate
- EasyID Setup & Debugging Tool, minimal set up

[Learn more](#)



## R5000 Series

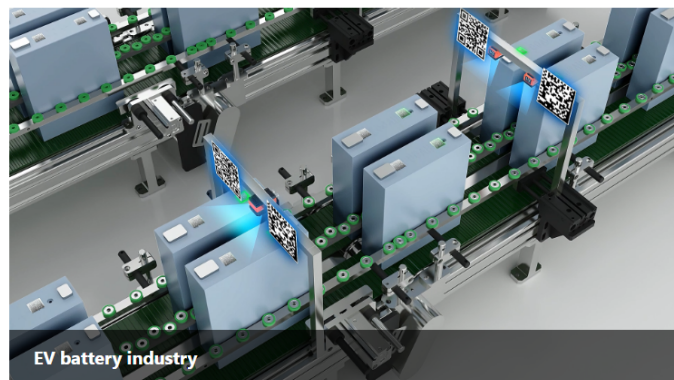
AI-enabled R5000 series code readers achieve high decoding rates and support various 1D and 2D codes in complex scenarios. Their 1.6MP and 5MP resolution image sensors, working in conjunction with high-performance chipsets, excel in applications requiring high speed, rapid pace, and decoding of small codes. Various user-friendly functions enhance flexible and easy deployment, including one-click training,

**\*AI-enabled**



[AI-enabled Technology >](#)

| Product Model                       | Resolution  | Focal Length | Max. Frame rate | Max. Read Speed | Light Source type                                 |
|-------------------------------------|-------------|--------------|-----------------|-----------------|---------------------------------------------------|
| R5013MG-00C-NGG01E                  | 1280 × 1024 |              | 60 fps          | 90 codes/s      |                                                   |
| R5016PMG-12M-RGG01E                 | 1440 × 1080 | 12mm         | 60 fps          | 120 codes/s     | Red, Polarized/Non-polarized; White,diffuse light |
| <a href="#">R5016PMG-12M-WGG01E</a> | 1440 × 1080 | 12mm         | 60 fps          | 120 codes/s     | White, Polarized/Non-polarized/diffuse light      |
| R5016PMG-05M-RGG01E                 | 1440 × 1080 | 5mm          | 60 fps          | 120 codes/s     | Red, Polarized/Non-polarized; White,diffuse light |
| R5016PMG-05M-WGG01E                 | 1440 × 1080 | 5mm          | 60 fps          | 120 codes/s     | White, Polarized/Non-polarized/diffuse light      |
| R5016MG-12M-BGG01E                  | 1440 × 1080 | 12mm         | 60 fps          | 90 codes/s      | Blue, Polarized/Non-polarized                     |
| R5016MG-12M-WGG01E                  | 1440 × 1080 | 12 mm        | 60 fps          | 90 codes/s      | White                                             |
| R5016MG-06M-WGG01E                  | 1440 × 1080 | 6 mm         | 60 fps          | 90 codes/s      | White                                             |
| R5016MG-25M-WGG01E                  | 1440 × 1080 | 25 mm        | 60 fps          | 90 codes/s      | White                                             |
| R5016MG-16M-WGG01E                  | 1440 × 1080 | 16 mm        | 60 fps          | 90 codes/s      | White                                             |
| R5016MG-25M-RGG01E                  | 1440 × 1080 | 25 mm        | 60 fps          | 90 codes/s      | Red, Polarized/Non-polarized                      |
| R5016MG-06M-RGG01E                  | 1440 × 1080 | 6 mm         | 60 fps          | 90 codes/s      | Red, Polarized/Non-polarized                      |
| R5016MG-16M-RGG01E                  | 1440 × 1080 | 16 mm        | 60 fps          | 90 codes/s      | Red, Polarized/Non-polarized                      |
| R5016MG-12M-RGG01E                  | 1440×1080   | 12 mm        | 60 fps          | 90 codes/s      | Red, Polarized/Non-polarized                      |
| R5030PMG-12M-RGG01E                 | 2048 × 1536 | 12mm         | 60 fps          | 100 codes/s     | Red, Polarized/Non-polarized; White,diffuse light |
| R5030PMG-12M-WGG01E                 | 2048 × 1536 | 12mm         | 60 fps          | 100 codes/s     | White, Polarized/Non-polarized/diffuse light      |



## SMART VISION SENSOR



### Machine Vision

Integration of visual functions such as positioning, measurement, recognition, detect inspection and deep learning



## SS3000 Series

Ultra-compact body design, with a rich set of built-in algorithm tools for positioning, presence detection, measurement, counting, identification, and logical operations.



| Product Model                        | Resolution | Max. Frame rate | Mono/Color                                                                        | Working Distance | Focal Length | Light Source Type | Product Status |
|--------------------------------------|------------|-----------------|-----------------------------------------------------------------------------------|------------------|--------------|-------------------|----------------|
| <a href="#">SS3016PMG-07H-RGF01E</a> | 1440×1080  | 60fps           |  | 40 mm - 150 mm   | 7 mm         | Red polarization  | Listed         |
| SS3016PMG-16H-RGF01E                 | 1440×1080  | 60fps           |  | 80 - 200 mm      | 16 mm        | Red polarization  | Listed         |
| SS3016PMG-07H-WGF01E                 | 1440×1080  | 60fps           |  | 40 mm - 150 mm   | 7 mm         | White polarized   | Listed         |
| SS3016PMG-16H-WGF01E                 | 1440×1080  | 60fps           |  | 80 - 200 mm      | 16 mm        | White polarized   | Listed         |
| SS3016PCG-07H-WGF01E                 | 1440×1080  | 60fps           |  | 40 mm - 150 mm   | 7 mm         | White polarized   | Listed         |
| SS3016PCG-16H-WGF01E                 | 1440×1080  | 60fps           |  | 80 - 200 mm      | 16 mm        | White polarized   | Listed         |

| Basic                  |                                                                                                                                                                                                                                                                                                                                         |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Resolution             | 1440×1080                                                                                                                                                                                                                                                                                                                               |
| Max. Frame rate        | 60fps                                                                                                                                                                                                                                                                                                                                   |
| Shutter Mode           | Global                                                                                                                                                                                                                                                                                                                                  |
| Mono/Color             | See on table above                                                                                                                                                                                                                                                                                                                      |
| Trigger Mode           | Internal Trigger/External Trigger/Ethernet/Serial/Industrial Ethernet.                                                                                                                                                                                                                                                                  |
| Software               | EasyVS, Web                                                                                                                                                                                                                                                                                                                             |
| Certifications         | CE, KC, UKCA, UL                                                                                                                                                                                                                                                                                                                        |
| Function               | Location Tools: PatternMatch AI Tools: AI classification Exist Tools: FindLine、FindCircle、BlobExist Count Tools: BlobCount Measure Tools: Grayscale area、Contrast、Brightness、EdgeWidthTool Detection Tools: ContourCompare Recognition Tools: DataCode、BarCode、OCR Logic Tools: LogicCheck、ConditionCheck、Mathematical、StringComparison |
| Focal Length           | See on table above                                                                                                                                                                                                                                                                                                                      |
| Focus Control          | Manual control                                                                                                                                                                                                                                                                                                                          |
| Light Source Type      | Red polarization                                                                                                                                                                                                                                                                                                                        |
| Performance            |                                                                                                                                                                                                                                                                                                                                         |
| Working Distance       | See on table above                                                                                                                                                                                                                                                                                                                      |
| Field of View (FOV)    | See Lens information                                                                                                                                                                                                                                                                                                                    |
| Port                   |                                                                                                                                                                                                                                                                                                                                         |
| Connector              | Industrial-grade M12 connectors are Ethernet and GPIO interfaces                                                                                                                                                                                                                                                                        |
| Network Port           | 100M Ethernet                                                                                                                                                                                                                                                                                                                           |
| GPIO Interface         | 1x RS232 interface, 1x Opto-isolated input, 1x Opto-isolated output, 1 configurable input and output                                                                                                                                                                                                                                    |
| Communication Mode     | RS232, Ethernet                                                                                                                                                                                                                                                                                                                         |
| Communication protocol | TCP Client, TCP Server, UDP, FTP, RS232, Profinet, Modbus TCP, EtherNet/IP                                                                                                                                                                                                                                                              |
| LED Indicator          | Power indicator, Network indicator, Result indicator                                                                                                                                                                                                                                                                                    |
| Power                  |                                                                                                                                                                                                                                                                                                                                         |
| Power Supply           | Support 9~26VDC, 1A input, suitable for industrial environment                                                                                                                                                                                                                                                                          |
| Power Consumption      | <8.8W                                                                                                                                                                                                                                                                                                                                   |
| Structure              |                                                                                                                                                                                                                                                                                                                                         |
| Product Dimensions     | 45.0mm × 35.0mm × 25.5mm(Without cable)                                                                                                                                                                                                                                                                                                 |
| Net Weight             | < 110 g                                                                                                                                                                                                                                                                                                                                 |
| Protection             | IP65                                                                                                                                                                                                                                                                                                                                    |
| Casing Material        | Aluminum alloy + Front cover                                                                                                                                                                                                                                                                                                            |
| Environment            |                                                                                                                                                                                                                                                                                                                                         |
| Operating Temperature  | -20°C ~ +50°C                                                                                                                                                                                                                                                                                                                           |
| Operating Humidity     | 20% ~ 95%, Non condensing                                                                                                                                                                                                                                                                                                               |
| Storage Temperature    | -30°C ~ +70°C                                                                                                                                                                                                                                                                                                                           |

SS4000 Series

Compact and integrated, this device combines image capture, AI processing, and communication. It's equipped with advanced AI tools and a multi-core processor for tasks like positioning, verification, measurement, and identification. With million-pixel sensors and electric zoom lenses, it offers one-click image optimization. The light source is adaptable, with modes for polarized, non-polarized, and diffuse lighting, and color options (R/G/B). Its rotatable connector



| Product Model       | Resolution  | Max. Frame rate | Mono/Color | Working Distance | Focal Length | Light Source Type                                                                                       | Product Status |
|---------------------|-------------|-----------------|------------|------------------|--------------|---------------------------------------------------------------------------------------------------------|----------------|
| SS4013MG-12M-RGG01E | 1280 × 1024 | 60 fps          |            | 50-500mm         | 12 mm        | Red (White & Blue options) , 1-channel diffused and 1-channel polarized and 1-channel transparent light | Listed         |
| SS4013MG-07M-RGG01E | 1280 × 1024 | 60 fps          |            | 50-500mm         | 7 mm         | Red (White & Blue options) , 1-channel diffused and 1-channel polarized and 1-channel transparent light | Listed         |
| SS4013MG-12M-RGG01  | 1280 × 1024 | 60 fps          |            | 50-500mm         | 12 mm        | Red (White & Blue options) , 1-channel diffused and 1-channel polarized and 1-channel transparent light | Listed         |
| SS4013CG-12M-WGG01E | 1280 × 1024 | 60fps           |            | 50-500mm         | 12 mm        | White, 1-channel diffused and 1-channel polarized and 1-channel transparent light                       | Listed         |
| SS4013CG-07M-WGG01E | 1280 × 1024 | 60fps           |            | 50-500mm         | 7 mm         | White, 1-channel diffused and 1-channel polarized and 1-channel transparent light                       | Listed         |
| SS4013MG-12M-WGG01E | 1280 × 1024 | 60 fps          |            | 50-500mm         | 12 mm        | White (Red & Blue options) , 1-channel diffused and 1-channel polarized and 1-channel transparent light | Listed         |
| SS4013MG-07M-WGG01E | 1280 × 1024 | 60 fps          |            | 50-500mm         | 7 mm         | White (Red & Blue options) , 1-channel diffused and 1-channel polarized and 1-channel transparent light | Listed         |
| SS4013MG-07M-RGG01  | 1280 × 1024 | 60 fps          |            | 50-500mm         | 7 mm         | Red (White & Blue options) , 1-channel diffused and 1-channel polarized and 1-channel transparent light | Listed         |

| Basic                  |                                                                                                                                                                                                                                                                                                                                                   |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Resolution             | 1280 × 1024                                                                                                                                                                                                                                                                                                                                       |
| Max. Frame rate        | 60 fps                                                                                                                                                                                                                                                                                                                                            |
| Shutter Mode           | Global                                                                                                                                                                                                                                                                                                                                            |
| Mono/Color             | Mono                                                                                                                                                                                                                                                                                                                                              |
| Lens Mount             | M12, auto focus                                                                                                                                                                                                                                                                                                                                   |
| Trigger Mode           | Internal Trigger/External Trigger/Ethernet/Serial/Industrial Ethernet.                                                                                                                                                                                                                                                                            |
| Software               | EasyVS, Web                                                                                                                                                                                                                                                                                                                                       |
| Certifications         | CE, KC                                                                                                                                                                                                                                                                                                                                            |
| Function               | Location Tools: PatternMatch AI Tools: AI classification Exist Tools: FindLine; FindCircle; BlobExist Count Tools: BlobCount Measure Tools: Grayscale area; Contrast; Brightness; EdgeWidthTool Detection Tools: ContourCompare Recognition Tools: DataCode; BarCode; OCR Logic Tools: LogicCheck; ConditionCheck; Mathematical; StringComparison |
| Focal Length           | 12 mm                                                                                                                                                                                                                                                                                                                                             |
| Light Source Type      | Red (White & Blue options) , 1-channel diffused and 1-channel polarized and 1-channel transparent light                                                                                                                                                                                                                                           |
| Focus Control          | Auto focus                                                                                                                                                                                                                                                                                                                                        |
| Performance            |                                                                                                                                                                                                                                                                                                                                                   |
| Working Distance       | 50-500mm                                                                                                                                                                                                                                                                                                                                          |
| Field of View (FOV)    | 64×51 mm @150mm                                                                                                                                                                                                                                                                                                                                   |
| Port                   |                                                                                                                                                                                                                                                                                                                                                   |
| Connector              | 2 industrial M12 connectors, Ethernet and GPIO                                                                                                                                                                                                                                                                                                    |
| Network Port           | 100M Ethernet                                                                                                                                                                                                                                                                                                                                     |
| GPIO Interface         | RS232, 2 Opto-isolated inputs, 3 Opto-isolated outputs                                                                                                                                                                                                                                                                                            |
| Communication Mode     | RS232, Ethernet                                                                                                                                                                                                                                                                                                                                   |
| Communication protocol | Location Tools: PatternMatch AI Tools: AI classification Exist Tools: FindLine; FindCircle; BlobExist Count Tools: BlobCount Measure Tools: Grayscale area; Contrast; Brightness; EdgeWidthTool Detection Tools: ContourCompare Recognition Tools: DataCode; BarCode; OCR Logic Tools: LogicCheck; ConditionCheck; Mathematical; StringComparison |
| LED Indicator          | Power, Ethernet, Result                                                                                                                                                                                                                                                                                                                           |
| Power                  |                                                                                                                                                                                                                                                                                                                                                   |
| Power Supply           | Support 9~26VDC, 1.5A input                                                                                                                                                                                                                                                                                                                       |
| Power Consumption      | <14W                                                                                                                                                                                                                                                                                                                                              |
| Structure              |                                                                                                                                                                                                                                                                                                                                                   |
| Product Dimensions     | 47mm×58mm×38mm (excluding connectors)                                                                                                                                                                                                                                                                                                             |
| Net Weight             | <180 g                                                                                                                                                                                                                                                                                                                                            |
| Protection             | IP65                                                                                                                                                                                                                                                                                                                                              |
| Casing Material        | Aluminum alloy (excluding front cover)                                                                                                                                                                                                                                                                                                            |
| Environment            |                                                                                                                                                                                                                                                                                                                                                   |
| Operating Temperature  | -20°C ~ +50°C                                                                                                                                                                                                                                                                                                                                     |
| Operating Humidity     | 20% ~ 95%, non-condensing                                                                                                                                                                                                                                                                                                                         |
| Storage Temperature    | -30°C ~ +70°C                                                                                                                                                                                                                                                                                                                                     |



## SS5000 Series

Superior AI processing capabilities, suitable for a variety of complex detection scenarios at medium and long distances.



| Product Model                        | Resolution | Working Distance | Max. Frame rate | Mono/Color                                                                          | Focal Length | Light Source Type                                          |
|--------------------------------------|------------|------------------|-----------------|-------------------------------------------------------------------------------------|--------------|------------------------------------------------------------|
| SS5016CG-08M-WGG01E <span>NEW</span> | 1440×1080  | 80-1500mm        | 60fps           |    | 8mm          | White, 2-channel polarized and 2-channel transparent light |
| SS5016MG-08M-WGG01E <span>NEW</span> | 1440×1080  | 80-1500mm        | 60fps           |    | 8mm          | White, 2-channel polarized and 2-channel transparent light |
| SS5016CG-16M-WGG01E <span>NEW</span> | 1440×1080  | 100-1500mm       | 60fps           |    | 16mm         | White, 2-channel polarized and 2-channel transparent light |
| SS5016MG-12M-WGG01E <span>NEW</span> | 1440×1080  | 80-1500mm        | 60fps           |    | 12mm         | White, 2-channel polarized and 2-channel transparent light |
| SS5016MG-16M-WGG01E <span>NEW</span> | 1440×1080  | 100-1500mm       | 60fps           |    | 16mm         | White, 2-channel polarized and 2-channel transparent light |
| SS5016MG-25M-WGG01E <span>NEW</span> | 1440×1080  | 250-1500mm       | 60fps           |    | 25mm         | White, 2-channel polarized and 2-channel transparent light |
| SS5016CG-12M-WGG01E <span>NEW</span> | 1440×1080  | 80-1500mm        | 60fps           |    | 12mm         | White, 2-channel polarized and 2-channel transparent light |
| SS5016CG-25M-WGG01E <span>NEW</span> | 1440×1080  | 250-1500mm       | 60fps           |    | 25mm         | White, 2-channel polarized and 2-channel transparent light |
| SS5050MG-08M-WGG01E <span>NEW</span> | 2368×1792  | 80-1500mm        | 45fps           |    | 8mm          | White, 2-channel polarized and 2-channel transparent light |
| SS5050MG-12M-WGG01E <span>NEW</span> | 2368×1792  | 80-1500mm        | 45fps           |   | 12mm         | White, 2-channel polarized and 2-channel transparent light |
| SS5050MG-16M-WGG01E <span>NEW</span> | 2368×1792  | 100-1500mm       | 45fps           |  | 16mm         | White, 2-channel polarized and 2-channel transparent light |
| SS5050MG-25M-WGG01E <span>NEW</span> | 2368×1792  | 250-1500mm       | 45fps           |  | 25mm         | White, 2-channel polarized and 2-channel transparent light |
| SS5050CG-08M-WGG01E <span>NEW</span> | 2368×1792  | 80-1500mm        | 45fps           |  | 8mm          | White, 2-channel polarized and 2-channel transparent light |
| SS5050CG-12M-WGG01E <span>NEW</span> | 2368×1792  | 80-1500mm        | 45fps           |  | 12mm         | White, 2-channel polarized and 2-channel transparent light |
| SS5050CG-16M-WGG01E <span>NEW</span> | 2368×1792  | 100-1500mm       | 45fps           |  | 16mm         | White, 2-channel polarized and 2-channel transparent light |
| SS5050CG-25M-WGG01E <span>NEW</span> | 2368×1792  | 250-1500mm       | 45fps           |  | 25mm         | White, 2-channel polarized and 2-channel transparent light |

| Basic               |                                                                                                                                                                                                                                                                                                                                                               |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Resolution          | 2368×1792                                                                                                                                                                                                                                                                                                                                                     |
| Max. Frame rate     | 45fps                                                                                                                                                                                                                                                                                                                                                         |
| Shutter Mode        | Global                                                                                                                                                                                                                                                                                                                                                        |
| Mono/Color          | Color                                                                                                                                                                                                                                                                                                                                                         |
| Lens Mount          | M12, auto focus                                                                                                                                                                                                                                                                                                                                               |
| Trigger Mode        | Internal Trigger/External Trigger/Ethernet/Serial/Industrial Ethernet.                                                                                                                                                                                                                                                                                        |
| Software            | EasyVS, Web                                                                                                                                                                                                                                                                                                                                                   |
| Certifications      | CE, UKCA, KC                                                                                                                                                                                                                                                                                                                                                  |
| Function            | Location Tools: PatternMatch AI Tools: AI classification Exist Tools: FindLine; FindCircle; BlobExist Count Tools: BlobCount Measure Tools: Grayscale area; Contrast; Brightness; EdgeWidthTool Detection Tools: ContourCompare Recognition Tools: DataCode; BarCode; OCR; ColorRecog Logic Tools: LogicCheck; ConditionCheck; Mathematical; StringComparison |
| Focal Length        | 16mm                                                                                                                                                                                                                                                                                                                                                          |
| Light Source Type   | White, 2-channel polarized and 2-channel transparent light                                                                                                                                                                                                                                                                                                    |
| Focus Control       | Auto focus                                                                                                                                                                                                                                                                                                                                                    |
| Performance         |                                                                                                                                                                                                                                                                                                                                                               |
| Working Distance    | 100-1500mm                                                                                                                                                                                                                                                                                                                                                    |
| Field of View (FOV) | 99×75mm @200mm                                                                                                                                                                                                                                                                                                                                                |

| Port                   |                                                                            |
|------------------------|----------------------------------------------------------------------------|
| Connector              | 2 industrial M12 connectors, Ethernet and GPIO                             |
| Network Port           | 1000M Ethernet                                                             |
| GPIO Interface         | RS232, 2 Opto-isolated inputs, 3 Opto-isolated outputs                     |
| Communication Mode     | RS232, Ethernet                                                            |
| Communication protocol | TCP Client, TCP Server, UDP, FTP, RS232, Profinet; Modbus TCP; EtherNet/IP |
| LED Indicator          | Power, Ethernet, Status, Result                                            |
| Power                  |                                                                            |
| Power Supply           | Support 9~26VDC, 2A input                                                  |
| Power Consumption      | <18W                                                                       |
| Structure              |                                                                            |
| Product Dimensions     | 82mm×55mm×50.7mm (excluding connectors)                                    |
| Net Weight             | <350 g                                                                     |
| Protection             | IP65                                                                       |
| Casing Material        | Aluminum alloy (excluding front cover)                                     |
| Environment            |                                                                            |
| Operating Temperature  | -20°C ~ +50°C                                                              |
| Operating Humidity     | 20% ~ 95%, non-condensing                                                  |
| Storage Temperature    | -30°C ~ +70°C                                                              |



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