

## Technical data sheet

### Contour measurement system

Part no.: 50146509  
CMS748i-0960-0560-0720.R

#### Contents

- Set consists of
- Technical data
- Dimensioned drawings
- Electrical connection
- Diagrams
- Notes
- Accessories



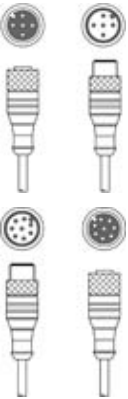
For illustration purposes only



## Set consists of

|                                                                                     | Quantity | Part no. | Designation             | Article                   | Description                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------|----------|----------|-------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | 4        | 424417   | BT-P40                  | Mounting bracket set      | Contains: BT-P40 clamp bracket, 2x<br>Bore hole 1: M6<br>Bore hole 2: M6<br>Design of mounting device: Mounting clamp<br>Fastening, at system: Groove mounting<br>Mounting bracket, at device: Groove mounting<br>Type of mounting device: Clampable, Suitable for mounting in UDC-S2, DC-S2 device columns<br>Material: Metal |
|                                                                                     | 6        | 429029   | BT-2RG                  | Mounting bracket set      | Contains: 2x BT-R swivel mount, 2 cylinders for mounting on the light curtain<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable<br>Type of mounting device: Turning, 360°<br>Material: Metal, Plastic                                                                                   |
|                                                                                     | 2        | 424422   | BT-2SB10                | Mounting bracket set      | Contains: 2x BT-SB10<br>Design of mounting device: Mounting clamp<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable, On the lateral C-groove<br>Type of mounting device: Swiveling<br>Swivel range: -8 ... 8°<br>Material: Metal                                                        |
|                                                                                     | 1        | 50119136 | CML730i-R05-560.R/L-M12 | Light curtain receiver    | Operating range: 0.1 ... 4.5 m<br>Interface: IO-Link<br>Connection: Connector, M12, Rear side, 8 -pin                                                                                                                                                                                                                          |
|  | 1        | 50119138 | CML730i-R05-720.R/L-M12 | Light curtain receiver    | Operating range: 0.1 ... 4.5 m<br>Interface: IO-Link<br>Connection: Connector, M12, Rear side, 8 -pin                                                                                                                                                                                                                          |
|                                                                                     | 1        | 50119141 | CML730i-R05-960.R/L-M12 | Light curtain receiver    | Operating range: 0.1 ... 4.5 m<br>Interface: IO-Link<br>Connection: Connector, M12, Rear side, 8 -pin                                                                                                                                                                                                                          |
|                                                                                     | 1        | 50118918 | CML730i-T05-560.R-M12   | Light curtain transmitter | Operating range: 0.1 ... 4 m<br>Connection: Connector, M12, Rear side, 5 -pin                                                                                                                                                                                                                                                  |
|                                                                                     | 1        | 50118920 | CML730i-T05-720.R-M12   | Light curtain transmitter | Operating range: 0.1 ... 4 m<br>Connection: Connector, M12, Rear side, 5 -pin                                                                                                                                                                                                                                                  |
|  | 1        | 50118923 | CML730i-T05-960.R-M12   | Light curtain transmitter | Operating range: 0.1 ... 4 m<br>Connection: Connector, M12, Rear side, 5 -pin                                                                                                                                                                                                                                                  |

## Set consists of

|                                                                                   | Quantity | Part no. | Designation                 | Article               | Description                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------------------|----------|----------|-----------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 3        | 50129781 | KDS DN-M12-5A-M12-5A-P3-050 | Interconnection cable | Application: Oil and lubricant resistant<br>Suitable for interface: DeviceNet, CANopen<br>Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin<br>Connection 2: Connector, M12, Axial, Male, A-coded, 5 -pin<br>Shielded: Yes<br>Cable length: 5,000 mm<br>Sheathing material: PUR |
|                                                                                   | 3        | 50135146 | KDS S-M12-8A-M12-8A-P1-050  | Interconnection cable | Application: Oil and lubricant resistant<br>Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin<br>Connection 2: Connector, M12, Axial, Male, A-coded, 8 -pin<br>Shielded: Yes<br>Cable length: 5,000 mm<br>Sheathing material: PUR                                               |
|                                                                                   | 1        | 50142331 | LSC748-000-100              | Switch cabinet        | Supply voltage: 100 ... 263 V, AC<br>Switching inputs: 4 Piece(s)<br>Switching outputs: 4 Piece(s)<br>Connections: 13 Piece(s)                                                                                                                                                             |

## Technical data

### Basic data

|             |                              |
|-------------|------------------------------|
| Series      | CMS 7xxi                     |
| Contains    | 1x dongle CMS700             |
| Order guide | Additional models on request |

### Functions

|           |                                          |
|-----------|------------------------------------------|
| Functions | For a minimum object height $\geq 50$ mm |
|-----------|------------------------------------------|

### Optical data

|                                    |                |
|------------------------------------|----------------|
| Operating range                    | 0.1 ... 4.5 m  |
| Operating range, transparent media | 0.1 ... 1.75 m |
| Operating range limit              | 0.1 ... 6 m    |
| Measurement field length 1         | 960 mm         |
| Measurement field length 2         | 560 mm         |
| Measurement field length 3         | 720 mm         |
| Beam spacing                       | 5 mm           |

### Electrical data

|                                                      |                              |
|------------------------------------------------------|------------------------------|
| Protective circuit                                   | Polarity reversal protection |
|                                                      | Short circuit protected      |
|                                                      | Transient protection         |
| Output current, continuous current per channel, max. | 100 mA                       |

### Performance data

|                      |               |
|----------------------|---------------|
| Supply voltage $U_B$ | 100 ... 263 V |
| Open-circuit current | 250 mA        |

### Inputs

|                                    |            |
|------------------------------------|------------|
| Number of digital switching inputs | 4 Piece(s) |
|------------------------------------|------------|

### Switching inputs

|                   |                         |
|-------------------|-------------------------|
| Type              | Digital switching input |
| Voltage type      | DC                      |
| Switching voltage | 24 V, VIN               |

### Outputs

|                                     |            |
|-------------------------------------|------------|
| Number of digital switching outputs | 4 Piece(s) |
|-------------------------------------|------------|

### Switching outputs

|                   |                          |
|-------------------|--------------------------|
| Type              | Digital switching output |
| Voltage type      | AC                       |
| Switching voltage | 24 V, VIN                |

### Interface

|      |                           |
|------|---------------------------|
| Type | EtherNet TCP/IP, PROFINET |
|------|---------------------------|

### Ethernet

|          |                              |
|----------|------------------------------|
| Function | Configuration / process data |
|----------|------------------------------|

### PROFINET

|          |                              |
|----------|------------------------------|
| Function | Configuration / process data |
|----------|------------------------------|

### Connection

|                       |            |
|-----------------------|------------|
| Number of connections | 9 Piece(s) |
|-----------------------|------------|

### Connection 1

|                    |                |
|--------------------|----------------|
| Function           | Earthing       |
| Type of connection | Earthing strap |
| Material           | Metal          |

### Connection 2

|                    |                   |
|--------------------|-------------------|
| Function           | Voltage supply    |
| Type of connection | Harting connector |
| Material           | Metal             |

## Technical data

### Connection 3

|                    |                                                                                    |
|--------------------|------------------------------------------------------------------------------------|
| Function           | Length measuring light curtain connection (not in combination with rotary encoder) |
| Type of connection | Connector                                                                          |
| Thread size        | M12                                                                                |
| Type               | Male                                                                               |
| Material           | Metal                                                                              |
| No. of pins        | 8 -pin                                                                             |
| Encoding           | A-coded                                                                            |

### Connection 4

|                    |                                          |
|--------------------|------------------------------------------|
| Function           | Width measuring light curtain connection |
| Type of connection | Connector                                |
| Thread size        | M12                                      |
| Type               | Male                                     |
| Material           | Metal                                    |
| No. of pins        | 8 -pin                                   |
| Encoding           | A-coded                                  |

### Connection 5

|                    |                                           |
|--------------------|-------------------------------------------|
| Function           | Height measuring light curtain connection |
| Type of connection | Connector                                 |
| Thread size        | M12                                       |
| Type               | Male                                      |
| Material           | Metal                                     |
| No. of pins        | 8 -pin                                    |
| Encoding           | A-coded                                   |

### Connection 6

|                    |                                                                                    |
|--------------------|------------------------------------------------------------------------------------|
| Function           | Rotary encoder connection (not in combination with length measuring light curtain) |
| Type of connection | Connector                                                                          |
| Thread size        | M12                                                                                |
| Type               | Male                                                                               |
| Material           | Metal                                                                              |
| No. of pins        | 8 -pin                                                                             |
| Encoding           | A-coded                                                                            |

### Connection 7

|                    |                                     |
|--------------------|-------------------------------------|
| Function           | External Ethernet TCP/IP connection |
| Type of connection | Connector                           |
| Thread size        | M12                                 |
| Type               | Male                                |
| Material           | Metal                               |
| No. of pins        | 4 -pin                              |
| Encoding           | A-coded                             |

### Connection 8

|                    |                                   |
|--------------------|-----------------------------------|
| Function           | PROFINET IN connection (optional) |
| Type of connection | Connector                         |
| Thread size        | M12                               |
| Type               | Male                              |
| Material           | Metal                             |
| No. of pins        | 4 -pin                            |
| Encoding           | A-coded                           |

### Connection 9

|                    |                                    |
|--------------------|------------------------------------|
| Function           | PROFINET OUT connection (optional) |
| Type of connection | Connector                          |
| Thread size        | M12                                |
| Type               | Male                               |
| Material           | Metal                              |
| No. of pins        | 4 -pin                             |
| Encoding           | A-coded                            |

### Mechanical data

|                     |          |
|---------------------|----------|
| Design              | Cubic    |
| Housing material    | Metal    |
| Metal housing       | Aluminum |
| Lens cover material | Plastic  |
| Net weight          | 13,600 g |
| Housing color       | Gray     |
|                     | Red      |

**Note** Dimensions of individual set items, see dimensioned drawings

### Operation and display

|                       |                         |
|-----------------------|-------------------------|
| Type of display       | LED                     |
| Number of LEDs        | 3 Piece(s)              |
| Type of configuration | performed via webConfig |
| Operational controls  | Rotary switch           |

### Environmental data

|                                |               |
|--------------------------------|---------------|
| Ambient temperature, operation | 0 ... 45 °C   |
| Ambient temperature, storage   | -20 ... 70 °C |

### Certifications

|           |     |
|-----------|-----|
| Approvals | CSA |
|-----------|-----|

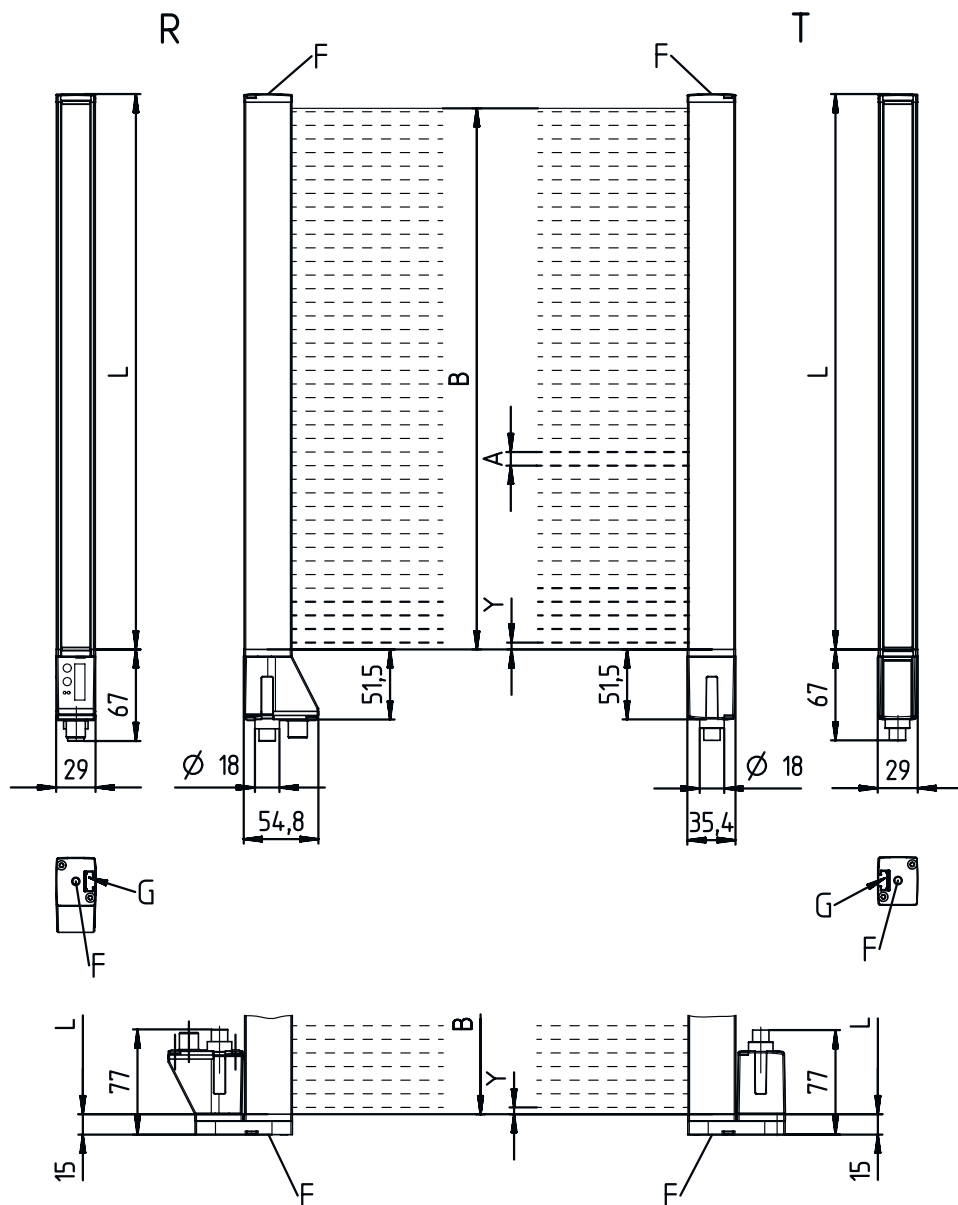
### Classification

|                       |          |
|-----------------------|----------|
| Customs tariff number | 90314990 |
| ECLASS 5.1.4          | 27270910 |
| ECLASS 8.0            | 27270910 |
| ECLASS 9.0            | 27270910 |
| ECLASS 10.0           | 27270910 |
| ECLASS 11.0           | 27270910 |
| ECLASS 12.0           | 27270910 |
| ECLASS 13.0           | 27270910 |
| ECLASS 14.0           | 27270910 |
| ECLASS 15.0           | 27270910 |
| ETIM 5.0              | EC002549 |
| ETIM 6.0              | EC002549 |
| ETIM 7.0              | EC002549 |
| ETIM 8.0              | EC002549 |
| ETIM 9.0              | EC002549 |
| ETIM 10.0             | EC002549 |

## Dimensioned drawings

All dimensions in millimeters

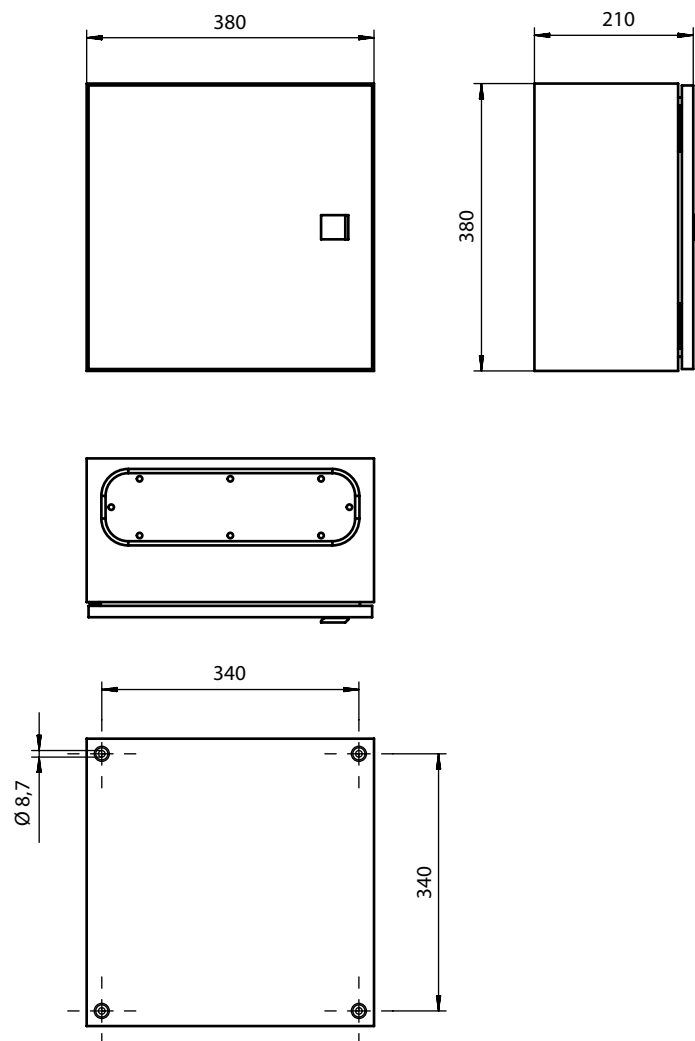
### Light curtain transmitter and receiver



- |   |                                                                                                                   |   |          |
|---|-------------------------------------------------------------------------------------------------------------------|---|----------|
| A | Beam spacing 5 mm                                                                                                 | R | Receiver |
| B | Measurement field length 1 = 960 mm<br>Measurement field length 2 = 560 mm<br>Measurement field length 3 = 720 mm | Y | 2.5 mm   |
| F | M6 thread                                                                                                         |   |          |
| G | Fastening groove                                                                                                  |   |          |
| L | Profile length 1 = 968 mm<br>Profile length 2 = 568 mm<br>Profile length 3 = 728 mm                               |   |          |
| T | Transmitter                                                                                                       |   |          |

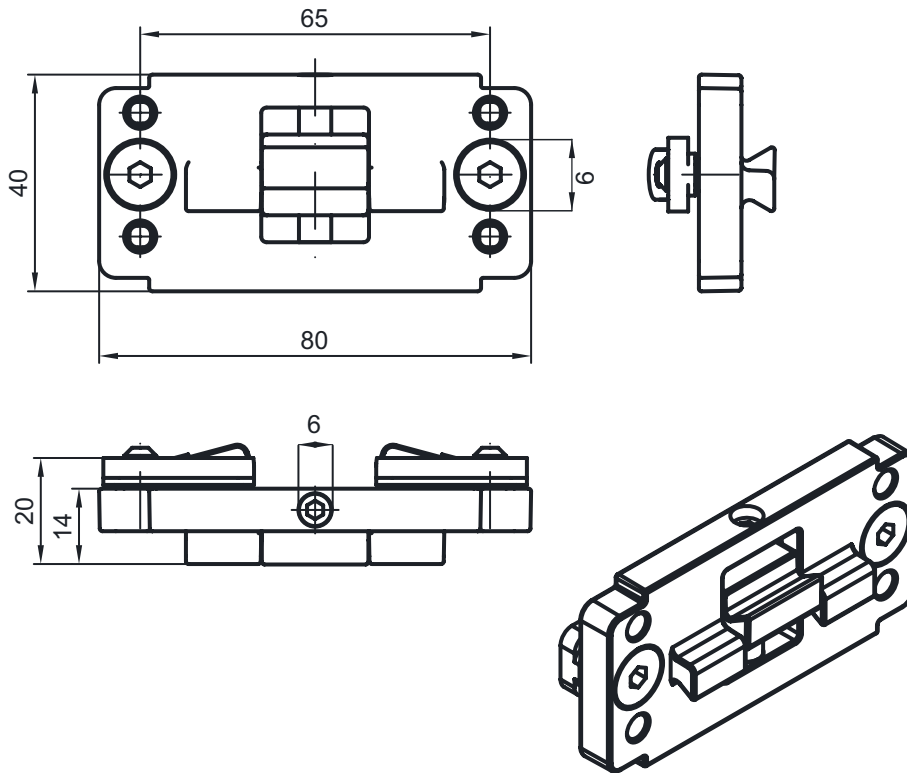
## Dimensioned drawings

### Switch cabinet



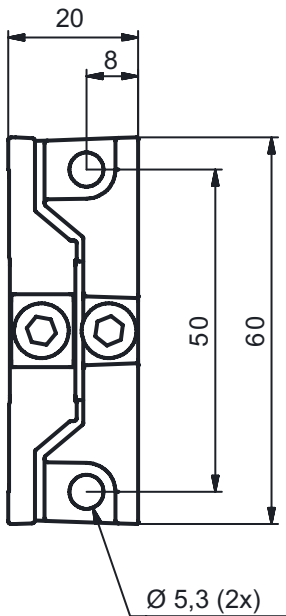
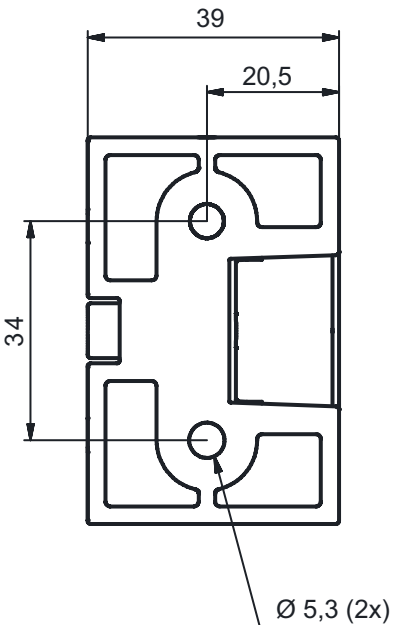
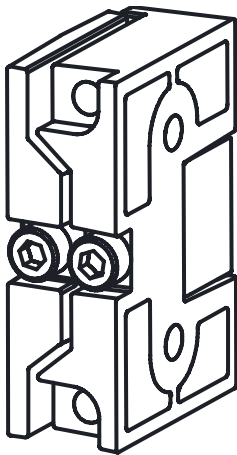
## Dimensioned drawings

### Mounting bracket BT-2P40



Dimensioned drawings

Mounting bracket BT-2SB10



Electrical connection

Connection 1

|                    |                |
|--------------------|----------------|
| Function           | Earthing       |
| Type of connection | Earthing strap |
| Material           | Metal          |

Connection 2

XS1000

|                    |                   |
|--------------------|-------------------|
| Function           | Voltage supply    |
| Type of connection | Harting connector |
| Material           | Metal             |

## Electrical connection

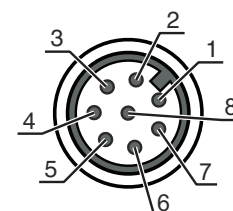
### Connection 3

### XS1300

|                    |                                                                                    |
|--------------------|------------------------------------------------------------------------------------|
| Function           | Length measuring light curtain connection (not in combination with rotary encoder) |
| Type of connection | Connector                                                                          |
| Thread size        | M12                                                                                |
| Type               | Male                                                                               |
| Material           | Metal                                                                              |
| No. of pins        | 8 -pin                                                                             |
| Encoding           | A-coded                                                                            |

#### Pin Pin assignment

|   |         |
|---|---------|
| 1 | V+      |
| 2 | IO1     |
| 3 | GND     |
| 4 | IO-Link |
| 5 | IO2     |
| 6 | IO3     |
| 7 | IO4     |
| 8 | GND     |



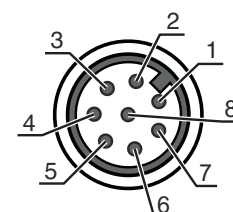
### Connection 4

### XS1301

|                    |                                          |
|--------------------|------------------------------------------|
| Function           | Width measuring light curtain connection |
| Type of connection | Connector                                |
| Thread size        | M12                                      |
| Type               | Male                                     |
| Material           | Metal                                    |
| No. of pins        | 8 -pin                                   |
| Encoding           | A-coded                                  |

#### Pin Pin assignment

|   |         |
|---|---------|
| 1 | V+      |
| 2 | IO1     |
| 3 | GND     |
| 4 | IO-Link |
| 5 | IO2     |
| 6 | IO3     |
| 7 | IO4     |
| 8 | GND     |



### Connection 5

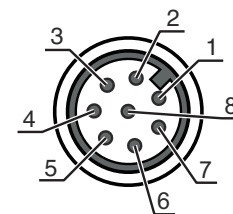
### XS1302

|                    |                                           |
|--------------------|-------------------------------------------|
| Function           | Height measuring light curtain connection |
| Type of connection | Connector                                 |
| Thread size        | M12                                       |
| Type               | Male                                      |
| Material           | Metal                                     |
| No. of pins        | 8 -pin                                    |
| Encoding           | A-coded                                   |

## Electrical connection

### Pin Pin assignment

|   |         |
|---|---------|
| 1 | V+      |
| 2 | IO1     |
| 3 | GND     |
| 4 | IO-Link |
| 5 | IO2     |
| 6 | IO3     |
| 7 | IO4     |
| 8 | GND     |



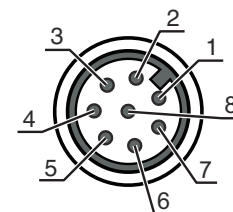
### Connection 6

### XS1400

|                    |                                                                                    |
|--------------------|------------------------------------------------------------------------------------|
| Function           | Rotary encoder connection (not in combination with length measuring light curtain) |
| Type of connection | Connector                                                                          |
| Thread size        | M12                                                                                |
| Type               | Male                                                                               |
| Material           | Metal                                                                              |
| No. of pins        | 8 -pin                                                                             |
| Encoding           | A-coded                                                                            |

### Pin Pin assignment

|   |        |
|---|--------|
| 1 | U-     |
| 2 | U+     |
| 3 | A      |
| 4 | B      |
| 5 | N      |
| 6 | A inv. |
| 7 | B inv. |
| 8 | N inv. |
| 9 | Shield |



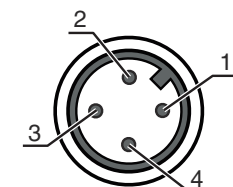
### Connection 7

### XETH1

|                    |                                     |
|--------------------|-------------------------------------|
| Function           | External Ethernet TCP/IP connection |
| Type of connection | Connector                           |
| Thread size        | M12                                 |
| Type               | Male                                |
| Material           | Metal                               |
| No. of pins        | 4 -pin                              |
| Encoding           | A-coded                             |

### Pin Pin assignment

|   |     |
|---|-----|
| 1 | TD+ |
| 2 | RD+ |
| 3 | TD- |
| 4 | RD- |



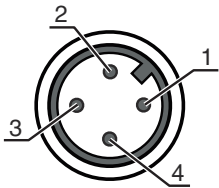
### Connection 8

### XS1100

|                    |                                   |
|--------------------|-----------------------------------|
| Function           | PROFINET IN connection (optional) |
| Type of connection | Connector                         |
| Thread size        | M12                               |
| Type               | Male                              |
| Material           | Metal                             |
| No. of pins        | 4 -pin                            |
| Encoding           | A-coded                           |

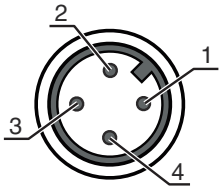
Electrical connection

| Pin | Pin assignment |
|-----|----------------|
| 1   | TD+            |
| 2   | RD+            |
| 3   | TD-            |
| 4   | RD-            |

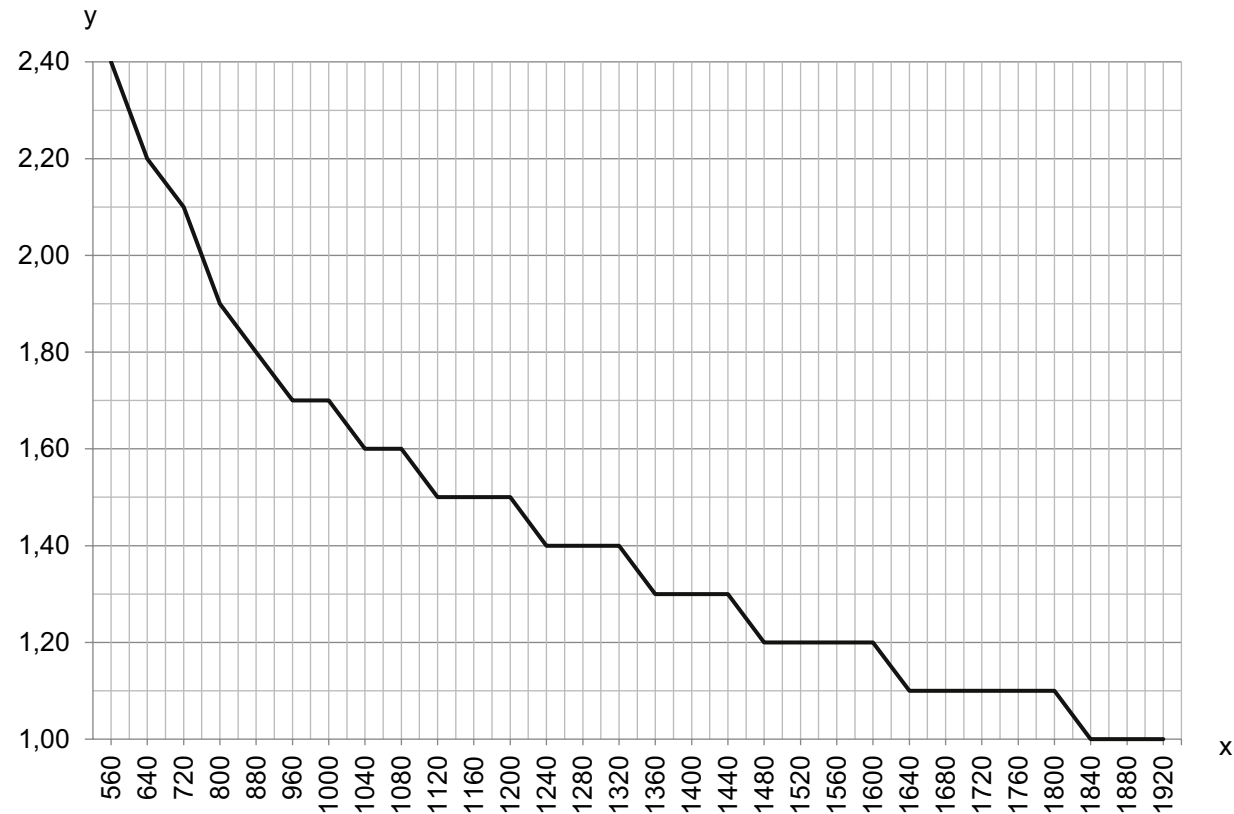


| Connection 9       | XS1101                             |
|--------------------|------------------------------------|
| Function           | PROFINET OUT connection (optional) |
| Type of connection | Connector                          |
| Thread size        | M12                                |
| Type               | Male                               |
| Material           | Metal                              |
| No. of pins        | 4 -pin                             |
| Encoding           | A-coded                            |

| Pin | Pin assignment |
|-----|----------------|
| 1   | TD+            |
| 2   | RD+            |
| 3   | TD-            |
| 4   | RD-            |



Diagrams



x Total measuring length from width and height measuring light curtain [mm]  
y Max. conveyor speed [m/s]

Notes

**Observe intended use!**

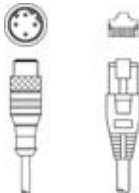
- This product is not a safety sensor and is not intended as personnel protection.
- The product may only be put into operation by competent persons.
- Only use the product in accordance with its intended use.

Accessories

Connection technology - Interconnection cables

|  | Part no. | Designation                 | Article               | Description                                                                                                                                                                                                                             |
|--|----------|-----------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50135082 | KSS ET-M12-4A-RJ45-A-P7-100 | Interconnection cable | Application: Oil and lubricant resistant<br>Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: RJ45<br>Shielded: Yes<br>Cable length: 10,000 mm<br>Sheathing material: PUR |

## Accessories

|                                                                                  | Part no. | Designation                 | Article               | Description                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------|----------|-----------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50135083 | KSS ET-M12-4A-RJ45-A-P7-150 | Interconnection cable | Application: Oil and lubricant resistant<br>Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: RJ45<br>Shielded: Yes<br>Cable length: 15,000 mm<br>Sheathing material: PUR |
|                                                                                  | 50135084 | KSS ET-M12-4A-RJ45-A-P7-300 | Interconnection cable | Application: Oil and lubricant resistant<br>Suitable for interface: Ethernet<br>Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin<br>Connection 2: RJ45<br>Shielded: Yes<br>Cable length: 30,000 mm<br>Sheathing material: PUR |

## Mounting technology - Other

|                                                                                    | Part no. | Designation   | Article             | Description                                                                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------|----------|---------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50143670 | BT 708M-MRSET | Mounting device set | Contains: Mounting material, Mounting profiles<br>Design of mounting device: Profile kit<br>Fastening, at system: Screw type / vertical<br>Mounting bracket, at device: Groove mounting<br>Type of mounting device: Rigid<br>Material: Aluminum<br>Shock absorber: No |
|                                                                                    | 50143669 | BT 710M-MRSET | Mounting device set | Contains: Mounting profiles, Mounting material<br>Design of mounting device: Profile kit<br>Fastening, at system: Screw type / vertical<br>Mounting bracket, at device: Groove mounting<br>Type of mounting device: Rigid<br>Material: Aluminum<br>Shock absorber: No |
|                                                                                    | 50142039 | BT 712M-MRSET | Mounting device set | Contains: Mounting profiles, Mounting material<br>Design of mounting device: Profile kit<br>Fastening, at system: Screw type / vertical<br>Mounting bracket, at device: Groove mounting<br>Type of mounting device: Rigid<br>Material: Aluminum<br>Shock absorber: No |

### Note



A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.