

## ITEM 156558 LCA-4TR-40-1660-AP-156558

| Description | Technical data | Accessories | Downloads |
|-------------|----------------|-------------|-----------|
|-------------|----------------|-------------|-----------|



### Features

- › Resolution 40 mm
- › Protective field height 1,660 mm
- › Extended range 20 m
- › LED indicator for weak signal
- › With plug connector M12
- › Two safety outputs (OSSD)
- › Installation material is included with the product

### Protective function



- › Figure  
hand protection

### LED function display



► Figure  
Transmitter



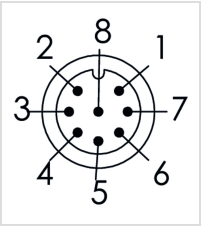
► Figure  
Receiver

|                       |                  |
|-----------------------|------------------|
| <b>LED OK</b>         | Normal operation |
| <b>LED ERROR</b>      | Fault state      |
| <b>LED STOP</b>       | Stop state       |
| <b>LED TEST</b>       | Test function    |
| <b>LED START</b>      | Start/ restart   |
| <b>LED SIGNAL LOW</b> | Weak signal      |

### Pin assignment transmitter

| Plug connector<br>(view of<br>connection side) | Pin | Designation | Function  | Conductor<br>coloring of<br>connection<br>cable |
|--|-----|-------------|---|---|
|  | 1   | 24 V DC     | Operating voltage, 24 V DC                                      | BN  |
|  | 2   | RANGE 0     | Device configuration, corresponds to the standard EN 61131-2    | WH  |
|  | 3   | 0 V DC      | Operating voltage, 0 V DC                                       | BU  |
|  | 4   | RANGE 1     | Device configuration, corresponds to the standard EN 61131-2    | BK  |
|  | 5   | FE          | Function earth (must be connected to meet the EMC requirements) | GY  |

### Connector assignment receiver

| Plug connector<br>(view of<br>connection side)                                    | Pin | Designation   | Function   | Conductor<br>coloring of<br>connection<br>cable |
|---|-----|---------------|--|---|
|  | 1   | FO1A          | Safety output,<br>channel 1  | WH  |
|   | 2   | 24 V DC       | Operating voltage,<br>24 V DC  | BN  |
|   | 3   | FO1B          | Safety output,<br>channel 2  | GN  |
|   | 4   | K1_K2/RESTART | Feedback external<br>contactors  | YE  |
|   | 5   | SEL_A         | Device configuration   | GY  |
|   | 6   | SEL_B         | Device configuration   | PK  |
|   | 7   | 0 V DC        | Operating voltage, 0<br>V DC   | BU  |
|   | 8   | FE            | Function earth<br>(must be connected<br>to meet the EMC<br>requirements) | RD  |

## Approvals



## Mechanical values and environment

|                                     |   |
|-------------------------------------|---|
| Number of safety outputs            | 2 Static, self-monitoring PNP safety outputs <sup>[1]</sup> |
| Resolution                          | 40 mm   |
| Height of the protective field      | 1660 mm   |
| Height of the sensor                | 1713 mm   |
| Maximum length of connection cables | 100 m   |
| Range of the protective field       | 20000 mm  |
| Dimensions                          | 28x30 mm <sup>[2]</sup>                                     |
| Ambient temperature                 | -30 ... 55 °C   |
| Degree of protection                | IP 65 / IP 67   |
| Installation position               | Any <sup>[3]</sup>  |
| Reaction time                       | 8,5 ms  |
| Connection                          | Plug connector M12 (5-pin transmitter / 8-pin receiver)     |

## Electrical connection ratings

|            |    |
|------------|----|
| Cascadable | No |
|------------|----|

|                      |   |
|----------------------|---|
| Muting possible      | In combination with external sensors and an evaluation unit |
| Operating voltage DC | 24 V DC -20% ... +20%                                       |
| Current consumption  | 400 mA  |
| Power consumption    |   |
|                      | Transmitter 1 W   |
|                      | Receiver 2 W  |
| LED indicator        | Yes <b>[4]</b>  |

### Reliability values acc. to EN ISO 13849-1

|                        |                            |
|------------------------|----------------------------|
| ESPE type              | 4 <b>[5]</b>               |
| Performance Level      | PL e <b>[6]</b>            |
| PFH <sub>D</sub>       | 1,55x10 <sup>-8</sup>      |
| Safety Integrity Level | SIL 3 / SILCL 3 <b>[7]</b> |
| Mission time           | 20 y                       |

**[1]** With short circuit and overload protection

**[2]** In cross-section

**[3]** Optional: adjustable holders

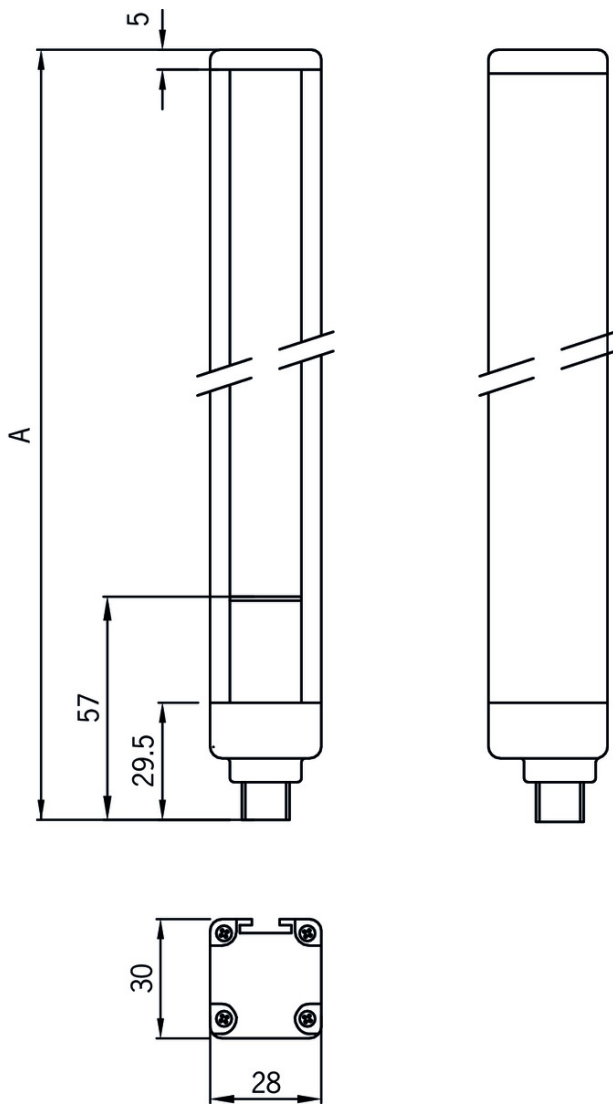
**[4]** Self-diagnostics and status

**[5]** Acc. to EN 61496-1

**[6]** acc. to EN ISO 13849-1

**[7]** According to IEC 61508-1...4 / IEC 62061

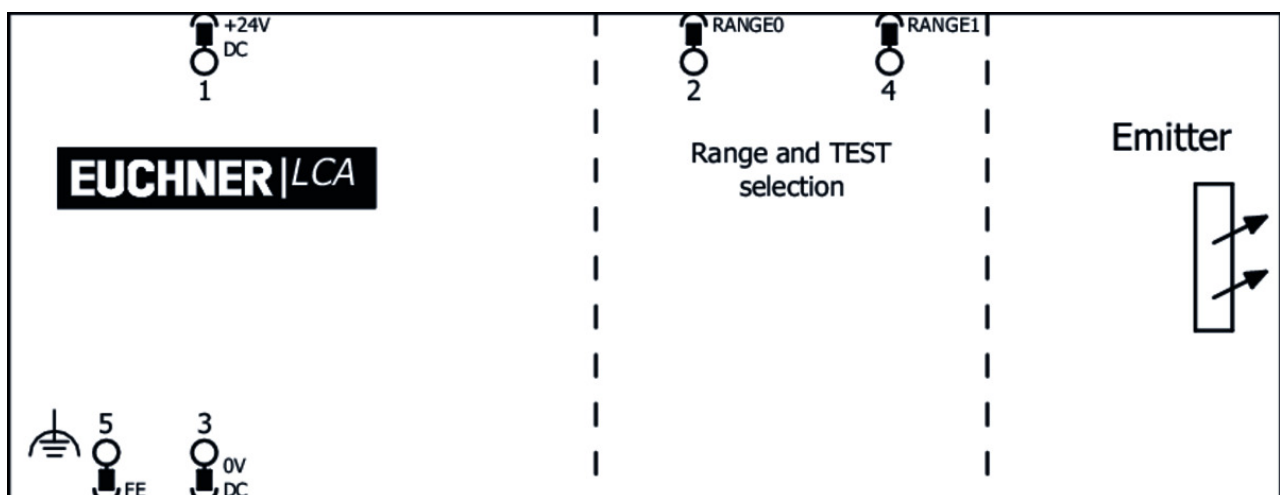
### Dimension drawing



### Legende

A = Height of the sensor (see technical data)

### Wiring diagram transmitter



## Wiring diagram receiver



## Mounting accessories

- Socket for mounting pillars 202 x 224 x 55 mm



**156884** AM-OS-P-AA-156884

### Features

- Socket for mounting pillars
- Spring-mounted floor plate made of steel
- Improved compensation of unevenness
- Adjustable via adjusting screws
- Height 55 mm

- Socket for mounting pillars 202 x 224 x 34 mm



**156885** AM-OS-P-AB-156885

### Features

- Socket for mounting pillars
- Adjustable via adjusting screws
- Height 34 mm

- Mounting pillar for protective field heights from 1510 to 1660 mm



**156889** AM-OS-C-A1-1970-156889

### Features

- Mounting pillar for light grids and light curtains LCA
- For protective field heights from 1510 to 1660 mm
- Protects against damage
- Straightforward adjustment using spherical circular level in the cover

- Mounting pillar with cable gland for protective field heights from 1510 to 1660 mm



**156893** AM-OS-C-A1-M-1970-156893

### Features

- Mounting pillar for light grids and light curtains LCA
- For protective field heights from 1510 to 1660 mm
- With integrated cable gland PG11
- Protects against damage
- Straightforward adjustment using spherical circular level in the cover

- 
- ▼ 12 x vibration damper for protective field heights of 1,210 to 1,810 mm or 2- to 4-beam light grids



**156918** AM-OS-D-V12-156918

▼ Features

- › Vibration damper for light grids and light curtains LCA
- › For protective field heights 1210 - 1810 mm or 2- 4 beams
- › Packaging unit 12 pcs.
- › For reducing vibration
- › Protects against damage
- › Installation either on the product or on mounting pillar

- 
- ▼ 6 x adjustable holder



**156920** AM-OS-B-A1-V06-156920

▼ Features

- › Set of 6 holders for light grids and light curtains LCA
- › For protective field heights from 1210 mm
- › Adjustable horizontally / vertically
- › Quick mount using two screws
- › Can be mounted directly on LCA

- 
- ▼ 4 x adjustable holder 180°



**156921** AM-OS-B-A2-V04-156921

▼ Features

- › Set of 4 holders for light grids and light curtains LCA
- › Can be rotated by 180°
- › Adjustable horizontally / vertically
- › Quick mount using two screws
- › Can be mounted directly on LCA

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## Function expansion

- ▼ Mounting pillar with deflection mirror for protective field heights from 1510 to 1660 mm



**156898** AE-OS-SC-1970-156898

▼ Features

- › Mounting pillar with deflection mirror for light grids and light curtains LCA
- › For protective field heights from 1510 to 1660 mm
- › Protects against damage
- › Straightforward adjustment using spherical circular level in the cover

- 
- ▼ Deflection mirror for protective field height 1660mm



**156913** AE-OS-S-1660-156913

▼ Features

- › Deflection mirror with adjustable holder for light curtains LCA
- › For protective field height 1660 mm

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## Miscellaneous accessories

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### ▾ Laser alignment aid



**156915** AY-OS-LSR-156915

#### ▾ Features

- › Laser alignment aid for light grids and light curtains LCA
- › Light source: Laser diode – wavelength 650 nm
- › Laser class 2
- › Usable range 100 m
- › Straightforward clamping on the transmitter

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### ▾ Test rod Ø 40 mm



**156924** AY-OS-FTR-40-156924

#### ▾ Features

- › Test rod for light curtains LCA
- › Used for function test
- › Ø 40 mm
- › Cylinder with matt surface

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## Connection material

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### ▾ Connection cable with straight plug connector M12, 5-pin, 5m



**100183** C-M12F05-05X034PV05,0-MA-100183

#### ▾ Features

- › M12 female plug, 5-pin
- › Straight plug connector
- › PVC cable
- › Cable length 5 m
- › With flying lead



**113620** C-M12F05-05X034PU05,0-MA-113620

#### ▾ Features

- › M12 female plug, 5-pin
- › Straight plug connector
- › PUR cable
- › Cable length 5 m
- › With flying lead

---

### ▾ Connection cable with plug connector M12, 5-pin, 10m



**100184** C-M12F05-05X034PV10,0-MA-100184

#### ▾ Features

- › M12 female plug, 5-pin
- › Straight plug connector
- › PVC cable
- › Cable length 10 m
- › With flying lead



- 
- ▼ Connection cable with plug connector M12, 5-pin, 20m



**100185** C-M12F05-05X034PV20,0-MA-100185

▼ Features

- › M12 female plug, 5-pin
  - › Straight plug connector
  - › PVC cable
  - › Cable length 20 m
  - › With flying lead
- 

- ▼ Connection cable with straight plug connector M12, 5-pin, 10m



**113640** C-M12F05-05X034PU10,0-MA-113640

▼ Features

- › M12 female plug, 5-pin
  - › Straight plug connector
  - › PUR cable
  - › Cable length 10 m
  - › With flying lead
- 

- ▼ Connection cable with straight plug connector M12, 5-pin, 20 m



**113682** C-M12F05-05X034PU20,0-MA-113682

▼ Features

- › M12 female plug, 5-pin
  - › Straight plug connector
  - › PUR cable
  - › Cable length 20 m
  - › With flying lead
- 

- ▼ Connection cable with straight plug connector M12, 5-pin, 30 m



**122784** C-M12F05-05X034PU30,0-MA-122784

▼ Features

- › M12 female plug, 5-pin
  - › Straight plug connector
  - › PUR cable
  - › Cable length 30 m
  - › With flying lead
- 

- ▼ Connection cable with 2 plug connectors M12, 5-pin, 5m



**100180** C-M12F05-05X034PV05,0-M12M05-100180

▼ Features

- › M12 female plug to M12 plug connector, 5-pin
  - › Straight female plug and plug connector
  - › PVC cable
  - › Cable length 5 m
- 

**119932** C-M12F05-05X034PU05,0-M12M05-119932



- ✓ Features
    - › M12 female plug to M12 plug connector, 5-pin
    - › Straight female plug and plug connector
    - › PUR cable
    - › Cable length 5 m
- 

- ✓ Connection cable with 2 plug connectors M12, 5-pin, 10m



- 100181** C-M12F05-05X034PV10,0-M12M05-100181
  - ✓ Features
    - › M12 female plug to M12 plug connector, 5-pin
    - › Straight female plug and plug connector
    - › PVC cable
    - › Cable length 10 m
- 



- 119947** C-M12F05-05X034PU10,0-M12M05-119947
  - ✓ Features
    - › M12 female plug to M12 plug connector, 5-pin
    - › Straight female plug and plug connector
    - › PUR cable
    - › Cable length 10 m
- 

- ✓ Connection cable with 2 plug connectors M12, 5-pin, 20m



- 100182** C-M12F05-05X034PV20,0-M12M05-100182
  - ✓ Features
    - › M12 female plug to M12 plug connector, 5-pin
    - › Straight female plug and plug connector
    - › PVC cable
    - › Cable length 20 m
- 



- 119971** C-M12F05-05X034PU20,0-M12M05-119971
  - ✓ Features
    - › M12 female plug to M12 plug connector, 5-pin
    - › Straight female plug and plug connector
    - › PUR cable
    - › Cable length 20 m
- 

- ✓ Connection cable with plug connector M12, 8-pin, 5m



- 100177** C-M12F08-08X025PV05,0-MA-100177
  - ✓ Features
    - › M12 female plug, 8-pin
    - › Straight plug connector
    - › PVC cable
    - › Cable length 5 m
    - › With flying lead
- 



- 115112** C-M12F08-08X025PU05,0-MA-115112
- ✓ Features
  - › M12 female plug, 8-pin

- › Straight plug connector
  - › PUR cable
  - › Cable length 5 m
  - › With flying lead
- 

▼ Connection cable with plug connector M12, 8-pin, 10m



**100178** C-M12F08-08X025PV10,0-MA-100178

▼ Features

- › M12 female plug, 8-pin
  - › Straight plug connector
  - › PVC cable
  - › Cable length 10 m
  - › With flying lead
- 



**115113** C-M12F08-08X025PU10,0-MA-115113

▼ Features

- › M12 female plug, 8-pin
  - › Straight plug connector
  - › PUR cable
  - › Cable length 10 m
  - › With flying lead
- 

▼ Connection cable with plug connector M12, 8-pin, 20m



**100179** C-M12F08-08X025PV20,0-MA-100179

▼ Features

- › M12 female plug, 8-pin
  - › Straight plug connector
  - › PVC cable
  - › Cable length 20 m
  - › With flying lead
- 



**115114** C-M12F08-08X025PU20,0-MA-115114

▼ Features

- › M12 female plug, 8-pin
  - › Straight plug connector
  - › PUR cable
  - › Cable length 20 m
  - › With flying lead
- 

▼ Connection cable with plug connector M12, 8-pin, 30m



**115116** C-M12F08-08X025PV30,0-MA-115116

▼ Features

- › M12 female plug, 8-pin
  - › Straight plug connector
  - › PVC cable
  - › Cable length 30 m
  - › With flying lead
- 

**115257** C-M12F08-08X025PU30,0-MA-115257



- ✓ Features
    - › M12 female plug, 8-pin
    - › Straight plug connector
    - › PUR cable
    - › Cable length 30 m
    - › With flying lead
- 

- ✓ Connection cable with 2 plug connectors M12, 1m



- 123430** C-M12M08-08X025PV01,0-M12F08-123430
  - ✓ Features
    - › 8-pin M12 male plug, straight
    - › 8-pin M12 female connector, straight
    - › PVC cable
    - › Cable length 1m
- 

- ✓ Connection cable with 2 plug connectors M12, 2m



- 123431** C-M12M08-08X025PV02,0-M12F08-123431
  - ✓ Features
    - › 8-pin M12 male plug, straight
    - › 8-pin M12 female connector, straight
    - › PVC cable
    - › Cable length 2m
- 

- ✓ Connection cable with 2 plug connectors M12, 5m



- 123432** C-M12M08-08X025PV05,0-M12F08-123432
  - ✓ Features
    - › 8-pin M12 male plug, straight
    - › 8-pin M12 female connector, straight
    - › PVC cable
    - › Cable length 5m
- 








- ✓ Connection cable with 2 plug connectors M12, 10m



- 123433** C-M12M08-08X025PV10,0-M12F08-123433
  - ✓ Features
    - › 8-pin M12 male plug, straight
    - › 8-pin M12 female connector, straight
    - › PVC cable
    - › Cable length 10m
- 









## Instructions

- ✓ Manual de instrucciones Barreras/cortinas fotoeléctricas LCA 4

|  |         |          |   |  |
|--|---------|----------|---|--|
| Betriebsanleitung Lichtgitter/ Lichtvorhänge LCA 4<br>Operating Instructions Light Grids/ Light Curtains LCA 4 | 2504709 | 02-02/18 | <br> |  5.2 MB  |
| Mode d'emploi Barrières photoélectriques / rideaux lumineux LCA 4  | 2504709 | 02-02/18 |    |  3.1 MB |
| Manual de instrucciones Barreras/cortinas fotoeléctricas LCA 4   | 2504709 | 02-02/18 |    |  3.1 MB |







## Catalogs

- Light grids and light curtains LCA Barreras fotoeléctricas y cortinas fotoeléctricas LCA Barrières photoélectriques et rideaux lumineux LCA Lichtgitter und Lichtvorhänge LCA

|   | Doc. no. | Version  | Language  | Download   |
|---|----------|----------|---|--|
| Lichtgitter und Lichtvorhänge LCA                     | 157084   | 03-03/18 |  |  2.5 MB |
| Barrières photoélectriques et rideaux lumineux LCA    | 157086   | 03-03/18 |  |  2.5 MB |
| Barreras fotoeléctricas y cortinas fotoeléctricas LCA | 157087   | 03-03/18 |  |  2.5 MB |
| Light grids and light curtains LCA                    | 157085   | 03-03/18 |  |  2.5 MB |

## Declaration of conformity

- EU-Konformitätserklärung

|  | Doc. no. | Version  | Language  | Download   |
|--|----------|----------|---|--|
| EU-Konformitätserklärung<br>Declaración UE de conformidad<br>Déclaration UE de conformité<br>Dichiarazione di conformità<br>EU declaration of conformity | 2503625  | 02-08/17 | <br><br><br><br> |  0.2 MB |