

OS4 SERIES

ARTICLE PROPERTIES

| | | | |
|---------------------------|--|--|---|
| SENSOR TYPE | Photoelectric sensor | CONNECTION TYPES (<i>see table</i>) | |
| SIZE | See dimensions | • Cable | PUR, 0.14 mm ² , 2 m** |
| OPERATING DISTANCE | See table | | |
| DETECTION MODE | Front opposed, Side opposed, BGS, Diffused | | ** Other cable lengths are available on request |

TECHNICAL DATA

| | | | |
|--------------------------|----------------------------------|------------------------------------|--|
| OPERATING VOLTAGE | 10 ... 30 V DC | VOLTAGE WITHSTANDING | 650 V AC < 1 mA |
| RIPPLE VOLTAGE | ≤ 10 % | REVERSE POLARITY PROTECTION | Yes |
| LIGHT SOURCE | Small red beam (630 nm) | OVERLOAD RESISTANCE | Yes |
| LIGHT SPOT SIZE | See beam pattern | SHORT CIRCUIT PROTECTION | Yes |
| OUTPUT | PNP / NPN (Depends on the model) | VOLTAGE SHOCK PROTECTION | Yes |
| FREQUENCY | See table | FASTENING METHOD | M2 bolts, the torque of the fixing screws is 0.2 N·m |
| NO-LOAD CURRENT | ≤ 20 mA | MTTF | |
| LOAD CURRENT | ≤ 50 mA | • Emitter | 542 years |
| HOUSING MATERIAL | PC + PBT | • Receiver | 836 years |
| LENS MATERIAL | PC | • BGS | 804 years |

ENVIRONMENTAL CONDITIONS

| | | | |
|---------------------------------------|-----------------------------------|---|--|
| OPERATING ENVIRONMENT HUMIDITY | 35 % to 85 % RH (no condensation) | INSULATION IMPEDENCE | ≥ 50 MΩ (500 V DC) |
| PROTECTION CLASS | IP67 | SHOCK RESISTANCE (EN 60068-2-27) | 500 m/s ² (50 G) 3 times X, Y, Z respectively |
| STORAGE TEMPERATURE | -10 ... +55 °C | IMPACT RESISTANCE (EN 60068-2-6) | Complex amplitude 1.5 mm 10 ... 50 Hz (2hr X, Y, Z respectively) |
| AMBIENT TEMPERATURE | -40 ... +70 °C | ANTI-AMBIENT LIGHT | ≤ 5000 Lux |

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STANDARDS AND DIRECTIVES

EMC DIRECTIVE 2014/30/EU EN IEC 60947-5-2

ROHS DIRECTIVE 2011/65/EU EN IEC 63000

APPROVALS



DETECTION MODE FRONT OPPOSED

| Article number | Operating distance | Light source | Frequency | Output (wiring diagram) | Switching mode | Connection | Dimensions |
|---------------------|--------------------|--------------|-----------|-------------------------|----------------|------------|------------|
| OS4-S6 (emitter) | 1 m | Red | — — | — — (WD1) | — — | 2 m cable | see Fig. 1 |
| OS4-SS6 (emitter) | 1 m | Point light | — — | — — (WD1) | — — | 2 m cable | see Fig. 1 |
| OS4-ELN6 (receiver) | 1 m | — — | 800 Hz | NPN (WD2) | L.O | 2 m cable | see Fig. 2 |
| OS4-EDN6 (receiver) | 1 m | — — | 800 Hz | NPN (WD3) | D.O | 2 m cable | see Fig. 2 |
| OS4-ELP6 (receiver) | 1 m | — — | 800 Hz | PNP (WD4) | L.O | 2 m cable | see Fig. 2 |
| OS4-EDP6 (receiver) | 1 m | — — | 800 Hz | PNP (WD5) | D.O | 2 m cable | see Fig. 2 |

DETECTION MODE FRONT OPPOSED

| Article number | Operating distance | Light source | Frequency | Output (wiring diagram) | Switching mode | Connection | Dimensions |
|----------------------|--------------------|--------------|-----------|-------------------------|----------------|------------|------------|
| OS4A-S6 (emitter) | 500 mm | Red | — — | — — (WD1) | — — | 2 m cable | see Fig. 3 |
| OS4A-ELN6 (receiver) | 500 mm | — — | 800 Hz | NPN (WD2) | L.O | 2 m cable | see Fig. 4 |
| OS4A-EDN6 (receiver) | 500 mm | — — | 800 Hz | NPN (WD3) | D.O | 2 m cable | see Fig. 4 |
| OS4A-ELP6 (receiver) | 500 mm | — — | 800 Hz | PNP (WD4) | L.O | 2 m cable | see Fig. 4 |
| OS4A-EDP6 (receiver) | 500 mm | — — | 800 Hz | PNP (WD5) | D.O | 2 m cable | see Fig. 4 |

DETECTION MODE SIDE OPPOSED

| Article number | Operating distance | Light source | Frequency | Output (wiring diagram) | Switching mode | Connection | Dimensions |
|----------------------|--------------------|--------------|-----------|-------------------------|----------------|------------|------------|
| OS4B-S6 (emitter) | 1 m | Red | — — | — — (WD1) | — — | 2 m cable | see Fig. 5 |
| OS4B-ELN6 (receiver) | 1 m | — — | 800 Hz | NPN (WD2) | L.O | 2 m cable | see Fig. 6 |
| OS4B-EDN6 (receiver) | 1 m | — — | 800 Hz | NPN (WD3) | D.O | 2 m cable | see Fig. 6 |
| OS4B-ELP6 (receiver) | 1 m | — — | 800 Hz | PNP (WD4) | L.O | 2 m cable | see Fig. 6 |
| OS4B-EDP6 (receiver) | 1 m | — — | 800 Hz | PNP (WD5) | D.O | 2 m cable | see Fig. 6 |

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DETECTION MODE BGS

Background suppression: Object with 90% remission (based on standard white, DIN 5033).

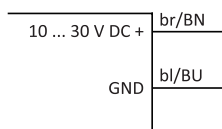
| Article number | Operating distance | Light source | Frequency | Output (wiring diagram) | Switching mode | Connection | Dimensions |
|----------------|--------------------|--------------|-----------|-------------------------|----------------|------------|------------|
| OS4-AK15LN6 | 4 ... 15 mm | Red | 800 Hz | NPN (WD2) | L.O | 2 m cable | see Fig. 7 |
| OS4-AK15DN6 | 4 ... 15 mm | Red | 800 Hz | NPN (WD3) | D.O | 2 m cable | see Fig. 7 |
| OS4-AK15LP6 | 4 ... 15 mm | Red | 800 Hz | PNP (WD4) | L.O | 2 m cable | see Fig. 7 |
| OS4-AK15DP6 | 4 ... 15 mm | Red | 800 Hz | PNP (WD5) | D.O | 2 m cable | see Fig. 7 |
| OS4-AK30LN6 | 5 ... 30 mm | Red | 800 Hz | NPN (WD2) | L.O | 2 m cable | see Fig. 7 |
| OS4-AK30DN6 | 5 ... 30 mm | Red | 800 Hz | NPN (WD3) | D.O | 2 m cable | see Fig. 7 |
| OS4-AK30LP6 | 5 ... 30 mm | Red | 800 Hz | PNP (WD4) | L.O | 2 m cable | see Fig. 7 |
| OS4-AK30DP6 | 5 ... 30 mm | Red | 800 Hz | PNP (WD5) | D.O | 2 m cable | see Fig. 7 |
| OS4-AKS15LN6 | 4 ... 15 mm | Point light | 800 Hz | NPN (WD2) | L.O | 2 m cable | see Fig. 7 |
| OS4-AKS15DN6 | 4 ... 15 mm | Point light | 800 Hz | NPN (WD3) | D.O | 2 m cable | see Fig. 7 |
| OS4-AKS15LP6 | 4 ... 15 mm | Point light | 800 Hz | PNP (WD4) | L.O | 2 m cable | see Fig. 7 |
| OS4-AKS15DP6 | 4 ... 15 mm | Point light | 800 Hz | PNP (WD5) | D.O | 2 m cable | see Fig. 7 |
| OS4-AKS30LN6 | 5 ... 30 mm | Point light | 800 Hz | NPN (WD2) | L.O | 2 m cable | see Fig. 7 |
| OS4-AKS30DN6 | 5 ... 30 mm | Point light | 800 Hz | NPN (WD3) | D.O | 2 m cable | see Fig. 7 |
| OS4-AKS30LP6 | 5 ... 30 mm | Point light | 800 Hz | PNP (WD4) | L.O | 2 m cable | see Fig. 7 |
| OS4-AKS30DP6 | 5 ... 30 mm | Point light | 800 Hz | PNP (WD5) | D.O | 2 m cable | see Fig. 7 |

DETECTION MODE DIFFUSED

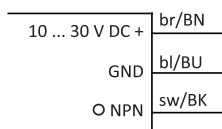
| Article number | Operating distance | Light source | Frequency | Output (wiring diagram) | Switching mode | Connection | Dimensions |
|----------------|--------------------|--------------|-----------|-------------------------|----------------|------------|------------|
| OS4-K30LN6 | 1 ... 30 mm | Red | 800 Hz | NPN (WD2) | L.O | 2 m cable | see Fig. 7 |
| OS4-K30DN6 | 1 ... 30 mm | Red | 800 Hz | NPN (WD3) | D.O | 2 m cable | see Fig. 7 |
| OS4-K30LP6 | 1 ... 30 mm | Red | 800 Hz | PNP (WD4) | L.O | 2 m cable | see Fig. 7 |
| OS4-K30DP6 | 1 ... 30 mm | Red | 800 Hz | PNP (WD5) | D.O | 2 m cable | see Fig. 7 |

WIRING DIAGRAMS

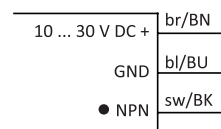
WD1 Emitter



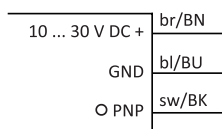
WD2 NPN / Light on



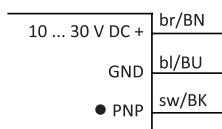
WD3 NPN / Dark on



WD4 PNP / Light on



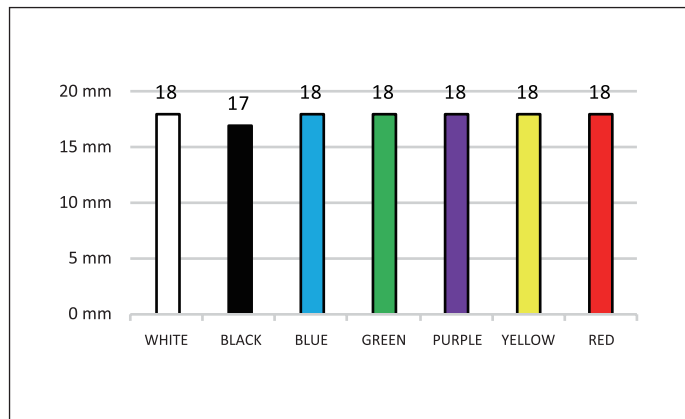
WD5 PNP / Dark on



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ATTENUATION FIGURE

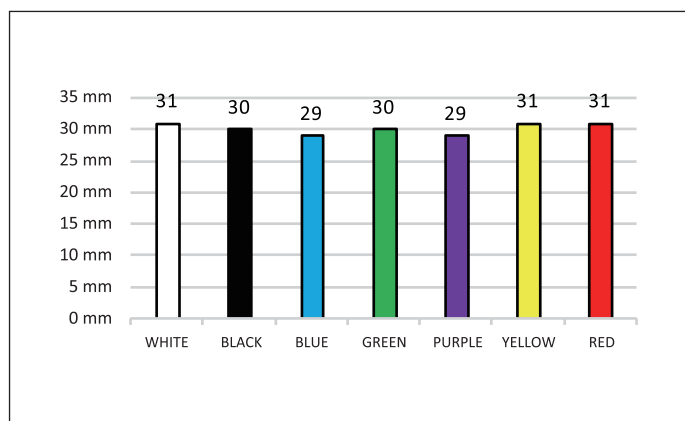
OS4-AK15



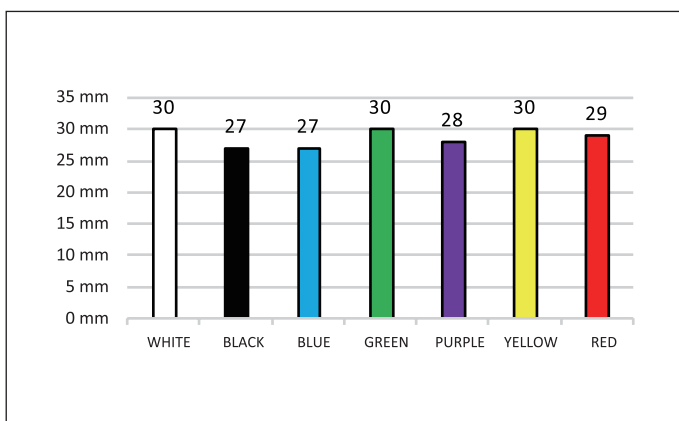
OS4-AKS15



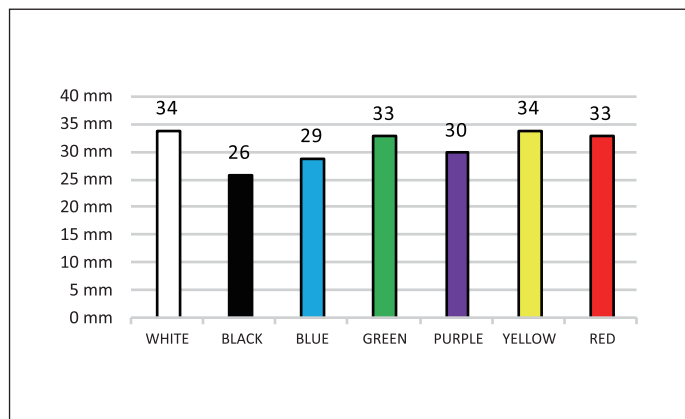
OS4-AK30



OS4-AKS30



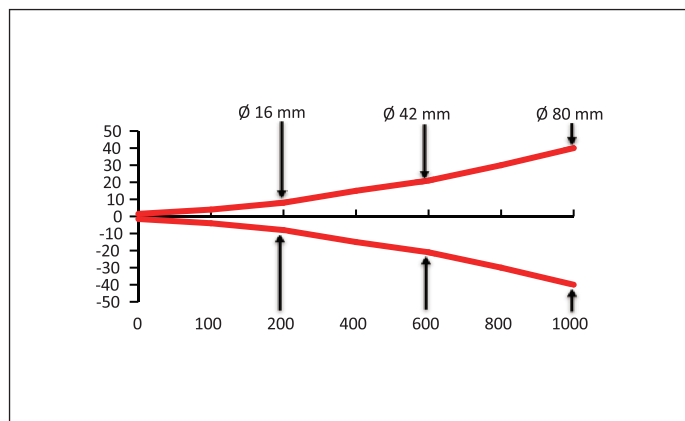
OS4-K30



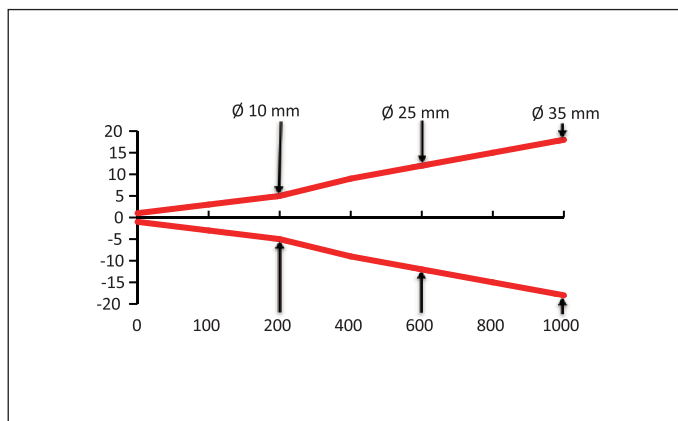
OS4 SERIES

BEAM PATTERN

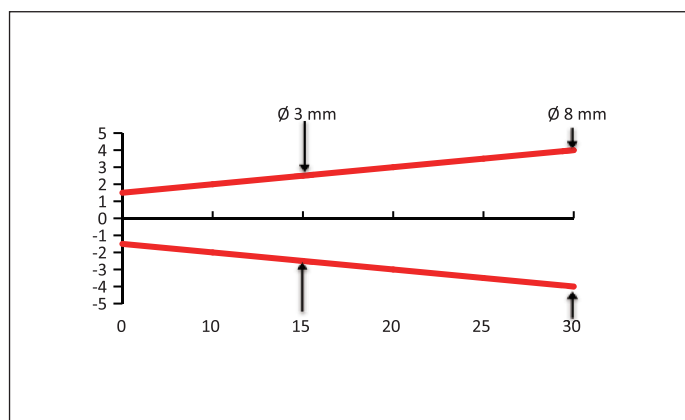
OS4-S6 (mm)



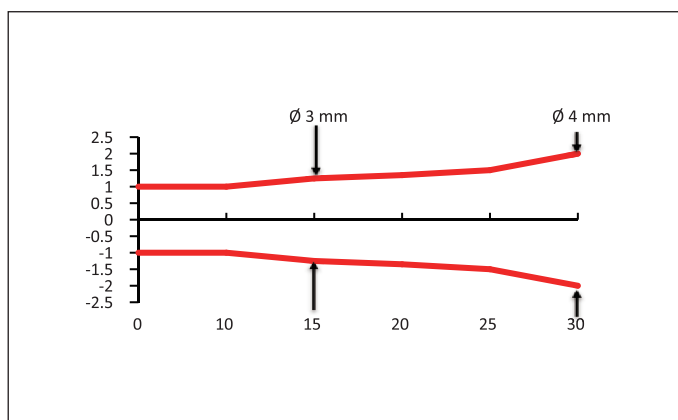
OS4-SS6 (mm)



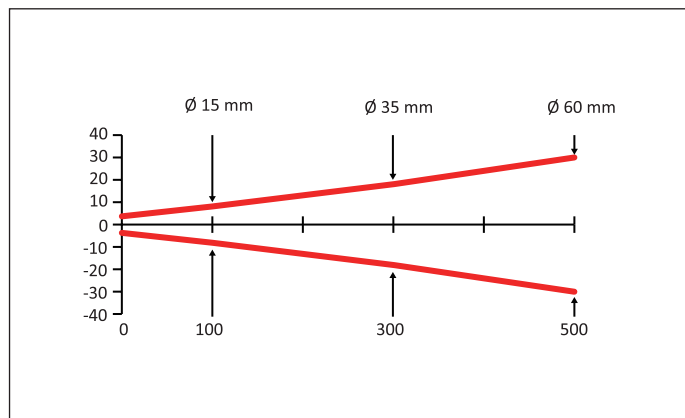
OS4-AK15/30 (mm)



OS4-AKS15/30 (mm)



OS4A-S6 (mm)



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DIMENSIONS (mm)

Front opposed (OS4)

Fig. 1 Emitter

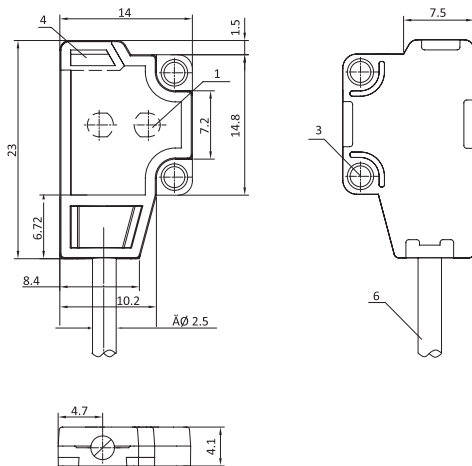
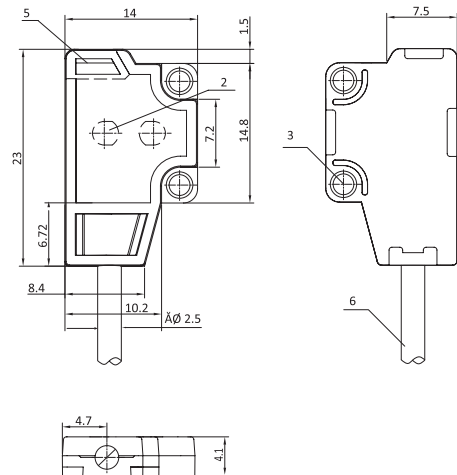


Fig. 2 Receiver



- 1 Emitter optic axis
- 2 Receiver optic axis
- 3 Mounting hole \varnothing 2 mm
- 4 LED: power on
- 5 LED: on / off
- 6 Connection: 2 m cable

Front opposed (OS4A)

Fig. 3 Emitter

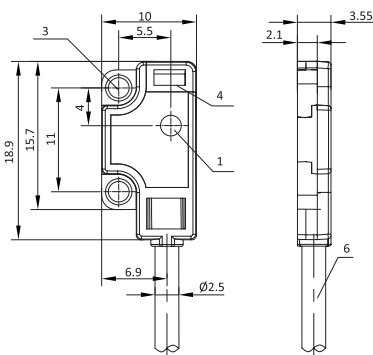
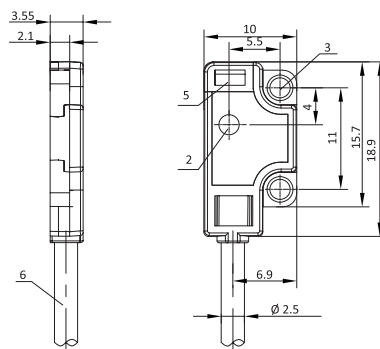


Fig. 4 Receiver



- 1 Emitter optic axis
- 2 Receiver optic axis
- 3 Mounting hole \varnothing 2 mm
- 4 LED: power on
- 5 LED: on / off
- 6 Connection: 2 m cable

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DIMENSIONS (mm)

Side opposed (OS4B)

Fig. 5 Emitter

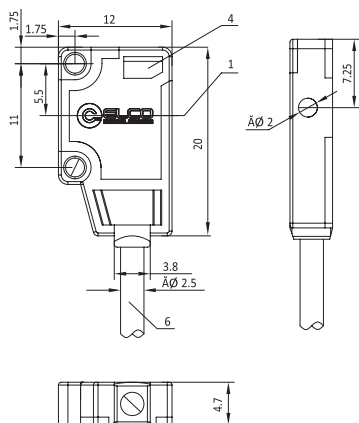
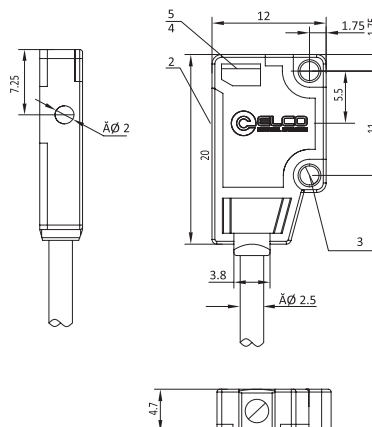


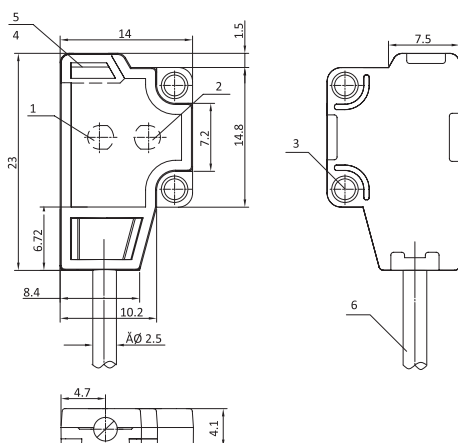
Fig. 6 Receiver



- 1 Emitter optic axis
- 2 Receiver optic axis
- 3 Mounting hole \varnothing 2 mm
- 4 LED: power on
- 5 LED: on / off
- 6 Connection: 2 m cable

BGS

Fig. 7



- 1 Emitter optic axis
- 2 Receiver optic axis
- 3 Mounting hole \varnothing 2 mm
- 4 LED: power on
- 5 LED: on / off
- 6 Connection: 2 m cable

OS4 SERIES

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