

OS4-0.3-Q12 SERIES

ARTICLE PROPERTIES

SENSOR TYPE	Photoelectric sensor	CONNECTION TYPES (see table)
SIZE	See dimensions	M12 connector, A-coded 
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

OS4-0.3-Q12 SERIES

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-S6-0.3-Q12 (emitter)	1 m	Red	— —	— — (WD1)	— —	0.3 m cable + M12, 4-pin	see Fig. 1
OS4-SS6-0.3-Q12 (emitter)	1 m	Point light	— —	— — (WD1)	— —	0.3 m cable + M12, 4-pin	see Fig. 1
OS4-ELN6-0.3-Q12 (receiver)	1 m	— —	800 Hz	NPN (WD2)	L.O	0.3 m cable + M12, 4-pin	see Fig. 2
OS4-EDN6-0.3-Q12 (receiver)	1 m	— —	800 Hz	NPN (WD3)	D.O	0.3 m cable + M12, 4-pin	see Fig. 2
OS4-ELP6-0.3-Q12 (receiver)	1 m	— —	800 Hz	PNP (WD4)	L.O	0.3 m cable + M12, 4-pin	see Fig. 2
OS4-EDP6-0.3-Q12 (receiver)	1 m	— —	800 Hz	PNP (WD5)	D.O	0.3 m cable + M12, 4-pin	see Fig. 2

DETECTION MODE FRONT OPPOSED

Article number	Operating distance	Light source	Frequency	Output (wiring diagram)	Switching mode	Connection	Dimensions
OS4A-S6-0.3-Q12 (emitter)	500 mm	Red	— —	— — (WD1)	— —	0.3 m cable + M12, 4-pin	see Fig. 3
OS4A-ELN6-0.3-Q12 (receiver)	500 mm	— —	800 Hz	NPN (WD2)	L.O	0.3 m cable + M8, 4-pin	see Fig. 4
OS4A-EDN6-0.3-Q12 (receiver)	500 mm	— —	800 Hz	NPN (WD3)	D.O	0.3 m cable + M8, 4-pin	see Fig. 4
OS4A-ELP6-0.3-Q12 (receiver)	500 mm	— —	800 Hz	PNP (WD4)	L.O	0.3 m cable + M8, 4-pin	see Fig. 4
OS4A-EDP6-0.3-Q12 (receiver)	500 mm	— —	800 Hz	PNP (WD5)	D.O	0.3 m cable + M8, 4-pin	see Fig. 4

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DETECTION MODE SIDE OPPOSED

Article number	Operating distance	Light source	Frequency	Output (wiring diagram)	Switching mode	Connection	Dimensions
OS4B-S6-0.3-Q12 (emitter)	1 m	Red	— —	— — (WD1)	— —	0.3 m cable + M12, 4-pin	see Fig. 5
OS4B-ELN6-0.3-Q12 (receiver)	1 m	— —	800 Hz	NPN (WD2)	L.O	0.3 m cable + M12, 4-pin	see Fig. 6
OS4B-EDN6-0.3-Q12 (receiver)	1 m	— —	800 Hz	NPN (WD3)	D.O	0.3 m cable + M12, 4-pin	see Fig. 6
OS4B-ELP6-0.3-Q12 (receiver)	1 m	— —	800 Hz	PNP (WD4)	L.O	0.3 m cable + M12, 4-pin	see Fig. 6
OS4B-EDP6-0.3-Q12 (receiver)	1 m	— —	800 Hz	PNP (WD5)	D.O	0.3 m cable + M12, 4-pin	see Fig. 6

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-AK15LN6-0.3-Q12	4 ... 15 mm	Red	800 Hz	NPN (WD2)	L.O	0.3 m cable + M12, 4-pin	see Fig. 7
OS4-AK15DN6-0.3-Q12	4 ... 15 mm	Red	800 Hz	NPN (WD3)	D.O	0.3 m cable + M12, 4-pin	see Fig. 7
OS4-AK15LP6-0.3-Q12	4 ... 15 mm	Red	800 Hz	PNP (WD4)	L.O	0.3 m cable + M12, 4-pin	see Fig. 7
OS4-AK15DP6-0.3-Q12	4 ... 15 mm	Red	800 Hz	PNP (WD5)	D.O	0.3 m cable + M12, 4-pin	see Fig. 7
OS4-AK30LN6-0.3-Q12	5 ... 30 mm	Red	800 Hz	NPN (WD2)	L.O	0.3 m cable + M12, 4-pin	see Fig. 7
OS4-AK30DN6-0.3-Q12	5 ... 30 mm	Red	800 Hz	NPN (WD3)	D.O	0.3 m cable + M12, 4-pin	see Fig. 7
OS4-AK30LP6-0.3-Q12	5 ... 30 mm	Red	800 Hz	PNP (WD4)	L.O	0.3 m cable + M12, 4-pin	see Fig. 7
OS4-AK30DP6-0.3-Q12	5 ... 30 mm	Red	800 Hz	PNP (WD5)	D.O	0.3 m cable + M12, 4-pin	see Fig. 7
OS4-AKS15LN6-0.3-Q12	4 ... 15 mm	Point light	800 Hz	NPN (WD2)	L.O	0.3 m cable + M12, 4-pin	see Fig. 7
OS4-AKS15DN6-0.3-Q12	4 ... 15 mm	Point light	800 Hz	NPN (WD3)	D.O	0.3 m cable + M12, 4-pin	see Fig. 7
OS4-AKS15LP6-0.3-Q12	4 ... 15 mm	Point light	800 Hz	PNP (WD4)	L.O	0.3 m cable + M12, 4-pin	see Fig. 7
OS4-AKS15DP6-0.3-Q12	4 ... 15 mm	Point light	800 Hz	PNP (WD5)	D.O	0.3 m cable + M12, 4-pin	see Fig. 7

OS4-0.3-Q12 SERIES

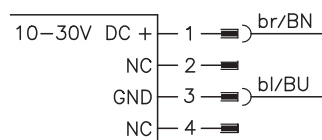
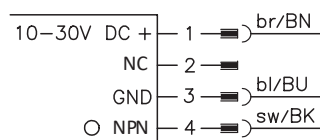
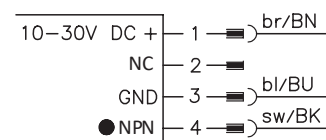
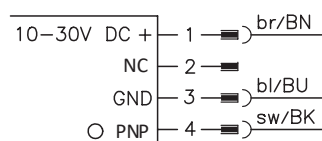
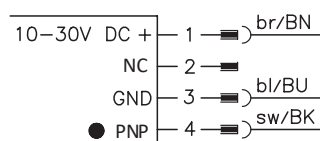
DETECTION MODE BGS

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-AKS30LN6-0.3-Q12	5 ... 30 mm	Point light	800 Hz	NPN (WD2)	L.O	0.3 m cable + M12, 4-pin	see Fig. 7
OS4-AKS30DN6-0.3-Q12	5 ... 30 mm	Point light	800 Hz	NPN (WD3)	D.O	0.3 m cable + M12, 4-pin	see Fig. 7
OS4-AKS30LP6-0.3-Q12	5 ... 30 mm	Point light	800 Hz	PNP (WD4)	L.O	0.3 m cable + M12, 4-pin	see Fig. 7
OS4-AKS30DP6-0.3-Q12	5 ... 30 mm	Point light	800 Hz	PNP (WD5)	D.O	0.3 m cable + M12, 4-pin	see Fig. 7

DETECTION MODE DIFFUSED

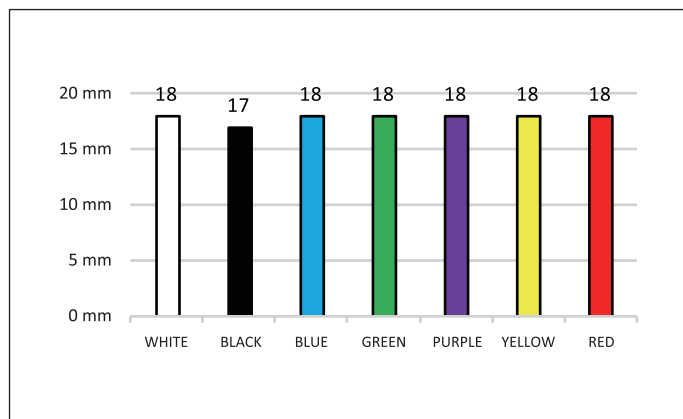
Article number	Operating distance	Light source	Frequency	Output (wiring diagram)	Switching mode	Connection	Dimensions
OS4-K30LN6-0.3-Q12	1 ... 30 mm	Red	800 Hz	NPN (WD2)	L.O	0.3 m cable + M12, 4-pin	see Fig. 7
OS4-K30DN6-0.3-Q12	1 ... 30 mm	Red	800 Hz	NPN (WD3)	D.O	0.3 m cable + M12, 4-pin	see Fig. 7
OS4-K30LP6-0.3-Q12	1 ... 30 mm	Red	800 Hz	PNP (WD4)	L.O	0.3 m cable + M12, 4-pin	see Fig. 7
OS4-K30DP6-0.3-Q12	1 ... 30 mm	Red	800 Hz	PNP (WD5)	D.O	0.3 m cable + M12, 4-pin	see Fig. 7

WIRING DIAGRAMS**WD1 Emitter****WD2 NPN / Light on****WD3 NPN / Dark on****WD4 PNP / Light on****WD5 PNP / Dark on**

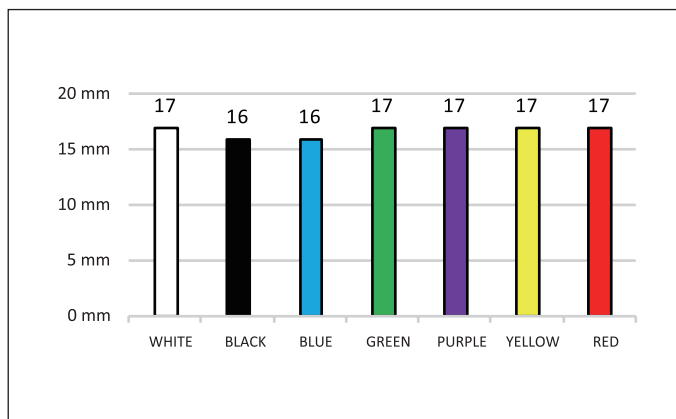
OS4-0.3-Q12 SERIES

ATTENUATION FIGURE

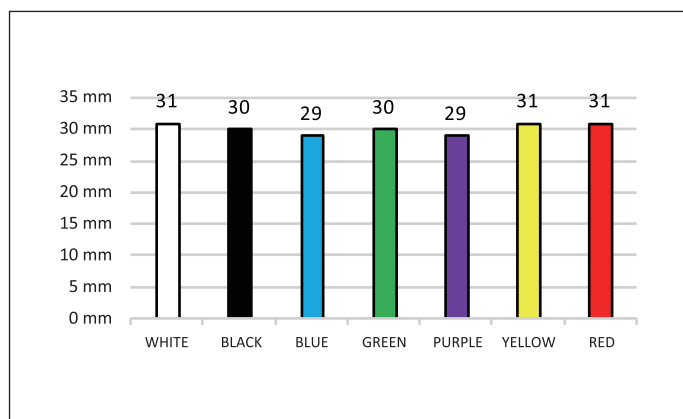
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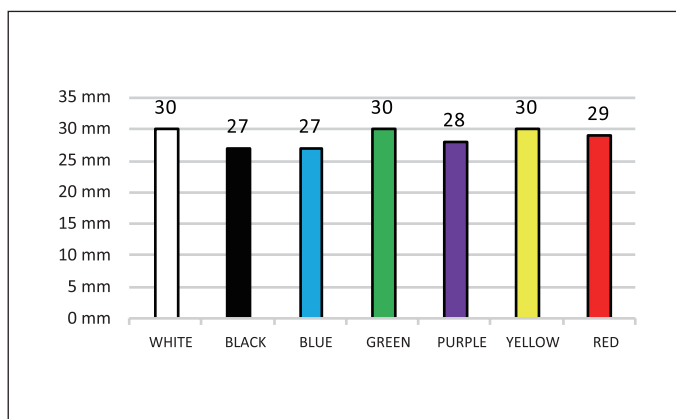
OS4-AKS15



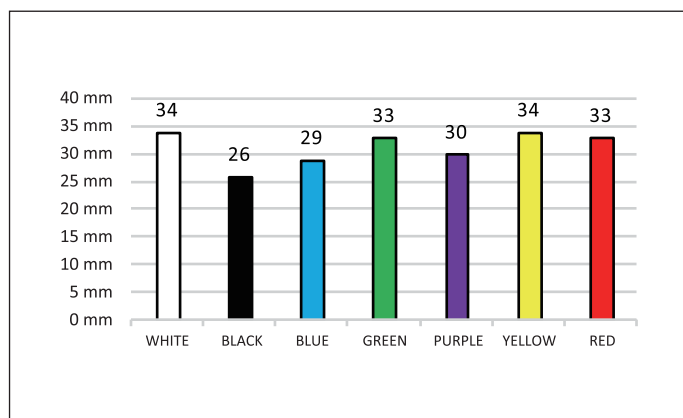
OS4-AK30



OS4-AKS30



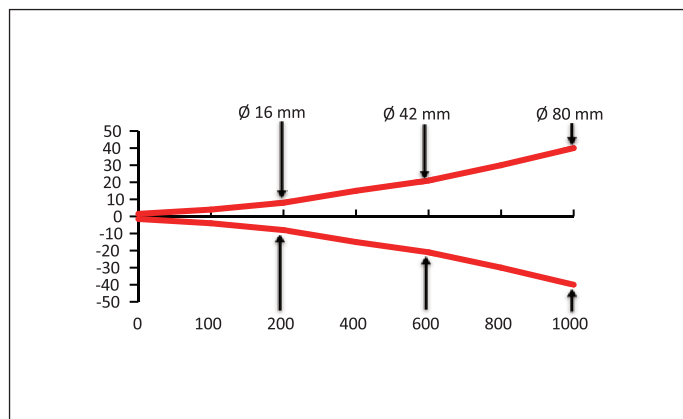
OS4-K30



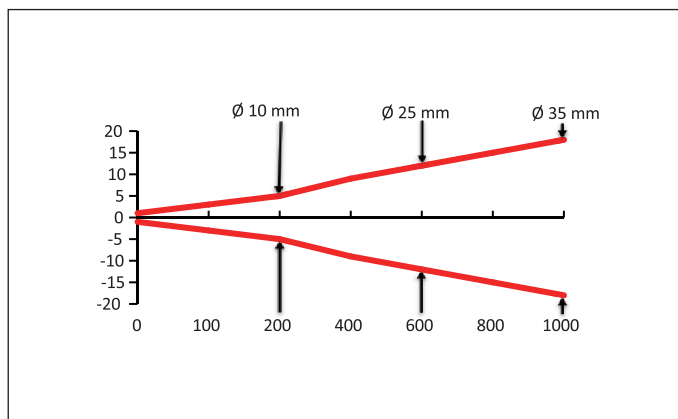
OS4-0.3-Q12 SERIES

BEAM PATTERN

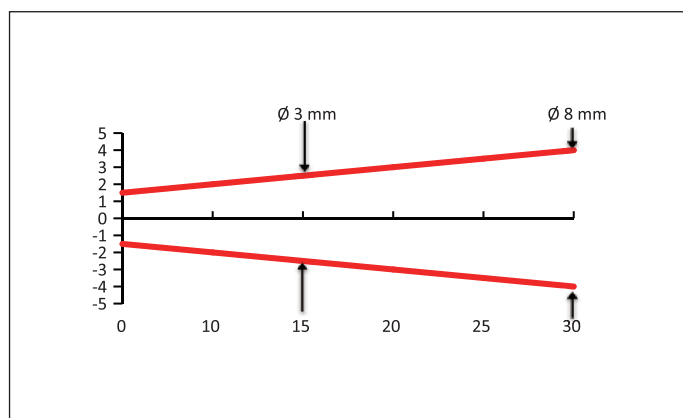
OS4-S6 (mm)



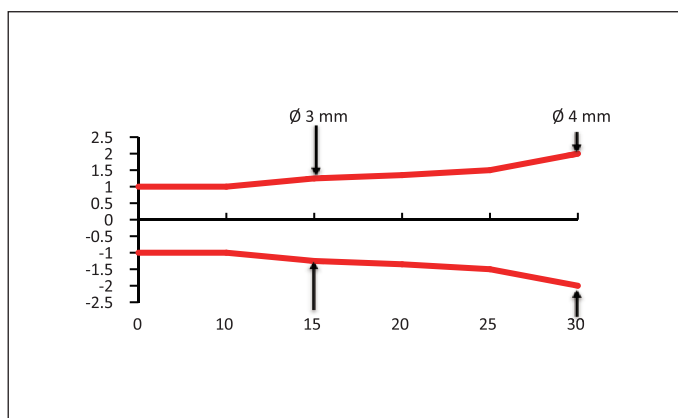
OS4-SS6 (mm)



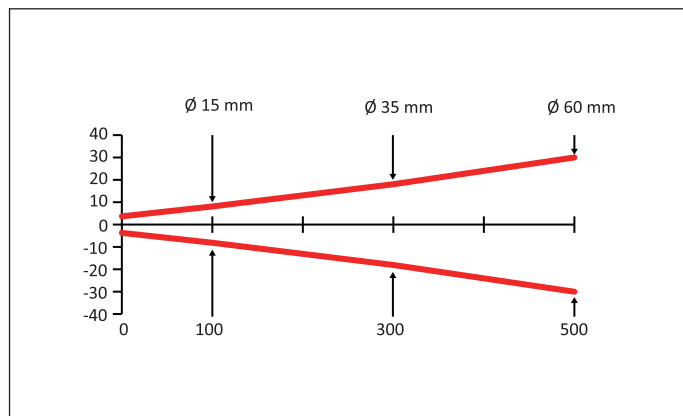
OS4-AK15/30 (mm)



OS4-AKS15/30 (mm)



OS4A-S6 (mm)



OS4-0.3-Q12 SERIES

DIMENSIONS (mm)

Front opposed (OS4)

Fig. 1 Emitter

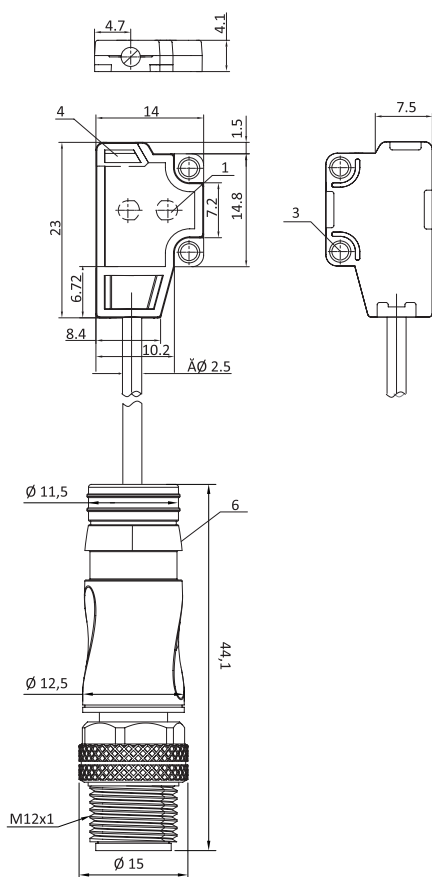
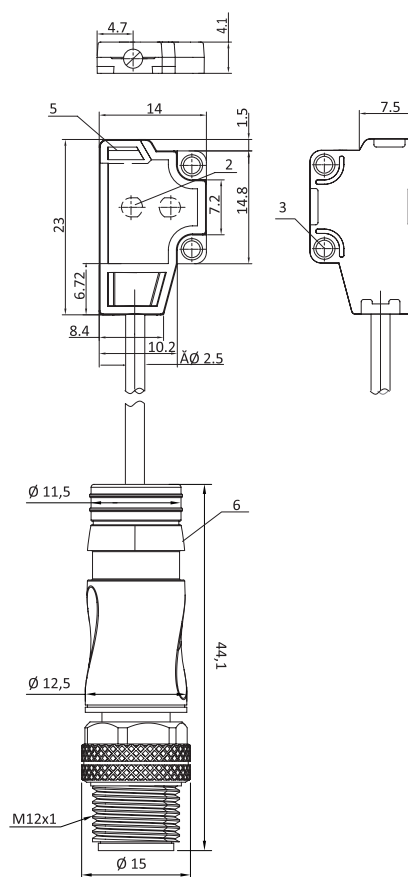


Fig. 2 Receiver



- 1 Emitter optic axis
- 2 Receiver optic axis
- 3 Mounting hole Ø 2 mm
- 4 LED: power on
- 5 LED: on / off
- 6 Connection: 0.3 m cable + M12 connector

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Front opposed (OS4A)

Fig. 3 Emitter

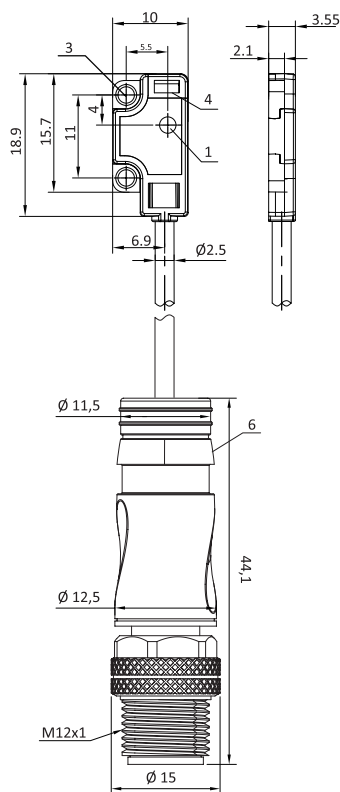
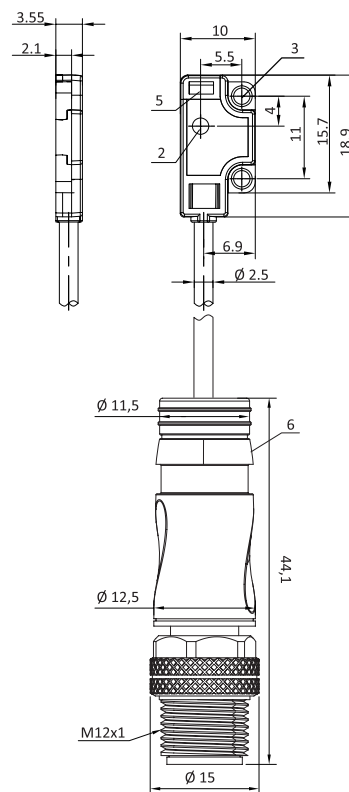


Fig. 4 Receiver



- 1 Emitter optic axis
- 2 Receiver optic axis
- 3 Mounting hole $\varnothing$ 2 mm
- 4 LED: power on
- 5 LED: on / off
- 6 Connection: 0.3 m cable + M12 connector

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Side opposed (OS4B)

Fig. 5 Emitter

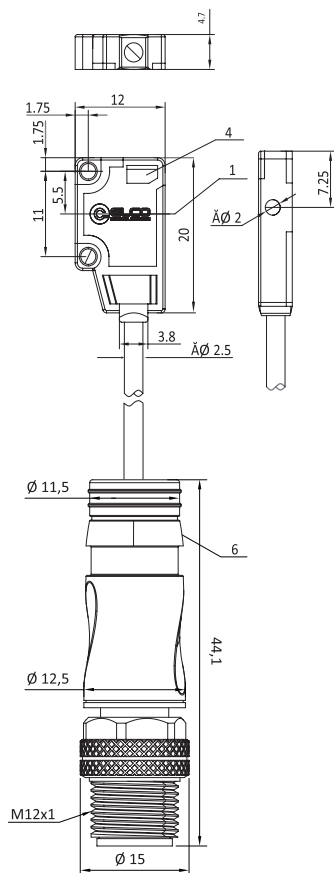
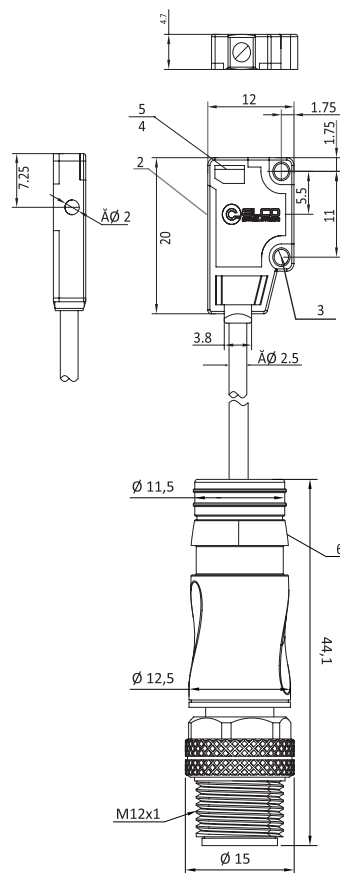


Fig. 6 Receiver



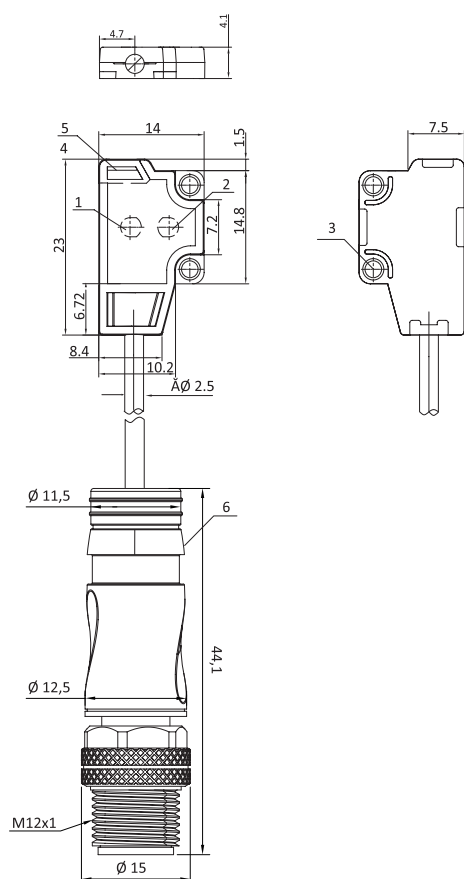
- 1 Emitter optic axis
- 2 Receiver optic axis
- 3 Mounting hole Ø 2 mm
- 4 LED: power on
- 5 LED: on / off
- 6 Connection: 0.3 m cable + M12 connector

OS4-0.3-Q12 SERIES

DIMENSIONS (mm)

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: 0.3 m cable + M12 connector

OS4-0.3-Q12 SERIES

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