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# 7415 x

Made in Germany

2010



fluid sensors  
and diagnostic  
systems

position  
sensors  
and object  
recognition

bus,  
identification  
and control systems

ifm electronic – close to you!



- **Photocells for general purposes and for harsh environments.**
- **Visible red and infrared light sources.**
- **Long ranges and accurate background suppression.**
- **Choice of standard industrial and high performance units.**
- **Accessories for simple fitting and extra mechanical protection.**

### **Photoelectric sensors: infrared / redlight**

Automation technology can no longer be imagined without photoelectric sensors as "artificial eyes". They are used where safe and non-contact detection of the exact position of objects is required. The material of the objects to be detected is of no importance. Compared to proximity sensors photoelectric sensors have a much higher sensing zone.

#### **Through-beam sensors**

A through-beam sensor is distinguished by a long range. The system consists of two separate components: a transmitter and a receiver. The light only travels one way (from the transmitter to the receiver). Adverse effects in the applications, such as dust in the air, dirt on the lenses, steam or mist do not immediately interfere with the system. This is called a high insensitivity to dirt or a high excess gain.

#### **Retro-reflective sensors**

For a retro-reflective sensor the transmitter and receiver are incorporated into one housing. By means of a reflector the transmitted light is returned to the receiver. An object in the beam path interrupts the beam and triggers a switching operation. Retro-reflective sensors without polarisation filter operate in the infrared area, systems with polarisation filter with visible red light. Compared to through-beam sensors, retro-reflective sensors have an average excess gain.

#### **Diffuse reflection sensors**

A diffuse reflection sensor is used for the direct detection of objects. Transmitter and receiver are incorporated into one housing. The transmitter emits light which is reflected by the object to be detected and seen by the receiver. This system evaluates the reflected light of an object. Reflectors are not necessary for operation.

#### **Fixing options**

ifm electronic offers a complete component system of easy-to-use mounting sets. The solutions consist of a clamp which is fastened with only one screw, keeps the sensors safely in place and at the same time guarantees free movement in all axes.














The reflector reflects the light beam: For a retro-reflective sensor transmitter and receiver are integrated into one housing.



Artificial eyes: Photoelectric sensors are used to detect positions in automation technology.











Cylindrical housing OF (M12) for industrial applications


Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
<b>Through-beam sensor · Type OFS M12 x 1 · Cable 2 m · metal · DC</b>								
	Transmitter	4 m	700	–	10...36	1	1	OF5018
	Receiver	4 m	–	H/D PNP	10...36	24	1	OF5019
<b>Through-beam sensor · Type OFE M12 x 1 · Cable 2 m · metal · DC</b>								
	Receiver	4 m	–	H/D PNP	10...36	24	1	OF5019
	Receiver	4 m	–	H/D NPN	10...36	25	1	OF5052
<b>Retro-reflective sensor · Type OFR M12 x 1 · Cable 2 m · metal · DC</b>								
	Retro-reflective sensor	0.05...2 m	140	H/D PNP	10...36	24	1	OF5014
	Retro-reflective sensor	0.05...2 m	140	H/D NPN	10...36	25	1	OF5050
<b>Retro-reflective sensor · Type OFP M12 x 1 · Cable 2 m · metal · DC</b>								
	Polarisation filter	0.2...0.8 m	70	H/D PNP	10...36	24	1	OF5024
	Polarisation filter	0.2...0.8 m	70	H/D NPN	10...36	25	1	OF5061
<b>Diffuse reflection sensor · Type OFT M12 x 1 · Cable 2 m · metal · DC</b>								
	Diffuse reflection sensor	1...200 mm	92	H/D PNP	10...36	24	1	OF5010
	Diffuse reflection sensor	1...200 mm	92	H/D NPN	10...36	26	1	OF5048
<b>Diffuse reflection sensor · Type OFT M12 x 1 · Cable 6 m · high-grade stainless steel · DC</b>								
	Diffuse reflection sensor	1...200 mm	92	H/D PNP	10...36	24	1	OF5032
<b>Diffuse reflection sensor · Type OFB M12 x 1 · Cable 2 m · metal · DC</b>								
	Diffuse reflection sensor	1...400 mm	185	H/D PNP	10...36	24	1	OF5026
	Diffuse reflection sensor	1...400 mm	185	H/D NPN	10...36	26	1	OF5059
<b>Retro-reflective sensor · Type OFR M12 x 1 · M12 connector · metal · DC</b>								
	Retro-reflective sensor	0.05...2 m	140	H/D PNP	10...36	27	2	OF5016
	Retro-reflective sensor	0.05...2 m	140	H/D NPN	10...36	28	2	OF5051
<b>Retro-reflective sensor · Type OFP M12 x 1 · M12 connector · metal · DC</b>								
	Polarisation filter	0.2...0.8 m	70	H/D PNP	10...36	27	2	OF5025
	Polarisation filter	0.2...0.8 m	70	H/D NPN	10...36	28	2	OF5062
<b>Diffuse reflection sensor · Type OFT M12 x 1 · M12 connector · metal · DC</b>								
	Diffuse reflection sensor	1...200 mm	92	H/D PNP	10...36	27	2	OF5012
	Diffuse reflection sensor	1...200 mm	92	H/D NPN	10...36	29	2	OF5049
<b>Diffuse reflection sensor · Type OFB M12 x 1 · M12 connector · metal · DC</b>								
	Diffuse reflection sensor	1...400 mm	185	H/D PNP	10...36	27	2	OF5027
	Diffuse reflection sensor	1...400 mm	185	H/D NPN	10...36	29	2	OF5060

## Photoelectric sensors infrared / redlight


Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
<b>Through-beam sensor · Type OFS M12 x 1 · M12 connector · metal · DC</b>								
	Transmitter	4 m	700	–	10...36	2	2	<b>OF5021</b>
	Receiver	4 m	–	H/D PNP	10...36	27	2	<b>OF5022</b>
<b>Through-beam sensor · Type OFE M12 x 1 · M12 connector · metal · DC</b>								
	Receiver	4 m	–	H/D PNP	10...36	27	2	<b>OF5022</b>
	Receiver	4 m	–	H/D NPN	10...36	28	2	<b>OF5053</b>


### Cylindrical housing OG (M18) BasicLine DC


Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
<b>Through-beam sensor · Type M18 x 1 · M12 connector · plastics · DC</b>								
	Receiver	8 m	–	D PNP	10...30	3	3	<b>OG E100</b>
	Receiver	8 m	–	H PNP	10...30	4	3	<b>OG E101</b>
<b>Through-beam sensor · Type M18 x 1 · M12 connector · metal · DC</b>								
	Transmitter	8 m	600	–	10...30	2	3	<b>OG S100</b>
	Receiver	8 m	–	H PNP	10...30	4	3	<b>OG S101</b>
<b>Through-beam sensor · Type OGE M18 x 1 · M12 connector · high-grade stainless steel · DC</b>								
	Receiver	20 m	–	D PNP	10...36	3	4	<b>OG E200</b>
	Receiver	20 m	–	H PNP	10...36	4	4	<b>OG E201</b>
<b>Through-beam sensor · Type OGS M18 x 1 · M12 connector · high-grade stainless steel · DC</b>								
	Transmitter	20 m	800	–	10...36	2	4	<b>OG S200</b>
	Receiver	20 m	–	H PNP	10...36	4	4	<b>OG S201</b>
<b>Retro-reflective sensor · Type M18 x 1 · M12 connector · plastics · DC</b>								
	Polarisation filter	0.05...2.5 m	200	D PNP	10...30	3	3	<b>OG P100</b>
	Polarisation filter	0.05...2.5 m	200	H PNP	10...30	4	3	<b>OG P101</b>
<b>Retro-reflective sensor · Type OGP M18 x 1 · M12 connector · high-grade stainless steel · DC</b>								
	Polarisation filter	0.03...4 m	160	D PNP	10...36	3	4	<b>OG P200</b>
	Polarisation filter	0.03...4 m	160	H PNP	10...36	4	4	<b>OG P201</b>
<b>Diffuse reflection sensor · Type M18 x 1 · M12 connector · plastics · DC</b>								
	Diffuse reflection sensor	10...400 mm	25	H PNP	10...30	3	5	<b>OG T100</b>
	Diffuse reflection sensor	10...400 mm	25	D PNP	10...30	3	5	<b>OG T101</b>
<b>Diffuse reflection sensor · Type OGT M18 x 1 · M12 connector · high-grade stainless steel · DC</b>								
	Diffuse reflection sensor	2...600 mm	50	H PNP	10...36	3	6	<b>OG T200</b>
	Diffuse reflection sensor	2...600 mm	50	D PNP	10...36	3	6	<b>OG T201</b>


Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
<b>Diffuse reflection sensor · Type OGH M18 x 1 · M12 connector · high-grade stainless steel · DC</b>								
	Background suppression	15...250 mm	15	H PNP	10...36	3	6	<b>OGH200</b>


**Cylindrical housing OG (M18) Performanceline DC**


Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
<b>Through-beam sensor · Type OGS M18 x 1 · M12 connector · high-grade stainless steel · DC</b>								
	Transmitter	25 m	1000	–	10...36	2	7	<b>OGS500</b>


<b>Through-beam sensor · Type OGE M18 x 1 · M12 connector · high-grade stainless steel · DC</b>								
	Receiver	25 m	–	H/D PNP	10...36	3	8	<b>OGE500</b>


<b>Retro-reflective sensor · Type OGP M18 x 1 · M12 connector · high-grade stainless steel · DC</b>								
	Polarisation filter	0.03...5 m	200	H/D PNP	10...36	3	8	<b>OGP500</b>
	Polarisation filter	0.03...5 m	200	H/D NPN	10...36	5	8	<b>OGP503</b>

<b>Diffuse reflection sensor · Type OGH M18 x 1 · M12 connector · high-grade stainless steel · DC</b>								
	Background suppression	15...300 mm	25	H/D PNP	10...36	3	8	<b>OGH500</b>
	Background suppression	15...300 mm	25	H/D NPN	10...36	5	8	<b>OGH504</b>
	Background suppression	15...300 mm	25	H/D NPN	10...36	5	8	<b>OGH502</b>





<b>Through-beam sensor · Type OGS M18 x 1 · Cable 2 m · high-grade stainless steel · DC</b>								
	Transmitter	25 m	1000	–	10...36	1	9	<b>OGS501</b>

<b>Through-beam sensor · Type OGE M18 x 1 · Cable 2 m · high-grade stainless steel · DC</b>								
	Receiver	25 m	–	H/D PNP	10...36	6	10	<b>OGE502</b>




<b>Retro-reflective sensor · Type OGP M18 x 1 · Cable 2 m · high-grade stainless steel · DC</b>								
	Polarisation filter	0.03...5 m	200	H/D PNP	10...36	6	10	<b>OGP502</b>

<b>Diffuse reflection sensor · Type OGH M18 x 1 · Cable 2 m · high-grade stainless steel · DC</b>								
	Background suppression	15...300 mm	25	H/D PNP	10...36	6	10	<b>OGH501</b>

**Cylindrical housing OG (M18) BasicLine with lateral sensing face**


Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
<b>Through-beam sensor · Type OGS · M12 connector · high-grade stainless steel · DC</b>								
	Transmitter	9 m	< 3000	–	10...30	2	11	<b>OG5129</b>
<b>Through-beam sensor · Type OGE · M12 connector · high-grade stainless steel · DC</b>								
	Receiver	9 m	–	H PNP	10...30	7	11	<b>OG5127</b>
	Receiver	9 m	–	D PNP	10...30	8	11	<b>OG5128</b>
<b>Retro-reflective sensor · Type OGP · M12 connector · high-grade stainless steel · DC</b>								
	Polarisation filter	3 m	< 96	H PNP	10...30	7	11	<b>OG5125</b>
	Polarisation filter	3 m	< 96	D PNP	10...30	8	11	<b>OG5126</b>
<b>Diffuse reflection sensor · Type OGH · M12 connector · high-grade stainless steel · DC</b>								
	Background suppression	100 mm	< 16	H PNP	10...30	7	12	<b>OG5123</b>
	Background suppression	200 mm	< 28	H PNP	10...30	7	12	<b>OG5124</b>

**Cylindrical housing OG (M18) WetLine for hygienic and wet areas**


Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
<b>Through-beam sensor · Type OGS M18 x 1 · Cable 6 m · high-grade stainless steel · DC</b>								
	Transmitter	20 m	800	–	10...36	1	13	<b>OGS301</b>
<b>Through-beam sensor · Type OGE M18 x 1 · Cable 6 m · high-grade stainless steel · DC</b>								
	Receiver	20 m	–	D PNP	10...36	6	13	<b>OGE302</b>
	Receiver	20 m	–	H PNP	10...36	6	13	<b>OGE303</b>
<b>Retro-reflective sensor · Type OGP M18 x 1 · Cable 6 m · high-grade stainless steel · DC</b>								
	Polarisation filter	0.03...4 m	160	D PNP	10...36	6	13	<b>OGP302</b>
	Polarisation filter	0.03...4 m	160	H PNP	10...36	6	13	<b>OGP303</b>
<b>Diffuse reflection sensor · Type OGH M18 x 1 · Cable 6 m · high-grade stainless steel · DC</b>								
	Background suppression	100 mm	8	H PNP	10...36	6	14	<b>OGH306</b>
	Background suppression	100 mm	8	D PNP	10...36	6	14	<b>OGH307</b>
	Background suppression	200 mm	12	H PNP	10...36	6	14	<b>OGH308</b>
	Background suppression	200 mm	12	D PNP	10...36	6	14	<b>OGH309</b>
	Background suppression	300 mm	15	H PNP	10...36	6	14	<b>OGH310</b>
	Background suppression	300 mm	15	D PNP	10...36	6	14	<b>OGH311</b>
<b>Through-beam sensor · Type OGS M18 x 1 · M12 connector · high-grade stainless steel · DC</b>								
	Transmitter	20 m	800	–	10...36	2	4	<b>OGS300</b>

Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
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**Through-beam sensor · Type OGE M18 x 1 · M12 connector · high-grade stainless steel · DC**

	Receiver	20 m	–	D PNP	10...36	3	4	OGE300
	Receiver	20 m	–	H PNP	10...36	4	4	OGE301

**Retro-reflective sensor · Type OGP M18 x 1 · M12 connector · high-grade stainless steel · DC**

	Polarisation filter	0.03...4 m	160	D PNP	10...36	3	4	OGP300
	Polarisation filter	0.03...4 m	160	H PNP	10...36	4	4	OGP301


**Diffuse reflection sensor · Type OGH M18 x 1 · M12 connector · high-grade stainless steel · DC**

	Background suppression	100 mm	8	H PNP	10...36	3	15	OGH300
	Background suppression	100 mm	8	D PNP	10...36	3	15	OGH301
	Background suppression	200 mm	12	H PNP	10...36	3	15	OGH302
	Background suppression	200 mm	12	D PNP	10...36	3	15	OGH303
	Background suppression	300 mm	15	H PNP	10...36	3	15	OGH304
	Background suppression	300 mm	15	D PNP	10...36	3	15	OGH305


**OG housing with rectangular housing**

Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
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**Through-beam sensor · Type OGS-Cube · M12 connector · high-grade stainless steel · DC**

	Transmitter	20 m	800	–	10...30	2	16	OGS280


**Through-beam sensor · Type OGE-Cube · M12 connector · high-grade stainless steel · DC**

	Receiver	20 m	–	D PNP	10...30	9	16	OGE280
	Receiver	20 m	–	D NPN	10...30	10	16	OGE282
	Receiver	20 m	–	H PNP	10...30	4	16	OGE281



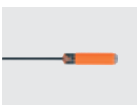
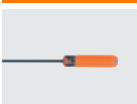
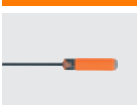


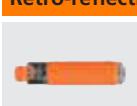

**Retro-reflective sensor · Type OGP-Cube · M12 connector · metal · DC**

	Polarisation filter	0.1...4 m	160	D PNP	10...30	9	16	OGP280
	Polarisation filter	0.1...4 m	160	H PNP	10...30	4	16	OGP281
	Polarisation filter	0.1...4 m	160	D NPN	10...30	10	16	OGP282
	Polarisation filter	0.1...4 m	160	H NPN	10...30	11	16	OGP283

**Diffuse reflection sensor · Type OGH-Cube · M12 connector · metal · DC**

	Background suppression	100 mm	7	H PNP	10...30	4	16	OGH280
	Background suppression	100 mm	7	H NPN	10...30	11	16	OGH282
	Background suppression	200 mm	13	H PNP	10...30	4	16	OGH281
	Background suppression	200 mm	13	H NPN	10...30	11	16	OGH283
	Background suppression	15...200 mm	13	H/D PNP	10...30	3	17	OGH580
	Background suppression	15...200 mm	13	H/D NPN	10...30	5	17	OGH581

**Cylindrical housing OG (M18) BasicLine AC/DC**






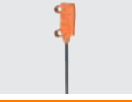




Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
<b>Through-beam sensor · Type OGS M18 x 1 · Cable 2 m · plastics · AC/DC</b>								
	Transmitter	15 m	2000	–	20...250	12	18	<b>OG0028</b>
<b>Through-beam sensor · Type OGE M18 x 1 · Cable 2 m · plastics · AC/DC</b>								
	Receiver	15 m	–	H AC/DC	20...250	13	18	<b>OG0029*</b>
	Receiver	15 m	–	D AC/DC	20...250	13	18	<b>OG0038*</b>
<b>Retro-reflective sensor · Type OGP M18 x 1 · Cable 2 m · plastics · AC/DC</b>								
	Polarisation filter	3 m	262	H AC/DC	20...250	13	18	<b>OG0043*</b>
	Polarisation filter	3 m	262	D AC/DC	20...250	13	18	<b>OG0032*</b>
<b>Diffuse reflection sensor · Type OGT M18 x 1 · Cable 2 m · plastics · AC/DC</b>								
	Diffuse reflection sensor	1...600 mm	< 169	H AC/DC	20...250	13	18	<b>OG0034*</b>
	Diffuse reflection sensor	1...600 mm	< 169	D AC/DC	20...250	13	18	<b>OG0040*</b>
<b>Diffuse reflection sensor · Type OGT M18 x 1 · Cable 0.377 m · plastics · AC/DC</b>								
	Diffuse reflection sensor	1...600 mm	< 169	H AC/DC	20...250	13	18	<b>OG0047*</b>
<b>Through-beam sensor · Type OGS M18 x 1 · 1/2" connector · plastics · AC/DC</b>								
	Transmitter	15 m	2000	–	20...250	14	19	<b>OG0030</b>
<b>Through-beam sensor · Type OGE M18 x 1 · 1/2" connector · plastics · AC/DC</b>								
	Receiver	15 m	–	H AC/DC	20...250	15	19	<b>OG0031*</b>
	Receiver	15 m	–	D AC/DC	20...250	15	19	<b>OG0039*</b>
<b>Retro-reflective sensor · Type OGP M18 x 1 · 1/2" connector · plastics · AC/DC</b>								
	Polarisation filter	3 m	262	H AC/DC	20...250	15	19	<b>OG0044*</b>
	Polarisation filter	3 m	262	D AC/DC	20...250	15	19	<b>OG0033*</b>
<b>Diffuse reflection sensor · Type OGT M18 x 1 · 1/2" connector · plastics · AC/DC</b>								
	Diffuse reflection sensor	1...600 mm	< 169	H AC/DC	20...250	15	19	<b>OG0035*</b>
	Diffuse reflection sensor	1...600 mm	< 169	D AC/DC	20...250	15	19	<b>OG0041*</b>

**\* Note for AC and AC/DC units**






Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting). Recommendation: check the unit for reliable function after a short circuit.








Rectangular housing OH for industrial applications











Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
<b>Through-beam sensor · Type OHS · Cable 2 m · plastics · DC</b>								
	Transmitter	1.2 m	10	–	10...30	1	20	OH5001
<b>Through-beam sensor · Type OHE · Cable 2 m · plastics · DC</b>								
	Receiver	1.2 m	–	D PNP	10...30	16	20	OH5002
<b>Retro-reflective sensor · Type OHP · Cable 2 m · plastics · DC</b>								
	Polarisation filter	0.8 m	10	D PNP	10...30	16	21	OH5010
<b>Diffuse reflection sensor · Type OHH · Cable 2 m · plastics · DC</b>								
	Background suppression	1...15 mm	2.5	H PNP	10...30	17	22	OH5008
	Background suppression	1...30 mm	4.5	H PNP	10...30	17	22	OH5006
<b>Diffuse reflection sensor · Type OHN · Cable 2 m · plastics · DC</b>								
	Diffuse reflection sensor	2...50 mm	3.5	H PNP	10...30	17	22	OH5004
<b>Through-beam sensor · Type OHS · Cable with connector 0.2 m · plastics · DC</b>								
	Transmitter	1.2 m	10	–	10...30	2	20	OH5020
	Transmitter	1.2 m	10	–	10...30	2	20	OH5012
<b>Through-beam sensor · Type OHE · Cable with connector 0.2 m · plastics · DC</b>								
	Receiver	1.2 m	–	D PNP	10...30	9	20	OH5015
	Receiver	1.2 m	–	D PNP	10...30	9	20	OH5003
<b>Retro-reflective sensor · Type OHP · Cable with connector 0.2 m · plastics · DC</b>								
	Polarisation filter	0.8 m	10	D PNP	10...30	9	21	OH5019
	Polarisation filter	0.8 m	10	D PNP	10...30	9	21	OH5011
<b>Diffuse reflection sensor · Type OHN · Cable with connector 0.2 m · plastics · DC</b>								
	Diffuse reflection sensor	2...50 mm	3.5	H PNP	10...30	4	22	OH5016
	Diffuse reflection sensor	2...50 mm	3.5	H PNP	10...30	4	22	OH5005
<b>Diffuse reflection sensor · Type OHH · Cable with connector 0.2 m · plastics · DC</b>								
	Background suppression	1...15 mm	2.5	H PNP	10...30	4	22	OH5018
	Background suppression	1...15 mm	2.5	H PNP	10...30	4	22	OH5009
	Background suppression	1...30 mm	4.5	H PNP	10...30	4	22	OH5017
	Background suppression	1...30 mm	4.5	H PNP	10...30	4	22	OH5007

**Rectangular housing OJ BasicLine, lateral sensing face**












Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
<b>Through-beam sensor · Type OJE · M8 connector · plastics · DC</b>								
	Receiver	10 m	–	D PNP	10...30	3	23	<b>OJE200</b>
<b>Through-beam sensor · Type OJS · M8 connector · plastics · DC</b>								
	Transmitter	0...10 m	< 1000	–	10...30	2	23	<b>OJS200</b>
<b>Retro-reflective sensor · Type OJR · M8 connector · plastics · DC</b>								
	Retro-reflective sensor	1.8 m	64	D PNP	10...30	3	23	<b>OJR200</b>
<b>Retro-reflective sensor · Type OJP · M8 connector · plastics · DC</b>								
	Polarisation filter	1.8 m	64	D PNP	10...30	3	23	<b>OJP200</b>
<b>Diffuse reflection sensor · Type OJH · M8 connector · plastics · DC</b>								
	Background suppression	100 mm	< 13	H PNP	10...30	3	24	<b>OJH200</b>









**Rectangular housing OJ Performanceline, lateral sensing face**

Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
<b>Through-beam sensor · Type OJS · Cable 2 m · plastics · DC</b>								
	Transmitter	10 m	1000	–	10...30	1	25	<b>OJS033</b>
<b>Through-beam sensor · Type OJE · Cable 2 m · plastics · DC</b>								
	Receiver	10 m	–	H/D PNP	10...30	18	25	<b>OJS034</b>
<b>Retro-reflective sensor · Type OJP · Cable 2 m · plastics · DC</b>								
	Polarisation filter	0...2 m	64	H/D PNP	10...30	18	25	<b>OJS028</b>
<b>Diffuse reflection sensor · Type OJB · Cable 2 m · plastics · DC</b>								
	Diffuse reflection sensor	1...600 mm	60	H/D PNP	10...30	18	26	<b>OJS024</b>
<b>Diffuse reflection sensor · Type OJH · Cable with connector 0.15 m · plastics · DC</b>								
	Background suppression	15...400 mm	< 18	H/D PNP	10...30	19	27	<b>OJS078</b>



Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
<b>Through-beam sensor · Type OJS · M8 connector · plastics · DC</b>								
	Transmitter	10 m	1000	–	10...30	2	28	OJ5030
<b>Through-beam sensor · Type OJE · M8 connector · plastics · DC</b>								
	Receiver	10 m	–	H/D PNP	10...30	19	28	OJ5031
	Receiver	10 m	–	H/D NPN	10...30	20	28	OJ5032
<b>Retro-reflective sensor · Type OJP · M8 connector · plastics · DC</b>								
	Polarisation filter	0...2 m	64	H/D PNP	10...30	19	28	OJ5026
	Polarisation filter	0...2 m	64	H/D NPN	10...30	20	28	OJ5027
<b>Diffuse reflection sensor · Type OJB · M8 connector · plastics · DC</b>								
	Diffuse reflection sensor	1...600 mm	60	H/D PNP	10...30	19	29	OJ5022
	Diffuse reflection sensor	1...600 mm	60	H/D NPN	10...30	20	29	OJ5023
	Diffuse reflection sensor	1...1000 mm	150	H/D PNP	10...30	19	29	OJ5071
<b>Diffuse reflection sensor · Type OJH · M8 connector · plastics · DC</b>								
	Background suppression	15...400 mm	< 18	H/D PNP	10...30	19	30	OJ5048
<b>Through-beam sensor · Type OJS · M8 connector · plastics · DC</b>								
	Transmitter	10 m	1000	–	10...30	2	31	OJ5130
<b>Through-beam sensor · Type OJE · M8 connector · plastics · DC</b>								
	Receiver	10 m	–	H/D PNP	10...30	19	31	OJ5131
<b>Retro-reflective sensor · Type OJP · M8 connector · plastics · DC</b>								
	Polarisation filter	0...2 m	64	H/D PNP	10...30	19	31	OJ5126
<b>Diffuse reflection sensor · Type OJB · M8 connector · plastics · DC</b>								
	Diffuse reflection sensor	1...600 mm	60	H/D PNP	10...30	19	32	OJ5122
<b>Diffuse reflection sensor · Type OJH · M8 connector · plastics · DC</b>								
	Background suppression	15...400 mm	< 18	H/D PNP	10...30	19	33	OJ5148

**Rectangular housing OJ Performanceline, front sensing face**




Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
<b>Through-beam sensor · Type OJS · Cable 2 m · plastics · DC</b>								
	Transmitter	10 m	1000	–	10...30	1	34	<b>OJ5011</b>
<b>Through-beam sensor · Type OJS · Cable with connector 0.15 m · plastics · DC</b>								
	Transmitter	10 m	1000	–	10...30	2	34	<b>OJ5065</b>
	Transmitter	10 m	1000	–	10...30	2	34	<b>OJ5064</b>
<b>Through-beam sensor · Type OJE · Cable 2 m · plastics · DC</b>								
	Receiver	10 m	–	H/D PNP	10...30	18	34	<b>OJ5012</b>
<b>Through-beam sensor · Type OJE · Cable with connector 0.15 m · plastics · DC</b>								
	Receiver	10 m	–	H/D PNP	10...30	19	34	<b>OJ5067</b>
	Receiver	10 m	–	H/D PNP	10...30	19	34	<b>OJ5066</b>
<b>Retro-reflective sensor · Type OJP · Cable 2 m · plastics · DC</b>								
	Polarisation filter	0...2 m	64	H/D PNP	10...30	18	34	<b>OJ5006</b>
<b>Retro-reflective sensor · Type OJP · Cable with connector 0.15 m · plastics · DC</b>								
	Polarisation filter	0...2 m	64	H/D PNP	10...30	19	34	<b>OJ5063</b>
	Polarisation filter	0...2 m	64	H/D PNP	10...30	19	34	<b>OJ5062</b>
<b>Diffuse reflection sensor · Type OJB · Cable with connector 0.15 m · plastics · DC</b>								
	Diffuse reflection sensor	1...600 mm	60	H/D PNP	10...30	19	35	<b>OJ5061</b>
	Diffuse reflection sensor	1...600 mm	60	H/D PNP	10...30	19	35	<b>OJ5060</b>
<b>Diffuse reflection sensor · Type OJH · Cable with connector 0.15 m · plastics · DC</b>								
	Background suppression	15...400 mm	< 18	H/D PNP	10...30	19	36	<b>OJ5069</b>
<b>Through-beam sensor · Type OJS · M8 connector · plastics · DC</b>								
	Transmitter	10 m	1000	–	10...30	2	37	<b>OJ5008</b>
<b>Through-beam sensor · Type OJE · M8 connector · plastics · DC</b>								
	Receiver	10 m	–	H/D PNP	10...30	19	37	<b>OJ5009</b>
	Receiver	10 m	–	H/D NPN	10...30	20	37	<b>OJ5010</b>
<b>Retro-reflective sensor · Type OJP · M8 connector · plastics · DC</b>								
	Polarisation filter	0...2 m	64	H/D PNP	10...30	19	37	<b>OJ5004</b>
	Polarisation filter	0...2 m	64	H/D NPN	10...30	20	37	<b>OJ5005</b>

Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
<b>Diffuse reflection sensor · Type OJB · M8 connector · plastics · DC</b>								
	Diffuse reflection sensor	1...600 mm	60	H/D PNP	10...30	19	38	<b>OJ5000</b>
	Diffuse reflection sensor	1...600 mm	60	H/D NPN	10...30	20	38	<b>OJ5001</b>
	Diffuse reflection sensor	1...1000 mm	150	H/D PNP	10...30	19	38	<b>OJ5070</b>
<b>Diffuse reflection sensor · Type OJH · M8 connector · plastics · DC</b>								
	Background suppression	15...400 mm	< 18	H/D PNP	10...30	19	39	<b>OJ5044</b>
<b>Diffuse reflection sensor · Type OJB · Cable 2 m · plastics · DC</b>								
	Diffuse reflection sensor	1...600 mm	60	H/D PNP	10...30	18	35	<b>OJ5002</b>
<b>Through-beam sensor · Type OJS · M8 connector · plastics · DC</b>								
	Transmitter	10 m	1000	–	10...30	2	40	<b>OJ5108</b>
<b>Through-beam sensor · Type OJE · M8 connector · plastics · DC</b>								
	Receiver	10 m	–	H/D PNP	10...30	19	40	<b>OJ5109</b>
<b>Retro-reflective sensor · Type OJP · M8 connector · plastics · DC</b>								
	Polarisation filter	0...2 m	64	H/D PNP	10...30	19	40	<b>OJ5104</b>
<b>Diffuse reflection sensor · Type OJB · M8 connector · plastics · DC</b>								
	Diffuse reflection sensor	1...600 mm	60	H/D PNP	10...30	19	41	<b>OJ5100</b>
<b>Diffuse reflection sensor · Type OJH · M8 connector · plastics · DC</b>								
	Background suppression	15...400 mm	< 18	H/D PNP	10...30	19	42	<b>OJ5144</b>

**Rectangular housing OL for industrial applications**

Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
<b>Through-beam sensor · Type OLS · Terminals · plastics · AC/DC</b>								
	Transmitter	25 m	< 2500	–	20...250	21	43	<b>OL0006</b>
<b>Through-beam sensor · Type OLE · Terminals · plastics · AC/DC</b>								
	Receiver	25 m	–	H/D relay	20...250	22	43	<b>OL0007</b>





## Photoelectric sensors infrared / redlight

Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
<b>Retro-reflective sensor · Type OLP · Terminals · plastics · AC/DC</b>								
	Polarisation filter	0.3...5 m	250	H/D relay	20...250	22	44	<b>OL0004*</b>
<b>Diffuse reflection sensor · Type OLT · Terminals · plastics · AC/DC</b>								
	Diffuse reflection sensor	1...1000 mm	< 300	H/D relay	20...250	22	43	<b>OL0005*</b>
<b>Diffuse reflection sensor · Type OLB · Terminals · plastics · AC/DC</b>								
	Diffuse reflection sensor	1...800 mm	< 80	H/D relay	20...250	22	43	<b>OL0009*</b>


### \* Note for AC and AC/DC units

Miniature fuse to IEC60127-2 sheet 1, ≤ 5 A (fast acting). Recommendation: check the unit for reliable function after a short circuit.

### Rectangular housing O5 BasicLine

Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
<b>Through-beam sensor · Type O5S · M12 connector · plastics · DC</b>								
	Transmitter	20 m	500	–	10...36	2	45	<b>O5S200</b>
<b>Through-beam sensor · Type O5E · M12 connector · plastics · DC</b>								
	Receiver	20 m	–	D PNP	10...36	9	45	<b>O5E200</b>
<b>Retro-reflective sensor · Type O5P · M12 connector · plastics · DC</b>								
	Polarisation filter	0.1...7 m	175	D PNP	10...36	9	46	<b>O5P200</b>
	Polarisation filter	0.1...7 m	175	H PNP	10...36	23	46	<b>O5P201</b>
<b>Diffuse reflection sensor · Type O5H · M12 connector · plastics · DC</b>								
	Background suppression	50...1400 mm	50	H PNP	10...36	4	47	<b>O5H200</b>
	Background suppression	50...1400 mm	50	H NPN	10...36	11	47	<b>O5H201</b>

### Rectangular housing O5 PerformanceLine


Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
<b>Through-beam sensor · Type O5S · Cable 2 m · plastics · DC</b>								
	Transmitter	25 m	625	–	10...36	1	48	<b>O5S501</b>

Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
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**Through-beam sensor · Type O5E · Cable 2 m · plastics · DC**

	Receiver	25 m	–	H/D PNP	10...36	6	49	<b>O5E501</b>
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**Retro-reflective sensor · Type O5P · Cable 2 m · plastics · DC**

	Polarisation filter	0.075...10 m	250	H/D PNP	10...36	6	50	<b>O5P501</b>
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**Diffuse reflection sensor · Type O5H · Cable 2 m · plastics · DC**

	Background suppression	50...1800 mm	50	H/D PNP	10...36	6	50	<b>O5H503</b>
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**Through-beam sensor · Type O5S · M12 connector · plastics · DC**

	Transmitter	25 m	625	–	10...36	2	45	<b>O5S500</b>
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**Through-beam sensor · Type O5E · M12 connector · plastics · DC**

	Receiver	25 m	–	H/D PNP	10...36	3	51	<b>O5E500</b>
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**Retro-reflective sensor · Type O5P · M12 connector · plastics · DC**

	Polarisation filter	0.075...10 m	250	H/D PNP	10...36	3	52	<b>O5P500</b>
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**Diffuse reflection sensor · Type O5H · M12 connector · plastics · DC**

	Background suppression	50...1800 mm	50	H/D PNP	10...36	3	52	<b>O5H500</b>
	Background suppression	60...700 mm	35	H/D PNP	10...36	3	52	<b>O5H501</b>

**Rectangular housing O5 PerformanceLine with ATEX approval 3D**

Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
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**Through-beam sensor · Type O5S-Atex · M12 connector · plastics · DC**

	Transmitter	25 m	625	–	10...30	2	53	<b>O5S51A</b>
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**Through-beam sensor · Type O5E-Atex · M12 connector · plastics · DC**

	Receiver	25 m	–	H/D PNP	10...30	3	53	<b>O5E51A</b>
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**Retro-reflective sensor · Type O5P-Atex · M12 connector · plastics · DC**

	Polarisation filter	0.075...10 m	250	H/D PNP	10...30	3	53	<b>O5P51A</b>
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## Photoelectric sensors infrared / redlight

Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
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### Diffuse reflection sensor · Type O5H-Atex · M12 connector · plastics · DC

	Background suppression	50...1800 mm	50	H/D PNP	10...30	3	53	<b>O5H51A</b>
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### Rectangular housing O4 BasicLine

Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
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### Through-beam sensor · Type O4S · M12 connector · plastics · DC

	Transmitter	0...50 m	1000	–	10...36	2	54	<b>O4S200</b>
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### Through-beam sensor · Type O4E · M12 connector · plastics · DC

	Receiver	0...50 m	–	D PNP	10...36	9	55	<b>O4E200</b>
	Receiver	0...50 m	–	H PNP	10...36	4	55	<b>O4E201</b>

### Retro-reflective sensor · Type O4P · M12 connector · plastics · DC

	Polarisation filter	0.3...18 m	500	D PNP	10...36	9	56	<b>O4P200</b>
	Polarisation filter	0.3...18 m	500	H PNP	10...36	4	56	<b>O4P201</b>


### Diffuse reflection sensor · Type O4H · M12 connector · plastics · DC

	Background suppression	100...2000 mm	100	H PNP	10...36	4	57	<b>O4H200</b>
	Background suppression	100...2000 mm	100	D PNP	10...36	9	57	<b>O4H201</b>


### Rectangular housing O4 PerformanceLine

Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Drawing no.	Order no.
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### Through-beam sensor · Type O4S · Cable 2 m · plastics · DC

	Transmitter	80 m	2400	–	10...36	1	58	<b>O4S501</b>
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### Through-beam sensor · Type O4E · Cable 2 m · plastics · DC

	Receiver	80 m	–	H/D PNP	10...36	6	59	<b>O4E501</b>
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### Retro-reflective sensor · Type O4P · Cable 2 m · plastics · DC

	Polarisation filter	0.3...22 m	660	H/D PNP	10...36	6	60	<b>O4P501</b>
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### Diffuse reflection sensor · Type O4H · Cable 2 m · plastics · DC

	Background suppression	100...2600 mm	50	H/D PNP	10...36	6	61	<b>O4H501</b>
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Type	Operating principle	Sensing range	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	U <sub>b</sub> [V]	Wiring diagram no.	Draw- ing no.	Order no.
<b>Through-beam sensor · Type O4S · M12 connector · plastics · DC</b>								
	Transmitter	80 m	2400	–	10...36	2	54	<b>O4S500</b>
<b>Through-beam sensor · Type O4E · M12 connector · plastics · DC</b>								
	Receiver	80 m	–	H/D PNP	10...36	3	62	<b>O4E500</b>
<b>Retro-reflective sensor · Type O4P · M12 connector · plastics · DC</b>								
	Polarisation filter	0.3...22 m	660	H/D PNP	10...36	3	63	<b>O4P500</b>
<b>Diffuse reflection sensor · Type O4H · M12 connector · plastics · DC</b>								
	Background suppression	100...2600 mm	50	H/D PNP	10...36	3	64	<b>O4H500</b>

### Accessories

Type	Description	Order no.
	Prismatic reflector · Ø 20 mm · round · for type O5P, OA, OC, OE, OF, OG, OH, OI, OJ, OL, OM, OR, OS, OT, OU · Housing materials: plastics	<b>E20003</b>
	Prismatic reflector · Ø 25 mm · round · fixing by screw · for type OA, OC, OE, OF, OG, OI, OM, OR, OS, OT, OU · Housing materials: plastics	<b>E20953</b>
	Prismatic reflector · Ø 35 mm · round · fixing by screw · for type OA, OC, OE, OF, OG, OI, OM, OR, OS, OT, OU · Housing materials: plastics	<b>E20954</b>
	Prismatic reflector · Ø 42 mm · round · for type O5P, OA, OC, OE, OF, OG, OH, OI, OJ, OL, OM, OR, OS, OT, OU · Housing materials: plastics	<b>E20004</b>
	Prismatic reflector · Ø 50 mm · round · fixing by screw · for type OA, OC, OE, OF, OG, OH, OI, OJ, OM, OR, OS, OS, OT, OU · Housing materials: plastics	<b>E20956</b>
	Prismatic reflector · Ø 80 mm · round · for type O4P, O5P, OG, OJ, OA, OC, OE, OF, OH, OI, OM, OR, OS, OT, OU · Housing materials: plastics	<b>E20005</b>
	Prismatic reflector · 18 x 40 mm · angular · for type O5P, OG, OJ, OA, OH, OI, OS, OT, OU, OF · Housing materials: plastics	<b>E21115</b>
	Prismatic reflector · 45 x 28 mm · angular · for type O5P, OA, OC, OE, OF, OG, OH, OI, OJ, OM, OR, OS, OT, OU · Housing materials: plastics	<b>E20452</b>

Type	Description	Order no.
	Prismatic reflector · 50 x 50 mm · angular · for type OA, OC, OE OF, OG, OH, OI, OJ, OM, OR, OS, OS, OT, OU · Housing materials: plastics	<b>E20744</b>
	Prismatic reflector · 93 x 45 mm · angular · for type O5P, OA, OC, OE OF, OG, OH, OI, OJ, OM, OR, OS, OT, OU · Housing materials: plastics	<b>E20453</b>
	Prismatic reflector · 95 x 95 mm · angular · for type O5P, OA, OC, OE OF, OG, OH, OI, OJ, OM, OR, OS, OT, OU · Housing materials: plastics	<b>E20454</b>
	Mounting set · for reflector · Clamp mounting · rod mounting Ø 30 mm · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: aluminium transparent anodised	<b>E21007</b>
	Mounting set · for reflector · Ø 25 mm · Clamp mounting · free-standing M8 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	<b>E20903</b>
	Mounting set · for reflector · Ø 35 mm · Clamp mounting · free-standing M8 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	<b>E20907</b>
	Mounting set · for reflector · Ø 50 mm · Clamp mounting · free-standing M10 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	<b>E20911</b>
	Mounting set · for reflector · Ø 80 mm · Clamp mounting · free-standing M12 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	<b>E20914</b>
	Mounting set · for reflector · Ø 80 mm · Clamp mounting · free-standing M12 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	<b>E20915</b>
	Angle bracket · for reflector · 50 x 50 mm · Housing materials: fixture: stainless steel 316Ti / 1.4571	<b>E20724</b>
	Reflective tape for retro-reflective sensors with polarisation filter · TS-02 · 50 x 1000 mm · Housing materials: plastics	<b>E21015</b>
	clamp · Ø 12 mm; M10 · free-standing M10 · Housing materials: clamp: diecast zinc	<b>E20716</b>
	clamp · Ø 14 mm; M12 · free-standing M12 · Housing materials: clamp: diecast zinc	<b>E20796</b>
	clamp · Ø 10 mm; M8 · free-standing M8 · Housing materials: clamp: diecast zinc	<b>E20843</b>






Type	Description	Order no.
	clamp · Ø 10 mm; M8 · free-standing M8 · Housing materials: clamp: stainless steel 316Ti / 1.4571	E20844
	Angle bracket · Ø 12 mm · with end stop · Mounting clamp · Clamp mounting · for type IF, KF, OF · Housing materials: clamp: diecast zinc / fixture: stainless steel / Mounting clamp: PC black	E21144
	Mounting set · Ø 12.2 mm · Clamp mounting · rod mounting Ø 10 mm · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21200
	Mounting set · Ø 12.2 mm · Clamp mounting · rod mounting Ø 10 mm · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E21201
	Mounting set · Ø 12.2 mm · Clamp mounting · rod mounting Ø 10 mm · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21202
	Mounting set · Ø 12.2 mm · Clamp mounting · rod mounting Ø 10 mm · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E21203
	angle support · 90° · for type OF · Housing materials: housing: ABS / lens: PC	E20590
	mounting rod · Ø 10 / M8 · Length: 150 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E21081
	mounting rod · Ø 10 / M8 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	E80310
	Head cap screw · M8 x 40 mm · ISO 4762 (DIN 912) · free-standing M8 · Housing materials: screw: steel galvanised	E21204
	Head cap screw · M8 x 40 mm · ISO 4762 (DIN 912) · free-standing M8 · Housing materials: screw: high-grade stainless steel	E21205
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	E20720
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	E20721
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: high-grade stainless steel / fixture: high-grade stainless steel	E21206

Type	Description	Order no.
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: high-grade stainless steel / fixture: high-grade stainless steel	<b>E21207</b>
	mounting rod · Ø 12 / M10 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	<b>E20938</b>
	mounting rod · Ø 12 / M10 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	<b>E20940</b>
	Cube · M8 · aluminium profile · Housing materials: diecast zinc	<b>E20950</b>
	Cube · M10 · aluminium profile · Housing materials: diecast zinc	<b>E20951</b>
	Protective bracket for free-standing and rod mounting · Ø 18 mm · Clamp mounting · Housing materials: stainless steel 316L / 1.4404	<b>E21125</b>
	Protective bracket for free-standing and rod mounting · Ø 18 mm · with end stop · Mounting clamp · Clamp mounting · Housing materials: Mounting clamp: PC black / Angle bracket: stainless steel 316L / 1.4404	<b>E21126</b>
	Angle bracket · Ø 18 mm · with end stop · Mounting clamp · Clamp mounting · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: stainless steel / Mounting clamp: PC black	<b>E21145</b>
	Head cap screw · M10 x 45 mm · ISO 4762 (DIN 912) · free-standing M10 · Housing materials: screw: steel galvanised	<b>E21208</b>
	Head cap screw · M10 x 45 mm · ISO 4762 (DIN 912) · free-standing M10 · Housing materials: screw: high-grade stainless steel	<b>E21209</b>
	Angle bracket · for type M18 · Housing materials: stainless steel	<b>E10736</b>
	angle support · 90° · for type OG · Housing materials: housing: ABS / lens: PC	<b>E20723</b>
	angle support · 90° · for type OGP · Housing materials: housing: ABS / lens: glass	<b>E20740</b>
	Mounting set · for type OH · Housing materials: ABS	<b>E21056</b>

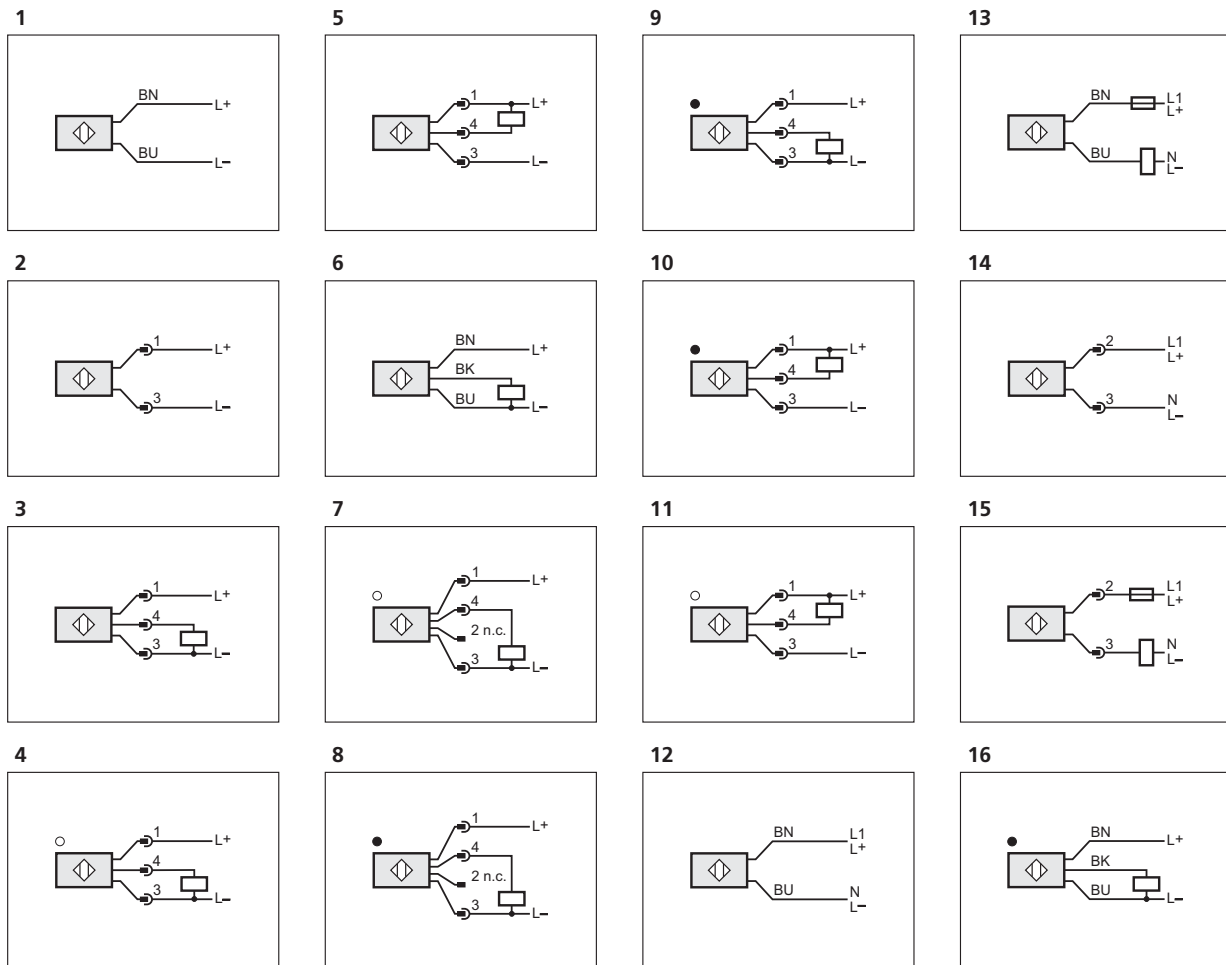
Type	Description	Order no.
	Angle bracket · for free-standing mounting · for type OH · Housing materials: Angle bracket: stainless steel 316Ti / 1.4571	E21057
	Basic clip · OJ · Housing materials: high-grade stainless steel	E20965
	Basic clip · OJ · Housing materials: diecast zinc	E20964
	Swivel-mount clip · for type OJ · Housing materials: diecast zinc	E20974
	Angle bracket · for type OJ · Housing materials: high-grade stainless steel	E20984
	Mounting set · OJ · for side lens · Clamp mounting · free-standing M8 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E20968
	Mounting set · OJ · for side lens · Clamp mounting · free-standing M8 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E20969
	Mounting set · OJ · for side lens · rod mounting Ø 10 mm · Housing materials: clamp: diecast zinc / fixture: stainless steel 316Ti / 1.4571	E21095
	Mounting set · OJ · for side lens · Clamp mounting · rod mounting Ø 10 mm · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21222
	Mounting set · OJ · for side lens · Clamp mounting · rod mounting Ø 10 mm · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E20973
	Mounting set · OJ · for front lens · Clamp mounting · free-standing M8 · Housing materials: clamp: diecast zinc / fixture: stainless steel 316Ti / 1.4571	E20966
	Mounting set · OJ · for front lens · Clamp mounting · rod mounting Ø 10 mm · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E20970
	Mounting set · OJ · for front lens · Clamp mounting · rod mounting · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E21221
	Angle bracket · for type OL · Housing materials: stainless steel	E20788

Type	Description	Order no.
	Angle bracket · with protective cover · for type OL · Housing materials: stainless steel	<b>E20789</b>
	Mounting set · Clamp mounting · free-standing M12 · for type OL · Housing materials: fixture: stainless steel / clamp: diecast zinc	<b>E20792</b>
	Mounting set · OL · Clamp mounting · rod mounting Ø 40 mm · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: aluminium transparent anodised	<b>E21012</b>
	Mounting set · Clamp mounting · with protective cover · free-standing M12 · for type OL · Housing materials: fixture: stainless steel / clamp: diecast zinc	<b>E20793</b>
	Mounting set · Clamp mounting · with protective cover · free-standing M12 · for type OL · Housing materials: clamp: stainless steel / fixture: stainless steel 316Ti / 1.4571	<b>E20877</b>
	Angle bracket · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	<b>E21087</b>
	Mounting sleeve · O5 · for mounting O5 sensors instead of OC sensors · Housing materials: AlZnMgCu1.5 F51/52	<b>E21114</b>
	Mounting set · Clamp mounting · with protective cover · rod mounting Ø 12 mm · for type O5 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: high-grade stainless steel	<b>E21223</b>
	Mounting set · Clamp mounting · with protective cover · rod mounting Ø 12 mm · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	<b>E21210</b>
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	<b>E21211</b>
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: high-grade stainless steel	<b>E21212</b>
	Mounting set · Clamp mounting · with protective cover · rod mounting Ø 14 mm · for type O5 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	<b>E21142</b>
	Mounting set · Clamp mounting · with protective cover · free-standing M10 · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	<b>E21084</b>
	Head cap screw · M10 x 120 mm · ISO 4762 (DIN 912) · free-standing M10 · Housing materials: screw: steel galvanised	<b>E21213</b>

Type	Description	Order no.
	Head cap screw · M10 x 120 mm · ISO 4762 (DIN 912) · free-standing M10 · Housing materials: screw: high-grade stainless steel	E21214
	Angle bracket · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	E21085
	Mounting set · Clamp mounting · free-standing M10 · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21083
	Mounting brackets Mounting on the back of the unit · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	E21086
	Dovetail clamp · for type DTS, O4, O5 · Housing materials: AlMgSi0.5	E21088
	Mounting sleeve · O5 · for mounting O5 sensors instead of OC sensors · Housing materials: AlZnMgCu1.5 F51/52	E21114
	clamp · Ø 12 mm · rod mounting Ø 12 mm · Housing materials: clamp: diecast zinc	E20717
	clamp · Ø 12 mm · rod mounting Ø 12 mm · Housing materials: clamp: stainless steel	E21110
	Angle bracket · O4 · for type O4 · Housing materials: stainless steel 316L / 1.4404	E21120
	Mounting set · Clamp mounting · with protective cover · rod mounting Ø 12 mm · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: diecast zinc	E21215
	Mounting set · Clamp mounting · with protective cover · rod mounting Ø 12 mm · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: high-grade stainless steel	E21216
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: diecast zinc	E21217
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: high-grade stainless steel	E21218
	Mounting set · O4 · Clamp mounting · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: diecast zinc	E21118

Type	Description	Order no.
	Mounting set · O4 · Clamp mounting · with protective cover · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: diecast zinc	E21119
	Angle bracket · O5, O4 · for mounting O5, O4 sensors instead of OL sensors · Dovetail clamp · Housing materials: Dovetail clamp: AlMgSi0.5 / fixture: AlMg3	E21122
	Angle bracket · O4 · for type O4 · Housing materials: stainless steel 316L / 1.4404	E21117
	Mounting set · O4 · Clamp mounting · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: diecast zinc	E21118
	Mounting brackets Mounting on the back of the unit · O4 · for type O4 · Housing materials: stainless steel 316Ti / 1.4571	E21116

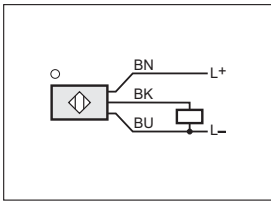
**Wiring diagrams**



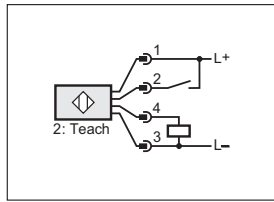


Wiring diagrams

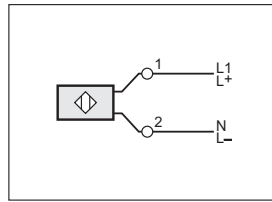
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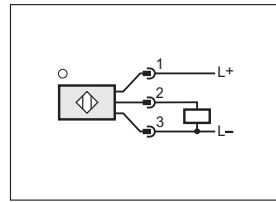
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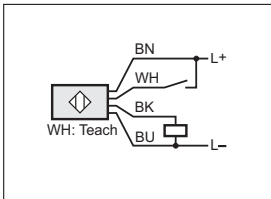
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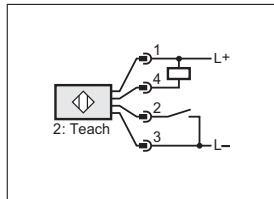
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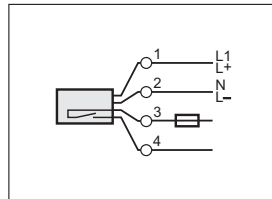
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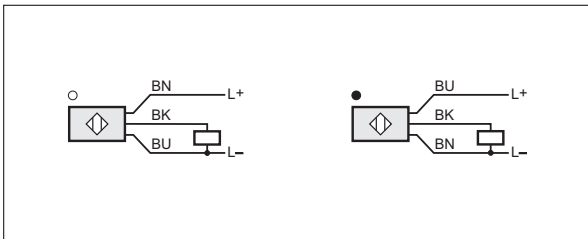
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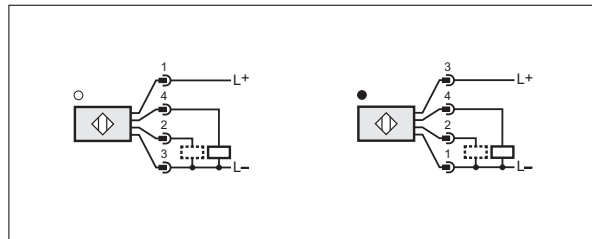
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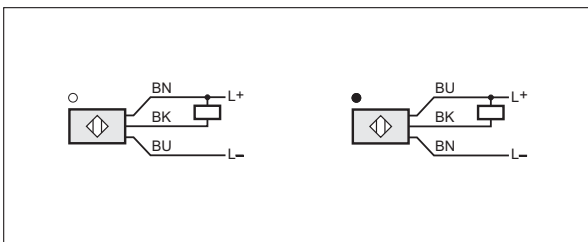
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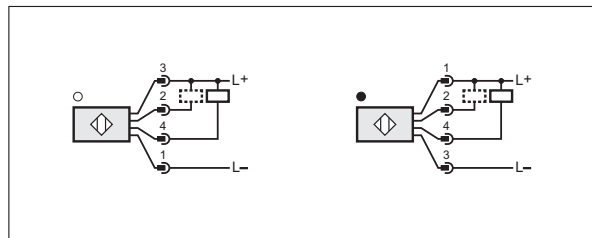


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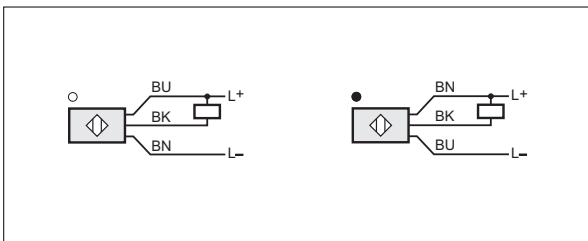


2: function check

28

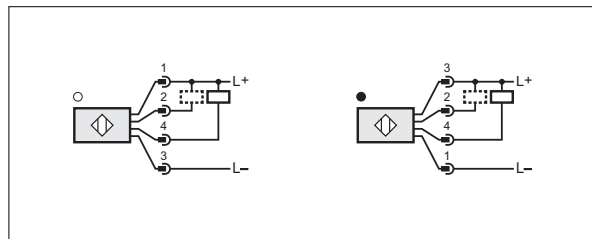


26



2: function check

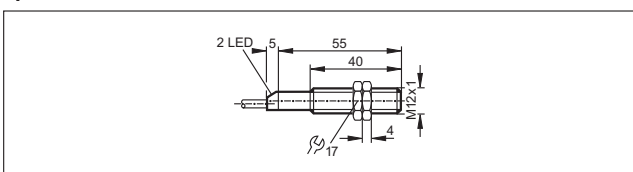
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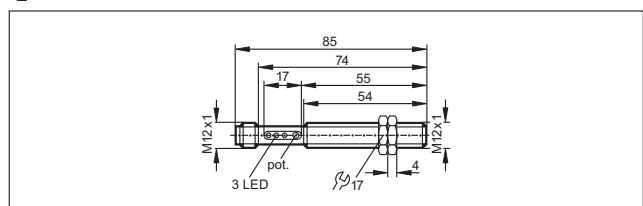
2: function check

Scale drawings

1

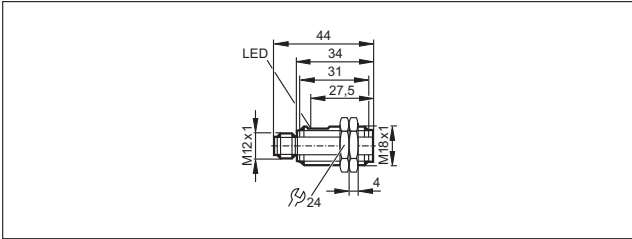


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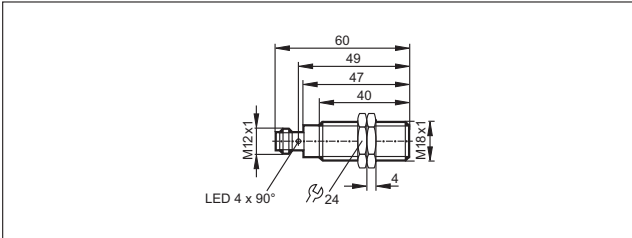


Scale drawings

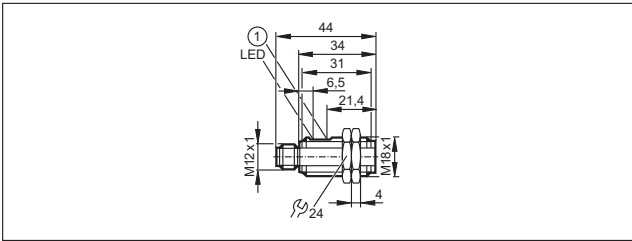
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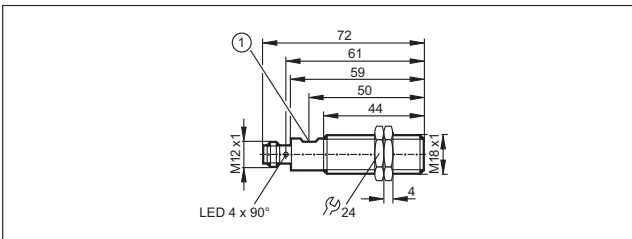


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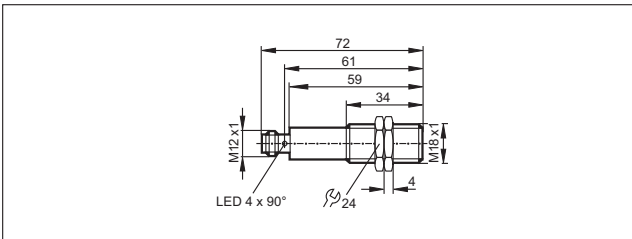
1: with pot.

6

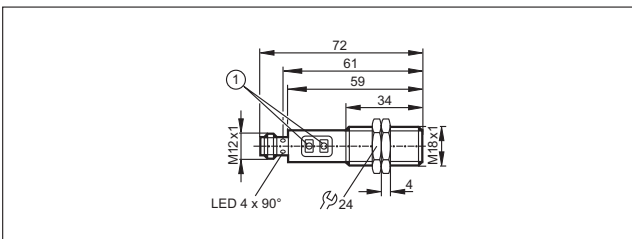


1: with pot.

7

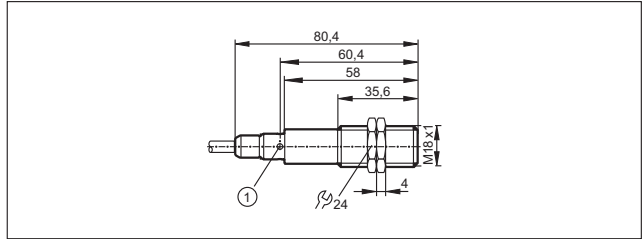


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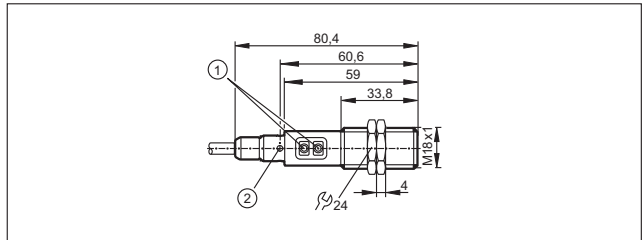
1: Programming buttons

9



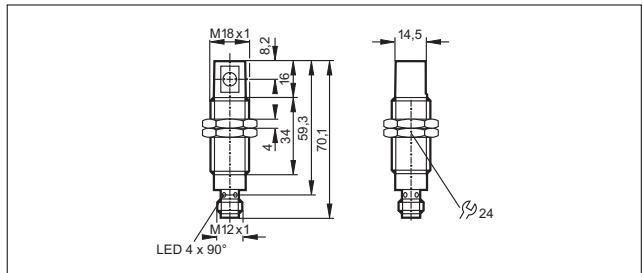
1: LED 4 x 90°

10

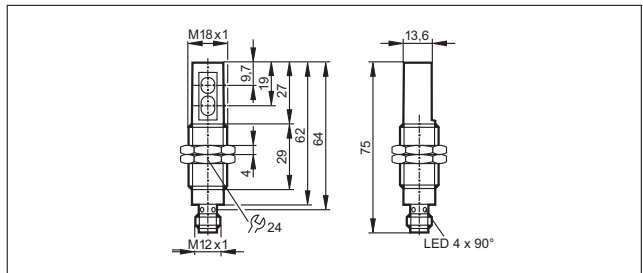


1: Programming buttons, 2: LED 4 x 90°

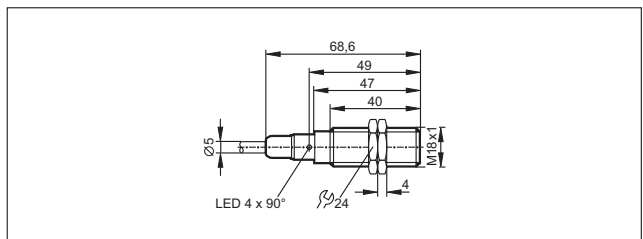
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12

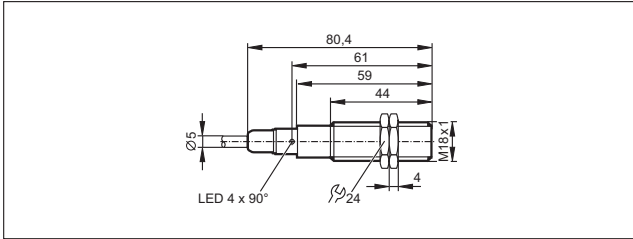


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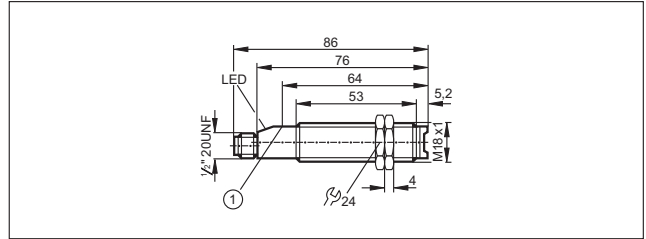


Scale drawings

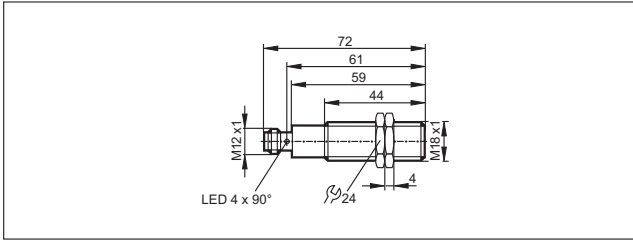
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19

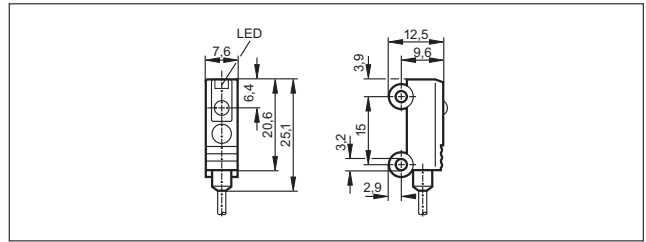


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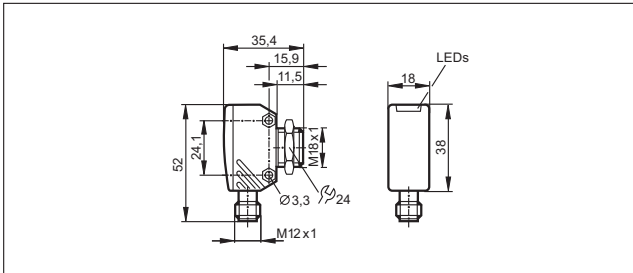


1: pushbutton

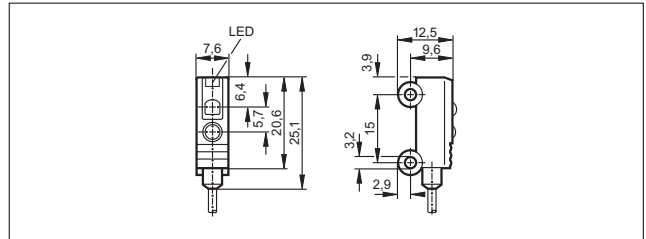
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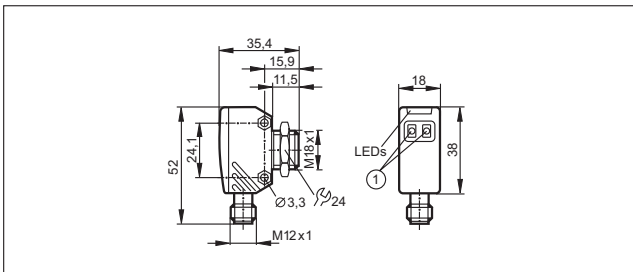
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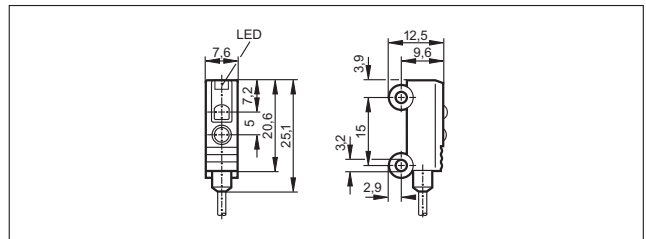
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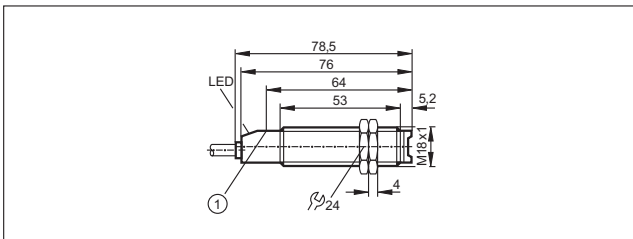


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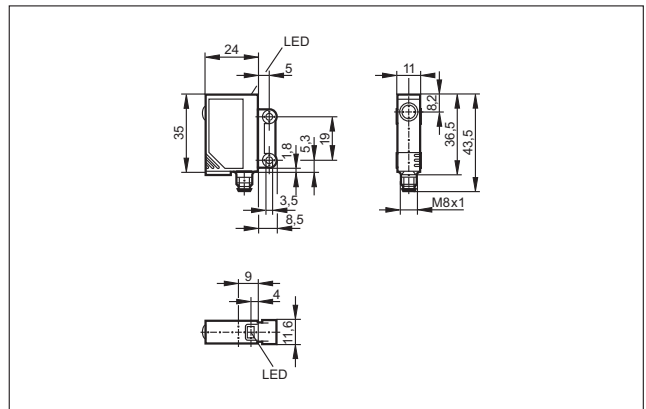
1: setting pushbuttons

18



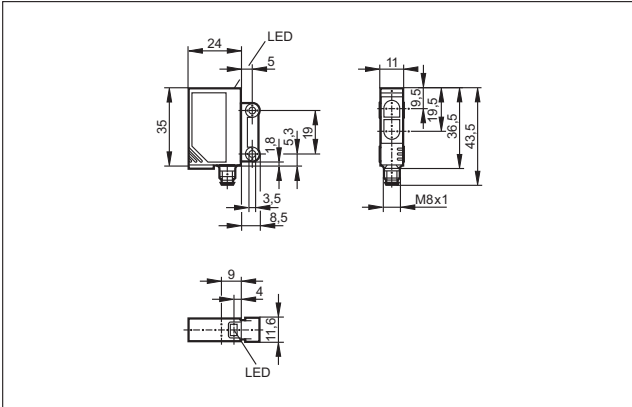
1: pushbutton

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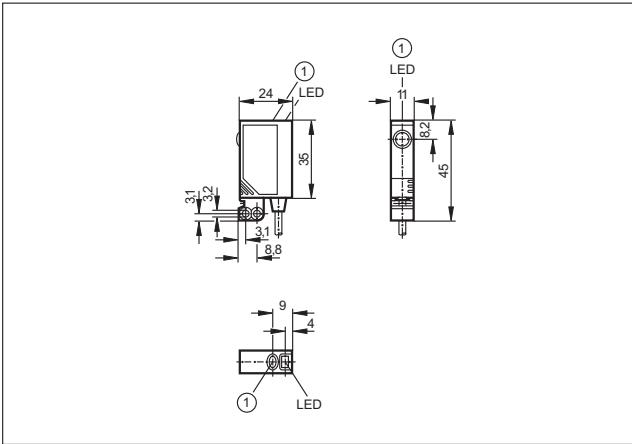


Scale drawings

24

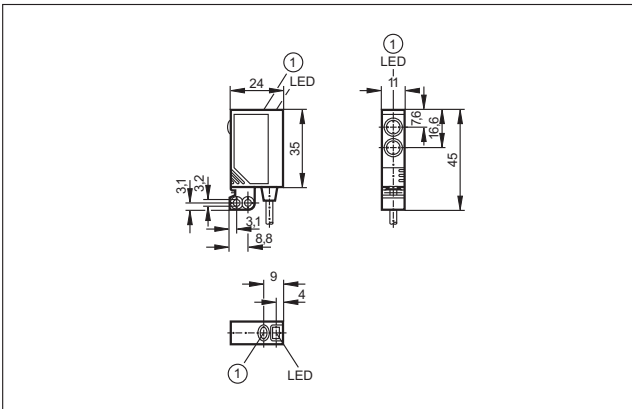


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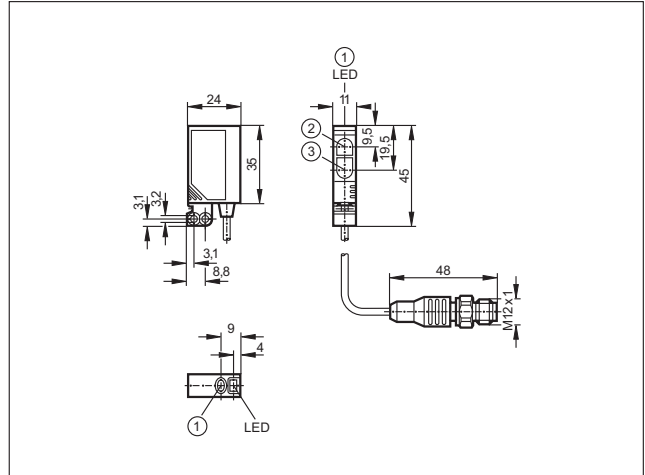
1: pushbutton

26



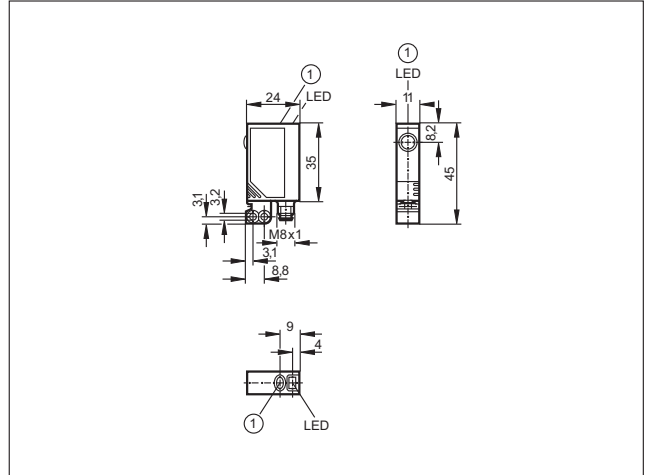
1: pushbutton

27



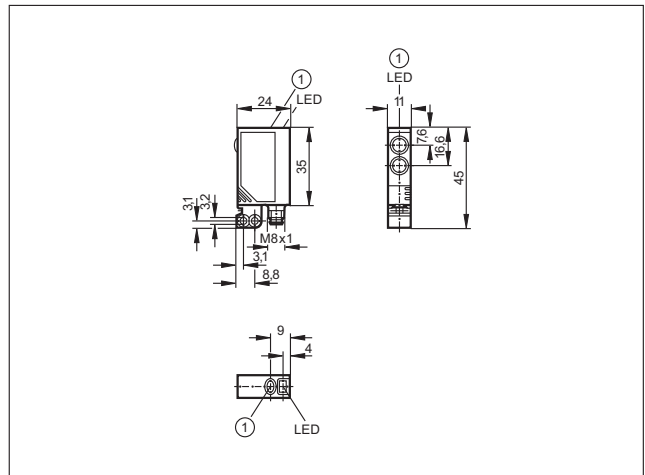
1: pushbutton, 2: Receiver, 3: Transmitter

28



1: pushbutton

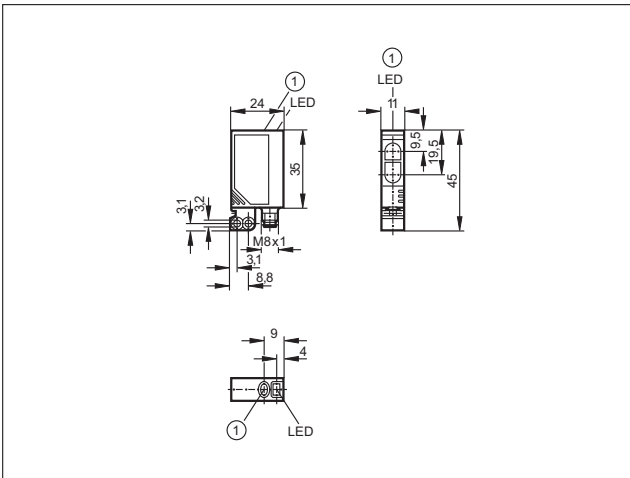
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1: pushbutton

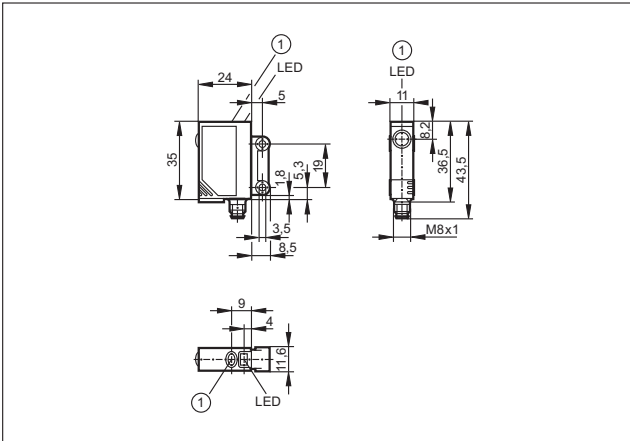
Scale drawings

30



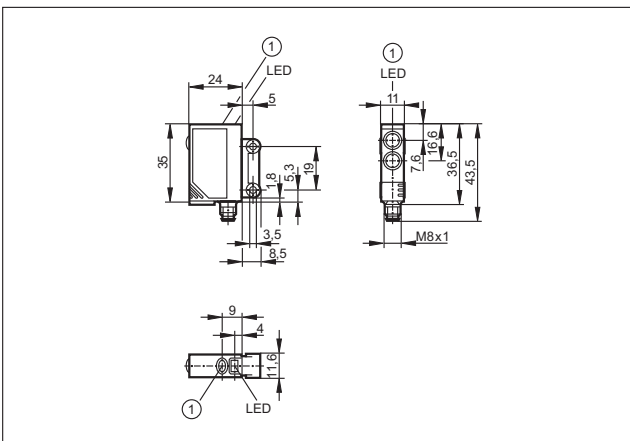
1: pushbutton

31



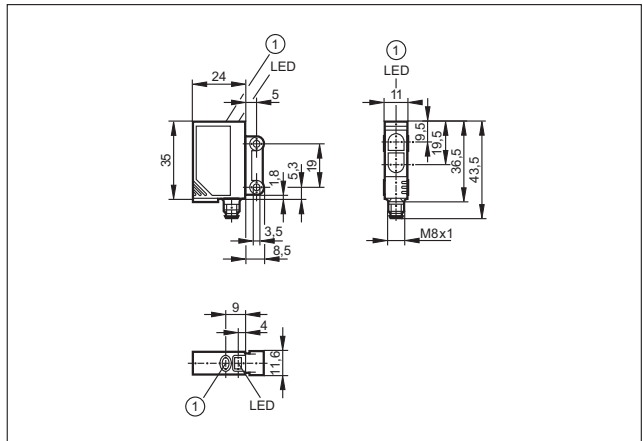
1: pushbutton

32



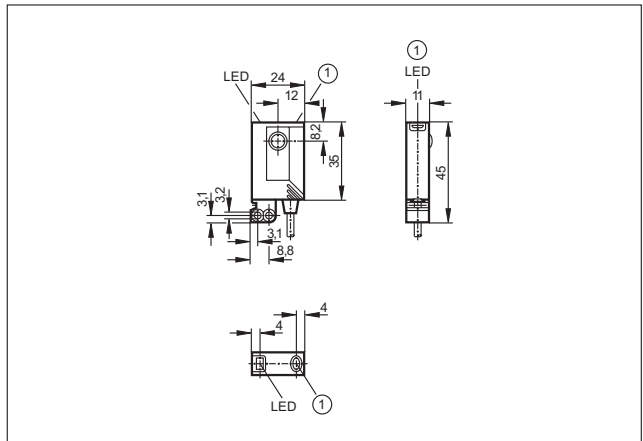
1: pushbutton

33



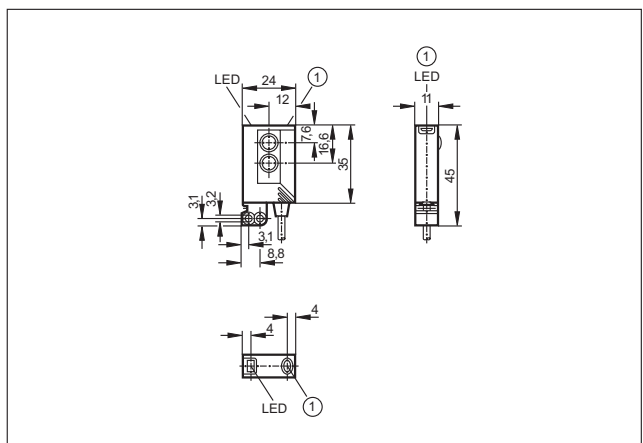
1: pushbutton

34



1: pushbutton

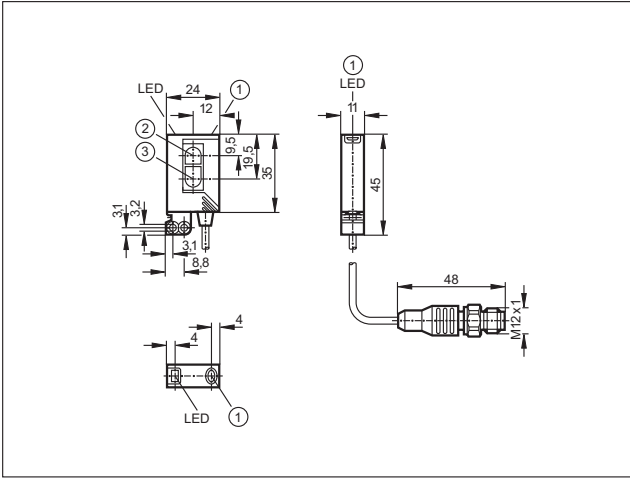
35



1: pushbutton

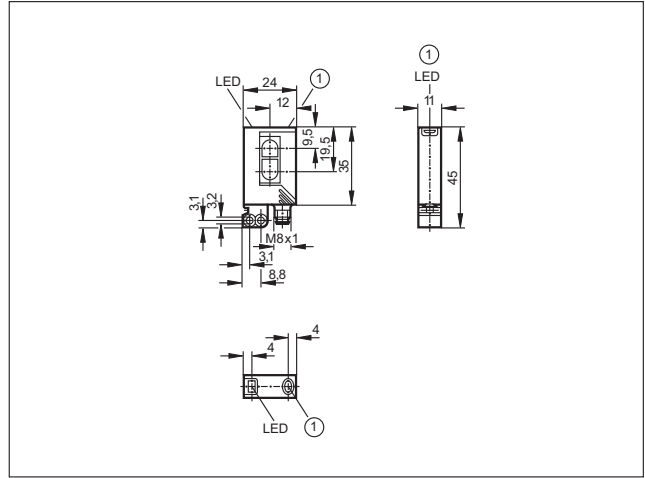
Scale drawings

36



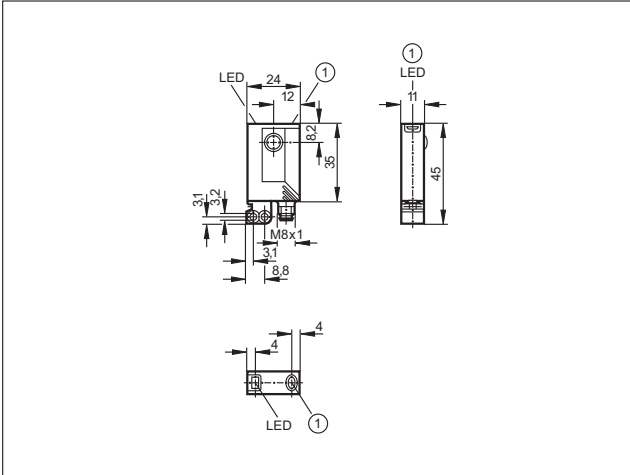
1: pushbutton, 2: Receiver, 3: Transmitter

39



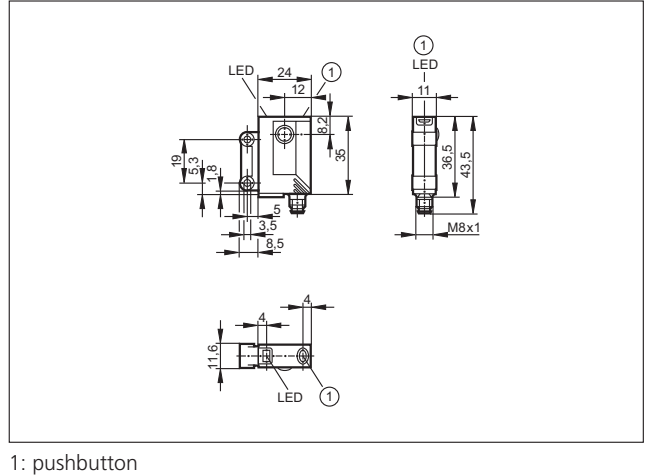
1: pushbutton

37



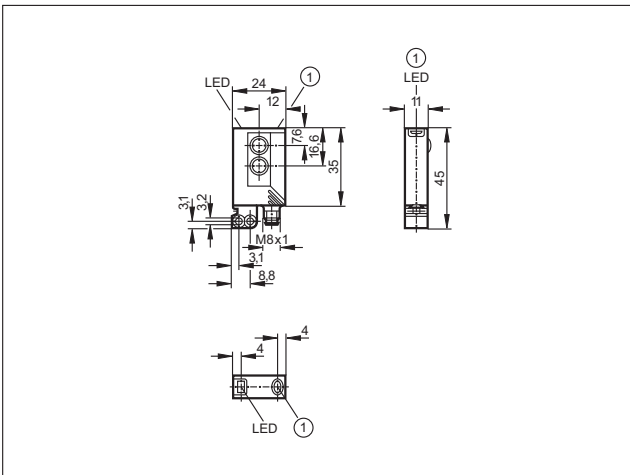
1: pushbutton

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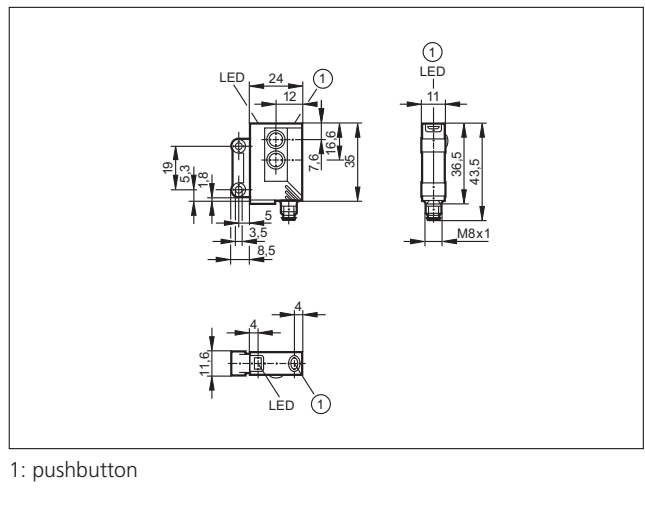
1: pushbutton

38



1: pushbutton

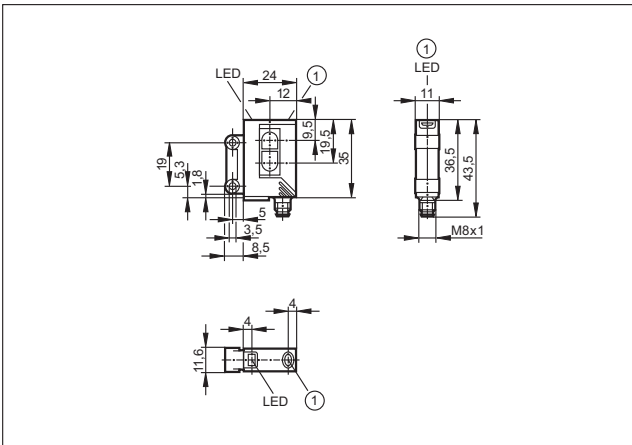
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1: pushbutton

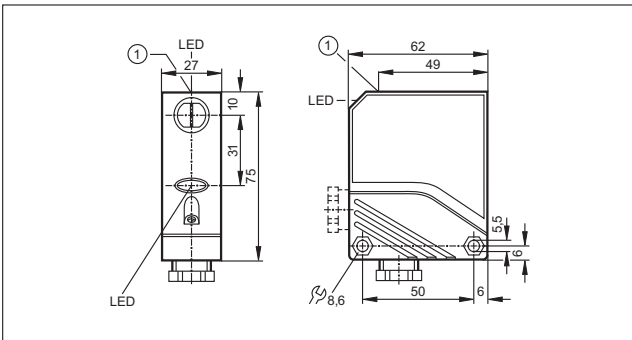
Scale drawings

42



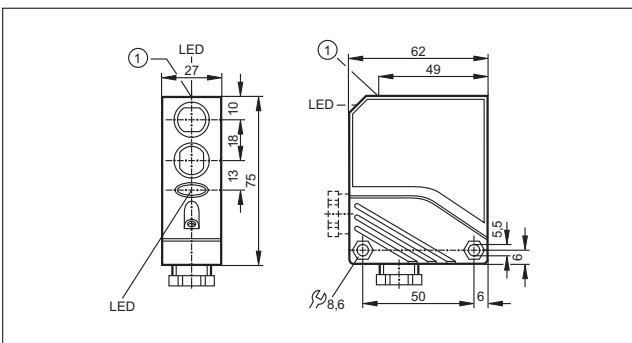
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43



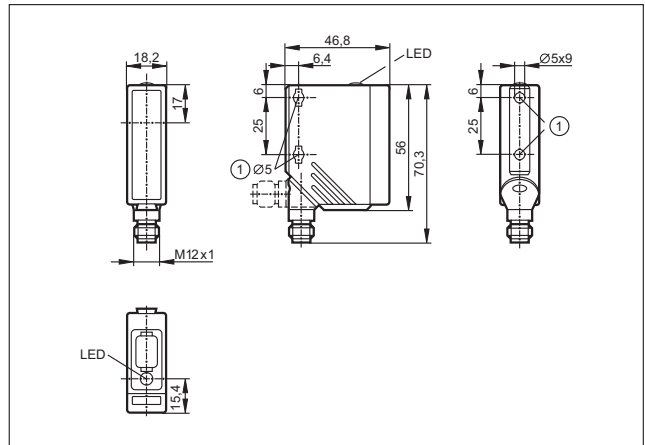
1: pushbutton

44



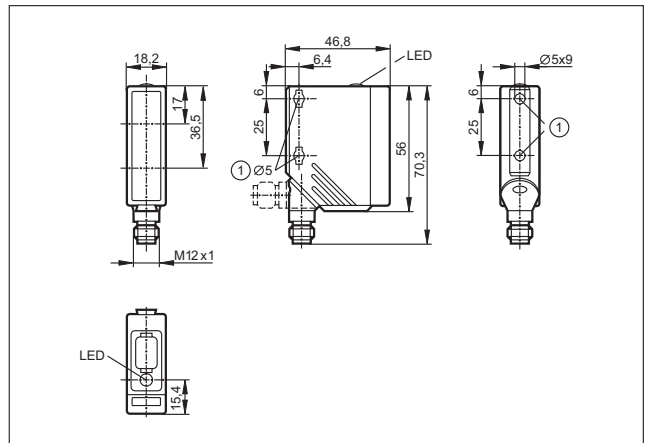
1: pushbutton

45



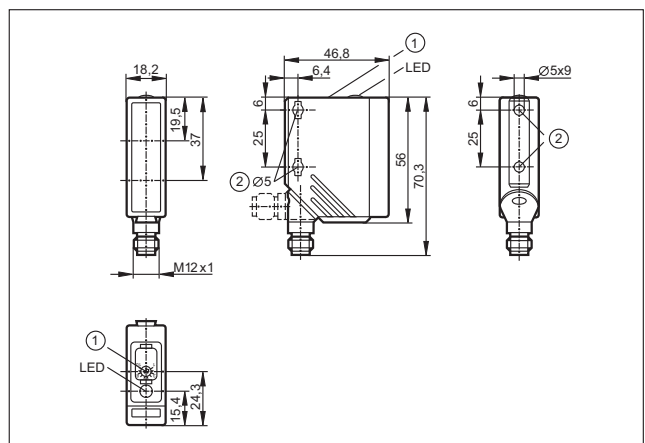
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

46



1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

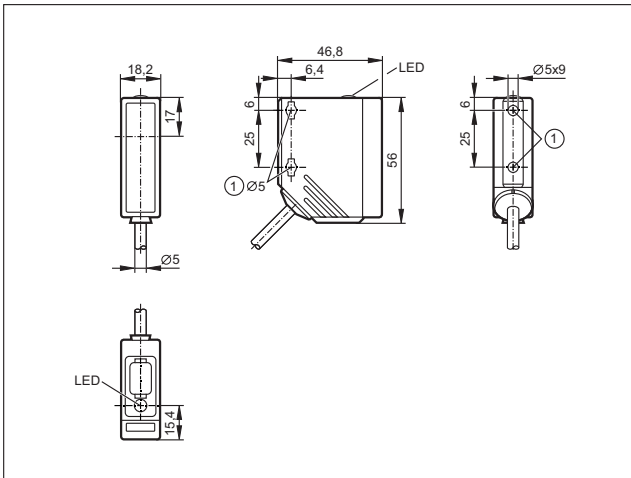
47



1: with pot., 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

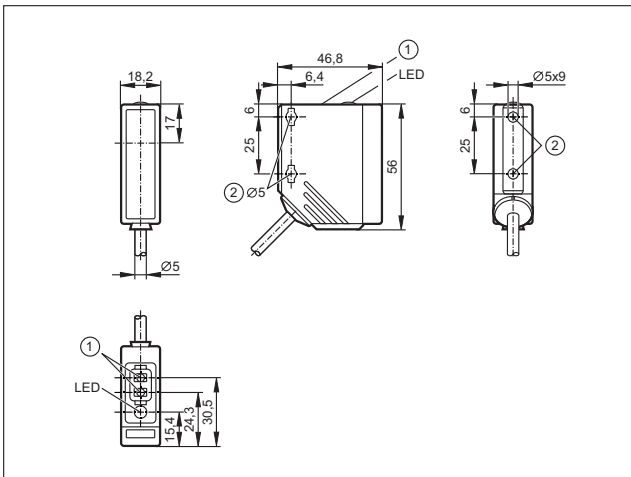
Scale drawings

48



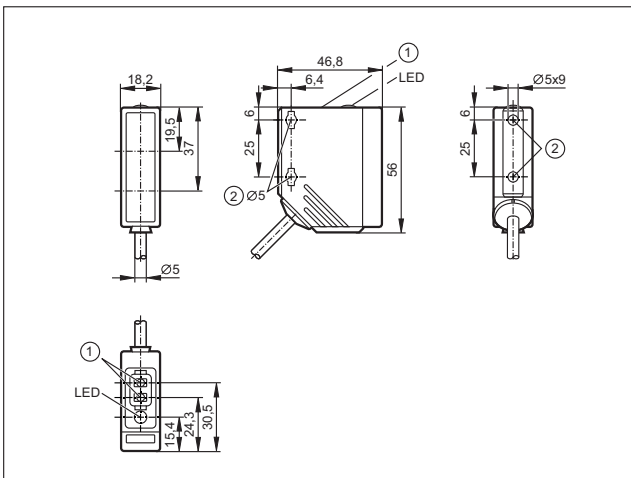
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

49



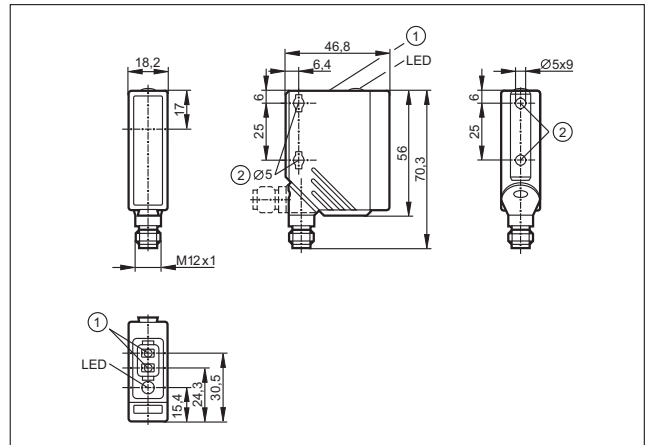
1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

50



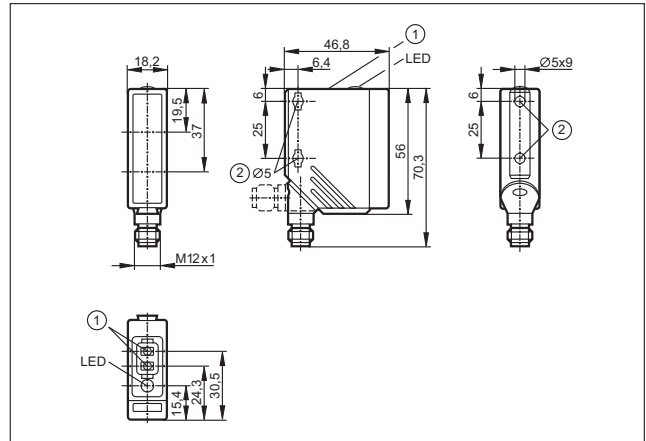
1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

51



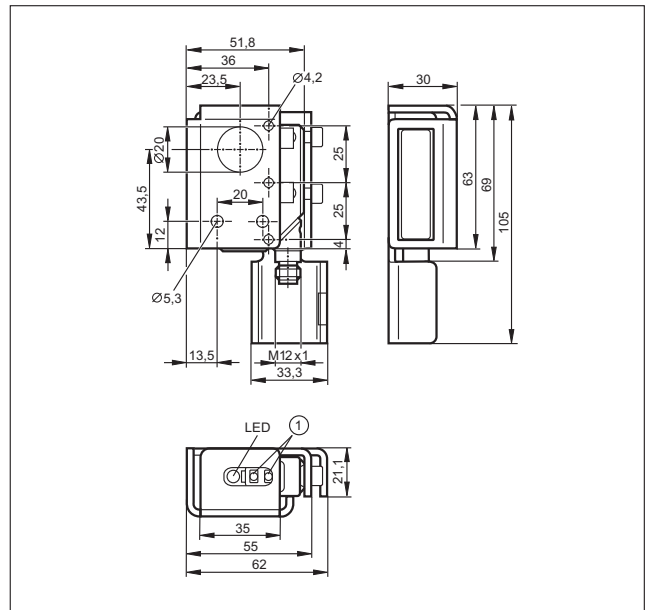
1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

52



1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

53

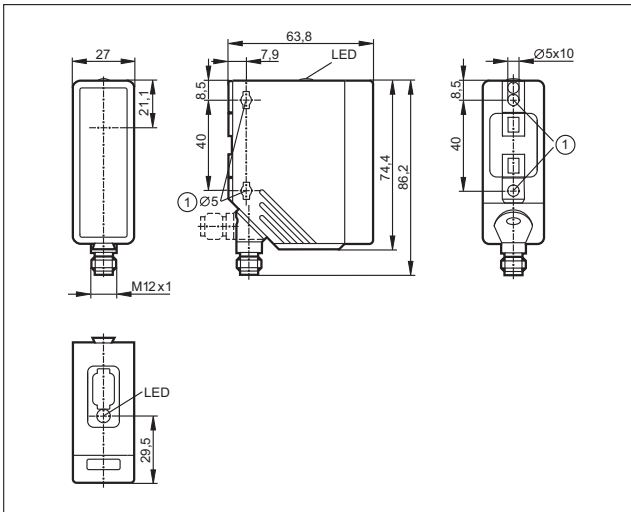


1: Programming buttons



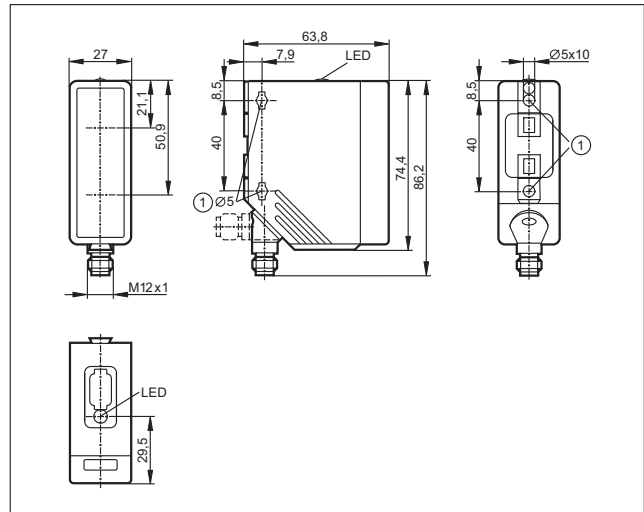
Scale drawings

54



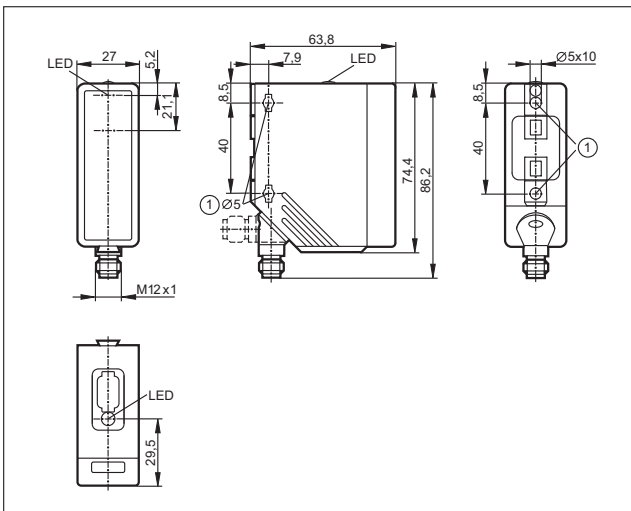
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

56



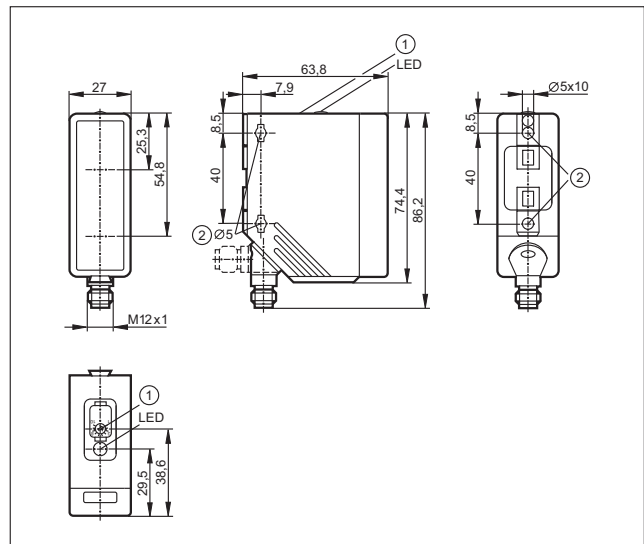
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

55



1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

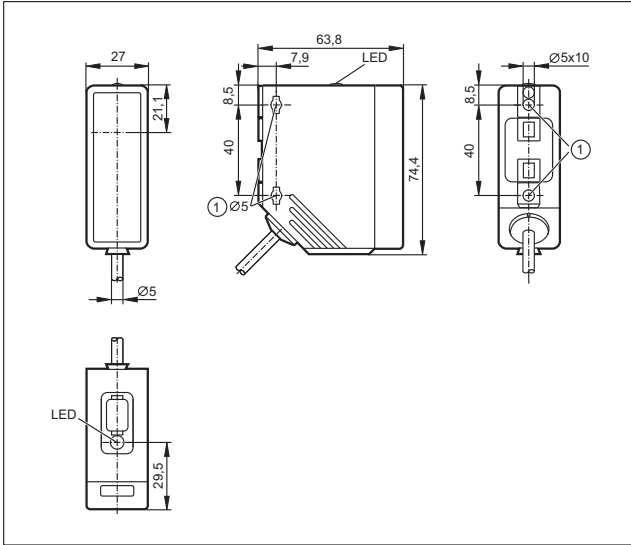
57



1: with pot., 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

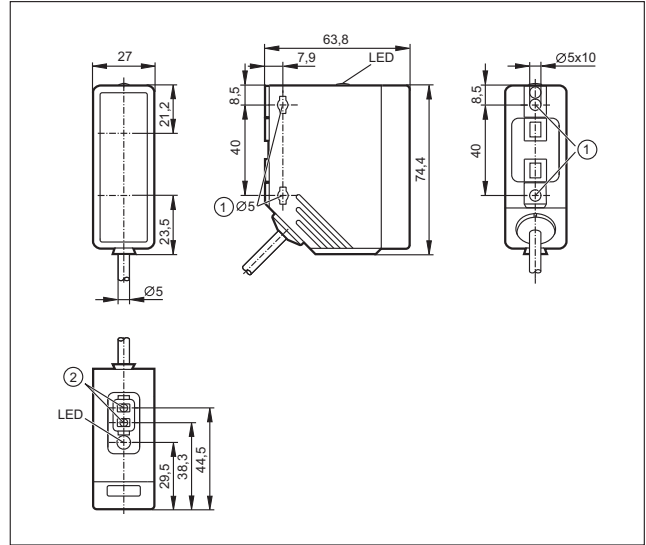
Scale drawings

58



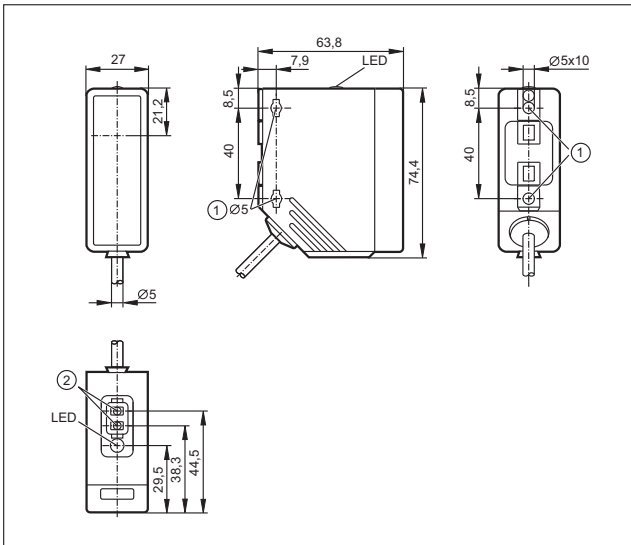
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

60



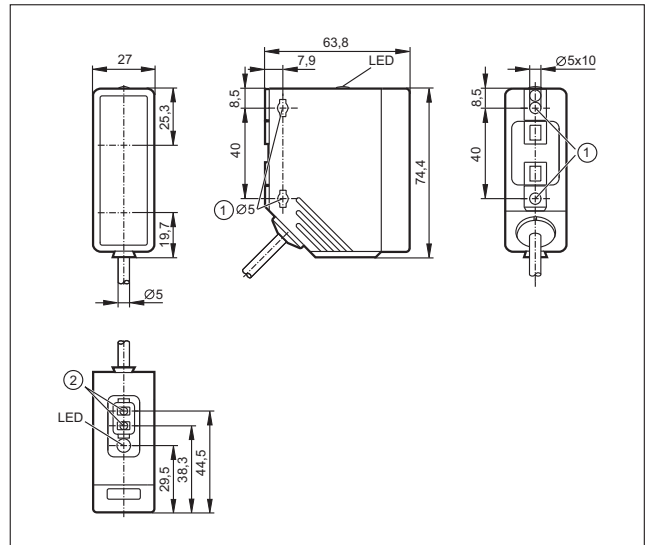
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm., 2: Programming buttons

59



1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm., 2: Programming buttons

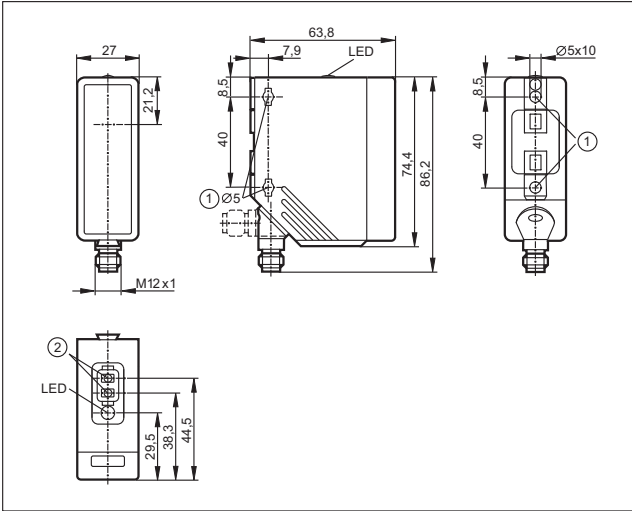
61



1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm., 2: Programming buttons

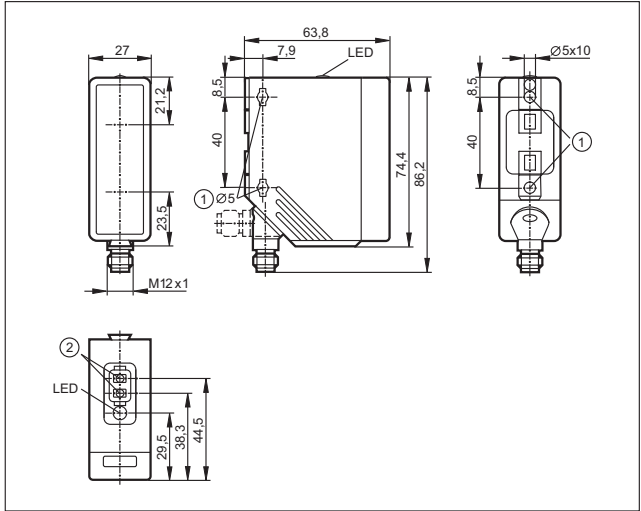
Scale drawings

62



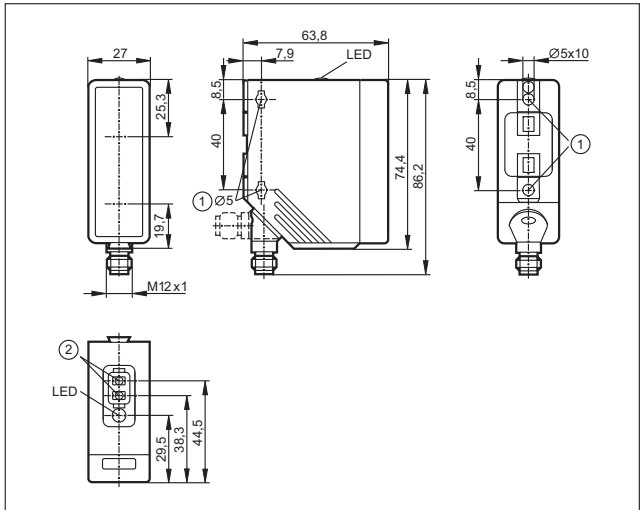
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm., 2: Programming buttons

63



1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm., 2: Programming buttons

64



1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm., 2: Programming buttons

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