

## Optic Sensors

Description of the typekey

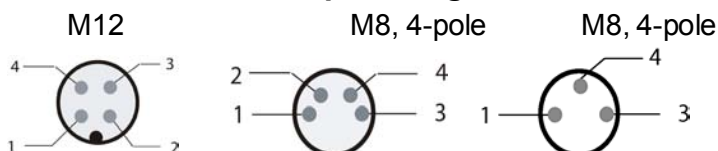
Expl.:	<b>MP-D</b>	<b>0300</b>	<b>D-</b>	<b>C</b>	<b>X</b>	<b>9</b>	<b>C</b>	<b>3</b>	<b>U</b>	<b>2-</b>	<b>PD</b>
											<ul style="list-style-type: none"> <li>I PF Polarizing Filter</li> <li>BS Background Suppression</li> <li>L Translucent Material Detector</li> <li>PD Plastic Detection</li> <li>N Narrow Light</li> <li>K Mark Sensor For Fiber Optic Mode</li> <li>1 Light Spot Size 1x1mm</li> <li>4 Light Spot Size 4x4mm</li> <li>S Cable Connection Swivel 90°</li> </ul>
											<ul style="list-style-type: none"> <li>2 Cable Length 2 m</li> <li>9 Cable Length 9 m</li> <li>P M8 Connector</li> <li>E M12 Connector</li> </ul>
											<ul style="list-style-type: none"> <li>U Whit Short Circuit Protection</li> <li>L Whitout Short Circuit Protection</li> </ul>
											<ul style="list-style-type: none"> <li>3 Cable/Connector 3-pol.</li> <li>4 Cable/Connector 4-pol.</li> <li>5 Cable/Connector 5-pol.</li> <li>8 Cable/Connector 8-pol.</li> </ul>
											<ul style="list-style-type: none"> <li>C Cable</li> <li>Q Connector</li> <li>T Terminal</li> </ul>
											<ul style="list-style-type: none"> <li>5 Green Light</li> <li>6 Red Light</li> <li>9 Infrared Light</li> </ul>
											<ul style="list-style-type: none"> <li>X Axial</li> <li>Z Radial</li> </ul>
											<ul style="list-style-type: none"> <li>C Light / Dark Changeover</li> <li>L Light</li> <li>D Dark</li> <li>E Emitter</li> </ul>
											<ul style="list-style-type: none"> <li>D PNP+NPN</li> <li>N NPN</li> <li>P PNP</li> <li>A AC</li> <li>R Relay Contact Output</li> </ul>
											<ul style="list-style-type: none"> <li>0016 Sensing Distance 16 mm</li> <li>0300 Sensing Distance 300 mm</li> <li>020M Sensing Distance 20m</li> </ul>
											<ul style="list-style-type: none"> <li>T Opposed Mode</li> <li>D Diffuse Mode</li> <li>L Retro - Reflective Mode</li> <li>C Convergent Mode</li> <li>S Clear Object Detector</li> <li>M Mark Sensor Mode</li> <li>F Fiber - Optic</li> <li>A Amplifier Mode</li> </ul>

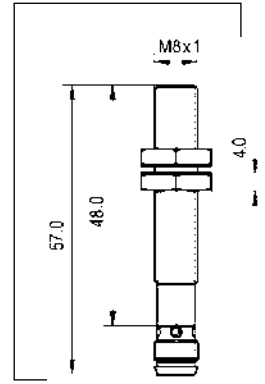
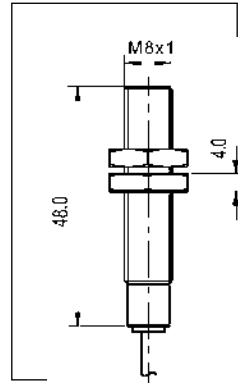
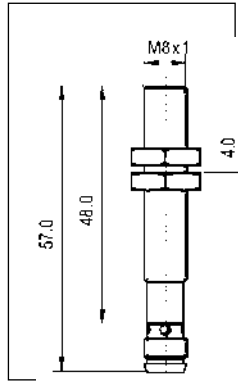
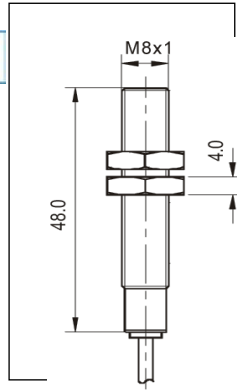
MP Series Style MP

### Optical Sensors - Connection diagrams

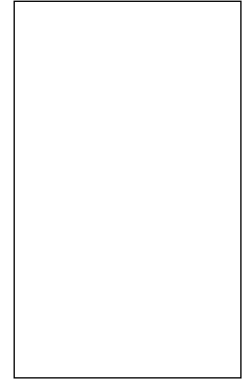
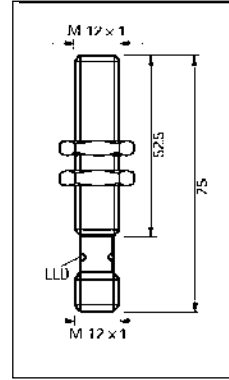
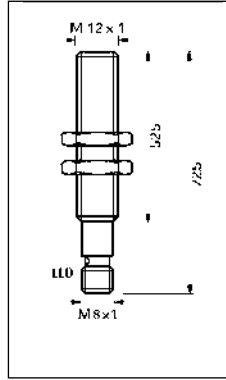
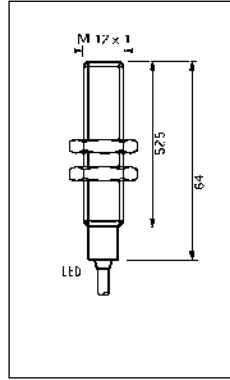
Circuit diagram for:	for Series:	Connection assignment
DC PNP	M8	
DC NPN light/dark	UP; M12; M30	
DC PNP light/dark	UP; M12; M30	
DC NPN/PNP	MP; EP	
DC NPN hell/dunkel umschaltbar	RP64; M18	
DC PNP hell/dunkel umschaltbar	RP64; M18	
DC NPN/PNP hell/dunkel umschaltbar	RP64	
DC Sender	MP; EP; UP; M30, M8	
DC Sender mit Testeingang	RP64; M12; M18	
AC/DC mit Relaisausgang	RS62	
AC/DC Sender	RS62	

### Connector pin assignment





Mode Of Operation	IR Diffuse Mode	IR Diffuse Mode	IR Opposed Mode	IR Opposed Mode
Sensing Distance	80 mm	80 mm	2 m	2 m
Type				
<b>Emitter</b>			<b>M8B-T2000D-EX9C3L2</b>	<b>M8B-T2000D-EX9Q4LP</b>
<b>PNP Dark</b>	<b>M8B-D0080P-LX9C3L2</b>	<b>M8B-D0080P-LX9Q4UP</b>		
<b>PNP Light</b>			<b>M8B-T2000P-DX9C3U2</b>	<b>M8B-T2000P-DX9Q4UP</b>
<b>Light</b>	<b>Infrared Light 880 nm</b>	<b>Infrared Light 880 nm</b>	<b>Infrared Light 880 nm</b>	<b>Infrared Light 880 nm</b>
Operating Voltage $U_b$	10 - 30 V DC	10 - 30 V DC	10 - 30 V DC	10 - 30 V DC
Unblinking / Blanking	Light On	Light On	Dark On	Dark On
Max. Output Current $I_o$	100 mA	100 mA	100 mA	100 mA
Idle Current $I_0$	< 30 mA	< 30 mA	< 50 mA	< 50 mA
Hysteresis H	< 15 %	< 15 %	< 15 %	< 15 %
Switching Freq. / Response Time	500 Hz / 1 ms	500 Hz / 1 ms	400 Hz / 1,25 ms	400 Hz / 1,25 ms
Ambient Temperature	-10 °C ... + 55 °C	-10 °C ... + 55 °C	-10 °C ... + 55 °C	-10 °C ... + 55 °C
Ambient Light	---	---	---	---
Halogen Light	---	---	---	---
Sun Light	---	---	---	---
Sensitivity Adjustable	no	no	no	no
Output Digital	yes	yes	yes	yes
Output Analog	---	---	---	---
LED - Indicator	yes	yes	yes	yes
Size	M8	M8	M8	M8
Housing Material	Brass Nickel-Plated	Brass Nickel-Plated	Brass Nickel-Plated	Brass Nickel-Plated
Material Light Outlet	---	---	---	---
Protection Class	IP 65	IP 65	IP 65	IP 65
EMC-Standard	EN 60947-5-2	EN 60947-5-2	EN 60947-5-2	EN 60947-5-2
Termination	Cable, 2m	Connector M8 3pol.	Cable, 2m	Connector M8 3pol.



**Mode Of Operation**

**IR Diffuse Mode**

**IR Diffuse Mode**

**IR Diffuse Mode**

**Sensing Distance**

**200,0 mm**

**200,0 mm**

**200,0 mm**

**Type**

**Type**

**Type**

**Emitter**

**PNP Light / Dark**

**M12B-D0200P-CX9C3U2**

**M12B-D0200P-CX9Q4UP**

**M12B-D0200P-CX9Q4UE**

**NPN Light / Dark**

**M12B-D0200N-CX9C3U2**

**M12B-D0200N-CX9Q4UP**

**M12B-D0200N-CX9Q4UE**

**Light**

**Infrared Light 880 nm**

**Infrared Light 880 nm**

**Infrared Light 880 nm**

Operating Voltage  $U_b$

10 - 30 V DC

10 - 30 V DC

10 - 30 V DC

Unblinking / Blanking

Light On / Dark On

Light On / Dark On

Light On / Dark On

Max. Output Current  $I_o$

150 mA

150 mA

150 mA

Idle Current  $I_o$

< 30 mA

< 30 mA

< 30 mA

Hysteresis H

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---

Switching Freq. / Response Time

--- / 1 ms

--- / 1 ms

--- / 1 ms

Ambient Temperature

-25 °C ... + 70 °C

-25 °C ... + 70 °C

-25 °C ... + 70 °C

Ambient Light

---

---

---

Halogen Light

---

---

---

Sun Light

---

---

---

Sensitivity Adjustable

no

no

no

Output Digital

yes

yes

yes

Output Analog

---

---

---

LED - Indicator

yes

yes

yes

Size

M12

M12

M12

Housing Material

Brass Nickel-Plated

Brass Nickel-Plated

Brass Nickel-Plated

Material Light Outlet

---

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Protection Class

IP 67

IP 67

IP 67

EMC-Standard

EN 60947-5-2

EN 60947-5-2

EN 60947-5-2

Termination

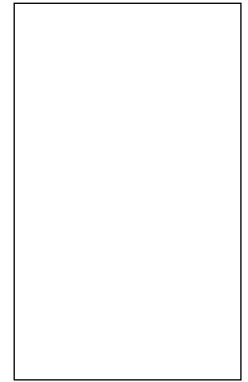
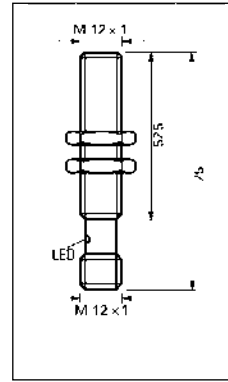
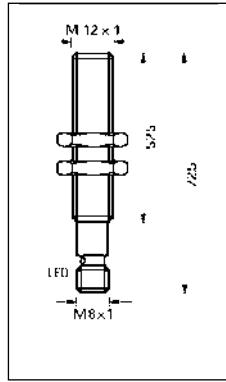
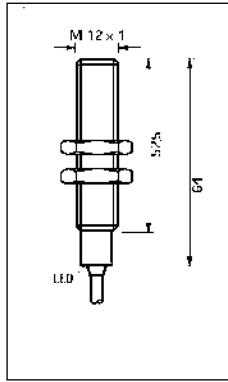
Cable, 2m

Connector M8 3pol.

Connector M12 4pol.



with Polarizing Filter



**Mode Of Operation**

**Retroreflective Mode**

**Retroreflective Mode**

**Retroreflective Mode**

**Sensing Distance**

**1,0 m**

**1,0 m**

**1,0 m**

**Type**

**Type**

**Type**

**Emitter**

**PNP Light / Dark**

**M12B-L1000P-CX6C3U2-PF**

**M12B-L1000P-CX6Q4UP-PF**

**M12B-L1000P-CX6Q4UE-PF**

**NPN Light / Dark**

**M12B-L1000N-CX6C3U2-PF**

**M12B-L1000N-CX6Q4UP-PF**

**M12B-L1000N-CX6Q4UE-PF**

**Light**

**Red Light 650 nm**

**Red Light 650 nm**

**Red Light 650 nm**

Operating Voltage  $U_b$

10 - 30 V DC

10 - 30 V DC

10 - 30 V DC

Unblinking / Blanking

Light On / Dark On

Light On / Dark On

Light On / Dark On

Max. Output Current  $I_o$

150 mA

150 mA

150 mA

Idle Current  $I_o$

< 30 mA

< 30 mA

< 30 mA

Hysteresis H

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---

Switching Freq. / Response Time

--- / 1 ms

--- / 1 ms

--- / 1 ms

Ambient Temperature

-25 °C ... + 70 °C

-25 °C ... + 70 °C

-25 °C ... + 70 °C

Ambient Light

---

---

---

Halogen Light

---

---

---

Sun Light

---

---

---

Sensitivity Adjustable

no

no

no

Output Digital

yes

yes

yes

Output Analog

---

---

---

LED - Indicator

yes

yes

yes

Size

M12

M12

M12

Housing Material

Brass Nickel-Plated

Brass Nickel-Plated

Brass Nickel-Plated

Material Light Outlet

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Protection Class

IP 67

IP 67

IP 67

EMC-Standard

EN 60947-5-2

EN 60947-5-2

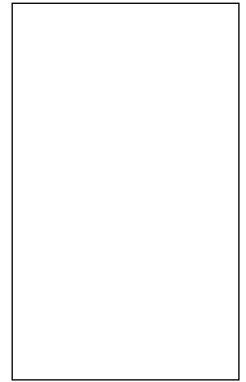
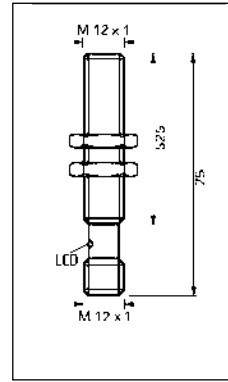
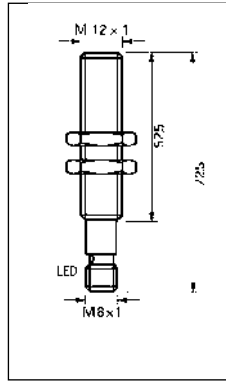
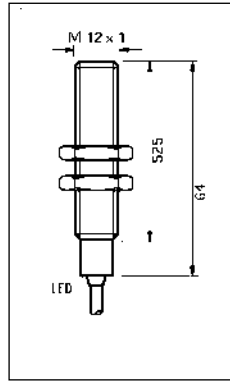
EN 60947-5-2

Termination

Cable , 2m

Connector M8 3pol.

Connector M12 4pol.



**Mode Of Operation**

**Sensing Distance**

**Retroreflective Mode**

**2,0 m**

**Retroreflective Mode**

**2,0 m**

**Retroreflective Mode**

**2,0 m**

**Type**

**Type**

**Type**

**Emitter**

**PNP Light / Dark**

**M12B-L2000P-CX9C3U2**

**M12B-L2000P-CX9Q4UP**

**M12B-L2000P-CX9Q4UE**

**NPN Light / Dark**

**M12B-L2000N-CX9C3U2**

**M12B-L2000N-CX9Q4UP**

**M12B-L2000N-CX9Q4UE**

**Light**

**Infrared Light 880 nm**

**Infrared Light 880 nm**

**Infrared Light 880 nm**

Operating Voltage  $U_b$

10 - 30 V DC

10 - 30 V DC

10 - 30 V DC

Unblinking / Blanking

Light On / Dark On

Light On / Dark On

Light On / Dark On

Max. Output Current  $I_o$

150 mA

150 mA

150 mA

Idle Current  $I_o$

< 30 mA

< 30 mA

< 30 mA

Hysteresis H

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---

Switching Freq. / Response Time

--- / 1 ms

--- / 1 ms

--- / 1 ms

Ambient Temperature

-25 °C ... + 70 °C

-25 °C ... + 70 °C

-25 °C ... + 70 °C

Ambient Light

---

---

---

Halogen Light

---

---

---

Sun Light

---

---

---

Sensitivity Adjustable

no

no

no

Output Digital

yes

yes

yes

Output Analog

---

---

---

LED - Indicator

yes

yes

yes

Size

M12

M12

M12

Housing Material

Brass Nickel-Plated

Brass Nickel-Plated

Brass Nickel-Plated

Material Light Outlet

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---

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Protection Class

IP 67

IP 67

IP 67

EMC-Standard

EN 60947-5-2

EN 60947-5-2

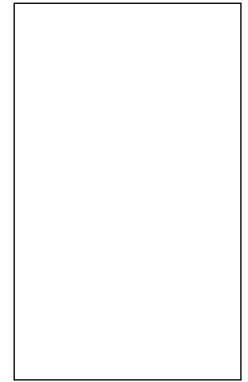
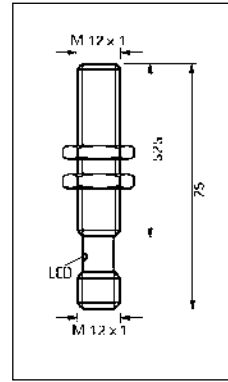
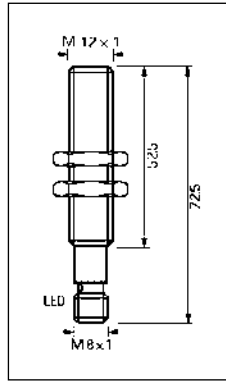
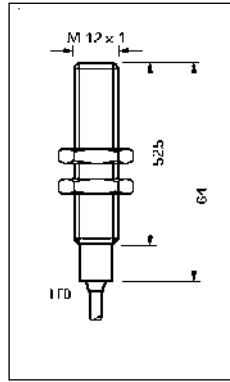
EN 60947-5-2

Termination

Cable, 2m

Connector M8 3pol.

Connector M12 4pol.



**Mode Of Operation**

**IR Opposed Mode**

**IR Opposed Mode**

**IR Opposed Mode**

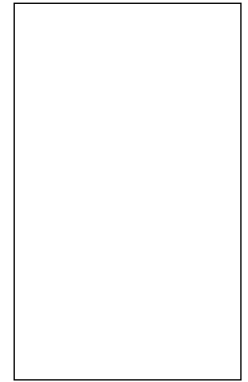
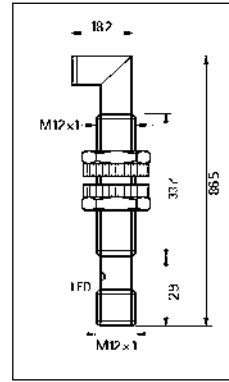
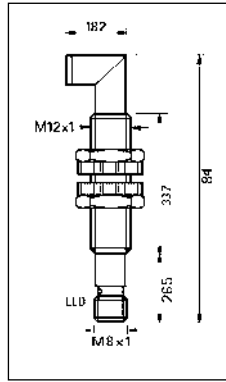
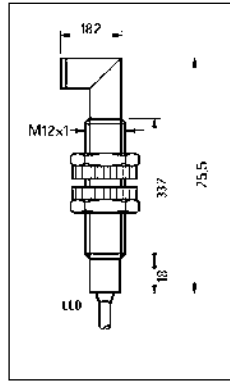
**Sensing Distance**

**5,2 m**

**5,2 m**

**5,2m**

	<b>Type</b>	<b>Type</b>	<b>Type</b>	
<b>Emitter</b>	<b>M12B-T5200D-EX9C3L2</b>	<b>M12B-T5200D-EX9Q4LP</b>	<b>M12B-T5200D-EX9Q4LE</b>	
<b>PNP Light / Dark</b>	<b>M12B-T5200P-CX9C3U2</b>	<b>M12B-T5200P-CX9Q4UP</b>	<b>M12B-T5200P-CX9Q4UE</b>	
<b>NPN Light / Dark</b>	<b>M12B-T5200N-CX9C3U2</b>	<b>M12B-T5200N-CX9Q4UP</b>	<b>M12B-T5200N-CX9Q4UE</b>	
<b>Light</b>	<b>Infrared Light 880 nm</b>	<b>Infrared Light 880 nm</b>	<b>Infrared Light 880 nm</b>	
Operating Voltage $U_b$	10 - 30 V DC	10 - 30 V DC	10 - 30 V DC	
Unblinking / Blanking	Light On / Dark On	Light On / Dark On	Light On / Dark On	
Max. Output Current $I_o$	150 mA	150 mA	150 mA	
Idle Current $I_0$	< 30 mA	< 30 mA	< 30 mA	
Hysteresis H	---	---	---	
<b>Switching Freq. / Response Time</b>	--- / 1 ms	--- / 1 ms	--- / 1 ms	
Ambient Temperature	-25 °C ... + 70 °C	-25 °C ... + 70 °C	-25 °C ... + 70 °C	
Ambient Light	---	---	---	
Halogen Light	---	---	---	
Sun Light	---	---	---	
Sensitivity Adjustable	no	no	no	
Output Digital	yes	yes	yes	
Output Analog	---	---	---	
LED - Indicator	yes	yes	yes	
Size	M12	M12	M12	
Housing Material	Brass Nickel-Plated	Brass Nickel-Plated	Brass Nickel-Plated	
Material Light Outlet	---	---	---	
Protection Class	IP 67	IP 67	IP 67	
EMC-Standard	EN 60947-5-2	EN 60947-5-2	EN 60947-5-2	
Termination	Cable, 2m	Connector M8 3pol.	Connector M12 4pol.	



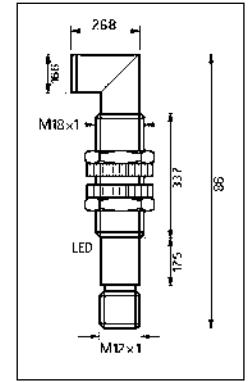
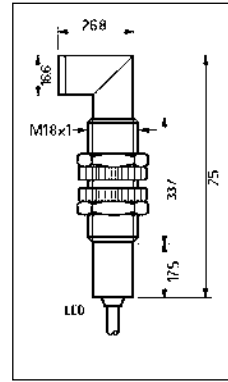
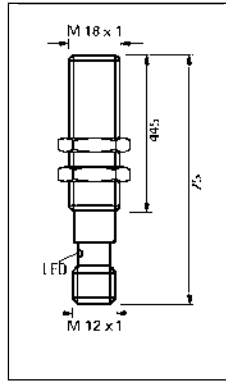
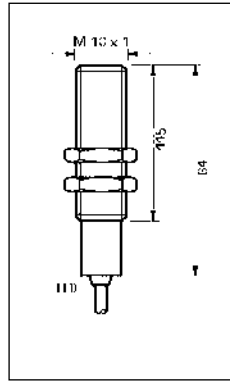
**Mode Of Operation**  
**Sensing Distance**

**IR Opposed Mode**  
**5,2 m**

**IR Opposed Mode**  
**5,2 m**

**IR Opposed Mode**  
**5,2 m**

	Type	Type	Type	
<b>Emitter</b>	<b>M12B-T5200D-EZ9C3L2</b>	<b>M12B-T5200D-EZ9Q4LP</b>	<b>M12B-T5200D-EZ9Q4LE</b>	
<b>PNP Light / Dark</b>	<b>M12B-T5200P-CZ9C3U2</b>	<b>M12B-T5200P-CZ9Q4UP</b>	<b>M12B-T5200P-CZ9Q4UE</b>	
<b>NPN Light / Dark</b>	<b>M12B-T5200N-CZ9C3U2</b>	<b>M12B-T5200N-CZ9Q4UP</b>	<b>M12B-T5200N-CZ9Q4UE</b>	
<b>Light</b>	<b>Infrared Light 880 nm</b>	<b>Infrared Light 880 nm</b>	<b>Infrared Light 880 nm</b>	
Operating Voltage $U_b$	10 - 30 V DC	10 - 30 V DC	10 - 30 V DC	
Unblinking / Blanking	Light On / Dark On	Light On / Dark On	Light On / Dark On	
Max. Output Current $I_o$	150 mA	150 mA	150 mA	
Idle Current $I_0$	< 30 mA	< 30 mA	< 30 mA	
Hysteresis H	---	---	---	
Switching Freq. / Response Time	--- / 1 ms	--- / 1 ms	--- / 1 ms	
Ambient Temperature	-25 °C ... + 70 °C	-25 °C ... + 70 °C	-25 °C ... + 70 °C	
Ambient Light	---	---	---	
Halogen Light	---	---	---	
Sun Light	---	---	---	
Sensitivity Adjustable	no	no	no	
Output Digital	yes	yes	yes	
Output Analog	---	---	---	
LED - Indicator	yes	yes	yes	
Size	M12	M12	M12	
Housing Material	Brass Nickel-Plated	Brass Nickel-Plated	Brass Nickel-Plated	
Material Light Outlet	---	---	---	
Protection Class	IP 67	IP 67	IP 67	
EMC-Standard	EN 60947-5-2	EN 60947-5-2	EN 60947-5-2	
Termination	Cable, 2m	Connector M8 3pol.	Connector M12 4pol.	



**Mode Of Operation**

**IR Diffuse Mode**

**IR Diffuse Mode**

**IR Diffuse Mode**

**IR Diffuse Mode**

**Sensing Distance**

**150,0 mm**

**150,0 mm**

**150,0 mm**

**150,0 mm**

**Type**

**Type**

**Type**

**Type**

**Emitter**

**PNP Light / Dark**

**M18B-D0150P-CX9C4U2**

**M18B-D0150P-CX9Q4UE**

**M18B-D0150P-CZ9C4U2**

**M18B-D0150P-CZ9Q4UE**

**NPN Light / Dark**

**M18B-D0150N-CX9C4U2**

**M18B-D0150N-CX9Q4UE**

**M18B-D0150N-CZ9C4U2**

**M18B-D0150N-CZ9Q4UE**

**Light**

**Infrared Light 880 nm**

**Infrared Light 880 nm**

**Infrared Light 880 nm**

**Infrared Light 880 nm**

Operating Voltage  $U_b$

10 - 30 V DC

10 - 30 V DC

10 - 30 V DC

10 - 30 V DC

Unblinking / Blanking

Light On / Dark On; selectable by „control“ input

Light On / Dark On; selectable by „control“ input

Max. Output Current  $I_o$

200 mA

200 mA

200 mA

200 mA

Idle Current  $I_o$

< 30 mA

< 30 mA

< 30 mA

< 30 mA

Hysteresis H

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Switching Freq. / Response Time

--- / 1,5 ms

--- / 1,5 ms

--- / 1,5 ms

--- / 1,5 ms

Ambient Temperature

-25 °C ... + 55 °C

-25 °C ... + 55 °C

-25 °C ... + 55 °C

-25 °C ... + 55 °C

Ambient Light

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Halogen Light

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Sun Light

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Sensitivity Adjustable

yes

yes

yes

yes

Output Digital

yes

yes

yes

yes

Output Analog

---

---

---

---

LED - Indicator

yes

yes

yes

yes

Size

M18

M18

M18

M18

Housing Material

Brass Nickel-Plated

Brass Nickel-Plated

Brass Nickel-Plated

Brass Nickel-Plated

Material Light Outlet

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Protection Class

IP 67

IP 67

IP 67

IP 67

EMC-Standard

EN 60947-5-2

EN 60947-5-2

EN 60947-5-2

EN 60947-5-2

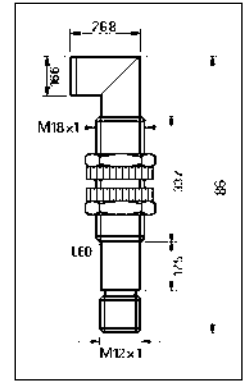
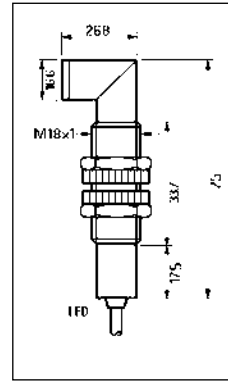
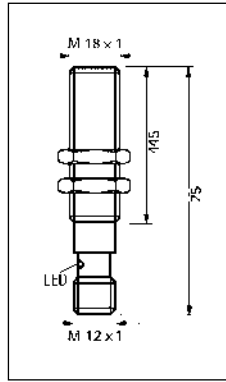
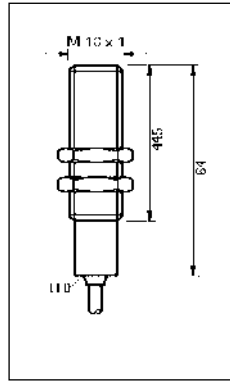
Termination

Cable, 2m

Connector M12 4pol.

Cable, 2m

Connector M12 4pol.



**Mode Of Operation**

**IR Diffuse Mode**

**IR Diffuse Mode**

**IR Diffuse Mode**

**IR Diffuse Mode**

**Sensing Distance**

**500,0 mm**

**500,0 mm**

**500,0 mm**

**500,0 mm**

**Type**

**Type**

**Type**

**Type**

**Emitter**

**PNP Light / Dark**

**M18B-D0500P-CX9C4U2**

**M18B-D0500P-CX9Q4UE**

**M18B-D0500P-CZ9C4U2**

**M18B-D0500P-CZ9Q4UE**

**NPN Light / Dark**

**M18B-D0500N-CX9C4U2**

**M18B-D0500N-CX9Q4UE**

**M18B-D0500N-CZ9C4U2**

**M18B-D0500N-CZ9Q4UE**

**Light**

**Infrared Light 880 nm**

**Infrared Light 880 nm**

**Infrared Light 880 nm**

**Infrared Light 880 nm**

Operating Voltage  $U_b$

10 - 30 V DC

10 - 30 V DC

10 - 30 V DC

10 - 30 V DC

Unblinking / Blanking

Light On / Dark On; selectable by „control“ input

Light On / Dark On; selectable by „control“ input

Max. Output Current  $I_o$

200 mA

200 mA

200 mA

200 mA

Idle Current  $I_o$

< 30 mA

< 30 mA

< 30 mA

< 30 mA

Hysteresis H

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---

Switching Freq. / Response Time

--- / 1,5 ms

--- / 1,5 ms

--- / 1,5 ms

--- / 1,5 ms

Ambient Temperature

-25 °C ... + 55 °C

-25 °C ... + 55 °C

-25 °C ... + 55 °C

-25 °C ... + 55 °C

Ambient Light

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Halogen Light

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---

---

Sun Light

---

---

---

---

Sensitivity Adjustable

yes

yes

yes

yes

Output Digital

yes

yes

yes

yes

Output Analog

---

---

---

---

LED - Indicator

yes

yes

yes

yes

Size

M18

M18

M18

M18

Housing Material

Brass Nickel-Plated

Brass Nickel-Plated

Brass Nickel-Plated

Brass Nickel-Plated

Material Light Outlet

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Protection Class

IP 67

IP 67

IP 67

IP 67

EMC-Standard

EN 60947-5-2

EN 60947-5-2

EN 60947-5-2

EN 60947-5-2

Termination

Cable, 2m

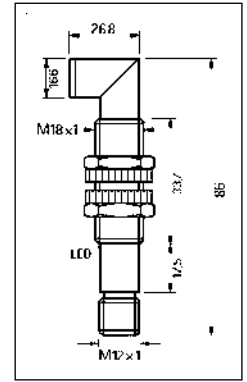
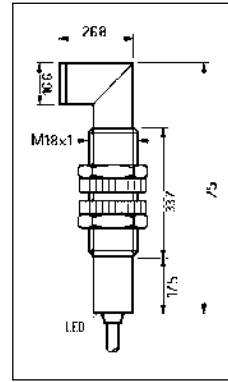
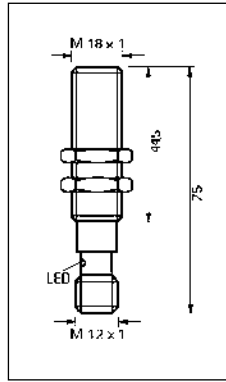
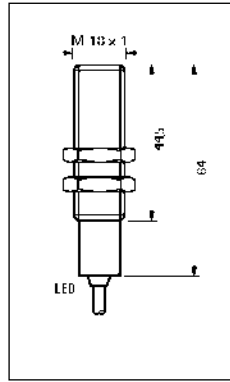
Connector M12 4pol.

Cable, 2m

Connector M12 4pol.



with Polarizing Filter



**Mode Of Operation**

**Retroreflective Mode**

**Retroreflective Mode**

**Retroreflective Mode**

**Retroreflective Mode**

**Sensing Distance**

**1,0 m**

**1,0 m**

**1,0 m**

**1,0 m**

**Type**

**Type**

**Type**

**Type**

**Emitter**

**PNP Light / Dark**

**M18B-L1000P-CX6C4U2-PF**

**M18B-L1000P-CX6Q4UE-PF**

**M18B-L1000P-CZ6C4U2-PF**

**M18B-L1000P-CZ6Q4UE-PF**

**NPN Light / Dark**

**M18B-L1000N-CX6C4U2-PF**

**M18B-L1000N-CX6Q4UE-PF**

**M18B-L1000N-CZ6C4U2-PF**

**M18B-L1000N-CZ6Q4UE-PF**

**Light**

**Red Light 660 nm**

**Red Light 660 nm**

**Red Light 660 nm**

**Red Light 660 nm**

Operating Voltage  $U_b$

10 - 30 V DC

10 - 30 V DC

10 - 30 V DC

10 - 30 V DC

Unblinking / Blanking

Light On / Dark On; selectable by „control“ input

Light On / Dark On; selectable by „control“ input

Max. Output Current  $I_o$

200 mA

200 mA

200 mA

200 mA

Idle Current  $I_o$

< 30 mA

< 30 mA

< 30 mA

< 30 mA

Hysteresis H

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---

Switching Freq. / Response Time

--- / 1,5 ms

--- / 1,5 ms

--- / 1,5 ms

--- / 1,5 ms

Ambient Temperature

-25 °C ... + 55 °C

-25 °C ... + 55 °C

-25 °C ... + 55 °C

-25 °C ... + 55 °C

Ambient Light

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Halogen Light

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---

Sun Light

---

---

---

---

Sensitivity Adjustable

yes

yes

yes

yes

Output Digital

yes

yes

yes

yes

Output Analog

---

---

---

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LED - Indicator

yes

yes

yes

yes

Size

M18

M18

M18

M18

Housing Material

Brass Nickel-Plated

Brass Nickel-Plated

Brass Nickel-Plated

Brass Nickel-Plated

Material Light Outlet

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Protection Class

IP 67

IP 67

IP 67

IP 67

EMC-Standard

EN 60947-5-2

EN 60947-5-2

EN 60947-5-2

EN 60947-5-2

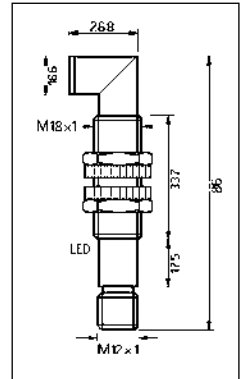
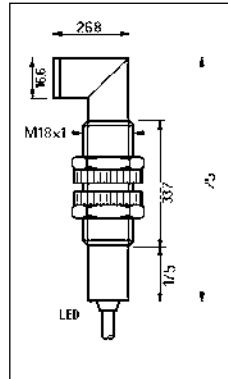
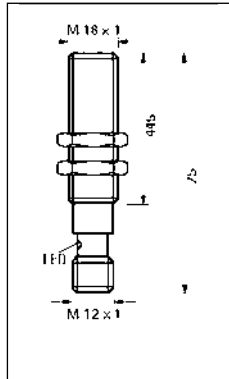
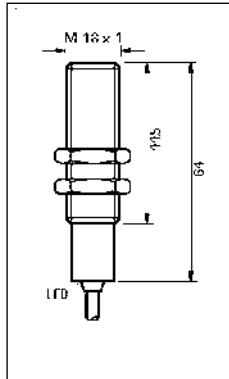
Termination

Cable, 2m

Connector M12 4pol.

Cable, 2m

Connector M12 4pol.



**Mode Of Operation**

**Retroreflective Mode**

**Retroreflective Mode**

**Retroreflective Mode**

**Retroreflective Mode**

**Sensing Distance**

**3,0 m**

**3,0 m**

**3,0 m**

**3,0 m**

**Type**

**Type**

**Type**

**Type**

**Emitter**

**PNP Light / Dark**

**M18B-L3000P-CX9C4U2**

**M18B-L3000P-CX9Q4UE**

**M18B-L3000P-CZ9C4U2**

**M18B-L3000P-CZ9Q4UE**

**NPN Light / Dark**

**M18B-L3000N-CX9C4U2**

**M18B-L3000N-CX9Q4UE**

**M18B-L3000N-CZ9C4U2**

**M18B-L3000N-CZ9Q4UE**

**Light**

**Infrared Light 880 nm**

**Infrared Light 880 nm**

**Infrared Light 880 nm**

**Infrared Light 880 nm**

Operating Voltage  $U_b$

10 - 30 V DC

10 - 30 V DC

10 - 30 V DC

10 - 30 V DC

Unblinking / Blanking

Light On / Dark On; selectable by „control“ input

Light On / Dark On; selectable by „control“ input

Max. Output Current  $I_o$

200 mA

200 mA

200 mA

200 mA

Idle Current  $I_o$

< 30 mA

< 30 mA

< 30 mA

< 30 mA

Hysteresis H

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---

Switching Freq. / Response Time

--- / 1,5 ms

--- / 1,5 ms

--- / 1,5 ms

--- / 1,5 ms

Ambient Temperature

-25 °C ... + 55 °C

-25 °C ... + 55 °C

-25 °C ... + 55 °C

-25 °C ... + 55 °C

Ambient Light

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Halogen Light

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---

---

Sun Light

---

---

---

---

Sensitivity Adjustable

yes

yes

yes

yes

Output Digital

yes

yes

yes

yes

Output Analog

---

---

---

---

LED - Indicator

yes

yes

yes

yes

Size

M18

M18

M18

M18

Housing Material

Brass Nickel-Plated

Brass Nickel-Plated

Brass Nickel-Plated

Brass Nickel-plated

Material Light Outlet

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Protection Class

IP 67

IP 67

IP 67

IP 67

EMC-Standard

EN 60947-5-2

EN 60947-5-2

EN 60947-5-2

EN 60947-5-2

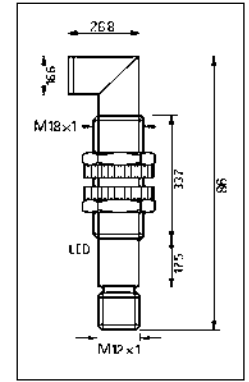
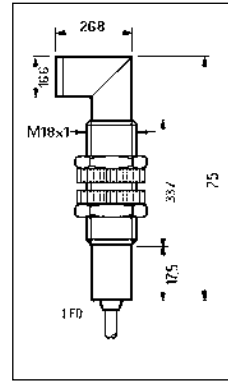
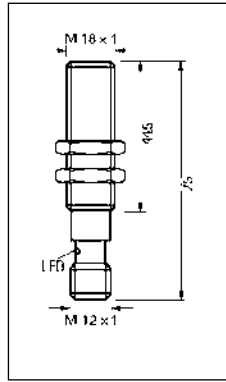
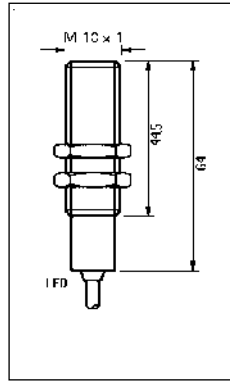
Termination

Cable, 2m

Connector M12 4pol.

Cable, 2m

Connector M12 4pol.



**Mode Of Operation**

**IR Opposed Mode**

**IR Opposed Mode**

**IR Opposed Mode**

**IR Opposed Mode**

**Sensing Distance**

**15,0 m**

**15,0 m**

**15,0 m**

**15,0 m**

**Type**

**Type**

**Type**

**Type**

**Emitter**

**M18B-T015MD-EX9C3L2**

**M18B-T015MD-EX9Q4LE**

**M18B-T015MD-EZ9C3L2**

**M18B-T015MD-EZ9Q4LE**

**PNP Light / Dark**

**M18B-T015MP-CX9C4U2**

**M18B-T015MP-CX9Q4UE**

**M18B-T015MP-CZ9C4U2**

**M18B-T015MP-CZ9Q4UE**

**NPN Light / Dark**

**M18B-T015MN-CX9C4U2**

**M18B-T015MN-CX9Q4UE**

**M18B-T015MN-CZ9C4U2**

**M18B-T015MN-CZ9Q4UE**

**Light**

**Infrared Light 880 nm**

**Infrared Light 880 nm**

**Infrared Light 880 nm**

**Infrared Light 880 nm**

Operating Voltage  $U_b$

10 - 30 V DC

10 - 30 V DC

10 - 30 V DC

10 - 30 V DC

Unblinking / Blanking

Light On / Dark On; selectable by „control“ input

Light On / Dark On; selectable by „control“ input

Max. Output Current  $I_o$

200 mA

200 mA

200 mA

200 mA

Idle Current  $I_o$

< 30 mA

< 30 mA

< 30 mA

< 30 mA

Hysteresis H

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Switching Freq. / Response Time

--- / 1,5 ms

--- / 1,5 ms

--- / 1,5 ms

--- / 1,5 ms

Ambient Temperature

-25 °C ... + 55 °C

-25 °C ... + 55 °C

-25 °C ... + 55 °C

-25 °C ... + 55 °C

Ambient Light

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Halogen Light

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Sun Light

---

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---

Sensitivity Adjustable

yes

yes

yes

yes

Output Digital

yes

yes

yes

yes

Output Analog

---

---

---

---

LED - Indicator

yes

yes

yes

yes

Size

M18

M18

M18

M18

Housing Material

Brass Nickel-Plated

Brass Nickel-Plated

Brass Nickel-Plated

Brass Nickel-Plated

Material Light Outlet

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Protection Class

IP 67

IP 67

IP 67

IP 67

EMC-Standard

EN 60947-5-2

EN 60947-5-2

EN 60947-5-2

EN 60947-5-2

Termination

Cable, 2m

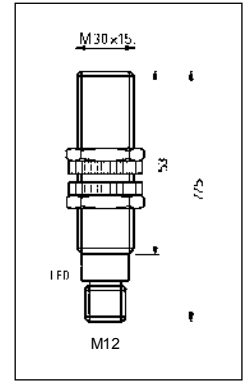
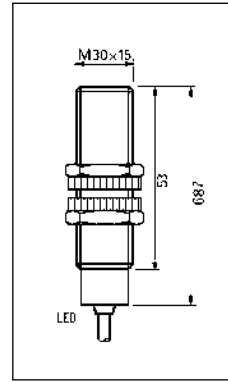
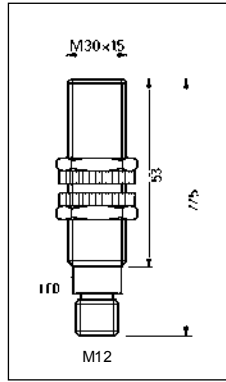
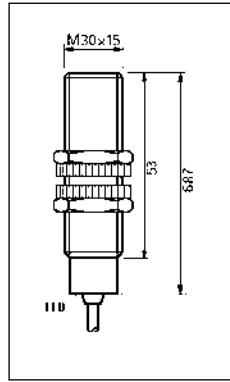
Connector M12 4pol.

Cable, 2m

Connector M12 4pol.



**with Background Suppression**



**Mode Of Operation**

**IR Diffuse Mode**

**IR Diffuse Mode**

**IR Diffuse Mode**

**IR Diffuse Mode**

**Sensing Distance**

**200,0 mm**

**200,0 mm**

**400,0 mm**

**400,0 mm**

**Type**

**Type**

**Type**

**Type**

**Emitter**

**PNP Light / Dark**

**M30B-D0200P-CX9C4U2-BS**

**M30B-D0200P-CX9Q4UE-BS**

**M30B-D0400P-CX9C4U2-BS**

**M30B-D0400P-CX9Q4UE-BS**

**NPN Light / Dark**

**M30B-D0200N-CX9C4U2-BS**

**M30B-D0200N-CX9Q4UE-BS**

**M30B-D0400N-CX9C4U2-BS**

**M30B-D0400N-CX9Q4UE-BS**

**Light**

**Infrared Mode 880 nm**

**Infrared Mode 880 nm**

**Infrared Mode 880 nm**

**Infrared Mode 880 nm**

Operating Voltage  $U_b$

10 - 30 V DC

10 - 30 V DC

10 - 30 V DC

10 - 30 V DC

Unblinking / Blanking

Light On / Dark On

Light On / Dark On

Light On / Dark On

Light On / Dark On

Max. Output Current  $I_o$

150 mA

150 mA

150 mA

150 mA

Idle Current  $I_o$

Hysteresis H

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---

Switching Freq. / Response Time

--- / 3 ms

--- / 3 ms

--- / 3 ms

--- / 3 ms

Ambient Temperature

-40 °C ... + 70 °C

-40 °C ... + 70 °C

-40 °C ... + 70 °C

-40 °C ... + 70 °C

Ambient Light

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Halogen Light

---

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---

---

Sun Light

---

---

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---

Sensitivity Adjustable

no

no

no

no

Output Digital

yes

yes

yes

yes

Output Analog

---

---

---

---

LED - Indicator

yes

yes

yes

yes

Size

M30

M30

M30

M30

Housing Material

Brass Nickel-Plated

Brass Nickel-Plated

Brass Nickel-Plated

Brass Nickel-Plated

Material Light Outlet

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Protection Class

IP 67

IP 67

IP 67

IP 67

EMC-Standard

EN 60947-5-2

EN 60947-5-2

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EN 60947-5-2

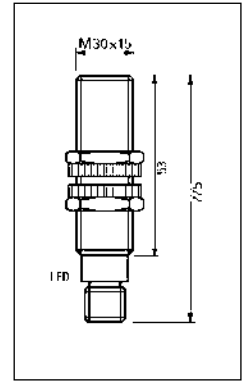
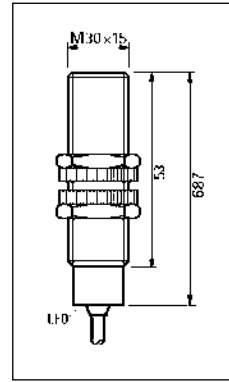
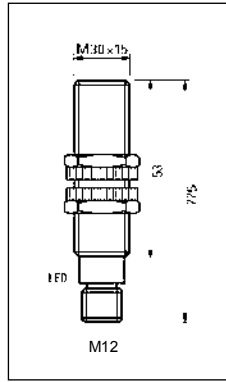
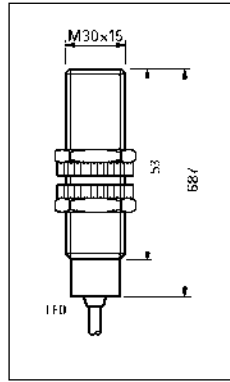
Termination

Cable, 2m

Connector M12 4pol.

Cable, 2m

Connector M12 4pol.



**Mode Of Operation**

**Sensing Distance**

**IR Diffuse Mode**  
with Background Suppression

**600,0 mm**

**IR Diffuse Mode**  
with Background Suppression

**600,0 mm**

**Retroreflective Mode**  
with Polarizing Filter

**6000,0 mm**

**Retroreflective Mode**  
with Polarizing Filter

**6000,0 mm**

**Type**

**Type**

**Type**

**Type**

**Emitter**

**PNP Light / Dark**

**M30B-D0600P-CX9C4U2-BS**

**M30B-D0600P-CX9Q4UE-BS**

**M30B-L6000P-CX6C4U2-PF**

**M30B-L6000P-CX6Q4UE-PF**

**NPN Light / Dark**

**M30B-D0600N-CX9C4U2-BS**

**M30B-D0600N-CX9Q4UE-BS**

**M30B-L6000N-CX6C4U2-PF**

**M30B-L6000N-CX6Q4UE-PF**

**Light**

**Infrared Light 880 nm**

**Infrared Light 880 nm**

**Red Light 650 nm**

**Red Light 650 nm**

Operating Voltage  $U_b$

10 - 30 V DC

10 - 30 V DC

10 - 30 V DC

10 - 30 V DC

Unblinking / Blanking

Light On / Dark On

Light On / Dark On

Light On / Dark On

Light On / Dark On

Max. Output Current  $I_o$

150 mA

150 mA

150 mA

150 mA

Idle Current  $I_o$

< 10 mA

< 10 mA

< 10 mA

< 10 mA

Hysteresis H

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---

Switching Freq. / Response Time

--- / 3 ms

--- / 3 ms

--- / 3 ms

--- / 3 ms

Ambient Temperature

-40 °C ... + 70 °C

-40 °C ... + 70 °C

-40 °C ... + 70 °C

-40 °C ... + 70 °C

Ambient Light

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Halogen Light

---

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---

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Sun Light

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---

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---

Sensitivity Adjustable

no

no

no

no

Output Digital

yes

yes

yes

yes

Output Analog

---

---

---

---

LED - Indicator

yes

yes

yes

yes

Size

M30

M30

M30

M30

Housing Material

Brass Nickel-Plated

Brass Nickel-Plated

Brass Nickel-Plated

Brass Nickel-Plated

Material Light Outlet

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Protection Class

IP 67

IP 67

IP 67

IP 67

EMC-Standard

EN 60947-5-2

EN 60947-5-2

EN 60947-5-2

EN 60947-5-2

Termination

Cable, 2m

Connector M12 4pol.

Cable, 2m

Connector M12 4pol.

## Product Overview

Site	Sensortype	Sensing Distance	Light Source	Comments
<b>Diffuse Mode</b>				
4	M8B-D0080...	8 cm	IR	--
5	M12B-D0200...	20 cm	IR	--
10	M18B-D0150...	15 cm	IR	--
11	M18B-D0500...	50 cm	IR	--
15	M30B-D0200...	20 cm	IR	with background suppression
15	M30B-D0400...	40 cm	IR	with background suppression
16	M30B-D0600...	60 cm	IR	with background suppression
<b>Retroreflective Mode</b>				
6	M12B-L1000...	1 m	Red	with polarizing filter
7	M12B-L2000...	2 m	IR	without polarizing filter
12	M18B-L1000...	1 m	Red	with polarizing filter
13	M18B-L3000...	3 m	IR	without polarizing filter
16	M30B-L6000...	6 m	IR	with polarizing filter
<b>Opposed Mode</b>				
4	M8B-T2000...	2 m	IR	axial
8	M12B-T5200... - ...X...	5,2 m	IR	axial
9	M12B-T5200... - ...Z...	5,2 m	IR	radial
14	M18B-T0150... - ...X...	15 m	IR	axial
14	M18B-T0150... - ...Z...	15 m	IR	radial

Discription	Art-Nr.	Site	Discription	Art-Nr.	Site
Typekey		2	M18B-D0500N-CX9C4U2	08361250218	11
Connection diagrams		3	M18B-D0500P-CX9C4U2	08361250219	11
<b>M8</b>			M18B-D0500N-CX9Q4UE	08361250220	11
M8B-D0080P-LX9C3L2	08361817500	4	M18B-D0500P-CX9Q4UE	08361250221	11
M8B-D0080P-LX9Q4UP	08361817564	4	M18B-D0500N-CZ9C4U2	08361250224	11
M8B-T2000D-EX9C3L2	08363817600	4	M18B-D0500P-CZ9C4U2	08361250225	11
M8B-T2000P-DX9C3U2	08363817700	4	M18B-D0500N-CZ9Q4UE	08361250226	11
M8B-T2000D-EX9Q4LP	08363817664	4	M18B-D0500P-CZ9Q4UE	08361250227	11
M8B-T2000P-DX9Q4UP	08363817764	4			
<b>M12</b>			M18B-L1000N-CX6C4U2-PF	08362250254	12
M12B-D0200N-CX9C3U2	08361245122	5	M18B-L1000P-CX6C4U2-PF	08362250255	12
M12B-D0200P-CX9C3U2	08361245123	5	M18B-L1000N-CX6Q4UE-PF	08362250256	12
M12B-D0200N-CX9Q4UP	08361245124	5	M18B-L1000P-CX6Q4UE-PF	08362250257	12
M12B-D0200P-CX9Q4UP	08361245125	5	M18B-L1000N-CZ6C4U2-PF	08362250260	12
M12B-D0200N-CX9Q4UE	08361245126	5	M18B-L1000P-CZ6C4U2-PF	08362250261	12
M12B-D0200P-CX9Q4UE	08361245127	5	M18B-L1000N-CZ6Q4UE-PF	08362250262	12
			M18B-L1000P-CZ6Q4UE-PF	08362250263	12
M12B-L1000N-CX6C3U2-PF	08362245122	6			
M12B-L1000P-CX6C3U2-PF	08362245123	6	M18B-L3000N-CX9C4U2	08362250218	13
M12B-L1000N-CX6Q4UP-PF	08362245124	6	M18B-L3000P-CX9C4U2	08362250219	13
M12B-L1000P-CX6Q4UP-PF	08362245125	6	M18B-L3000N-CX9Q4UE	08362250220	13
M12B-L1000N-CX6Q4UE-PF	08362245126	6	M18B-L3000P-CX9Q4UE	08362250221	13
M12B-L1000P-CX6Q4UE-PF	08362245127	6	M18B-L3000N-CZ9C4U2	08362250224	13
			M18B-L3000P-CZ9C4U2	08362250225	13
M12B-L2000N-CX9C3U2	08362245158	7	M18B-L3000N-CZ9Q4UE	08362250226	13
M12B-L2000P-CX9C3U2	08362245159	7	M18B-L3000P-CZ9Q4UE	08362250227	13
M12B-L2000N-CX9Q4UP	08362245160	7			
M12B-L2000P-CX9Q4UP	08362245161	7	M18B-T015MD-EX9C3L2	08363250227	14
M12B-L2000N-CX9Q4UE	08362245162	7	M18B-T015MN-CX9C4U2	08363250228	14
M12B-L2000P-CX9Q4UE	08362245163	7	M18B-T015MP-CX9C4U2	08363250229	14
			M18B-T015MD-EX9Q4LE	08363250230	14
M12B-T5200D-EX9C3L2	08363245133	8	M18B-T015MN-CX9Q4UE	08363250231	14
M12B-T5200N-CX9C3U2	08363245134	8	M18B-T015MP-CX9Q4UE	08363250232	14
M12B-T5200P-CX9C3U2	08363245135	8			
M12B-T5200D-EX9Q4LP	08363245136	8	M18B-T015MD-EZ9C3L2	08363250236	14
M12B-T5200N-CX9Q4UP	08363245137	8	M18B-T015MN-CZ9C4U2	08363250237	14
M12B-T5200P-CX9Q4UP	08363245138	8	M18B-T015MP-CZ9C4U2	08363250238	14
M12B-T5200D-EX9Q4LE	08363245139	8	M18B-T015MD-EZ9Q4LE	08363250239	14
M12B-T5200N-CX9Q4UE	08363245140	8	M18B-T015MN-CZ9Q4UE	08363250240	14
M12B-T5200P-CX9Q4UE	08363245141	8	M18B-T015MP-CZ9Q4UE	08363250241	14
M12B-T5200D-EZ9C3L2	08363245145	9	<b>M30</b>		
M12B-T5200N-CZ9C3U2	08363245146	9	M30B-D0200N-CX9C4U2-BS	08361255016	15
M12B-T5200P-CZ9C3U2	08363245147	9	M30B-D0200P-CX9C4U2-BS	08361255017	15
M12B-T5200D-EZ9Q4LP	08363245148	9	M30B-D0200N-CX9Q4UE-BS	08361255024	15
M12B-T5200N-CZ9Q4UP	08363245149	9	M30B-D0200P-CX9Q4UE-BS	08361255025	15
M12B-T5200P-CZ9Q4UP	08363245150	9			
M12B-T5200D-EZ9Q4LE	08363245151	9	M30B-D0400N-CX9C4U2-BS	08361255048	15
M12B-T5200N-CZ9Q4UE	08363245152	9	M30B-D0400P-CX9C4U2-BS	08361255049	15
M12B-T5200P-CZ9Q4UE	08363245153	9	M30B-D0400N-CX9Q4UE-BS	08361255056	15
			M30B-D0400P-CX9Q4UE-BS	08361255057	15
<b>M18</b>					
M18B-D0150N-CX9C4U2	08361250254	10	M30B-D0600N-CX9C4U2-BS	08361255080	16
M18B-D0150P-CX9C4U2	08361250255	10	M30B-D0600P-CX9C4U2-BS	08361255081	16
M18B-D0150N-CX9Q4UE	08361250256	10	M30B-D0600N-CX9Q4UE-BS	08361255088	16
M18B-D0150P-CX9Q4UE	08361250257	10	M30B-D0600P-CX9Q4UE-BS	08361255089	16
M18B-D0150N-CZ9C4U2	08361250260	10			
M18B-D0150P-CZ9C4U2	08361250261	10	M30B-L6000N-CX6C4U2-PF	08362255016	16
M18B-D0150N-CZ9Q4UE	08361250262	10	M30B-L6000P-CX6C4U2-PF	08362255017	16
M18B-D0150P-CZ9Q4UE	08361250263	10	M30B-L6000N-CX6Q4UE-PF	08362255024	16
			M30B-L6000P-CX6Q4UE-PF	08362255025	16
			Product overview		20