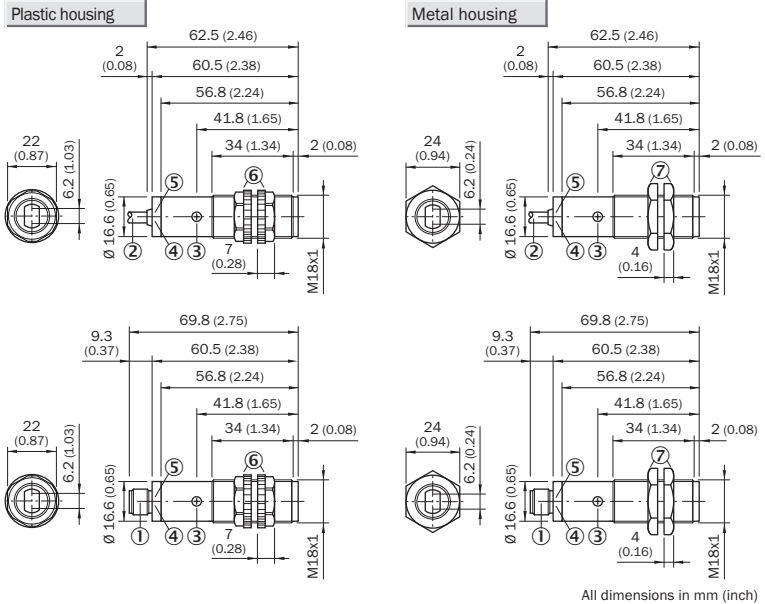


## Photoelectric proximity sensor

### Dimensional drawing



**Scanning distance**  
1 ... 140 mm

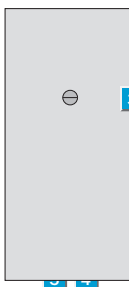
Photoelectric proximity sensor BGB

- Photoelectric proximity sensors with focussed optics and background blanking (BGB)
- Red light as alignment aid
- Adjustable sensitivity
- LED indicator: switching output active and operation reserve
- Material optionally made of plastic or metal



### Adjustments

All types



- ① M12 plug, 4-pin
- ② Connector cable 2 m
- ③ Sensitivity control 270°
- ④ Orange LED indicator: switching output active
- ⑤ Green LED indicator, stability indicator:
  - LED lights continuously: light reception < 0.9 / > 1.1
  - LED off: light reception > 0.9 ... < 1.1
- ⑥ Plastic housing, mounting nuts (2x); SW22, PC
- ⑦ Metal housing, mounting nuts (2x); SW24

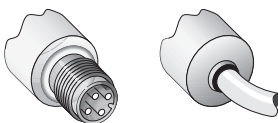
### Connection types

RS 729-5090	RS 729-5094
RS 729-5104	RS 729-5107



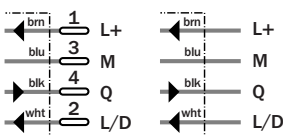
### Accessories

Cables and connectors  
Mounting systems



4-pin, M12

4 x 0.18 mm<sup>2</sup>



Technical data		729-5107	729-5104	729-5094	729-5090					
<b>Scanning distance SD</b> , typ. max. <sup>1)</sup>	1 ... 140 mm									
<b>Operating distance SD</b> <sup>1)</sup>	1 ... 100 mm									
Light spot diameter	Approx. 8 mm at 100 mm									
Angle of dispersion sender	Focussed approx. 7 mm at 60 mm									
Light source <sup>2)</sup> , light type	LED, red light, 645 nm									
<b>Sensitivity adjustable</b>	Potentiometer 270°									
Orange LED indicator	Switching output active									
Green LED indicator	Stability indicator light reception									
	LED lights continuously:									
	light reception < 0.9/> 1.1									
	LED off: light reception > 0.9 ... < 1.1									
<b>Supply voltage V<sub>S</sub></b>	10 ... 30 V DC <sup>3)</sup>									
Residual ripple <sup>4)</sup>	± 10 %									
Current consumption <sup>5)</sup>	≤ 30 mA									
<b>Switching outputs</b>	Q: PNP, open collector									
Signal voltage PNP HIGH/LOW	V <sub>S</sub> - 1.8 V <sub>max</sub> /approx. 0 V									
	Q: NPN, open collector									
Signal voltage NPN HIGH/LOW	Approx. V <sub>S</sub> / < 1.8 V									
<b>Switching mode</b>	Light-/dark-switching, selectable <sup>6)</sup>									
<b>Output current I<sub>A</sub> max.</b>	≤ 100 mA									
Response time <sup>7)</sup>	≤ 0.5 ms									
Max. switching frequency <sup>8)</sup>	1,000/s									
<b>Connection type</b>	Plug, M12, 4-pin									
	Cable <sup>9)</sup> , PVC, 2 m, 4 x 0.18 mm <sup>2</sup>									
<b>VDE protection class</b>	⊕									
<b>Enclosure rating</b>	IP 67									
<b>Circuit protection <sup>10)</sup></b>	A, B, C									
<b>Ambient temperature T<sub>A</sub></b>	Operation -25 °C ... +55 °C									
	Storage -40 °C ... +70 °C									
<b>Weight plastic housing</b>	With plug M12, approx. 18 g									
	With cable 2 m, approx. 62 g									
<b>Weight metal housing</b>	With plug M12, approx. 47 g									
	With cable 2 m, approx. 95 g									
<b>Housing material</b>	Housing: PBT and PC									
	Housing: brass nickel-pated and PC									
	Optic: PMMA									

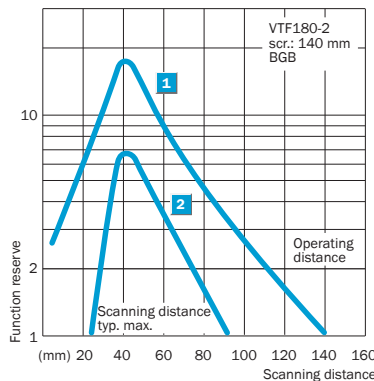
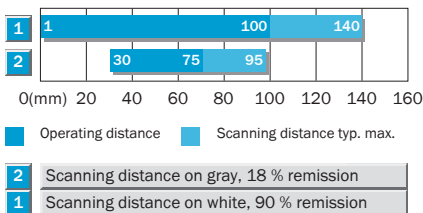
1) Object with 90 % remission (based on standard white DIN 5033); 100 x 100 mm  
 2) Average service life 100,000 h at T<sub>A</sub> = +25 °C  
 3) Limit values

4) May not exceed or fall short of V<sub>S</sub> tolerances  
 5) Without load  
 6) L/D-switching type control line: L/D = + V<sub>S</sub>: light-switching L.ON  
 L/D = 0 V: dark-switching D.ON

Control line open  
 NPN: light-switching L.ON  
 PNP: dark-switching D.ON  
 7) Signal transit time with resistive load  
 8) With light/dark ratio 1:1  
 9) Do not bend below 0 °C

10) A = V<sub>S</sub> connections reverse-polarity protected  
 B = Inputs and outputs reverse-polarity protected  
 C = Outputs overcurrent and short-circuit protected

**Scanning distance**



**Ordering information**

Model name	Part No.
RS 729-5094	7295094
RS 729-5090	7295090
RS 729-5107	7295107
RS 729-5104	7295104

**Scanning range**  
**0.05 ... 7 m (PL80A)**  
**Photoelectric reflex sensor**

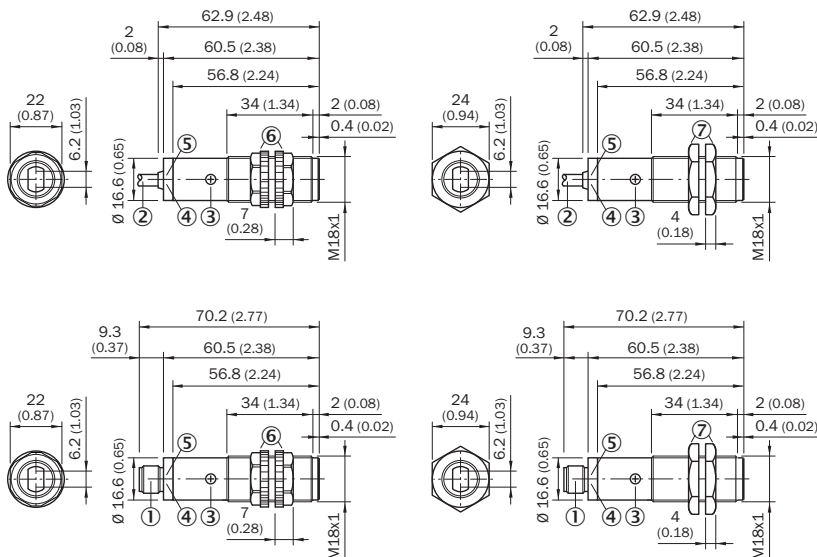
- Polarizing filter for reliable detection of shiny surfaces
- LED indicator: switching output active and operation reserve
- Large ranges
- Red light as alignment aid
- Material optionally made of plastic or metal



**Dimensional drawing**

Plastic housing

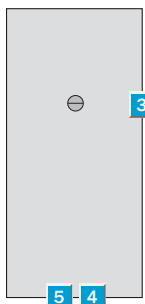
Metal housing



All dimensions in mm (inch)

**Adjustments**

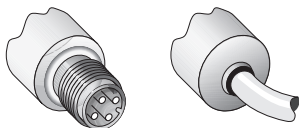
All types



- ① M12 plug, 4-pin
- ② Connector cable 2 m
- ③ Sensitivity control 270°
- ④ Orange LED indicator: switching output active
- ⑤ Green LED indicator, stability indicator:
  - LED lights continuously: light reception < 0.9 / > 1.1
  - LED off: light reception > 0.9 ... < 1.1
- ⑥ Plastic housing, mounting nuts (2x); SW22, PC
- ⑦ Metal housing, mounting nuts (2x); SW24

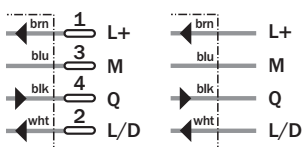
**Connection types**

RS 729-5101	RS 729-5110
RS 729-5113	RS 729-5117



4-pin, M12

4 x 0.18 mm<sup>2</sup>



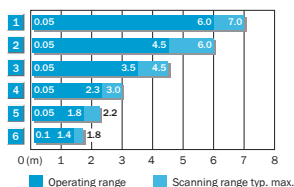
**Accessories**

- Cables and connectors
- Mounting systems
- Reflectors

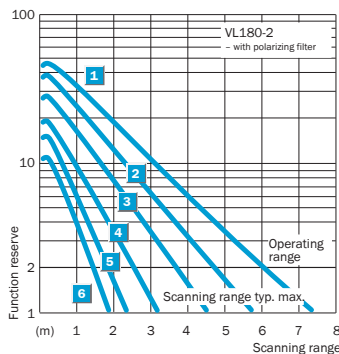
Technical data		729-5117	729-5113	729-5110	729-5101					
Scanning range SR, typ. max./reflect.	0.05 ... 7 m (PL80A)/... 6 m (P250) <sup>1)</sup>									
Operating range	0.05 ... 6 m (PL80A)/... 4.5 m (P250) <sup>1)</sup>									
Light spot diameter	Approx. 400 mm at 6 m									
Angle of dispersion sender	Approx. 4.5°									
Light source <sup>2)</sup> , light type	LED, red light, 645 nm									
Polarizing filter	Yes									
Sensitivity adjustable	Potentiometer 270°									
Orange LED indicator	Switching output active									
Green LED indicator	Stability indicator light reception									
	LED lights continuously:									
	light reception < 0.9/> 1.1									
	LED off: light reception > 0.9 ... < 1.1									
Supply voltage V <sub>S</sub>	10 ... 30 V DC <sup>3)</sup>									
Residual ripple <sup>4)</sup>	± 10 %									
Current consumption <sup>5)</sup>	≤ 30 mA									
Switching outputs	Q: PNP, open collector									
Signal voltage PNP HIGH/LOW	V <sub>S</sub> - 1.8 V <sub>max</sub> /approx. 0 V									
	Q: NPN, open collector									
Signal voltage NPN HIGH/LOW	Approx. V <sub>S</sub> / < 1.8 V									
Switching mode	Light-/dark-switching, selectable <sup>6)</sup>									
Output current I <sub>A</sub> max.	≤ 100 mA									
Response time <sup>7)</sup>	≤ 0.5 ms									
Max. switching frequency <sup>8)</sup>	1,000/s									
Connection type	Plug, M12, 4-pin									
	Cable <sup>9)</sup> , PVC, 2 m, 4 x 0.18 mm <sup>2</sup> , Ø 3.8 mm									
VDE protection class	⊕									
Enclosure rating	IP 67									
Circuit protection <sup>10)</sup>	A, B, C									
Ambient temperature T <sub>A</sub>	Operation -25 °C ... +55 °C									
	Storage -40 °C ... +70 °C									
Weight plastic housing	With plug M12, approx. 18 g									
	With cable 2 m, approx. 62 g									
Weight metal housing	With plug M12, approx. 47 g									
	With cable 2 m, approx. 95 g									
Housing material	Housing: PBT and PC									
	Housing: brass nickel-pated and PC									
	Optic: PMMA									

- 1) Reflector P250 included with delivery VL180-2  
 2) Average service life 100,000 h at T<sub>A</sub> = +25 °C  
 3) Limit values  
 4) May not exceed or fall short of V<sub>S</sub> tolerances  
 5) Without load  
 6) L/D-switching type control line: L/D = + V<sub>S</sub>: light-switching L.ON  
 L/D = 0 V: dark-switching D.ON  
 Control line open  
 NPN: light-switching L.ON  
 PNP: dark-switching D.ON  
 7) Signal transit time with resistive load  
 8) With light/dark ratio 1:1  
 9) Do not bend below 0 °C  
 10) A = V<sub>S</sub> connections reverse-polarity protected  
 B = Inputs and outputs reverse-polarity protected  
 C = Outputs overcurrent and short-circuit protected

Scanning range and operating reserve



Reflector type	Operating range
1 PL80A	0.05 ... 6.0 m
2 P250, PL40A, PL50A, C110A	0.05 ... 4.5 m
3 PL30A, PL31A	0.05 ... 3.5 m
4 PL20A	0.05 ... 2.3 m
5 P45	0.05 ... 1.8 m
6 Reflective tape Diamond Grade	0.1 ... 1.4 m (100 x 100 mm <sup>2</sup> )



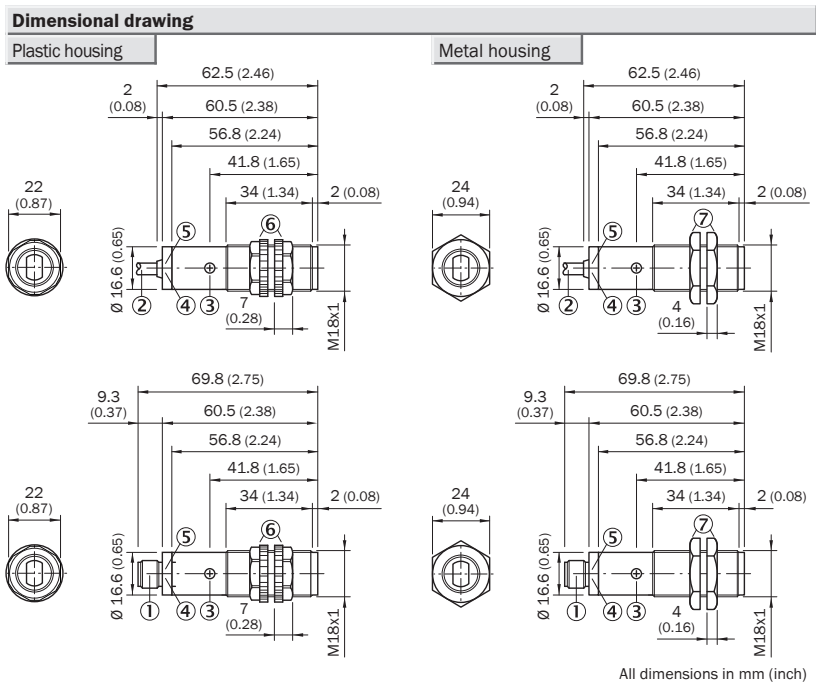
Model name	Part No. *)
RS 729-5110	7295110
RS 729-5101	7295101
RS 729-5117	7295117
RS 729-5113	7295113

\*) Reflector included

**Scanning range**  
0 ... 28 m

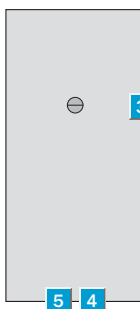
Through-beam photoelectric sensor

- Very large scanning ranges
- Adjustable sensitivity
- LED indicator VE180-2: switching output active and operation reserve
- Red light as alignment aid
- Material optionally made of plastic or metal



**Adjustments**

All types



- M12 plug, 4-pin
- Connector cable 2 m
- Sensitivity control 270°, only VE180-2
- Orange LED indicator, only VE180-2: switching output active
- Green LED indicator, only VE180-2, stability indicator:
  - LED lights continuously: light reception < 0.9 / > 1.1
  - LED off: light reception > 0.9 ... < 1.1
- Plastic housing, mounting nuts (2x); SW22, PC
- Metal housing, mounting nuts (2x); SW24



**Connection types**

RS 729-5126	RS 729-5129	RS 729-5126	RS 729-5129
RS 729-5123	RS 729-5132	RS 729-5123	RS 729-5132

**Accessories**

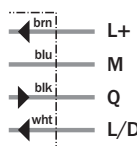
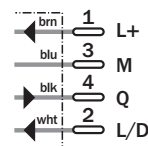
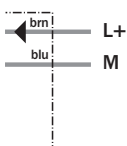
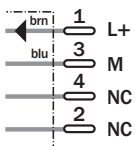
Cables and connectors  
Mounting systems

Sender 4-pin, M12

2 x 0.18 mm<sup>2</sup>

Receiver 4-pin, M12

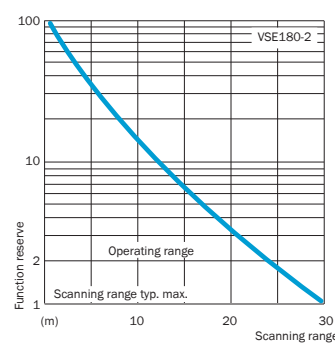
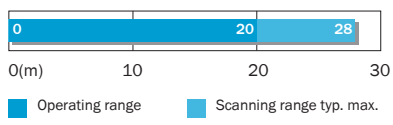
4 x 0.18 mm<sup>2</sup>



Technical data		729-5132	729-5123	729-5129	729-5126					
<b>Scanning range SR</b> , typ. max.	0 ... 28 m									
<b>Operating range</b>	0 ... 20 m									
Light spot diameter	Approx. 1,100 mm at 20 m									
Angle of dispersion sender	Approx. 5°									
Light source <sup>1)</sup> , light type	LED, red light, 645 nm									
<b>Sensitivity adjustable</b>	Receiver VE180-2: Potentiometer 270°									
Orange LED indicator	Switching output active									
Green LED indicator	Stability indicator light reception									
	LED lights continuously:									
	light reception < 0.9/> 1.1									
	LED off: light reception > 0.9 ... < 1.1									
<b>Supply voltage V<sub>S</sub></b>	10 ... 30 V DC <sup>2)</sup>									
Residual ripple <sup>3)</sup>	± 10 %									
Current consumption sender <sup>4)</sup>	≤ 20 mA									
Current consumption receiver <sup>4)</sup>	≤ 15 mA									
<b>Switching outputs</b>	Q: PNP, open collector									
Signal voltage PNP HIGH/LOW	V <sub>S</sub> - 1.8 V <sub>max</sub> /approx. 0 V									
	Q: NPN, open collector									
Signal voltage NPN HIGH/LOW	Approx. V <sub>S</sub> / < 1.8 V									
<b>Switching mode Receiver</b>	Light-/dark-switching, selectable <sup>5)</sup>									
<b>Output current I<sub>A</sub> max.</b>	≤ 100 mA									
Response time <sup>6)</sup>	≤ 0.5 ms									
Max. switching frequency <sup>7)</sup>	1,000/s									
<b>Connection type</b>	Plug, M12, 4-pin									
Sender	Cable <sup>8)</sup> , PVC, 2 m, 2 x 0.18 mm <sup>2</sup> , Ø 3.8 mm									
Receiver	Cable <sup>8)</sup> , PVC, 2 m, 4 x 0.18 mm <sup>2</sup> , Ø 3.8 mm									
<b>VDE protection class</b>	⊕									
<b>Enclosure rating</b>	IP 67									
<b>Circuit protection <sup>9)</sup></b>	A, B, C									
<b>Ambient temperature T<sub>A</sub></b>	Operation -25 °C ... +55 °C									
	Storage -40 °C ... +70 °C									
<b>Weight plastic housing <sup>10)</sup></b>	With plug M12, approx. 18 g									
	With cable 2 m, approx. 62 g									
<b>Weight metal housing <sup>10)</sup></b>	With plug M12, approx. 47 g									
	With cable 2 m, approx. 95 g									
<b>Housing material</b>	Housing: PBT and PC									
	Housing: brass nickel-pated and PC									
	Optic: PMMA									

1) Average service life 100,000 h at T<sub>A</sub> = +25 °C  
 2) Limit values  
 3) May not exceed or fall short of V<sub>S</sub> tolerances  
 4) Without load  
 5) L/D-switching type control line:  
 L/D = + V<sub>S</sub>: light-switching L.ON  
 L/D = 0 V: dark-switching D.ON  
 Control line open  
 NPN: light-switching L.ON  
 PNP: dark-switching D.ON  
 6) Signal transit time with resistive load  
 7) With light/dark ratio 1:1  
 8) Do not bend below 0 °C  
 9) A = V<sub>S</sub> connections reverse-polarity protected  
 B = Inputs and outputs reverse-polarity protected  
 C = Outputs overcurrent and short-circuit protected  
 10) Per sender or receiver

**Scanning range and operating reserve**



**Ordering information**

Model name	Part No.*)
RS 729-5129	7295129
RS 729-5126	7295126
RS 729-5132	7295132
RS 729-5123	7295123

\*) Part No. includes sender and receiver (pair)