

### Overview

Cubic molded plastic enclosure, IP67,  
connection using M12 connector or Pg 11 cable gland

Versions for use in potentially explosive environments acc. to  
94/9/EG (ATEX exists):

- Zone 2 (gases, vapors, mist) according to classification II 3G
- Zone 22 (dust atmosphere, non-conductive dust) according to classification II 3D

Diffuse sensor (energetic sensor)

- Sensing range 2 m (adjustable using potentiometer)

Diffuse sensor with background suppression

- Sensing range 0.2 to 1 m (adjustable using potentiometer)

Retroreflective sensor

- Sensing range 6 m (adjustable using potentiometer)
- Supplied without reflector
- "Advanced" version 1 to 12 m

Thru-beam sensor

- Sensing range 50 m (adjustable using potentiometer)

Rated operating voltage 24 V DC or 240 V AC/DC

Inputs and outputs

- Electronics output pnp or npn
- programmable as light-ON or dark-ON
- light-ON, dark-ON (antivalent)
- Relay output 20 V to 320 V AC/DC
- Timing function (delayed pick-up or drop-out, pulse shaping)
- Enabling input for test purposes

Supplied without mounting material

### Technical specifications

Operating mode	Diffuse sensor				Diffuse sensor with background suppression			
Sensing range	m	2 (adjustable)			0,2 ... 1 (adjustable)			
Standard target	mm	400 x 400 (white)			200 x 200 (white)			
Operating voltage range (DC)	V	10 ... 36	–	10 ... 36	10 ... 36			
No-load current $I_0$ , max.	mA	30	–	30	45			
Operating voltage range (AC/DC)	V	–	20 ... 265	200	–			
No-load power, max.	VA	–	2	–	–			
Rated operational current $I_e$	mA	200	2000 (at 240 V AC)	200	200			
Switching frequency, max.	Hz	1000	20	1000	250			
Switching time, max.	ms	0.5	20	0.5	2			
Wavelength (illuminant)	nm	880 (IR)			880 (IR)			
Switching state/surplus light function display	LED yellow/LED green							
Enclosure material	Formstoff (PBTP)							
Degree of protection	IP67							
Approval for Ex Zones 2/22	no	no	yes	no	no			
Ambient temperature	°C	–5 ... +55	–5 ... +55	–5 ... +40	–5 ... +55			
Temperature coefficient	%/K	0.3						
Type	3RG72 00-...00, 3RG72 10-...00		3RG72 10-6MC00	3RG72 00-3CC00- 0XB4	3RG72 04-...00, 3RG72 14-...00			
Operating mode	Retroreflective sensor with polarization filter				Thru-beam sensor			
Sensing range	m	6/12 (adjustable)			50 (adjustable)			
Reflector	mm	Reflector type D 84			–			
Operating voltage range (DC)	V	10 ... 36	–	10 ... 36	10 ... 36	–	10 ... 36	
No-load current $I_0$ , max.	mA	30	–	30	30	–	–	
Operating voltage range (AC/DC)	V	–	20 ... 265	–	–	20 ... 320	–	
No-load power, max.	VA	–	2	–	–	2	–	
Rated operational current $I_e$	mA	200	2000 (at 240 V AC))	200	200	2000 (at 240 V AC)	200	
Switching frequency, max.	Hz	1000	20	1000	1000	20	1000	
Switching time, max.	ms	0.5	20	0.5	0.5	20	0.5	
Wavelength (illuminant)	nm	660 (red, polarized)			880 (IR)			
Switching state/surplus light function display	LED yellow/LED green							
Enclosure material	Molded plastic (PBTP)							
Degree of protection	IP67							
Approval for Ex Zones 2/22	no	no	yes	no	no	yes	–	
Ambient temperature	°C	–5 ... +55	–5 ... +55	–5 ... +40	–5 ... +55	–5 ... +55	–5 ... +40	
Temperature coefficient	%/K	0.3						
Type	3RG72 01-...00, 3RG72 01-...61, 3RG72 11-...00, 3RG72 11-...61		3RG72 11-6MC00, 3RG72 11-6MC61	3RG72 01-3CC- 0XB4	3RG72 02-...00, 3RG72 12-...00	3RG72 12-6MC00, 3RG72 02-6FG00	3RG72 02-...- 0XB4, 3RG72 12-...- 0XB4	

Operating mode	Sensing range	Illuminant	Wiring	Switching output	Ckt. diag. No.	Order No.
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#### K80 form



Thru-beam sensor	50 (adjustable via potentiometer)	880 (IR)	M12 plug, 4-pole, type F	Light-ON and dark-ON (antivalent)	pnp 5	<b>3RG72 02-3CC00</b> <b>3RG72 02-3HC00</b>			
				Light-On or Dark-On and surplus light, with timing function (0.01 ... 1 s)	pnp 6		<b>3RG72 12-3DK00</b>		
			Pg 11, 4-pole	Light-ON and dark-ON (antivalent)	pnp 11	<b>3RG72 02-6CC00</b> <b>3RG72 02-6HC00</b>			
				Light-On or Dark-On and surplus light, with timing function (0.01 ... 1 s)	pnp 11 npn 11	<b>3RG72 12-6DK00</b> <b>3RG72 12-6EK00</b>			
			Pg 11, 5-pole	Relay, light-ON and dark-ON, with timing function (0.1 ... 10 s)	- 10	<b>3RG72 12-6MC00</b>			
			Thru-beam sensor Emitter	50 (adjustable via potentiometer)	880 (IR)	M12 plug, 4-pole, type F	Emitter DC with enabling input	- 7	<b>3RG72 02-3BG00</b>
						Pg 11, 3-pole	Emitter DC with enabling input	- 11	<b>3RG72 02-6BG00</b>
Pg 11, 3-pole	Emitter AC/DC with enabling input	- 11				<b>3RG72 02-6FG00</b>			

Operating mode	Sensing range	Illuminant	Wiring	Switching output	Ckt. diag. No.	Order No.
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#### K80 ATEX form



Diffuse sensor	2 (can be set with potentiometer)	880 (IR)	M12 plug, 4-pole, type F	Light-ON and dark-ON (antivalent)	pnp 5	<b>3RG72 00-3CC00-0XB4</b>
Retroreflective sensor	6 (can be set with potentiometer)	660 (red, polarized)	M12 plug, 4-pole, type F	Light-ON and dark-ON (antivalent)	pnp 5	<b>3RG72 01-3CC00-0XB4</b>
	12 (can be set with potentiometer)	660 (red, polarized)	M12 plug, 4-pole, type F	Light-ON and dark-ON (antivalent)	pnp 5	<b>3RG72 01-3CC61-0XB4</b>
Thru-beam sensor	50 (can be set with potentiometer)	880 (IR)	M12 plug, 4-pole, type F	Light-ON and dark-ON (antivalent)	pnp 5	<b>3RG72 02-3CC00-0XB4</b>
				Light-On or Dark-On and surplus light, with timing function (0.01 ... 1 s)	pnp 6	<b>3RG72 12-3DK00-0XB4</b>
				Sender with enable input	- 7	<b>3RG72 02-3BG00-0XB4</b>

#### Communication-capable proximity switches with K80 IQ-Sense form

Diffuse sensor	2	880 (IR)	M12 plug, 4-pole, type F	for connection to the 4IQ-Sense sensor module	9	<b>3SF72 10-3JQ00</b>
Diffuse sensor with background suppression	0.2 ... 1	880 (IR)	M12 plug, 4-pole, type F	for connection to the 4IQ-Sense sensor module	9	<b>3SF72 14-3JQ00</b>
Retroreflective sensor	8	660 (red, polarized)	M12 plug, 4-pole, type F	for connection to the 4IQ-Sense sensor module	9	<b>3SF72 11-3JQ00</b>

#### Accessories

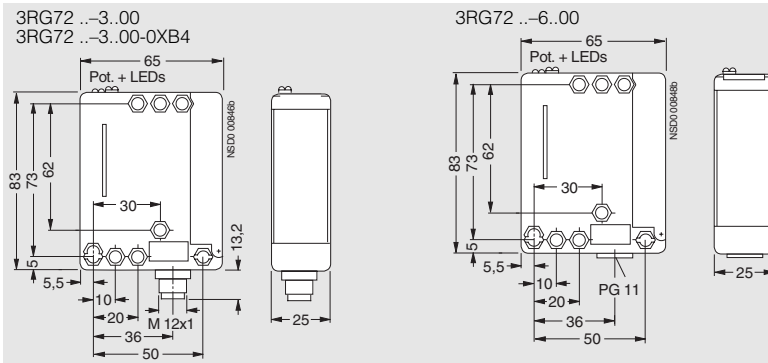
Mounting bracket for form K80	<b>3RX7 303</b>
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# Opto Proximity Switches

## SIMATIC PXO600

K80 form

### Dimensions



2

### Overview

Cubic molded plastic enclosure, IP67,  
wired with M12 connector

Visible laser light (red),  
laser protection class 2 as per EN 60947-5-2

Diffuse sensor with analog output, configurable using teach-in  
keys

Resolution < 0.1 % of sensing range upper limit

Two digital channels, adjustable as 2 switching outputs or 1  
switching output and 1 trigger input



Rated operating voltage 24 V DC

Solid-state inputs or outputs pnp

Analog output 4 to 20 mA (adjustable normalization)

Supplied without mounting accessories

### Technical specifications


Operating mode		Laser diffuse sensor with analog output	
			
Sensing range	mm	250 ... 750	
Resolution	%/MBE	< 0.1	
Linearity	%/MBE	< 0.25	
Light spot diameter (at end of sensing range)	mm	2 x 4.5	
Operating voltage range (DC)	V	18 ... 30	
No-load supply current $I_0$ , max.	mA	40	
Analog output	mA	4 ... 20	
Output current per switching output	mA	100	
Recommended load	W	≤ 500	
Switching frequency	Hz	1000	
Switching time	ms	< 1	
Wavelength (illuminant)	nm	650	
Indicators			
• Ready for operation		Green LED	
• Status display		Red LED	
• Switching state, input/output		Yellow LED (2 x)	
• Status display, trigger input		Green LED	
• Object valid		Green LED	
• Timer function active		Green LED	
• Measured value centering active		Green LED	
Enclosure material		PBT	
Degree of protection		IP67	
Ambient temperature	°C	-10 ... +60	
Temperature coefficient	%/K	0.02	
Wiring		M12 plug, 8-pole, type O	
Type		3RG72 56-3NQ00	

# Opto Proximity Switches

## SIMATIC PXO600

### L80 HF form

#### Selection and Ordering data

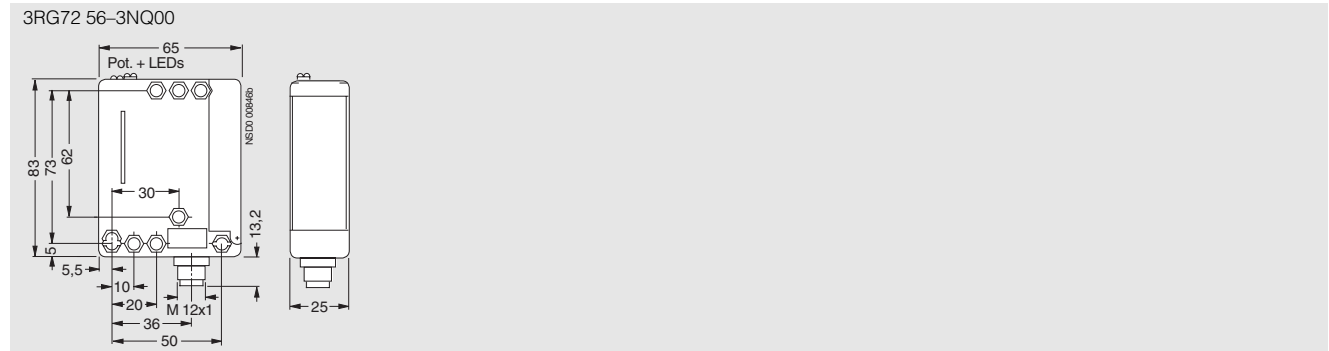
	Operating mode	Sensing range	Illuminant	Wiring	Analog output	Ckt. diag. No.	Order No.
		mm	nm		mA		
 <p>Operating mode L80 HF</p>	Laser diffuse sensor with analog output	250 ... 750	650 (red laser light)	M12 plug, 8-pole, type O	4 ... 20	pnp 20	A <b>3RG72 56-3NQ00</b>

#### Accessories

Mounting bracket for form L80 HF	<b>3RX7 303</b>
Cable plug, shielded, 8 × 0.25 mm <sup>2</sup>	A <b>3RX8 000-0CB81-1GF0</b>

A: Subject to export regulations: AL = N and ECCN = EAR99H

#### Dimensions



## Overview

Measuring laser sensor based on the principle of optical running-time measurement

- Measuring laser with IR light; laser class 1
- Pilot laser for adjustment with visible red light; laser class 2
- Wired via M12 4-pole or 5-pole connector
- Range 6 m; range with reflector 30 m

- Rated operating voltage 24 V DC
- 1 or 2 solid-state outputs pnp
- NO or NC contact, adjustable via "teach-in"
- Analog output 4 to 20 mA
- Timer function

## Technical specifications


Sensing range	0.2 ... 6 m	0.2 ... 6 m	0.2 ... 30 m
Standard target/reflector	White 90%, 100 x 100 mm		R250 reflector, 250 x 250 mm
Operating mode	Distance sensor/jogging		Distance sensor/retroreflective sensor
Light spot diameter (at end of sensing range)	4 x 12 mm		45 x 60 mm
Reproducibility			
• Slow	10 mm		5 mm
• Fast	15 mm		10 mm
Operating voltage range	18 ... 30 V DC		
No-load supply current $I_0$ , max.	125 mA at 24 V DC		
Rated operating current $I_e$	100 mA		
Analog output	-	4 ... 20 mA	
Response time			
• Slow	80 ms		65 ms
• Fast	13 ms		13 ms
Wavelength (illuminant)			
• Measuring laser	905 nm, IR, invisible, class 1		
• Pilot laser	650 nm, red, visible, class 2		
Displays			
• Switching status	Green LED		
• Operating voltage	Yellow LED	2 yellow LEDs	
• Operating mode	Orange LED		
Adjustment menu	-	4 red LEDs	
Enclosure material	Plastic (ABS)		
Degree of protection	IP67		
Ambient temperature during operation	-20 °C ... +50 °C		
Ambient temperature during storage	-40 °C ... +80 °C		
Temperature coefficient	0.3 %/K		
Type	6GR1654-3AD20	6GR1654-3CH20	6GR1654-3CH21

# Opto Proximity Switches

## SIMATIC PXO600

### SIMATIC PXO650 L90L

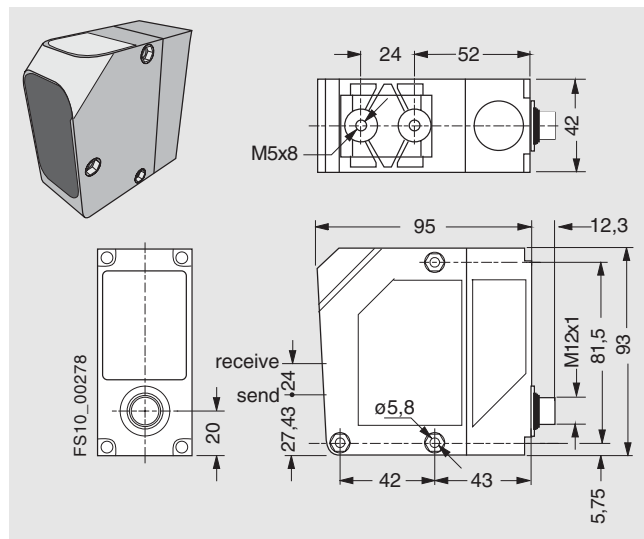
#### Selection and Ordering data

	Sensing range	Wiring	Switching output	Analog output	Ckt. diag. No.	Order No.
	m					
	0.2 ... 6	M12 plug, 4-pole, type F	1 x light-ON or dark-ON	-	pn p	12 A <b>6GR1654-3AD20</b>
	0.2 ... 6	M12 plug, 5-pole, type F	2 x light-ON or dark-ON	yes	pn p	19 A <b>6GR1654-3CH20</b>
	0.2 ... 30	M12 plug, 5-pole, type G	2 x light-ON or dark-ON	yes	pn p	19 A <b>6GR1654-3CH21</b>

SIMATIC PXO560  
L90L

A: Subject to export regulations: AL = N and ECCN = EAR99H

#### Dimensions



### Overview

- Fork sensor for detecting small objects.
- Molded plastic enclosure with screw-on or dovetail fastening.
  - Wired with 3 or 4-pole M8 connector.
  - 4 different fork widths:
    - GL30 = 30 mm
    - GL50 = 50 mm
    - GL80 = 80 mm
    - GL120 = 120 mm
  - Rated operating voltage 24 V DC.
  - Solid-state output pnp.
  - NO or NC contact, adjustable via "teach-in".
  - Versions with external "teach-in".

### Technical specifications

	PXO830 GL30	PXO830 GL50	PXO830 GL80	PXO830 GL120
Operating mode	Thru-beam sensor			
Fork width	30 mm	50 mm	80 mm	120 mm
Operating voltage range	10 ... 30 V DC			
No-load supply current $I_0$ , max.	30 mA			
Rated operating current $I_e$	100 mA			
Switching frequency	200 Hz			
Wavelength (illuminant)	640 nm (red, visible)			
Switching status indicators	4 yellow LEDs			
Enclosure material	Plastic (ABS)			
Degree of protection	IP67			
Ambient temperature				
• During operation	-20 °C ... +60 °C			
• During storage	-20 °C ... +80 °C			
Temperature coefficient	0.3 %/K			
Type	6GR1802-....	6GR1804-....	6GR1806-....	6GR1808-....



# Opto Proximity Switches

## SIMATIC PXO800

### SIMATIC PXO830 GL

#### Selection and Ordering data

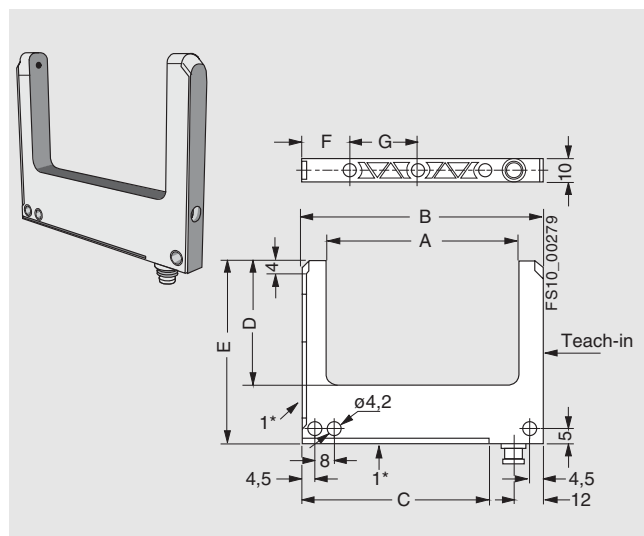
Fork width	Wiring	Switching output	External "teach-in"	Ckt. diag. No.	Order No.
mm					
30	M8 plug, 3-pole, type A	Light-ON or dark-ON	pnp -	1	A <b>6GR1802-7AD00</b>
30	M8 plug, 4-pole, type B	Light-ON or dark-ON	pnp yes	14	A <b>6GR1802-7BD05</b>
50	M8 plug, 3-pole, type A	Light-ON or dark-ON	pnp -	1	A <b>6GR1804-7AD00</b>
50	M8 plug, 4-pole, type B	Light-ON or dark-ON	pnp yes	14	A <b>6GR1804-7BD05</b>
80	M8 plug, 3-pole, type A	Light-ON or dark-ON	pnp -	1	A <b>6GR1806-7AD00</b>
80	M8 plug, 4-pole, type B	Light-ON or dark-ON	pnp yes	14	A <b>6GR1806-7BD05</b>
120	M8 plug, 3-pole, type A	Light-ON or dark-ON	pnp -	1	A <b>6GR1808-7AD00</b>
120	M8 plug, 4-pole, type B	Light-ON or dark-ON	pnp yes	14	A <b>6GR1808-7BD05</b>



SIMATIC PXO830 GL

A: Subject to export regulations: AL = N and ECCN = EAR99H

#### Dimensions



All dimensions in mm

MLFB	A Fork width	B	C	D	E	F	G
<b>6GR1802</b>	<b>30</b>	50	30	34	59,5	20	
<b>6GR1804</b>	<b>50</b>	70	50	54	79,5	20	28
<b>6GR1806</b>	<b>80</b>	100	80	54	79,5	20	2 x 28
<b>6GR1808</b>	<b>120</b>	140	120	54	79,5	20	3 x 28