

OPTICAL SENSORS

Square



p·u·l·s·o·t·r·o·n·i·c

About us

In the traditional and strive industry region Chemnitz-Zwickau, directly at the freeway A72 you will find the new location of the Pulsotronic GmbH & Co.KG.

As a worldwide active company we develop and produce according to ISO 9001 proximity switches and electronic components for the following product ranges:

- > Inductive and Capacitive Sensors
- > Metal separation and Metal detection
- > Picture Processing
- > Optical Sensors
- > Magnetoresistive Sensors
- > Laser Systems
- > Colour Detection
- > Ultrasonic Sensors
- > X-Ray- Scanner

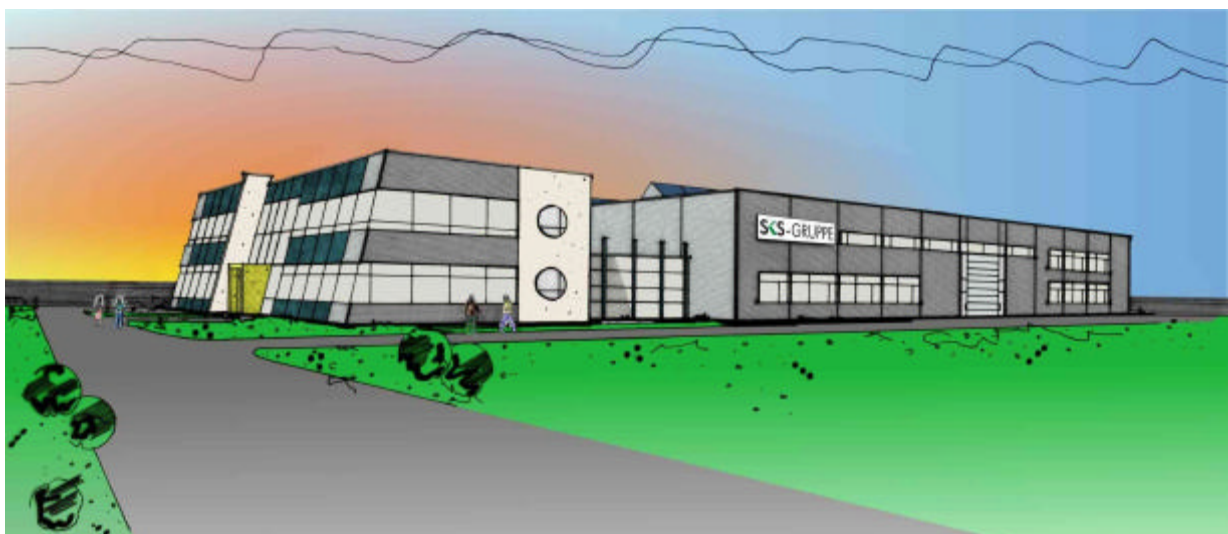
We guarantee customized solutions by our high-performance profile in the area. The available wide palette of key technologies is an ideal condition for the realization of your application.

You find the Pulsotronic everywhere there, where are to set standards and to solve task positions on the far side of well known standing types.

With innovation and individualism our competent team will advise also on place to solve your problem.

Demand us, than you will also find out:

„Pulsotronic - Here is the solution.“



Optic Sensors

Description of the typekey

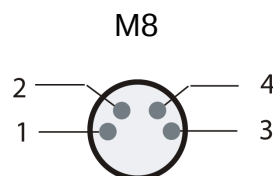
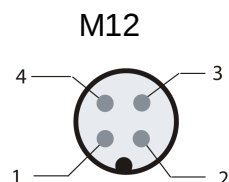
Expl.:	MP-D	0300	D-	C	X	9	C	3	U	2-	PD
											PF Polarizing Filter BS Background Suppression L Translucent Material Detector PD Plastic Detection N Narrow Light K Mark Sensor For Fiber Optic Mode 1 Light Spot Size 1x1mm 4 Light Spot Size 4x4mm S Cable Connection Swivel 90°
											2 Cable Length 2 m 9 Cable Length 9 m P M8 Connector E M12 Connector
											U With Short Circuit Protection L Without Short Circuit Protection
											3 Cable/Connector 3-pol. 4 Cable/Connector 4-pol. 5 Cable/Connector 5-pol. 8 Cable/Connector 8-pol.
											C Cable Q Connector T Terminal
											5 Green Light 6 Red Light 9 Infrared Light
											X Axial Z Radial
											C Light / Dark Changeover L Light D Dark E Emitter
											D PNP+NPN N NPN P PNP A AC R Relay Contact Output
											0016 Sensing Distance 16 mm 0300 Sensing Distance 300 mm 020M Sensing Distance 20m
											T Opposed Mode D Diffuse Mode L Retro - Reflectiv Mode C Convergent Mode S Clear Object Detector M Mark Sensor Mode F Fiber - Optic A Amplifier Mode

MP Series Style MP

Optical Sensors - Connection diagrams

Circuit diagram for:	for Series:	Connection assignment
DC NPN	UP; M12; M30	
DC PNP	UP; M12; M30	
DC NPN/PNP	MP; EP	
DC NPN light/dark switchable	RP64; M18	
DC PNP light/dark switchable	RP64; M18	
DC NPN/PNP light/dark switchable	RP64	
DC emitter	MP; EP; UP; M30	
DC emitter with test-output	RP64; M12; M18	
AC/DC with relayoutput	RS62	
AC/DC emitter	RS62	

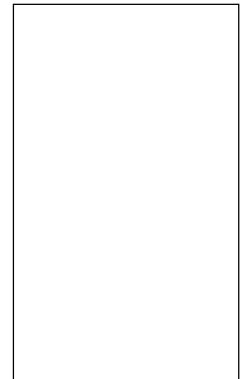
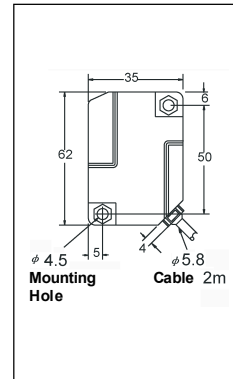
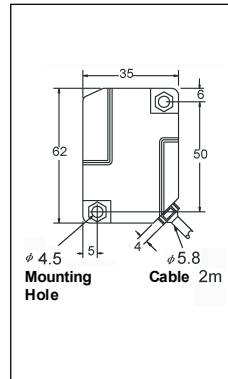
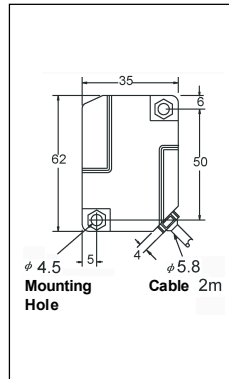
Connector pin assignment



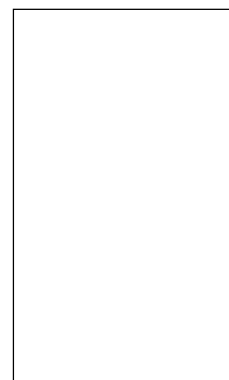
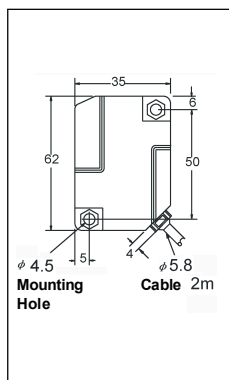
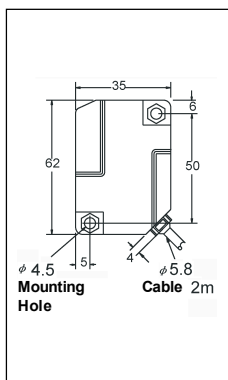
p-u-l-s-o-t-r-o-n-i-c



*** with Polarizing Filter**



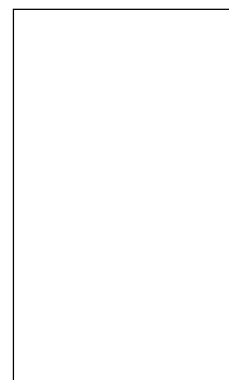
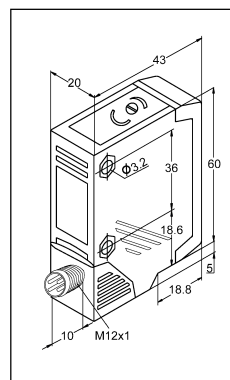
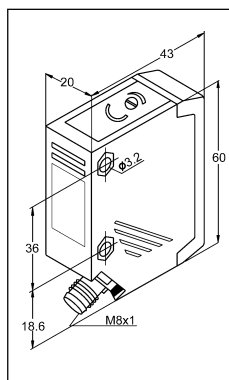
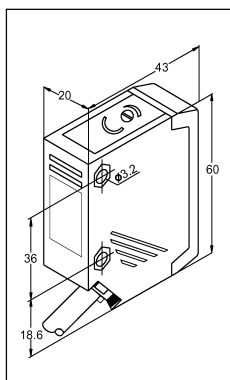
Mode Of Operation	IR Diffuse Mode	Retroreflective Mode*	Retroreflective Mode	
Sensing Distance	700,0 mm	5,0 m	7,0 m	
Emitter	Type	Type	Type	
Relay Light	RS62-D0700R-LY9C5L2	RS62-L5000R-LY6C5L2-PF	RS62-L7000R-LY9C5L2	
Relay Dark	RS62-D0700R-DY9C5L2	RS62-L5000R-DY6C5L2-PF	RS62-L7000R-DY9C5L2	
Light	Infrared Light 880 nm	Red Light 650 nm	Infrared Light 880 nm	
Operating Voltage U_b	12-240 VDC/24-240VAC	12-240 VDC/24-240VAC	12-240 VDC/24-240VAC	
Unblinking / Blanking	Light On / Dark On	Light On / Dark On	Dark On	
Max. Output Current I_e	2A (DC) / 1A (AC)	2A (DC) / 1A (AC)	2A (DC) / 1A (AC)	
Idle Current I_o	---	---	---	
Hysteresis H	---	---	---	
Switching Freq. / Response Time	--- / < 10 ms	--- / < 10 ms	--- / < 10 ms	
Ambient Temperature	-20 °C ... + 55 °C	-20 °C ... + 55 °C	-25 °C ... + 55 °C	
Ambient Light	---	---	---	
Halogen Light	3.000 Lux	3.000 Lux	3.000 Lux	
Sun Light	11.000 Lux	11.000 Lux	11.000 Lux	
Sensitivity Adjustable	Yes	Yes	Yes	
Output Digital	250VAC/1A 30VDC/2A	250VAC/1A 30VDC/2A	250VAC/1A 30VDC/2A	
Output Analog	---	---	---	
LED - Indicator	Yes	Yes	Yes	
Size	Square 62x35x18	Square 62x35x18	Square 62x35x18	
Housing Material	ABS	ABS	ABS	
Material Light Outlet	Polycarbonate	Polycarbonate	Polycarbonate	
Protection Class	IP 66	IP 66	IP 66	
EMC-Standard	EN 60947-5-2	EN 60947-5-2	EN 60947-5-2	
Termination	Cable, 2m	Cable, 2m	Cable, 2m	



Mode Of Operation	RL Opposed Mode	IR Opposed Mode		
Sensing Distance	10,0 m	30,0 m		
	Type	Type		
Emitter	RS62-T010MD-EY6C2L2	RS62-T030MD-EY9C2L2		
Relay Light	RS62-T010MR-LY6C5L2	RS62-T030MR-LY9C5L2		
Relay Dark	RS62-T010MR-DY6C5L2	RS62-T030MR-DY9C5L2		
Light	Red Light 650 nm	Infrared Light 880 nm		
Operating Voltage U_b	12-240 VDC/24-240VAC	12-240 VDC/24-240VAC		
Unblanking / Blanking	Light On / Dark On	Light On / Dark On		
Max. Output Current I_e	2A (DC) / 1A (AC)	2A (DC) / 1A (AC)		
Idle Current I_o	---	---		
Hysteresis H	---	---		
Switching Freq. / Response Time	--- / < 10 ms	--- / < 10 ms		
Ambient Temperature	-20 °C ... + 55 °C	-20 °C ... + 55 °C		
Ambient Light	---	---		
Halogen Light	3.000 Lux	3.000 Lux		
Sun Light	11.000 Lux	11.000 Lux		
Sensitivity Adjustable	Yes	Yes		
Output Digital	250VAC/1A 30VDC/2A	250VAC/1A 30VDC/2A		
Output Analog	---	---		
LED - Indicator	Yes	Yes		
Size	Square 62x35x18	Square 62x35x18		
Housing Material	ABS	ABS		
Material Light Outlet	Polycarbonate	Polycarbonate		
Protection Class	IP 66	IP 66		
EMC-Standard	EN 60947-5-2	EN 60947-5-2		
Termination	Cable, 2m	Cable, 2m		



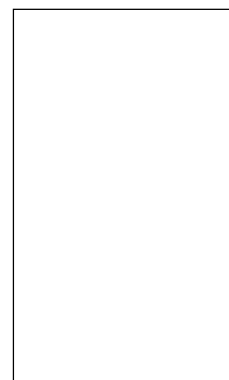
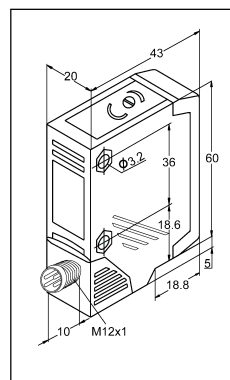
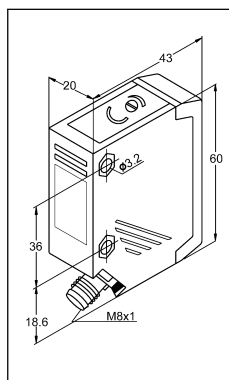
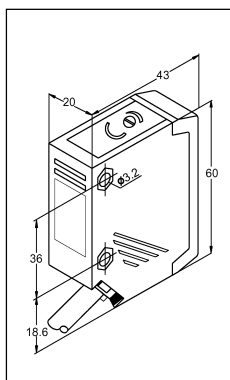
**With
Background Suppression**



Mode Of Operation		RL Diffuse Mode	RL Diffuse Mode	RL Diffuse Mode	
Sensing Distance		300,0 mm	300,0 mm	300,0 mm	
		Type	Type	Type	
NPN Light / Dark		RP64-D0300N-CY6C4U2-BS	RP64-D0300N-CY6Q4UP-BS	RP64-D0300N-CY6Q4UE-SB	
PNP Light / Dark		RP64-D0300P-CY6C4U2-BS	RP64-D0300P-CY6Q4UP-BS	RP64-D0300P-CY6Q4UE-SB	
NPN/PNP Light / Dark		RP64-D0300D-CY6C5U2-BS	RP64-D0300D-CY6Q5UP-BS	RP64-D0300D-CY6Q5UE-SB	
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	
Unblanking / Blanking		Light On / Dark On	Light On / Dark On	Light On / Dark On	
Max. Output Current	I_e	100 mA	100 mA	100 mA	
Idle Current	I_o	< 35 mA	< 35 mA	< 35 mA	
Hysteresis	H	---	---	---	
Switching Freq. / Response Time		33 Hz / < 15 ms	33 Hz / < 15 ms	33 Hz / < 15 ms	
Ambient Temperature		-25 °C ... + 55 °C	-25 °C ... + 55 °C	-25 °C ... + 55 °C	
Ambient Light		---	---	---	
Halogen Light		---	---	---	
Sun Light		---	---	---	
Sensitivity Adjustable		With Potentiometer	With Potentiometer	With Potentiometer	
Output Digital		Depends On Type	Depends On Type	Depends On Type	
Output Analog		---	---	---	
LED - Indicator		Yes	Yes	Yes	
Size		Square 60x20x43	Square 60x20x43	Square 60x20x43	
Housing Material		PBT	PBT	PBT	
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	Connector M12	



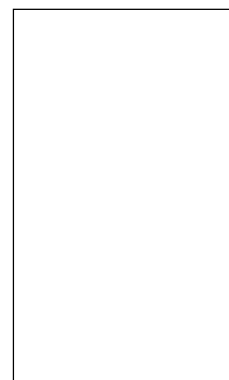
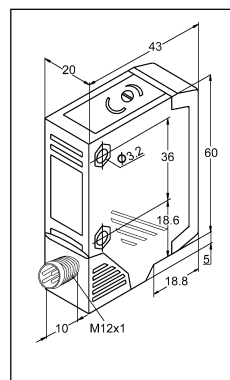
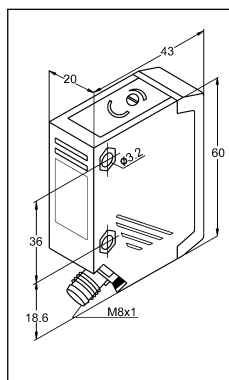
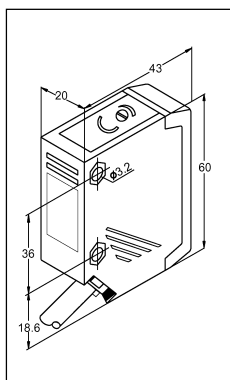
**With
Background Suppression**



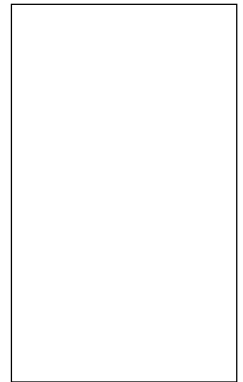
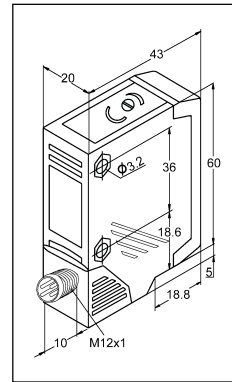
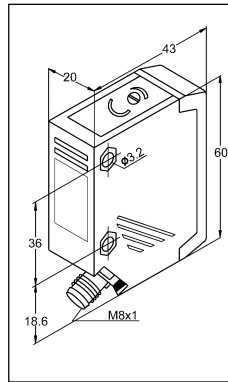
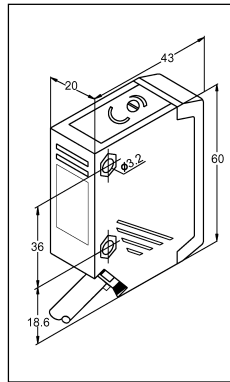
Mode Of Operation	RL Diffuse Mode	RL Diffuse Mode	RL Diffuse Mode	
Sensing Distance	500,0 mm	500,0 mm	500,0 mm	
	Type	Type	Type	
NPN Light / Dark	RP64-D0500N-CY6C4U2-BS	RP64-D0500N-CY6Q4UP-BS	RP64-D0500N-CY6Q4UE-SB	
PNP Light / Dark	RP64-D0500P-CY6C4U2-BS	RP64-D0500P-CY6Q4UP-BS	RP64-D0500P-CY6Q4UE-SB	
NPN/PNP Light / Dark	RP64-D0500D-CY6C5U2-BS	RP64-D0500D-CY6Q5UP-BS	RP64-D0500D-CY6Q5UE-SB	
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	
Unblanking / Blanking	Light On / Dark On	Light On / Dark On	Light On / Dark On	
Max. Output Current I_e	100 mA	100 mA	100 mA	
Idle Current I_0	< 35 mA	< 35 mA	< 35 mA	
Hysteresis H	---	---	---	
Switching Freq. / Response Time	33 Hz / < 15 ms	33 Hz / < 15 ms	33 Hz / < 15 ms	
Ambient Temperature	-25 °C ... + 55 °C	-25 °C ... + 55 °C	-25 °C ... + 55 °C	
Ambient Light	---	---	---	
Halogen Light	---	---	---	
Sun Light	---	---	---	
Sensitivity Adjustable	With Potentiometer	With Potentiometer	With Potentiometer	
Output Digital	Depends On Type	Depends On Type	Depends On Type	
Output Analog	---	---	---	
LED - Indicator	Yes	Yes	Yes	
Size	Square 60x20x43	Square 60x20x43	Square 60x20x43	
Housing Material	PBT	PBT	PBT	
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	Connector M12	



With Polarizing Filter



Mode Of Operation	Retroreflective Mode			
Sensing Distance	13,0 m			
	Type	Type	Type	
NPN Light / Dark	RP64-L013MN-CY6C4U2-PF	RP64-L013MN-CY6Q4U2-PF	RP64-L013MN-CY6Q4UE-PS	
PNP Light / Dark	RP64-L013MP-CY6C4U2-PF	RP64-L013MP-CY6Q4U2-PF	RP64-L013MP-CY6Q4UE-PS	
NPN/PNP Light / Dark	RP64-L013MD-CY6C5U2-PF	RP64-L013MD-CY6Q5U2-PF	RP64-L013MD-CY6Q5UE-PS	
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	
Unblanking / Blanking	Light On / Dark On	Light On / Dark On	Light On / Dark On	
Max. Output Current I_e	100 mA	100 mA	100 mA	
Idle Current I_0	< 35 mA	< 35 mA	< 35 mA	
Hysteresis H	---	---	---	
Switching Freq. / Response Time	700 Hz / < 0,7 ms	700 Hz / < 0,7 ms	700 Hz / < 10,7 ms	
Ambient Temperature	-25 °C ... + 55 °C	-25 °C ... + 55 °C	-25 °C ... + 55 °C	
Ambient Light	---	---	---	
Halogen Light	---	---	---	
Sun Light	---	---	---	
Sensitivity Adjustable	With Potentiometer	With Potentiometer	With Potentiometer	
Output Digital	Depends On Type	Depends On Type	Depends On Type	
Output Analog	---	---	---	
LED - Indicator	Yes	Yes	Yes	
Size	Square 60x20x43	Square 60x20x43	Square 60x20x43	
Housing Material	PBT	PBT	PBT	
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	Connector M12	



Mode Of Operation
Sensing Distance

RL Opposed Mode
22,0 m

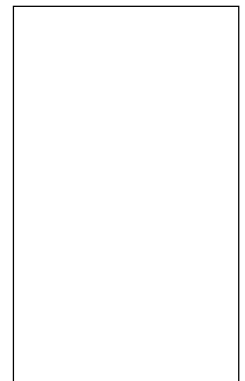
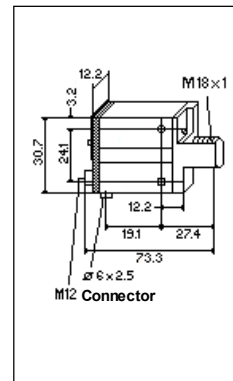
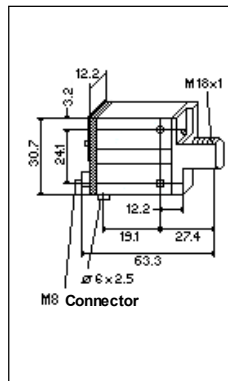
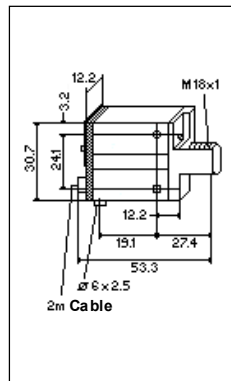
RL Opposed Mode
22,0 m

RL Opposed Mode
22,0 m

	Type	Type	Type	
Emitter	RP64-T022MD-EY6C3L2	RP64-T022MD-EY6Q4LP	RP64-T022MD-EY6Q4LE-S	
NPN Light / Dark	RP64-T022MN-CY6C4U2	RP64-T022MN-CY6Q4UP	RP64-T022MN-CY6Q4UE-S	
PNP Light / Dark	RP64-T022MP-CY6C4U2	RP64-T022MP-CY6Q4UP	RP64-T022MP-CY6Q4UE-S	
NPN/PNP Light / Dark	RP64-T022MD-CY6C5U2		RP64-T022MD-CY6Q5UE-S	
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	
Unblanking / Blanking	Light On / Dark On	Light On / Dark On	Light On / Dark On	
Max. Output Current I_e	100 mA	100 mA	100 mA	
Idle Current I_o	< 35 mA	< 35 mA	< 35 mA	
Hysteresis H	---	---	---	
Switching Freq. / Response Time	33 Hz / < 15 ms	33 Hz / < 15 ms	33 Hz / < 15 ms	
Ambient Temperature	-25 °C ... + 55 °C	-25 °C ... + 55 °C	-25 °C ... + 55 °C	
Ambient Light	---	---	---	
Halogen Light	---	---	---	
Sun Light	---	---	---	
Sensitivity Adjustable	With Potentiometer	With Potentiometer	With Potentiometer	
Output Digital	Depends On Type	Depends On Type	Depends On Type	
Output Analog	---	---	---	
LED - Indicator	Yes	Yes	Yes	
Size	Square 60x20x43	Square 60x20x43	Square 60x20x43	
Housing Material	PBT	PBT	PBT	
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	Connector M12	



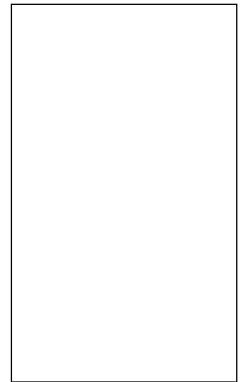
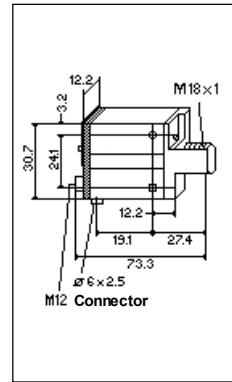
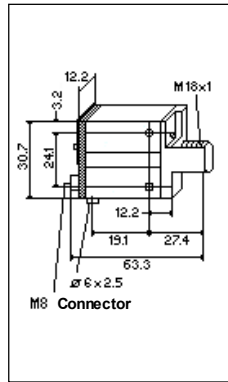
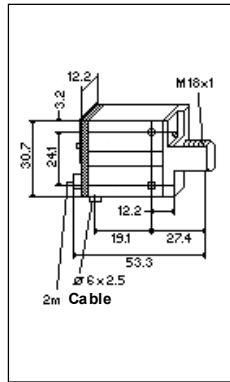
With Convergent Mode



Mode Of Operation	IR Convergent Mode	IR Convergent Mode	IR Convergent Mode	
Sensing Distance	16,0 mm	16,0 mm	16,0 mm	
Type	Type	Type	Type	
NPN/PNP Light / Dark	MP-C0016D-CX9C4U2	MP-C0016D-CX9Q4UP	MP-C0016D-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	
Unblanking / Blanking	Light On / Dark On	Light On / Dark On	Light On Dark On	
Max. Output Current I_e	150 mA	150 mA	150 mA	
Idle Current I_0	< 25 mA	< 25 mA	< 25 mA	
Hysteresis H	---	---	---	
Switching Freq. / Response Time	--- / 1 ms	--- / 1 ms	--- / 1 ms	
Ambient Temperature	-20 °C ... + 70 °C	-20 °C ... + 70 °C	-20 °C ... + 70 °C	
Ambient Light	---	---	---	
Halogen Light	---	---	---	
Sun Light	---	---	---	
Sensitivity Adjustable	Yes	Yes	Yes	
Output Digital	Receiver NPN/PNP	Receiver NPN/PNP	Receiver NPN/PNP	
Output Analog	---	---	---	
LED - Indicator	Yes	Yes	Yes	
Size	Square 31x12x53	Square 31x12x63	Square 31x12x73	
Housing Material	PBT	PBT	PBT	
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	Connector M12	



With Convergent Mode



Mode Of Operation

Sensing Distance

GL Convergent Mode

16,0 mm

GL Convergent Mode

16,0 mm

GL Convergent Mode

16,0 mm

NPN/PNP Light / Dark

MP-C0016D-CX5C4U2

MP-C0016D-CX5Q4UP

MP-C0016D-CX5Q4UE

Light

Green Light 525 nm

Green Light 525 nm

Green Light 525 nm

Operating Voltage U_b

10 - 30 V DC

10 - 30 V DC

10 - 30 V DC

Unblanking / Blanking

Light On / Dark On

Light On / Dark On

Light On / Dark On

Max. Output Current I_e

150 mA

150 mA

150 mA

Idle Current I_0

< 25 mA

< 25 mA

< 25 mA

Hysteresis H

Switching Freq. / Response Time

--- / 1 ms

--- / 1 ms

--- / 1 ms

Ambient Temperature

-20 °C ... + 70 °C

-20 °C ... + 70 °C

-20 °C ... + 70 °C

Ambient Light

Halogen Light

Sun Light

Sensitivity Adjustable

Yes

Yes

Yes

Output Digital

NPN/PNP

NPN/PNP

NPN/PNP

Output Analog

LED - Indicator

Yes

Yes

Yes

Size

Square 31x12x53

Square 31x12x63

Square 31x12x73

Housing Material

PBT

PBT

PBT

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

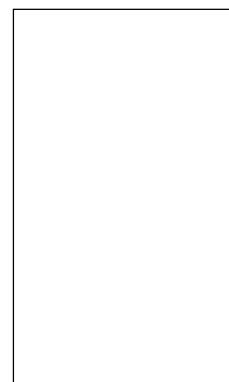
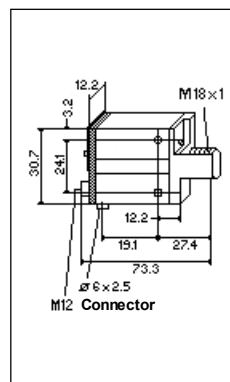
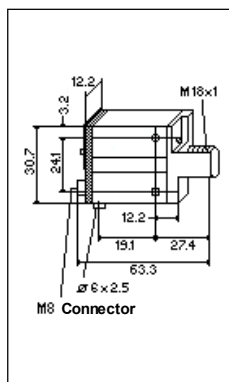
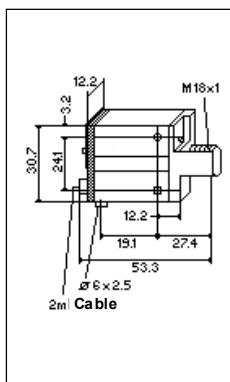
Cable, 2m

Connector M8

Connector M12



With Convergent Mode



Mode Of Operation

Sensing Distance

GL Convergent Mode

16,0 mm

GL Convergent Mode

16,0 mm

GL Convergent Mode

16,0 mm

NPN/PNP Light / Dark

MP-C0016D-CX6C4U2

MP-C0016D-CX6Q4UP

MP-C0016D-CX6Q4UE

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

Unblanking / Blanking

Light On / Dark On

Light On / Dark On

Light On / Dark On

Max. Output Current I_e

150 mA

150 mA

150 mA

Idle Current I_0

< 25 mA

< 25 mA

< 25 mA

Hysteresis H

Switching Freq. / Response Time

--- / 1 ms

--- / 1 ms

--- / 1 ms

Ambient Temperature

-20 °C ... + 70 °C

-20 °C ... + 70 °C

-20 °C ... + 70 °C

Ambient Light

Halogen Light

Sun Light

Sensitivity Adjustable

Yes

Yes

Yes

Output Digital

NPN/PNP

NPN/PNP

NPN/PNP

Output Analog

LED - Indicator

Yes

Yes

Yes

Size

Square 31x12x53

Square 31x12x63

Square 31x12x73

Housing Material

PBT

PBT

PBT

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

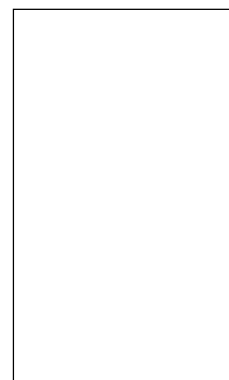
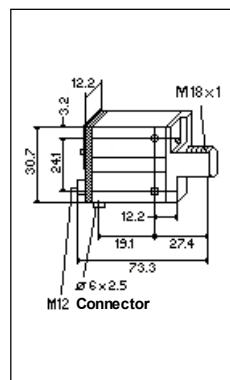
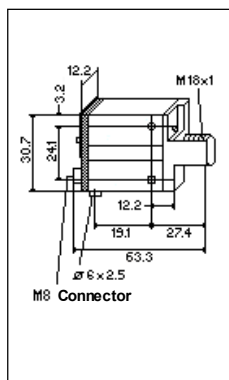
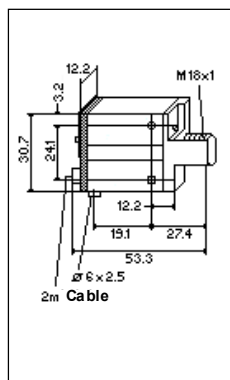
Connector M8

Connector M12

p.u.l.s-o-t-r-o-n-i-c



With Convergent Mode



Mode Of Operation

IR Convergent Mode

IR Convergent Mode

IR Convergent Mode

Sensing Distance

43,0 mm

43,0 mm

43,0 mm

Type

Type

Type

NPN/PNP Light / Dark

MP-C0043D-CX9C4U2

MP-C0043D-CX9Q4UP

MP-C0043D-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

Unblanking / Blanking

Light On / Dark On

Light On / Dark On

Light On / Dark On

Max. Output Current I_e

150 mA

150 mA

150 mA

Idle Current I_0

< 25 mA

< 25 mA

< 25 mA

Hysteresis H

Switching Freq. / Response Time

--- / 1 ms

--- / 1 ms

--- / 1 ms

Ambient Temperature

-20 °C ... + 70 °C

-20 °C ... + 70 °C

-20 °C ... + 70 °C

Ambient Light

Halogen Light

Sun Light

Sensitivity Adjustable

Yes

Yes

Yes

Output Digital

NPN/PNP

NPN/PNP

NPN/PNP

Output Analog

LED - Indicator

Yes

Yes

Yes

Size

Square 31x12x53

Square 31x12x63

Square 31x12x73

Housing Material

PBT

PBT

PBT

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

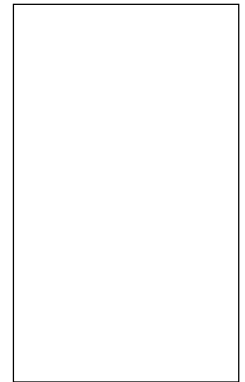
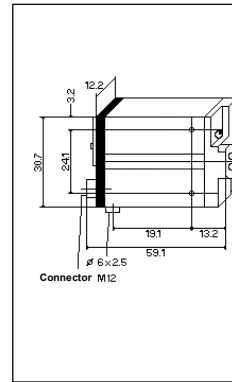
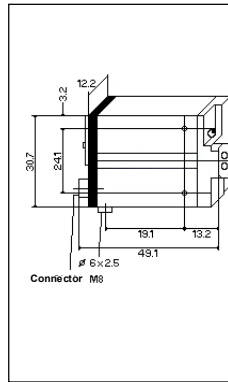
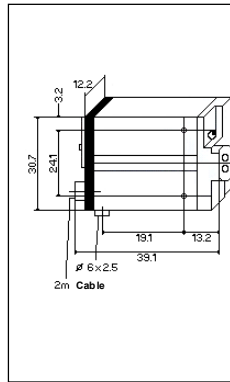
Cable, 2m

Connector M8

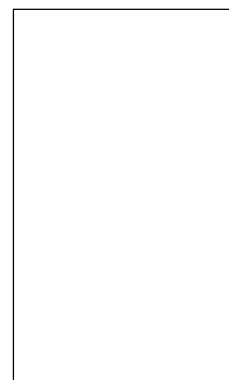
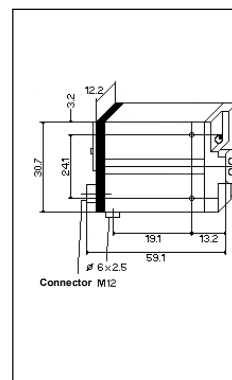
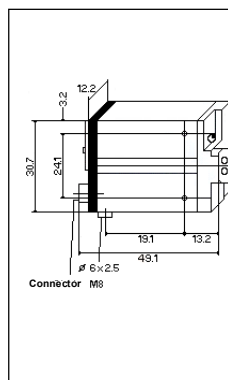
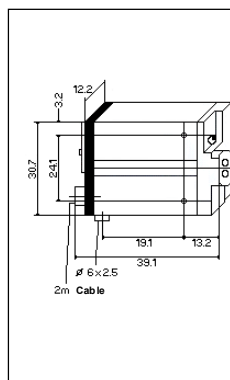
Connector M12



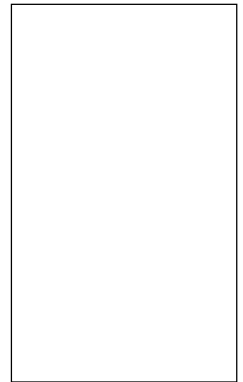
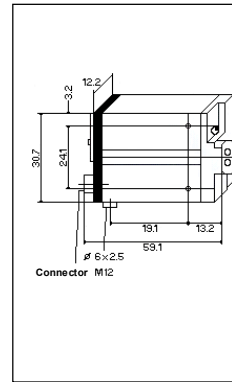
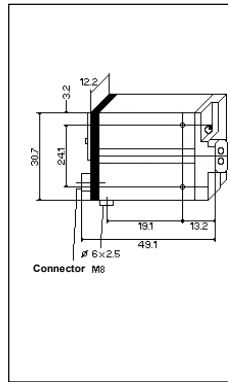
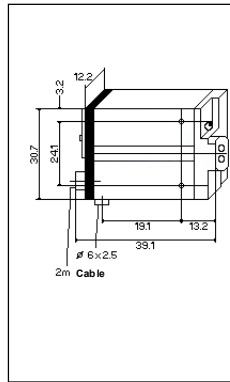
With Convergent Mode



Mode Of Operation	IR Convergent Mode	IR Convergent Mode	IR Convergent Mode	
Sensing Distance	43,0 mm	43,0 mm	43,0 mm	
	Type	Type	Type	
NPN/PNP Light / Dark	MP-C0043D-CX6C4U2	MP-C0043D-CX6Q4UP	MP-C0043D-CX6Q4UE	
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_e	150 mA	150 mA	150 mA	
Idle Current I_0	< 25 mA	< 25 mA	< 25 mA	
Hysteresis H	---	---	---	
Switching Freq. / Response Time	--- / 1 ms	--- / 1 ms	--- / 1 ms	
Ambient Temperature	-20 °C ... + 70 °C	-20 °C ... + 70 °C	-20 °C ... + 70 °C	
Ambient Light	---	---	---	
Halogen Light	---	---	---	
Sun Light	---	---	---	
Sensitivity Adjustable	Yes	Yes	Yes	
Output Digital	NPN/PNP	NPN/PNP	NPN/PNP	
Output Analog	---	---	---	
LED - Indicator	Yes	Yes	Yes	
Size	Square 31x12x53	Square 31x12x63	Square 31x12x73	
Housing Material	PBT	PBT	PBT	
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	Connector M12	



Mode Of Operation		IR Diffuse Mode	IR Diffuse Mode	IR Diffuse Mode	
Sensing Distance		130,0 mm	130,0 mm	130,0 mm	
		Type	Type	Type	
NPN/PNP Light / Dark		MP-D0130D-CX9C4U2	MP-D0130D-CX9Q4UP	MP-D0130D-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	
Unblanking / Blanking		Light On / Dark On	Light On / Dark On	Light On / Dark On	
Max. Output Current	I_e	150 mA	150 mA	150 mA	
Idle Current	I_0	< 25 mA	< 25 mA	< 25 mA	
Hysteresis	H	---	---	---	
Switching Freq. / Response Time		--- / 1 ms	--- / 1 ms	--- / 1 ms	
Ambient Temperature		-20 °C ... + 70 °C	-20 °C ... + 70 °C	-20 °C ... + 70 °C	
Ambient Light		---	---	---	
Halogen Light		---	---	---	
Sun Light		---	---	---	
Sensitivity Adjustable		Yes	Yes	Yes	
Output Digital		NPN/PNP	NPN/PNP	NPN/PNP	
Output Analog		---	---	---	
LED - Indicator		Yes	Yes	Yes	
Size		Square 31x12x39	Square 31x12x49	Square 31x12x59	
Housing Material		PBT	PBT	PBT	
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	Connector M12	



Mode Of Operation
Sensing Distance

IR Diffuse Mode
300,0 mm

IR Diffuse Mode
300,0 mm

IR Diffuse Mode
300,0 mm

NPN/PNP Light / Dark

Type
MP-D0300D-CX9C4U2

Type
MP-D0300D-CX9Q4UP

Type
MP-D0300D-CX9Q4UE

Light

Infrared Light 880 nm

Infrared Light 880 nm

Infrared Light 880 nm

Operating Voltage U_b
Unblanking / Blanking
Max. Output Current I_e
Idle Current I_0

10 - 30 V DC
Light On / Dark On
150 mA
< 25 mA

10 - 30 V DC
Light On / Dark On
150 mA
< 25 mA

10 - 30 V DC
Light On / Dark On
150 mA
< 25 mA

Hysteresis H

Switching Freq. / Response Time

--- / 1 ms

--- / 1 ms

--- / 1 ms

Ambient Temperature

-20 °C ... + 70 °C

-20 °C ... + 70 °C

-20 °C ... + 70 °C

Ambient Light

Halogen Light

Sun Light

Sensitivity Adjustable

Yes

Yes

Yes

Output Digital

NPN/PNP

NPN/PNP

NPN/PNP

Output Analog

LED - Indicator

Yes

Yes

Yes

Size

Square 31x12x39

Square 31x12x49

Square 31x12x59

Housing Material

PBT

PBT

PBT

Material Light Outlet

Protection Class

IP 67

IP 67

IP 67

EMC-Standard

EN 60947-5-2

EN 60947-5-2

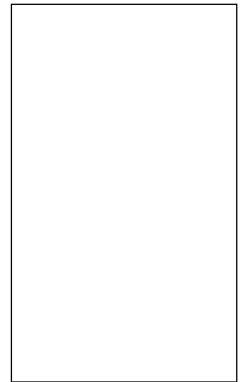
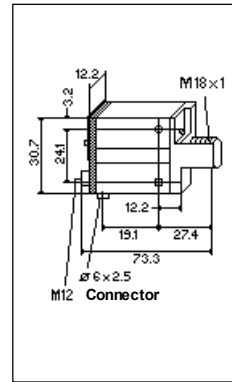
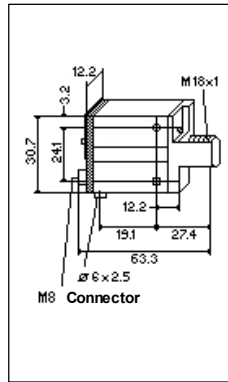
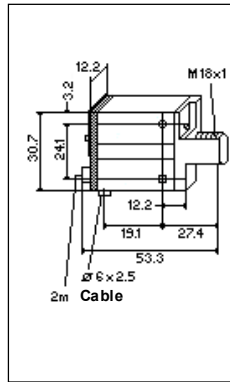
EN 60947-5-2

Termination

Cable, 2m

Connector M8

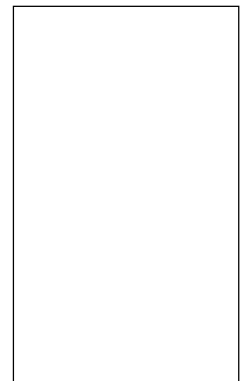
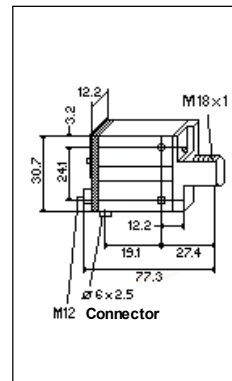
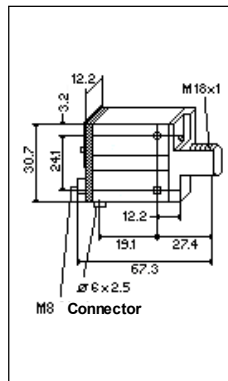
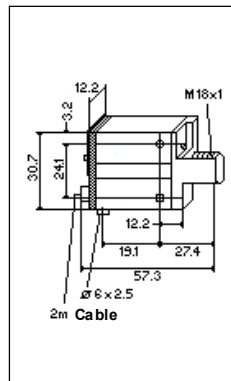
Connector M12



Mode Of Operation		IR Diffuse Mode	IR Diffuse Mode	IR Diffuse Mode	
Sensing Distance		380,0 mm	380,0 mm	380,0 mm	
		Type	Type	Type	
NPN/PNP Light / Dark		MP-D0380D-CX9C4U2	MP-D0380D-CX9Q4UP	MP-D0380D-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	
Unblanking / Blanking		Light On / Dark On	Light On / Dark On	Light On / Dark On	
Max. Output Current	I_e	150 mA	150 mA	150 mA	
Idle Current	I_0	< 25 mA	< 25 mA	< 25 mA	
Hysteresis	H	---	---	---	
Switching Freq. / Response Time		--- / 1 ms	--- / 1 ms	--- / 1 ms	
Ambient Temperature		-20 °C ... + 70 °C	-20 °C ... + 70 °C	-20 °C ... + 70 °C	
Ambient Light		---	---	---	
Halogen Light		---	---	---	
Sun Light		---	---	---	
Sensitivity Adjustable		Yes	Yes	Yes	
Output Digital		NPN/PNP	NPN/PNP	NPN/PNP	
Output Analog		---	---	---	
LED - Indicator		Yes	Yes	Yes	
Size		Square 31x12x53	Square 31x12x63	Square 31x12x73	
Housing Material		PBT	PBT	PBT	
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	Connector M12	



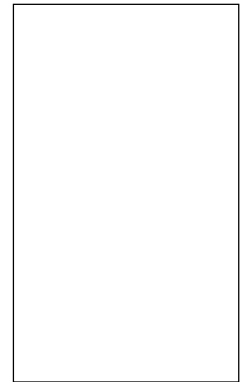
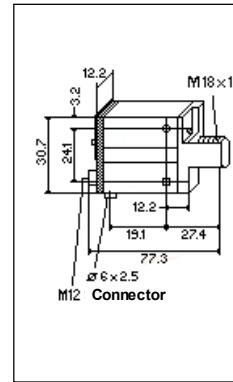
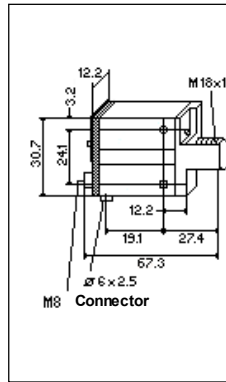
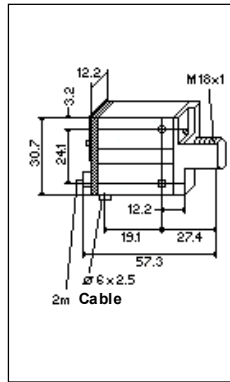
Glass - Fibre - Optic Device



Mode Of Operation	IR Diffuse Mode	IR Diffuse Mode	IR Diffuse Mode	
Sensing Distance	Depends On Fibre - Optic	Depends On Fibre - Optic	Depends On Fibre - Optic	
	Type	Type	Type	
NPN/PNP Light / Dark	MP-DGFD-CX9C4U2	MP-DGFD-CX9Q4UP	MP-DGFD-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	
Unblanking / Blanking	Light On / Dark On	Light On / Dark On	Light On / Dark On	
Max. Output Current I_e	150 mA	150 mA	150 mA	
Idle Current I_0	< 25 mA	< 25 mA	< 25 mA	
Hysteresis H	---	---	---	
Switching Freq. / Response Time	--- / 1 ms	--- / 1 ms	--- / 1 ms	
Ambient Temperature	-20 °C ... + 70 °C	-20 °C ... + 70 °C	-20 °C ... + 70 °C	
Ambient Light	---	---	---	
Halogen Light	---	---	---	
Sun Light	---	---	---	
Sensitivity Adjustable	Yes	Yes	Yes	
Output Digital	NPN/PNP	NPN/PNP	NPN/PNP	
Output Analog	---	---	---	
LED - Indicator	Yes	Yes	Yes	
Size	Square 31x12x57	Square 31x12x67	Square 31x12x77	
Housing Material	PBT	PBT	PBT	
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	Connector M12	



Glass - Fibre - Optic Device

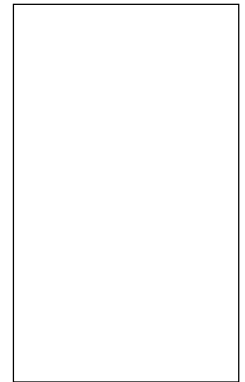
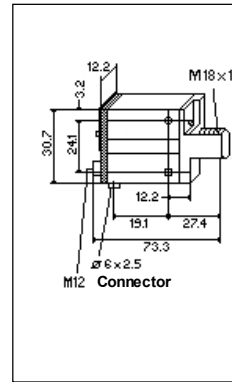
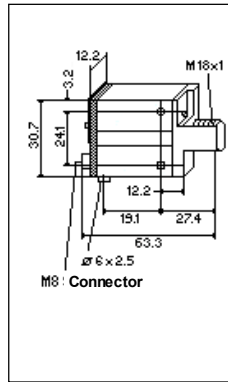
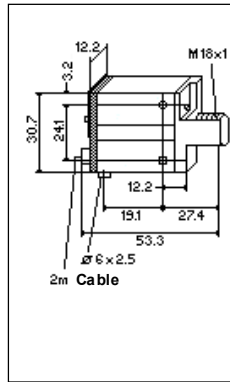


Mode Of Operation	RL Diffuse Mode	RL Diffuse Mode	RL Diffuse Mode	
Sensing Distance	Depends On Fibre - Optic	Depends On Fibre - Optic	Depends On Fibre - Optic	
	Type	Type	Type	
NPN/PNP Light / Dark	MP-DGFD-CX6C4U2	MP-DGFD-CX6Q4UP	MP-DGFD-CX6Q4UE	
Light	Red Light 650 nm	Red Light 650 nm	Red Light 650 nm	
Operating Voltage U_b	10 - 30 V DC	10 - 30 V DC	10 - 30 V DC	
Unblanking / Blanking	Light On / Dark On	Light On / Dark On	Light On / Dark On	
Max. Output Current I_e	150 mA	150 mA	150 mA	
Idle Current I_0	< 25 mA	< 25 mA	< 25 mA	
Hysteresis H	---	---	---	
Switching Freq. / Response Time	--- / 1 ms	--- / 1 ms	--- / 1 ms	
Ambient Temperature	-20 °C ... + 70 °C	-20 °C ... + 70 °C	-20 °C ... + 70 °C	
Ambient Light	---	---	---	
Halogen Light	---	---	---	
Sun Light	---	---	---	
Sensitivity Adjustable	Yes	Yes	Yes	
Output Digital	NPN/PNP	NPN/PNP	NPN/PNP	
Output Analog	---	---	---	
LED - Indicator	Yes	Yes	Yes	
Size	Square 31x12x57	Square 31x12x67	Square 31x12x77	
Housing Material	PBT	PBT	PBT	
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	Connector M12	

p-u-l-s-o-t-r-o-n-i-c



With Polarizing Filter



Mode Of Operation

Sensing Distance

Retroreflective Mode

2,0 m

Retroreflective Mode

2,0 m

Retroreflective Mode

2,0 m



Type

Type

Type

NPN/PNP Light / Dark

MP-L2000D-CX6C4U2-PF

MP-L2000D-CX6Q4UP-PF

MP-L2000D-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

Unblanking / Blanking

Light On / Dark On

Light On / Dark On

Light On / Dark On

Max. Output Current I_e

150 mA

150 mA

150 mA

Idle Current I_0

< 25 mA

< 25 mA

< 25 mA

Hysteresis H

Switching Freq. / Response Time

--- / 1 ms

--- / 1 ms

--- / 1 ms

Ambient Temperature

-20 °C ... + 70 °C

-20 °C ... + 70 °C

-20 °C ... + 70 °C

Ambient Light

Halogen Light

Sun Light

Sensitivity Adjustable

Yes

Yes

Yes

Output Digital

NPN/PNP

NPN/PNP

NPN/PNP

Output Analog

LED - Indicator

Yes

Yes

Yes

Size

Square 31x12x53

Square 31x12x63

Square 31x12x73

Housing Material

PBT

PBT

PBT

Material Light Outlet

Protection Class

IP 67

IP 67

IP 67

EMC-Standard

EN 60947-5-2

EN 60947-5-2

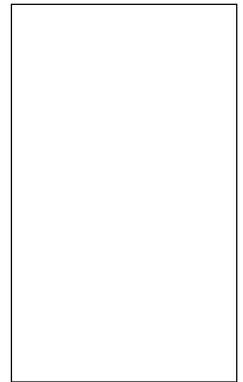
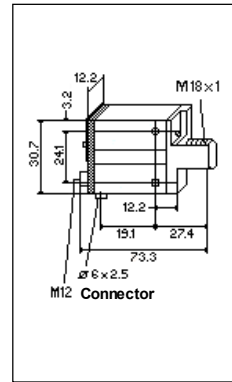
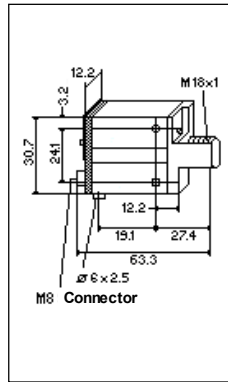
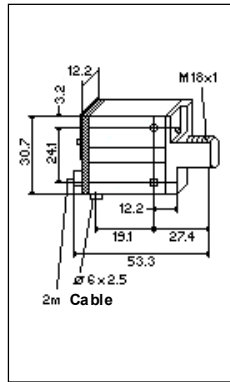
EN 60947-5-2

Termination

Cable, 2m

Connector M8

Connector M12



Mode Of Operation

Sensing Distance

Retroreflective Mode

5,0 m

Retroreflective Mode

5,0 m

Retroreflective Mode

5,0 m

NPN/PNP Light / Dark

MP-L5000D-CX6C4U2

MP-L5000D-CX6Q4UP

MP-L5000D-CX6Q4UE

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

Unblanking / Blanking

Light On / Dark On

Light On / Dark On

Light On / Dark On

Max. Output Current I_e

150 mA

150 mA

150 mA

Idle Current I_0

< 25 mA

< 25 mA

< 25 mA

Hysteresis H

Switching Freq. / Response Time

--- / 1 ms

--- / 1 ms

--- / 1 ms

Ambient Temperature

-20 °C ... + 70 °C

-20 °C ... + 70 °C

-20 °C ... + 70 °C

Ambient Light

Halogen Light

Sun Light

Sensitivity Adjustable

Yes

Yes

Yes

Output Digital

NPN/PNP

NPN/PNP

NPN/PNP

Output Analog

LED - Indicator

Yes

Yes

Yes

Size

Square 31x12x53

Square 31x12x63

Square 31x12x73

Housing Material

PBT

PBT

PBT

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

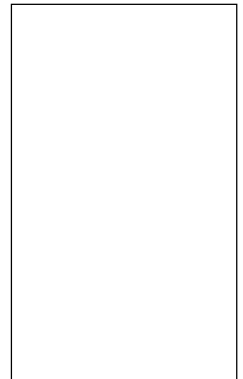
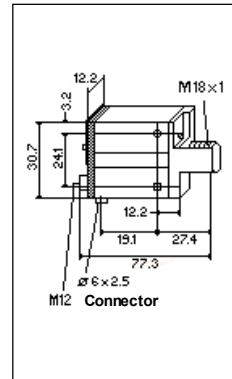
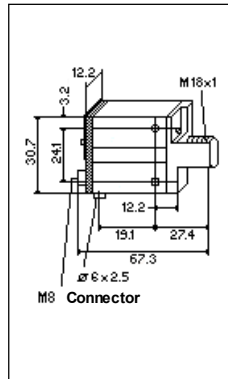
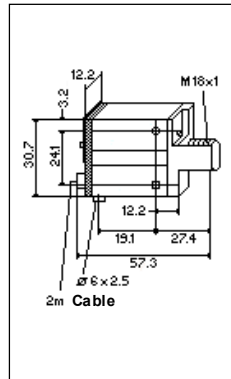
Cable, 2m

Connector M8

Connector M12



Glass - Fibre - Optic Device



Mode Of Operation

Sensing Distance

Retroreflective Mode

Depends On Fibre - Optic

Retroreflective Mode

Depends On Fibre - Optic

Retroreflective Mode

Depends On Fibre - Optic

NPN/PNP Light / Dark

MP-LGFD-CX9C4U2

MP-LGFD-CX9Q4UP

MP-LGFD-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

Unblanking / Blanking

Light On / Dark On

Light On / Dark On

Light On / Dark On

Max. Output Current I_e

150 mA

150 mA

150 mA

Idle Current I_0

< 25 mA

< 25 mA

< 25 mA

Hysteresis H

Switching Freq. / Response Time

--- / 1 ms

--- / 1 ms

--- / 1 ms

Ambient Temperature

-20 °C ... + 70 °C

-20 °C ... + 70 °C

-20 °C ... + 70 °C

Ambient Light

Halogen Light

Sun Light

Sensitivity Adjustable

Yes

Yes

Yes

Output Digital

NPN/PNP

NPN/PNP

NPN/PNP

Output Analog

LED - Indicator

Yes

Yes

Yes

Size

Square 31x12x57

Square 31x12x67

Square 31x12x77

Housing Material

PBT

PBT

PBT

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

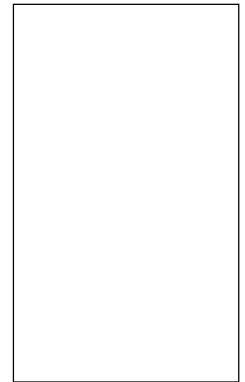
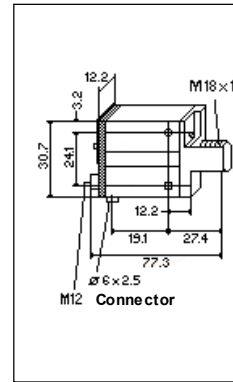
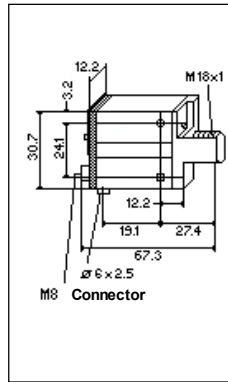
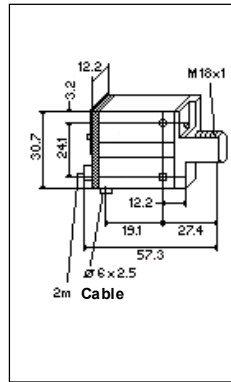
Cable, 2m

Connector M8

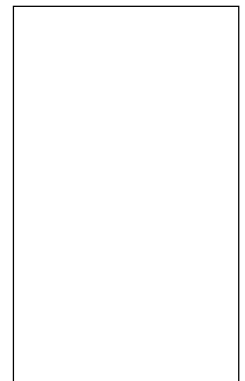
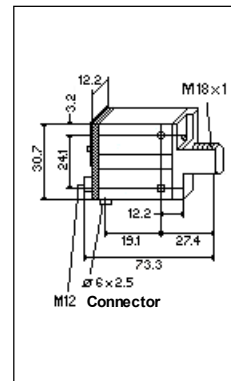
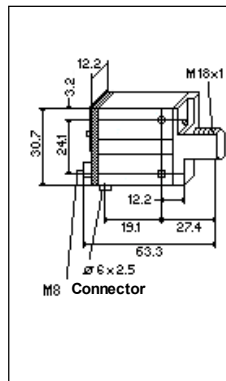
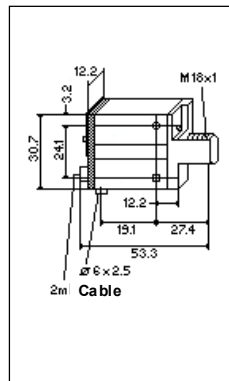
Connector M12



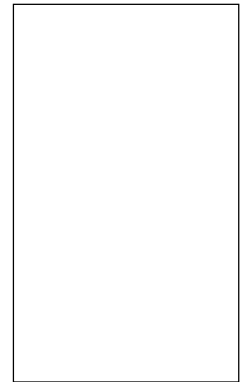
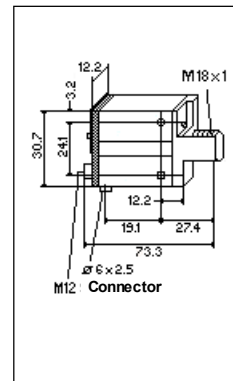
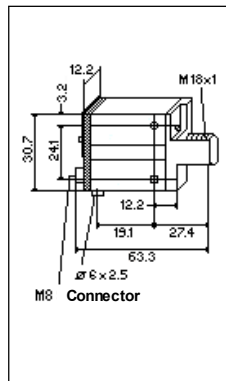
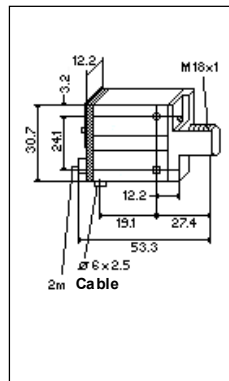
Plastic - Fibre - Optic Device



Mode Of Operation	RL Opposed Mode	RL Opposed Mode	RL Opposed Mode	
Sensing Distance	Depends On Fibre - Optic	Depends On Fibre - Optic	Depends On Fibre - Optic	
	Type	Type	Type	
NPN/PNP Light / Dark	MP-TPFD-CX6C4U2	MP-TPFD-CX6Q4UP	MP-TPFD-CX6Q4UE	
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	
Unblanking / Blanking	Light On / Dark On	Light On / Dark On	Light On / Dark On	
Max. Output Current I_e	150 mA	150 mA	150 mA	
Idle Current I_0	< 25 mA	< 25 mA	< 25 mA	
Hysteresis H	---	---	---	
Switching Freq. / Response Time	--- / 1 ms	--- / 1 ms	--- / 1 ms	
Ambient Temperature	-20 °C ... + 70 °C	-20 °C ... + 70 °C	-20 °C ... + 70 °C	
Ambient Light	---	---	---	
Halogen Light	---	---	---	
Sun Light	---	---	---	
Sensitivity Adjustable	Yes	Yes	Yes	
Output Digital	NPN/PNP	NPN/PNP	NPN/PNP	
Output Analog	---	---	---	
LED - Indicator	Yes	Yes	Yes	
Size	Square 31x12x57	Square 31x12x67	Square 31x12x77	
Housing Material	PBT	PBT	PBT	
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	Connector M12	



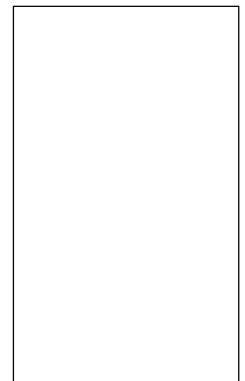
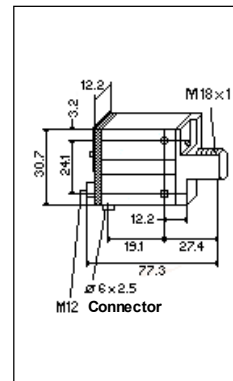
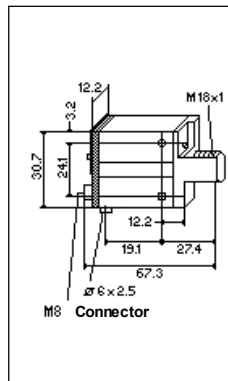
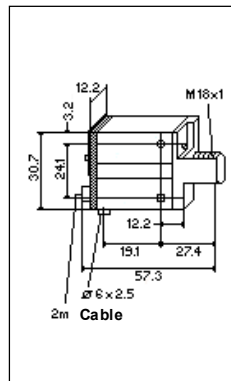
Mode Of Operation	IR Opposed Mode	IR Opposed Mode	IR Opposed Mode	
Sensing Distance	3,0 m	3,0 m	3,0 m	
Emitter	MP-T3000D-EX9C3L2	MP-T3000D-EX9Q4LP	MP-T3000D-EX9Q4LE	
NPN/PNP Light / Dark	MP-T3000D-CX9C4U2	MP-T3000D-CX9Q4UP	MP-T3000D-CX9Q4UE	
Light	Infrared Light 880 nm	Infrared Light 880 nm	Infrared Light 880 nm	
Operating Voltage U_b	10 - 30 V DC	10 - 30 V DC	10 - 30 V DC	
Unblanking / Blanking	Light On / Dark On	Light On / Dark On	Light On / Dark On	
Max. Output Current I_e	150 mA	150 mA	150 mA	
Idle Current I_0	< 25 mA	< 25 mA	< 25 mA	
Hysteresis H	---	---	---	
Switching Freq. / Response Time	--- / 1 ms	--- / 1 ms	--- / 1 ms	
Ambient Temperature	-20 °C ... + 70 °C	-20 °C ... + 70 °C	-25 °C ... + 70 °C	
Ambient Light	---	---	---	
Halogen Light	---	---	---	
Sun Light	---	---	---	
Sensitivity Adjustable	Yes	Yes	Yes	
Output Digital	NPN/PNP	NPN/PNP	NPN/PNP	
Output Analog	---	---	---	
LED - Indicator	Yes	Yes	Yes	
Size	Square 31x12x53	Square 31x12x63	Square 31x12x73	
Housing Material	PBT	PBT	PBT	
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	Connector M12	



Mode Of Operation	IR Opposed Mode	IR Opposed Mode	IR Opposed Mode	
Sensing Distance	30,0 m	30,0 m	30,0 m	
	Type	Type	Type	
Emitter	MP-T030MD-EX9C3L2	MP-T030MD-EX9Q4LP	MP-T030MD-EX9Q4LE	
NPN/PNP Light / Dark	MP-T030MD-CX9C4U2	MP-T030MD-EX9Q4UP	MP-T030MD-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	
Unblanking / Blanking	Light On / Dark On	Light On / Dark On	Light On / Dark On	
Max. Output Current I_e	150 mA	150 mA	150 mA	
Idle Current I_0	< 25 mA	< 25 mA	< 25 mA	
Hysteresis H	---	---	---	
Switching Freq. / Response Time	--- / 1 ms	--- / 1 ms	--- / 1 ms	
Ambient Temperature	-20 °C ... + 70 °C	-20 °C ... + 70 °C	-25 °C ... + 70 °C	
Ambient Light	---	---	---	
Halogen Light	---	---	---	
Sun Light	---	---	---	
Sensitivity Adjustable	Yes	Yes	Yes	
Output Digital	NPN/PNP	NPN/PNP	NPN/PNP	
Output Analog	---	---	---	
LED - Indicator	Yes	Yes	Yes	
Size	Square 31x12x53	Square 31x12x63	Square 31x12x73	
Housing Material	PBT	PBT	PBT	
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	Connector M12	



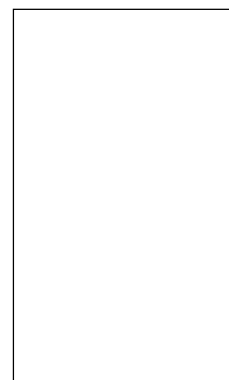
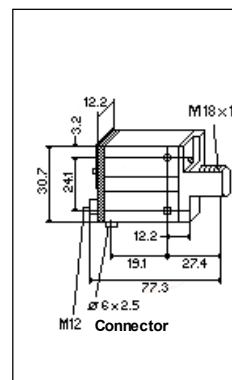
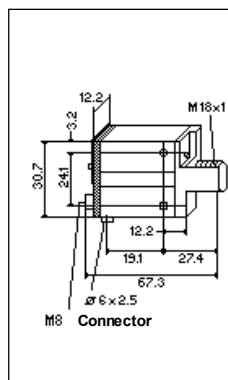
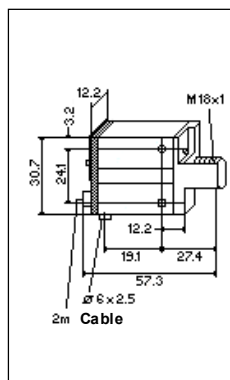
**Glass - Fibre - Optic
Device**



Mode Of Operation		IR Opposed Mode	IR Opposed Mode	IR Opposed Mode	
Sensing Distance		Depends On Fibre - Optic	Depends On Fibre - Optic	Depends On Fibre - Optic	
		Type	Type	Type	
NPN/PNP Light / Dark		MP-TGFD-CX9C4U2	MP-TGFD-CX9Q4UP	MP-TGFD-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	
Unblanking / Blanking		Light On / Dark On	Light On / Dark On	Light On / Dark On	
Max. Output Current	I_e	150 mA	150 mA	150 mA	
Idle Current	I_0	< 25 mA	< 25 mA	< 25 mA	
Hysteresis	H	---	---	---	
Switching Freq. / Response Time		--- / 1 ms	--- / 1 ms	--- / 1 ms	
Ambient Temperature		-20 °C ... + 70 °C	-20 °C ... + 70 °C	-20 °C ... + 70 °C	
Ambient Light		---	---	---	
Halogen Light		---	---	---	
Sun Light		---	---	---	
Sensitivity Adjustable		Yes	Yes	Yes	
Output Digital		NPN/PNP	NPN/PNP	NPN/PNP	
Output Analog		---	---	---	
LED - Indicator		Yes	Yes	Yes	
Size		Square 31x12x57	Square 31x12x67	Square 31x12x77	
Housing Material		PBT	PBT	PBT	
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	Connector M12	



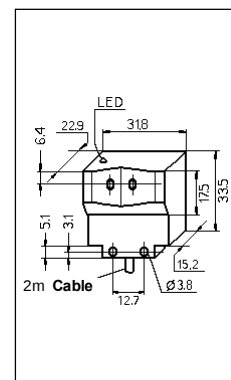
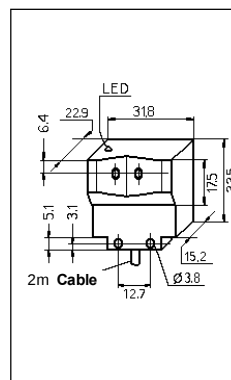
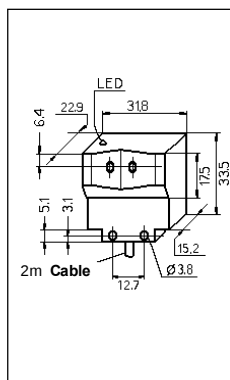
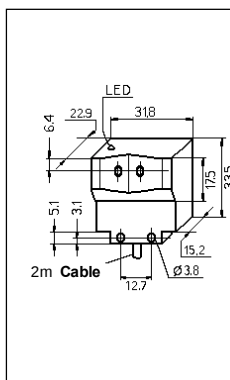
**Glass - Fibre - Optic
Device**



Mode Of Operation	RL Opposed Mode	RL Opposed Mode	RL Opposed Mode	
Sensing Distance	Depends On Fibre - Optic	Depends On Fibre - Optic	Depends On Fibre - Optic	
	Type	Type	Type	
NPN/PNP Light / Dark	MP-TGFD-CX6C4U2	MP-TGFD-CX6Q4UP	MP-TGFD-CX6Q4UE	
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	
Unblanking / Blanking	Light On / Dark On	Light On / Dark On	Light On / Dark On	
Max. Output Current I_e	150 mA	150 mA	150 mA	
Idle Current I_0	< 25 mA	< 25 mA	< 25 mA	
Hysteresis H	---	---	---	
Switching Freq. / Response Time	--- / 1 ms	--- / 1 ms	--- / 1 ms	
Ambient Temperature	-20 °C ... + 70 °C	-20 °C ... + 70 °C	-20 °C ... + 70 °C	
Ambient Light	---	---	---	
Halogen Light	---	---	---	
Sun Light	---	---	---	
Sensitivity Adjustable	Yes	Yes	Yes	
Output Digital	NPN/PNP	NPN/PNP	NPN/PNP	
Output Analog	---	---	---	
LED - Indicator	Yes	Yes	Yes	
Size	Square 31x12x57	Square 31x12x67	Square 31x12x77	
Housing Material	PBT	PBT	PBT	
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	Connector M12	



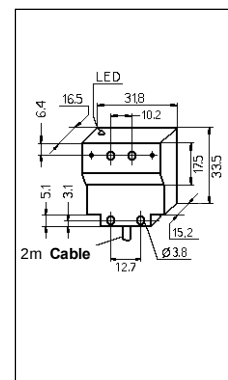
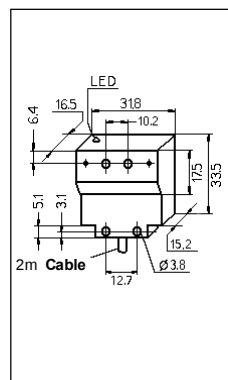
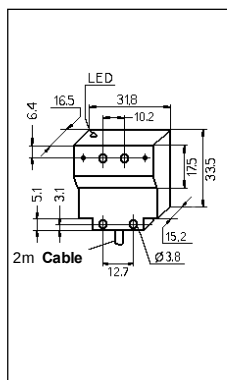
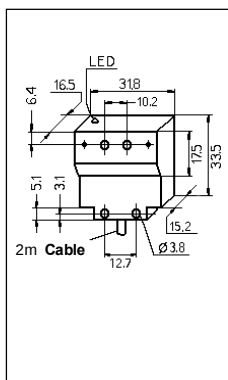
Convergent Mode
*** High Speed**



Mode Of Operation	IR Convergent Mode	IR Convergent Mode*	RL Convergent Mode	RL Convergent Mode*
Sensing Distance	12,0 mm	12,0 mm	16,0 mm	16,0 mm
NPN/PNP Light	EP-C0012D-LY9C4U2	EP-C0012D-LY9C4U2-HS	EP-C0016D-LY6C4U2	EP-C0016D-LY6C4U2-HS
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
Unblanking / Blanking	Light On	Light On	Light On	Light On
Max. Output Current I_e	150 mA	150 mA	150 mA	150 mA
Idle Current I_0	< 25 mA	< 25 mA	< 25 mA	< 25 mA
Hysteresis H	---	---	---	---
Switching Freq. / Response Time	--- / 10 ms	--- / 1 ms	--- / 10 ms	--- / 1 ms
Ambient Temperature	0 °C ... + 50 °C	0 °C ... + 50 °C	0 °C ... + 50 °C	0 °C ... + 50 °C
Ambient Light	---	---	---	---
Halogen Light	---	---	---	---
Sun Light	---	---	---	---
Sensitivity Adjustable	No	No	No	No
Output Digital	NPN/PNP	NPN/PNP	NPN/PNP	NPN/PNP
Output Analog	---	---	---	---
LED - Indicator	Yes	Yes	Yes	Yes
Size	Square 38x32x17	Square 38x32x17	Square 38x32x17	Square 38x32x17
Housing Material	PBT	PBT	PBT	PBT
Material Light Outlet	---	---	---	---
Protection Class	IP 67	IP 67	IP 67	IP 66
EMC-Standard	EN 60947-5-2	EN 60947-5-2	EN 60947-5-2	EN 60947-5-2
Termination	Cable, 2m	Cable, 2m	Cable, 2m	Cable, 2m



* High Speed

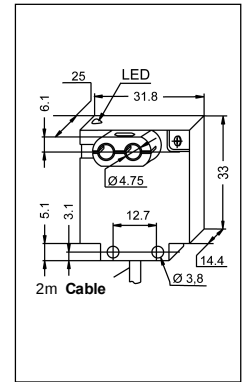
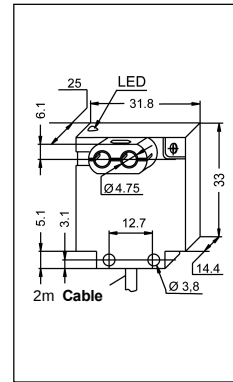
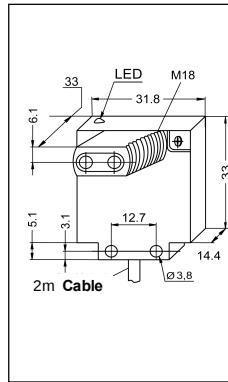
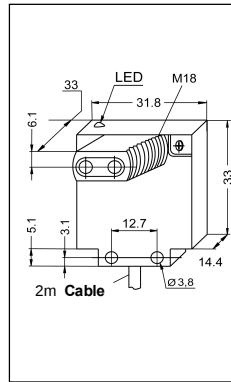


Mode Of Operation	IR Diffuse Mode	IR Diffuse Mode*	IR Diffuse Mode	IR Diffuse Mode*
Sensing Distance	200,0 mm	200,0 mm	76,0 mm	76,0 mm
	Type	Type	Type	Type
NPN/PNP Light	EP-D0200D-LY9C4U2	EP-D0200D-LY9C4U2-HS	EP-D0076D-LY9C4U2	EP-D0076D-LY9C4U2-HS
Light	Infrared Light 880 nm	Infrared Light 880 nm	Infrared 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
Unblanking / Blanking	Light On	Light On	Light On	Light On
Max. Output Current I_e	150 mA	150 mA	150 mA	150 mA
Idle Current I_o	< 25 mA	< 25 mA	< 25 mA	< 25 mA
Hysteresis H	---	---	---	---
Switching Freq. / Response Time	--- / 10 ms	--- / 1 ms	--- / 10 ms	--- / 10 ms
Ambient Temperature	0 °C ... + 50 °C	0 °C ... + 50 °C	0 °C ... + 50 °C	0 °C ... + 50 °C
Ambient Light	---	---	---	---
Halogen Light	---	---	---	---
Sun Light	---	---	---	---
Sensitivity Adjustable	No	No	No	No
Output Digital	NPN/PNP	NPN/PNP	NPN/PNP	NPN/PNP
Output Analog	---	---	---	---
LED - Indicator	Yes	Yes	Yes	Yes
Size	Square 38x32x17	Square 38x32x17	Square 38x32x17	Square 38x32x17
Housing Material	PBT	PBT	PBT	PBT
Material Light Outlet	---	---	---	---
Protection Class	IP 66	IP 66	IP 66	IP 66
EMC-Standard	EN 60947-5-2	EN 60947-5-2	EN 60947-5-2	EN 60947-5-2
Termination	Cable, 2m	Cable, 2m	Cable, 2m	Cable, 2m



Fibre - Optic - Device

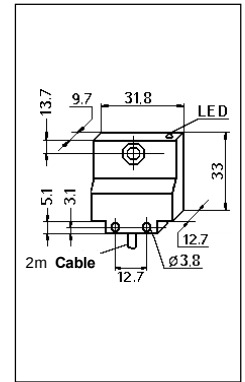
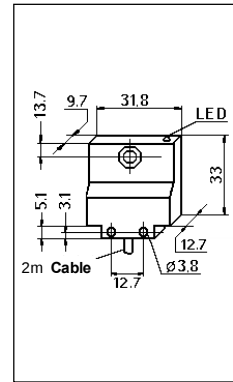
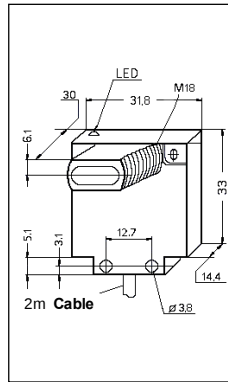
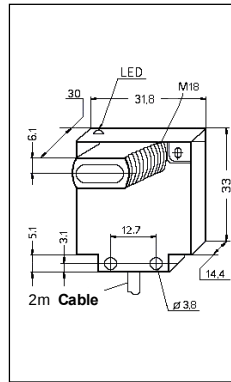
*** High Speed**



Mode Of Operation	IR Diffuse Mode	IR Diffuse Mode*	RL Diffuse Mode	RL Diffuse Mode*
Sensing Distance	Depends On Fibre - Optic	Depends On Fibre - Optic	Depends On Fibre - Optic	Depends On Fibre - Optic
	Type	Type	Type	Type
NPN/PNP Light	EP-DGFD-LY9C4U2	EP-DGFD-LY9C4U2-HS	EP-DPFD-LY6C4U2	EP-DPFD-LY6C4U2-HS
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
Unblanking / Blanking	Light On	Light On	Light On	Light On
Max. Output Current I_e	150 mA	150 mA	150 mA	150 mA
Idle Current I_o	< 25 mA	< 25 mA	< 25 mA	< 25 mA
Hysteresis H	---	---	---	---
Switching Freq. / Response Time	--- / 10 ms	--- / 1 ms	--- / 10 ms	--- / 1 ms
Ambient Temperature	0 °C ... + 50 °C	0 °C ... + 50 °C	0 °C ... + 50 °C	0 °C ... + 50 °C
Ambient Light	---	---	---	---
Halogen Light	---	---	---	---
Sun Light	---	---	---	---
Sensitivity Adjustable	No	No	No	No
Output Digital	NPN/PNP	NPN/PNP	NPN/PNP	NPN/PNP
Output Analog	---	---	---	---
LED - Indicator	Yes	Yes	Yes	Yes
Size	Square 38x32x33	Square 38x32x33	Square 38x32x25	Square 38x32x25
Housing Material	PBT	PBT	PBT	PBT
Material Light Outlet	---	---	---	---
Protection Class	IP 66	IP 66	IP 66	IP 66
EMC-Standard	EN 60947-5-2	EN 60947-5-2	EN 60947-5-2	EN 60947-5-2
Termination	Cable, 2m	Cable, 2m	Cable, 2m	Cable, 2m



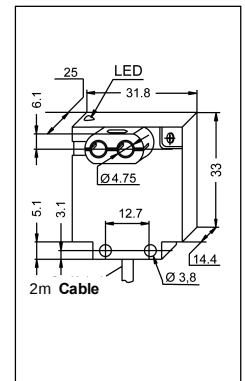
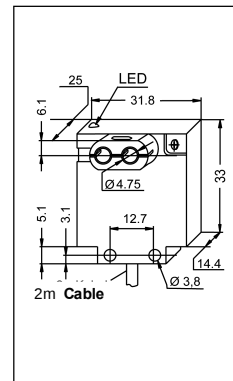
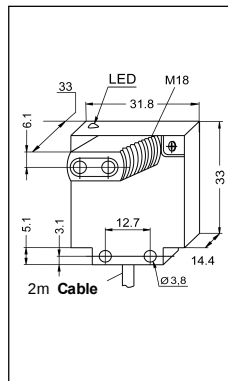
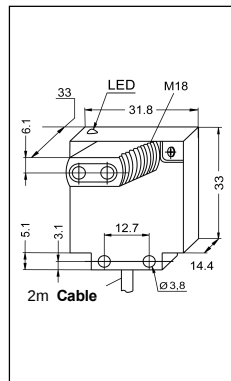
***High Speed**



Mode Of Operation	Retroreflective Mode		Retroreflective Mode*		IR Opposed Mode	IR Opposed Mode*
Sensing Distance	5,0 m		5,0 m		1,8 m	1,8 m
Emitter	Type		Type		Type	Type
NPN/PNP Hello	EP-L5000D-LY6C4U2		EP-L5000D-LY6C4U2-HS		EP-T1800D-LY9C4U2	EP-T1800D-LY9C4U2-HS
Light	Red Light 650 nm		Red Light 650 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
Unblanking / Blanking	Light On		Light On		Light On	Light On
Max. Output Current I_o	150 mA		150 mA		150 mA	150 mA
Idle Current I_o	< 25 mA		< 25 mA		< 25 mA	< 25 mA
Hysteresis H	---		---		---	---
Switching Freq. / Response Time	--- / 10 ms		--- / 1 ms		--- / 10 ms	--- / 1 ms
Ambient Temperature	0 °C ... + 50 °C		0 °C ... + 50 °C		0 °C ... + 50 °C	0 °C ... + 50 °C
Ambient Light	---		---		---	---
Halogen Light	---		---		---	---
Sun Light	---		---		---	---
Sensitivity Adjustable	No		No		No	No
Output Digital	NPN/PNP		NPN/PNP		NPN/PNP	NPN/PNP
Output Analog	---		---		---	---
LED - Indicator	Yes		Yes		Yes	Yes
Size	Square 38x32x30		Square 38x32x30		Square 38x32x13	Square 38x32x13
Housing Material	PBT		PBT		PBT	PBT
Material Light Outlet	---		---		---	---
Protection Class	IP 66		IP 66		IP 66	IP 66
EMC-Standard	EN 60947-5-2		EN 60947-5-2		EN 60947-5-2	EN 60947-5-2
Termination	Cable, 2m		Cable, 2m		Cable, 2m	Cable, 2m



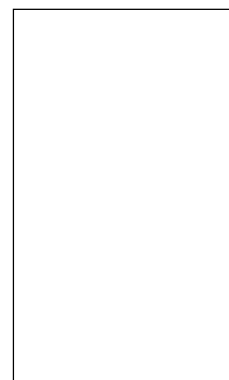
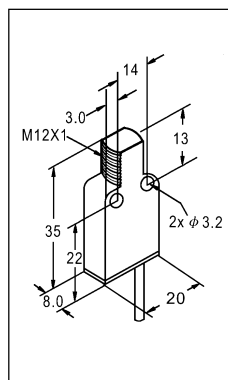
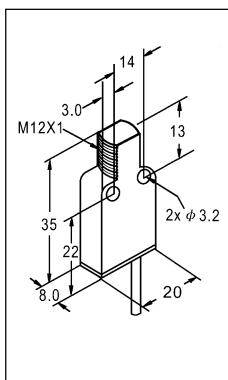
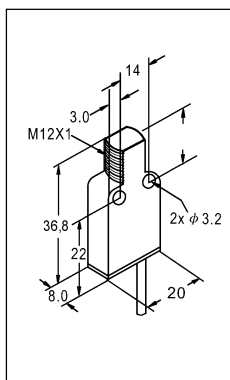
Fibre - Optic - Device
*** High Speed**



Mode Of Operation	IR Opposed Mode	IR Opposed Mode*	RL Opposed Mode	RL Opposed Mode*
Sensing Distance	Depends On Fibre - Optic	Depends On Fibre - Optic	Depends On Fibre - Optic	Depends On Fibre - Optic
	Type	Type	Type	Type
NPN/PNP Light	EP-TGFD-LY9C4U2	EP-TGFD-LY9C4U2-HS	EP-TPFD-LY6C4U2	EP-TPFD-LY6C4U2-HS
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
Unblanking / Blanking	Light On	Light On	Light On	Light On
Max. Output Current I_e	150 mA	150 mA	150 mA	150 mA
Idle Current I_o	< 25 mA	< 25 mA	< 25 mA	< 25 mA
Hysteresis H	---	---	---	---
Switching Freq. / Response Time	--- / 10 ms	--- / 1 ms	--- / 10 ms	--- / 1 ms
Ambient Temperature	0 °C ... + 50 °C	0 °C ... + 50 °C	0 °C ... + 50 °C	0 °C ... + 50 °C
Ambient Light	---	---	---	---
Halogen Light	---	---	---	---
Sun Light	---	---	---	---
Sensitivity Adjustable	No	No	No	No
Output Digital	NPN/PNP	NPN/PNP	NPN/PNP	NPN/PNP
Output Analog	---	---	---	---
LED - Indicator	Yes	Yes	Yes	Yes
Size	Square 38x32x33	Square 38x32x33	Square 38x32x25	Square 38x32x25
Housing Material	PBT	PBT	PBT	PBT
Material Light Outlet	---	---	---	---
Protection Class	IP 66	IP 66	IP 66	IP 66
EMC-Standard	EN 60947-5-2	EN 60947-5-2	EN 60947-5-2	EN 60947-5-2
Termination	Cable, 2m	Cable, 2m	Cable, 2m	Cable, 2m



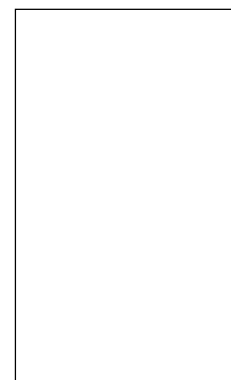
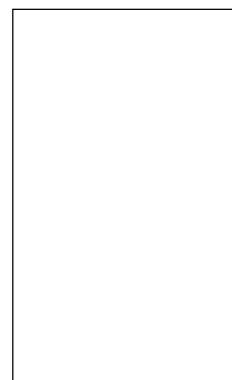
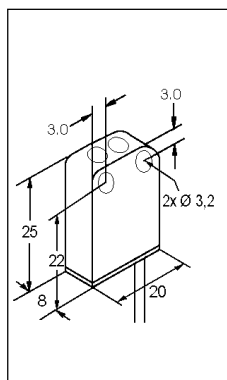
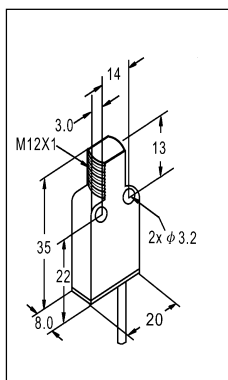
***With Polarizing Filter**



Mode Of Operation	RL Opposed Mode	Retroreflective Mode	Retroreflective Mode*	
Sensing Distance	4,0 m	2,0 m	1,0 m	
Emitter	Type UP-T4000D-EX6C3L2	Type UP-L2000N-CX6C4U2	Type UP-L1000N-CX6C4U2-PF	
NPN	UP-T4000N-CX6C4U2	UP-L2000N-CX6C4U2	UP-L1000N-CX6C4U2-PF	
PNP	UP-T4000P-CX6C4U2	UP-L2000P-CX6C4U2	UP-L1000P-CX6C4U2-PF	
Light	Red Light 660 nm	Red Light 660 nm	Red Light 680 nm	
Operating Voltage U_b	10 - 30 V DC	10 - 30 V DC	10 - 30 V DC	
Unblanking / Blanking	Light On / Dark On	Light On / Dark On	Light On / Dark On	
Max. Output Current I_e	150 mA	150 mA	150 mA	
Idle Current I_0	< 25 mA	< 25 mA	< 25 mA	
Hysteresis H	---	---	---	
Switching Freq. / Response Time	--- / 8 ms	--- / 1,5 ms	--- / 1,5 ms	
Ambient Temperature	- 20°C ... + 55°C	-20 °C ... + 50 °C	-20 °C ... + 50 °C	
Ambient Light	---	---	---	
Halogen Light	---	---	---	
Sun Light	---	---	---	
Sensitivity Adjustable	Yes	Yes	Yes	
Output Digital	NPN/PNP	NPN/PNP	NPN/PNP	
Output Analog	---	---	---	
LED - Indicator	Yes	Yes	Yes	
Size	Square 20x8x35	Square 20x8x35	Square 20x8x35	
Housing Material	ABS	ABS	ABS	
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	Cable, 2m	Cable, 2m	



*Flush - Front



Mode Of Operation
Sensing Distance

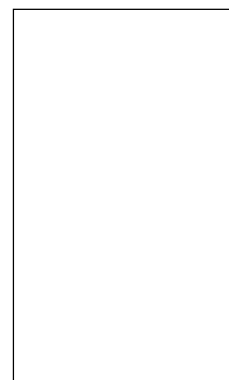
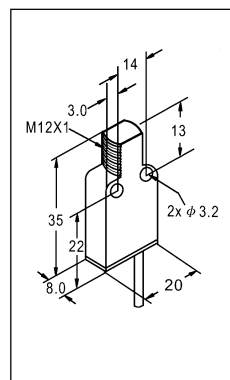
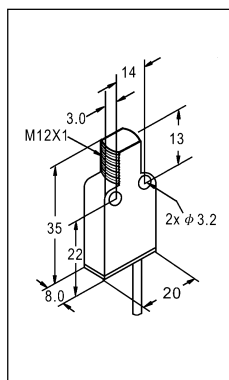
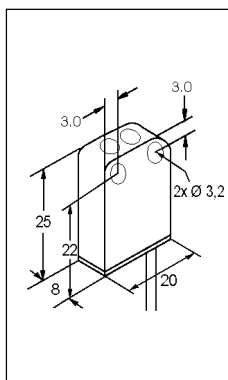
RL Diffuse Mode
200,0 mm

RL Diffuse Mode*
200,0 mm

		Type	Type		
NPN		UP-D0200N-CX6C4U2	UP-D0200N-CX6C4U2-F		
PNP		UP-D0200P-CX6C4U2	UP-D0200P-CX6C4U2-F		
Light		Red Light 680 nm	Red Light 680 nm		
Operating Voltage U_b		10 - 30 V DC	10 - 30 V DC		
Unblanking / Blanking		Light On / Dark On	Light On / Dark On		
Max. Output Current I_o		150 mA	150 mA		
Idle Current I_o		< 25 mA	< 25 mA		
Hysteresis H		---	---		
Switching Freq. / Response Time		--- / 1,5 ms	--- / 1,5 ms		
Ambient Temperature		- 20°C ... + 55°C	-20 °C ... + 50 °C		
Ambient Light		---	---		
Halogen Light		---	---		
Sun Light		---	---		
Sensitivity Adjustable		Yes	Yes		
Output Digital		NPN/PNP	NPN/PNP		
Output Analog		---	---		
LED - Indicator		Yes	Yes		
Size		Square 20x8x35	Square 20x8x25		
Housing Material		ABS	ABS		
Material Light Outlet		---	---		
Protection Class		IP 67	IP 67		
EMC-Standard		EN 60947-5-2	EN 60947-5-2		
Termination		Cable, 2m	Cable, 2m		



* Wide - Angle
** Convergent Mode



Mode Of Operation	RL Diffuse Mode*	RL Convergent Mode**	RL Convergent Mode	
Sensing Distance	50,0 mm	10,0 mm	20,0 mm	
	Type	Type	Type	
NPN	UP-D0050N-CX6C4U2-W	UP-C0010N-CX6C4U2	UP-C0020N-CX6C4U2	
PNP	UP-D0050P-CX6C4U2-W	UP-C0010P-CX6C4U2	UP-C0020P-CX6C4U2	
Light	Red Light 660 nm	Red Light 660 nm	Red Light 680 nm	
Operating Voltage U_b	10 - 30 V DC	10 - 30 V DC	10 - 30 V DC	
Unblanking / 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	< 25 mA	< 25 mA	< 25 mA	
Hysteresis H	---	---	---	
Switching Freq. / Response Time	--- / 1,5 ms	--- / 1,5 ms	--- / 1,5 ms	
Ambient Temperature	- 20°C ... + 55°C	-20 °C ... + 50 °C	-20 °C ... + 50 °C	
Ambient Light	---	---	---	
Halogen Light	---	---	---	
Sun Light	---	---	---	
Sensitivity Adjustable	Yes	Yes	Yes	
Output Digital	NPN/PNP	NPN/PNP	NPN/PNP	
Output Analog	---	---	---	
LED - Indicator	Yes	Yes	Yes	
Size	Square 20x8x25	Square 20x8x36,8	Square 20x8x36,8	
Housing Material	ABS	ABS	ABS	
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	Cable, 2m	Cable, 2m	

Product Overview

Site	Sensortype	Sensing Distance	Light Source	Comments
Diffuse Mode				
4	RS62-D0700...	70 cm	IR	AC/DC, relay output
6	RP64-D0300...	30 cm	Red	background suppression
7	RP64-D0500...	50 cm	Red	background suppression
10	MP-C0016...-...9	16 mm	IR	convergent mode
11	MP-C0016...-...5	16 mm	Green	convergent mode
12	MP-C0016...-...6	16 mm	Red	convergent mode
13	MP-C0043...-...9	43 mm	IR	convergent mode
14	MP-C0043...-...6	43 mm	Red	convergent mode
15	MP-D0130...	13 cm	IR	--
16	MP-D0300...	30 cm	IR	--
17	MP-D0380...	38 cm	IR	--
18	MP-DGFD...-...9	look fiber optic	IR	for glass fiber optic
19	MP-DGFD...-...6	look fiber optic	Red	for glass fiber optic
28	EP-C0012...	12 mm	IR	convergent mode
28	EP-C0016...	16 mm	Red	convergent mode
29	EP-D0200	20 cm	IR	--
29	EP-D0076	76 mm	IR	--
30	EP-DGFD...-...9...	look fiber optic	IR	for glass fiber optic
30	EP-DPFD...-...6	look fiber optic	Red	for plastic fiber optic
34	UP-D0200	20 cm	Red	--
35	UP-D0050	50 mm	Red	--
35	UP-C0010	10 mm	Red	convergent mode
35	UP-C0020	20 mm	Red	convergent mode
Retroreflective Mode				
4	RS62-L5000	5 m	Red	AC/DC, relay output, polarized
8	RP64-L013M...-PF	13 m	Red	polarized
8	RP64-L013M...-PS	13 m	Red	polarized, turnable connector
20	MP-L2000	2 m	Red	polarized
21	MP-L5000	5 m	Red	
22	MP-LGFD...-...9	look fiber optic	IR	for glass fiber optic
31	EP-L5000	5 m	Red	--
31	UP-L2000	2 m	Red	--
33	UP-L1000	1 m	Red	polarized
Opposed Mode				
5	RS62-T010M	10 m	Red	--
5	RS62-T030M	30 m	IR	--
9	RP64-T022M	22 m	Red	--
9	RP64-T022M...-...S	22 m	Red	turnable connector
24	MP-T3000	3 m	IR	--
25	MP-T030M	30 m	IR	--
26	MP-TGFD...-...9	look fiber optic	IR	for glass fiber optic
27	MP-TGFD...-...6	look fiber optic	Red	for glass fiber optic
31	EP-T1800	1,8 m	IR	--
32	EP-TGFD...-...9	look fiber optic	IR	for glass fiber optic
32	EP-TGFD...-...6	look fiber optic	Red	for glass fiber optic
33	UP-T4000	4 m	Red	--

Discription	Art-Nr.	Site	Discription	Art-Nr.	Site
Typkey		2	MP-DGFD-CX9C4U2	08361260501	18
Connection diagrams		3	MP-DGFD-CX9Q4UP	08361260505	18
Series RS62			MP-DGFD-CX9Q4UE	08361260506	18
RS62-L7000R-LY9C5L2	08362220001	4	MP-DGFD-CX6C4U2	08361260517	19
RS62-L7000R-DY9C5L2	08362220002	4	MP-DGFD-CX6Q4UP	08361260521	19
RS62-L5000R-LY6C5L2-PF	08362220005	4	MP-DGFD-CX6Q4UE	08361260522	19
RS62-L5000R-DY6C5L2-PF	08362220006	4	MP-L2000D-CX6C4U2-PF	08362260017	20
RS62-D0700R-LY9C5L2	08361220001	4	MP-L2000D-CX6Q4UP-PF	08362260021	20
RS62-D0700R-DY9C5L2	08361220002	4	MP-L2000D-CX6Q4UE-PF	08362260022	20
RS62-T010MD-EY6C2L2	08363220001	5	MP-L5000D-CX6C4U2	08362260001	21
RS62-T010MR-LY6C5L2	08363220002	5	MP-L5000D-CX6Q4UP	08362260005	21
RS62-T010MR-DY6C5L2	08363220003	5	MP-L5000D-CX6Q4UE	08362260006	21
RS62-T030MD-EY9C2L2	08363220007	5	MP-LGFD-CX9C4U2	08362260501	22
RS62-T030MR-LY9C5L2	08363220008	5	MP-LGFD-CX9Q4UP	08362260505	22
RS62-T030MR-DY9C5L2	08363220009	5	MP-LGFD-CX9Q4UE	08362260506	22
			MP-TPFD-CX6C4U2	08362260517	23
			MP-TPFD-CX6Q4UP	08362260521	23
Series RP64			MP-TPFD-CX6Q4UE	08362260522	23
RP64-D0300N-CY6C4U2-BS	08361215000	6	MP-T3000D-EX9C3L2	08363260001	24
RP64-D0300P-CY6C4U2-BS	08361215001	6	MP-T3000D-CX9C4U2	08363260002	24
RP64-D0300D-CY6C5U2-BS	08361215002	6	MP-T3000D-EX9Q4LP	08363260005	24
RP64-D0300N-CY6Q4UP-BS	08361215004	6	MP-T3000D-CX9Q4UP	08363260006	24
RP64-D0300P-CY6Q4UP-BS	08361215005	6	MP-T3000D-EX9Q4LE	08363260007	24
RP64-D0300D-CY6Q5UP-BS	08361215006	6	MP-T3000D-CX9Q4UE	08363260008	24
RP64-D0300N-CY6Q4UE-SB	08361215007	6	MP-T030MD-EX9C3L2	08363260033	25
RP64-D0300P-CY6Q4UE-SB	08361215008	6	MP-T030MD-CX9C4U2	08363260034	25
RP64-D0300D-CY6Q5UE-SB	08361215009	6	MP-T030MD-EX9Q4LP	08363260037	25
RP64-D0500N-CY6C4U2-BS	08361215015	7	MP-T030MD-CX9Q4UP	08363260038	25
RP64-D0500P-CY6C4U2-BS	08361215016	7	MP-T030MD-EX9Q4LE	08363260039	25
RP64-D0500D-CY6C5U2-BS	08361215017	7	MP-T030MD-CX9Q4UE	08363260040	25
RP64-D0500N-CY6Q4UP-BS	08361215019	7	MP-TGFD-CX9C4U2	08363260501	26
RP64-D0500P-CY6Q4UP-BS	08361215020	7	MP-TGFD-CX9Q4UP	08363260505	26
RP64-D0500D-CY6Q5UP-BS	08361215021	7	MP-TGFD-CX9Q4UE	08363260506	26
RP64-D0500N-CY6Q4UE-SB	08361215022	7	MP-TGFD-CX6C4U2	08363260517	27
RP64-D0500P-CY6Q4UE-SB	08361215023	7	MP-TGFD-CX6Q4UP	08363260521	27
RP64-D0500D-CY6Q5UE-SB	08361215024	7	MP-TGFD-CX6Q4UE	08363260522	27
RP64-L013MN-CY6C4U2-PF	08362215000	8			
RP64-L013MP-CY6C4U2-PF	08362215001	8	Series EP		
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