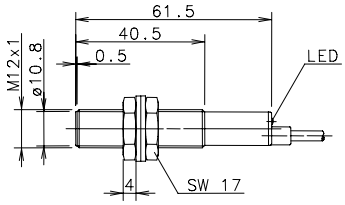
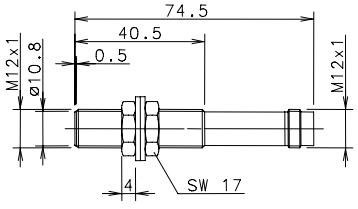
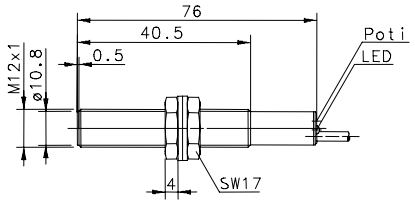
Series M12

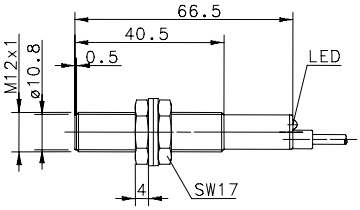
Overview of Diffuse reflective sensors

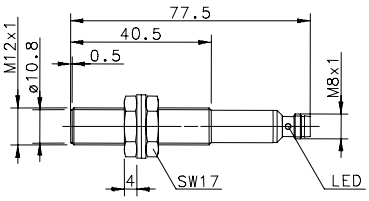




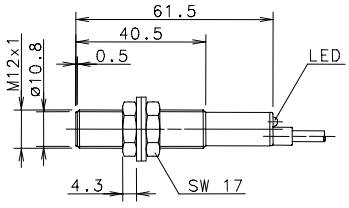
	Brass enclosure	
	Cable	M12 plug-in connection
Sensing range	60mm	
Light activation	6557928002	6557927001
Dark activation	6557728001	

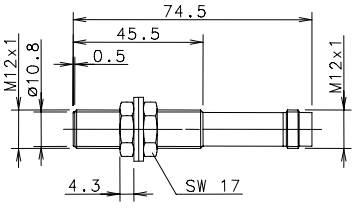






	Brass enclosure		
	Cable		M8 plug-in connection
Sensing range	200mm adjustable (Potentiometer)	200mm	
Light activation	6557928003	6557928004	6557927004
Dark activation			

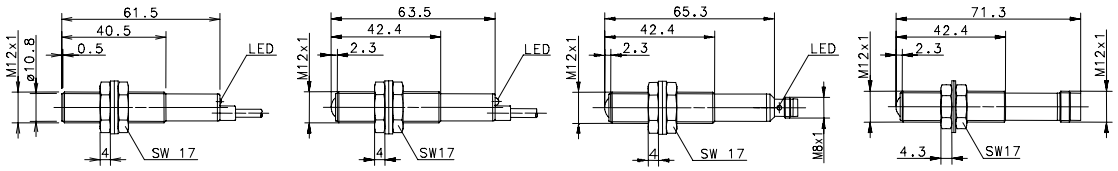




	Plastic enclosure			
	Cable		M12 plug-in connection	
Sensing range	200mm	60mm	200mm	60mm
Light activation	6557930001	6557930002	6557929001	6557929002
Dark activation				

RT = Diffuse reflective sensor

Overview of Through-beam sensors



	Brass enclosure			Plastic enclosure
	Cable		M8 plug-in connection	M12 plug-in connection
	PA12 Front cap	PA12 Lens		
Sensing range	1m	6m		
SE	6551028002	6551028001	6551027002	6551029001*)
EE NPN				6551129001
EE PNP	6551728002	6551728001	6551727002	6551729001

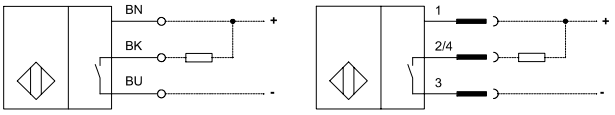
SE = Through beam, transmitter only
EE = Through beam receiver only (dark activated)

Switching functions and wiring diagrams

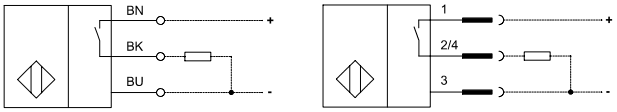
The description refers to:

Sensors	**Sensing types**	**Mounting conditions**
Diffuse reflective sensor	RT	without an object inside the sensing range
Through beam, receiver only	EE	with mounted emitter but without an object inside the sensing range

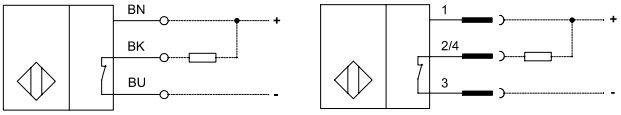
NPN – light activation



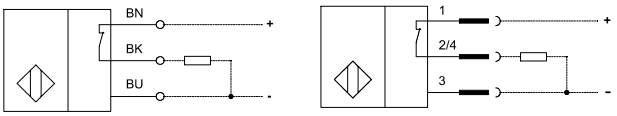
PNP - light activation



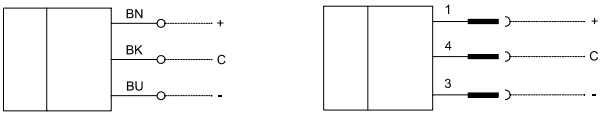
NPN – dark activation



PNP - dark activation



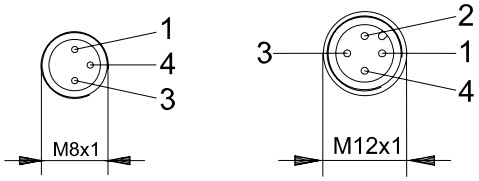
Through beam, transmitter only



C = Control-Input. The emitter will be turned off when „Control“ and „-“ get connected (system test).
*) Without Control-Input

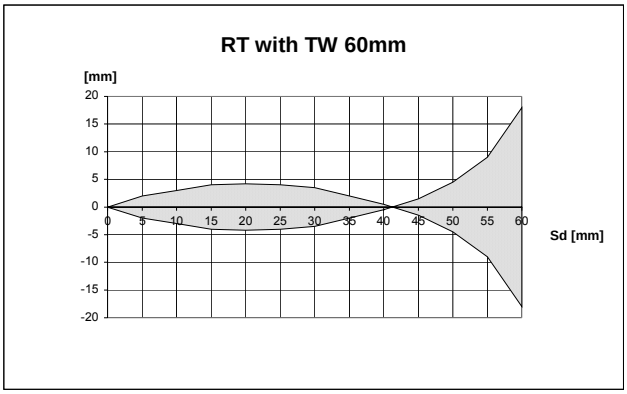
M8x1, M12x1 connectors and corresponding colours

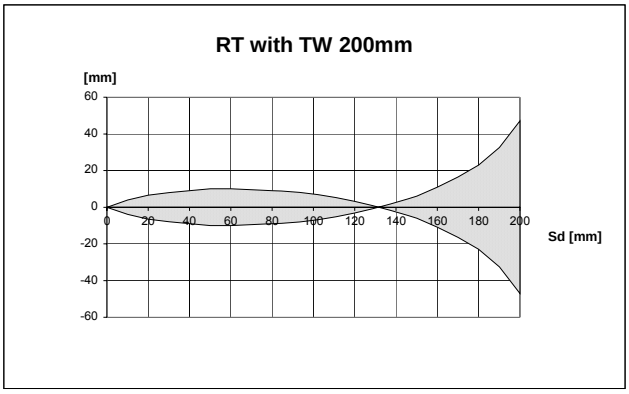
Pin number	Colour	Code
1	brown	BN
2/4	black	BK
3	blue	BU

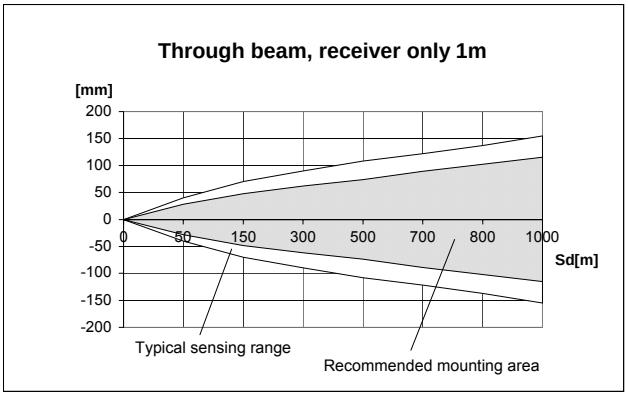


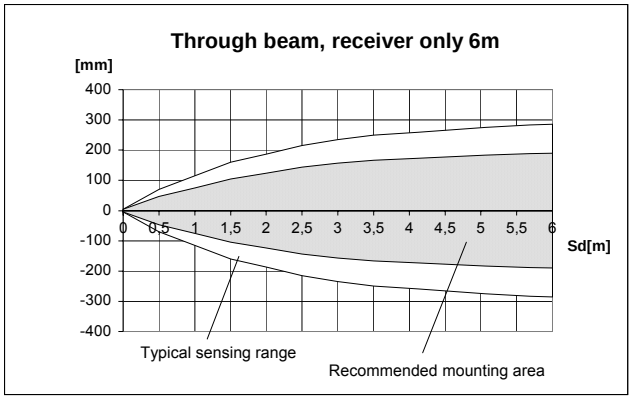
M12x1 connectors: Pin 2 = dark activation; Pin 4 = light activation

Typical sensing range









Identifying characteristics in accordance with EN 60947-5-2

Electrical data

Sensing range	S_d	see overview Target, white 100mm x 100mm
Switching element function		see overview, permanent overload protection, indication: LED yellow
Repeat accuracy	R	10%
Differential travel (hysteresis)	H	10-20%
Rated operational voltage	U_e	12-24V DC
Operational voltage range	U_B	10-36V DC
Rated insulation voltage	U_i	75V DC
Rated impulse withstand voltage	U_{imp}	500V
Voltage drop	U_d	< 1,8V
Utilization category		DC-13
Rated operational current	I_e	50mA
Minimum operational current	I_m	1mA
Off–state current	I_r	≤ 0,1mA
No–load supply current	I_o	≤ 12mA @ RT ≤ 25mA @ SE
Rated conditional short–circuit current		100A
Max. rated output current		200mA
Ambient light proof		> 10kLux > 5kLux @ EE
Short–circuit protection		pulsed
Frequency of operating cycles	f	> 100Hz @ RT=60mm and EE > 250Hz @ RT=200mm
False polarity protection		yes
Time delay before availability	t_v	< 70ms @ RT=60mm < 50ms @ RT=200mm < 15ms @ EE
Einschaltverzug	t_{on}	≤ 5ms

Electromagnetic compatibility (EMC)

Electromagnetic field test	IEC 61000-4-3	3V/m
Electrostatic discharge test	IEC 61000-4-2	4kV (metallic enclosure) 8kV (plastic enclosure)
Electrical fast transient immunity test (Burst)	IEC 61000-4-4	2kV
Impulse voltage withstand ability (Surge)	IEC 61000-4-5	500V, 1,2/50µs @ Ri = 42Ω
Radiated disturbance field strength	EN 55011	≤ 40dB (µV/m)

Mechanical Data

Enclosure	M12x1 brass, nickel plated M12x1 PA6 red
Beam-output	PA12 PA12 lens @ through beam 6m
End cap	PA6.6 black
Ambient air temperature	-20°C...+70°C
Type of protection	Cable versions: IP67 / with potentiometer IP65 Connector versions: M8x1 with plug-in-connector IP65 Connector versions: M8x1 / M12x1 with screwed plug-in-connector IP67
Pollution degree	3 (Pollution of the optic can cause impairments of the operating distances.)
Indication	Output LED yellow Transmitter LED green
Termination type	Cable 3x0,14mm² x 2m, PVC-outer jacket, black Plug socket M8x1, brass, nickel plated Plug socket M12x1, PA
For attachment	Hexagon nut; brass, nickel plated (with toothed washers A2) Hexagon nut; PA 6.6, black (with washers PEBUNAN)

EU Conformity

CE