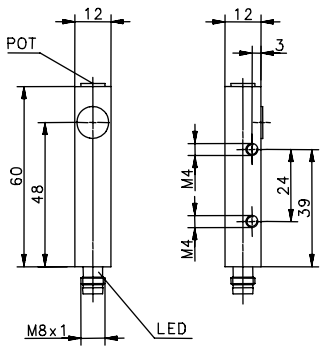
Technical Data
Photoelectric Sensors

BERNSTEIN safe solutions

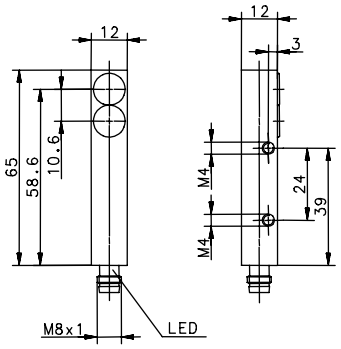
Series OR12

Overview of diffuse reflective and retroreflective sensors

Diffuse reflective sensor, adjustable

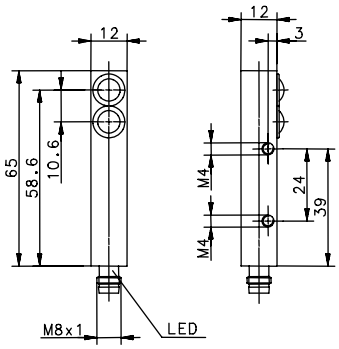


Convergent beam sensor, fixed focus

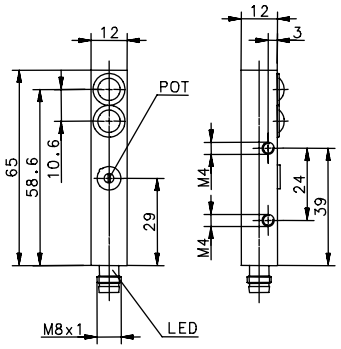


	PNP		NPN		PNP		NPN	
Sensing range	L.A.	D.A.	L.A.	D.A.	L.A.	D.A.	L.A.	D.A.
RT 200mm var.	6557955001	6557755001		6557155001				
FF 50mm fix.					6558955001			

Retroreflective sensor



Diffuse reflective sensor, adjustable



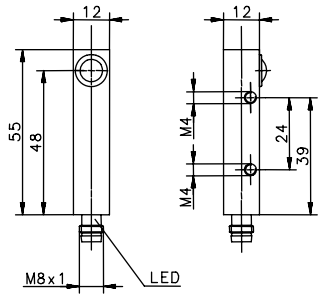
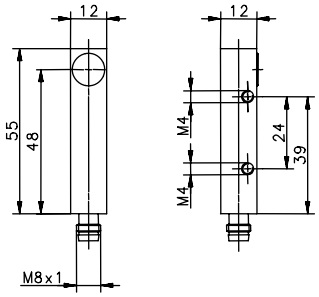
	PNP		NPN		PNP		NPN	
Sensing range	L.A.	D.A.	L.A.	D.A.	L.A.	D.A.	L.A.	D.A.
RT 1,2m var.					6557955002	6557755002		
RS 4m fix.	6554955001	6554755001						

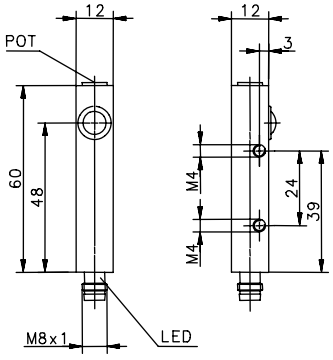
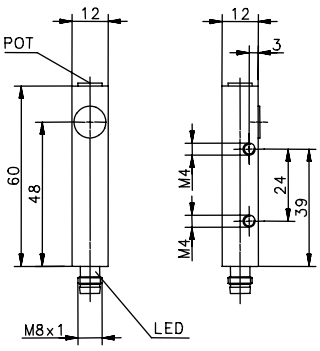
Abbreviations:

RT = Diffuse reflective sensor
RS = Retroreflective sensor
FF = Convergent beam sensor, fixed focus

var. = sensing range adjustable with potentiometer
fix. = sensing range is fixed
L.A. = light activation
D.A. = dark activation

Overview of through-beam sensors

Through-beam sensor					Through-beam sensor			
								
	PNP		NPN		PNP		NPN	
Sensing range	L.A.	D.A.	L.A.	D.A.	L.A.	D.A.	L.A.	D.A.
1m					6551955002	6551755002	6551355002	
6m	6551955001	6551755001	6551355001	6551155001				
10m	6551955005							
	Transmitter				Transmitter			
	6551055002				6551055003			

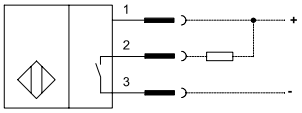
Through-beam sensor, adjustable					Through-beam sensor, adjustable			
								
	PNP		NPN		PNP		NPN	
Sensing range	L.A.	D.A.	L.A.	D.A.	L.A.	D.A.	L.A.	D.A.
1m					6551955004	6551755004		
6m	6551955003	6551755003						
	Transmitter				Transmitter			
	see above (6551055002)				see above (6551055003)			

Switching functions and wiring diagrams

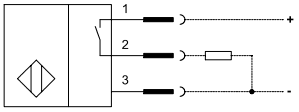
The description refers to:

Sensors	Sensing types	Mounting conditions
Diffuse reflective sensor	RT, FF	without an object inside the sensing range
Retroreflective sensor	RS	without reflector
Through beam, receiver only	EE	without transmitter

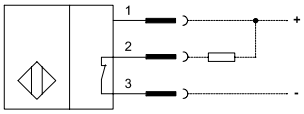
NPN - light activation (L.A.)



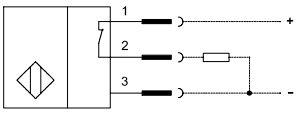
PNP – light activation (L.A.)



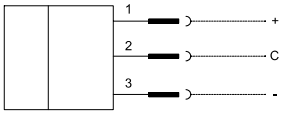
NPN – dark activation (D.A.)



PNP – dark activation (D.A.)

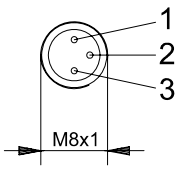


Through beam, transmitter only

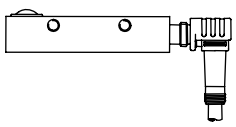


C = Control-Input. The emitter will be turned off when „Control“ and „-“ get connected (system test).

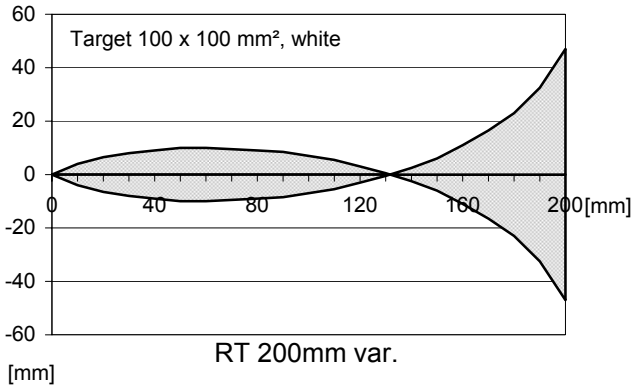
Connector M8x1



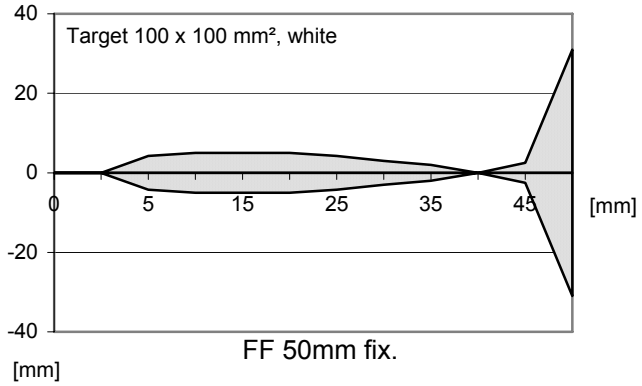
Sensor with mounted female plug (angle type)



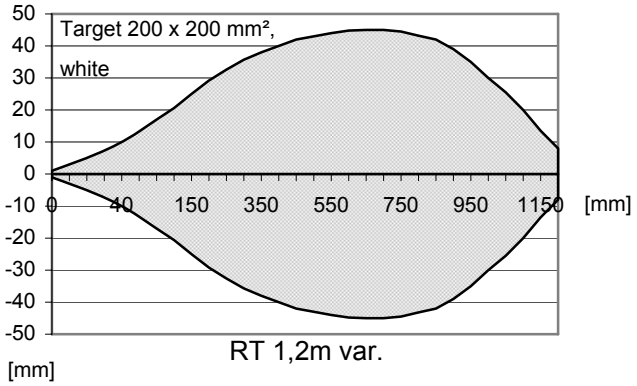
Typical sensing range



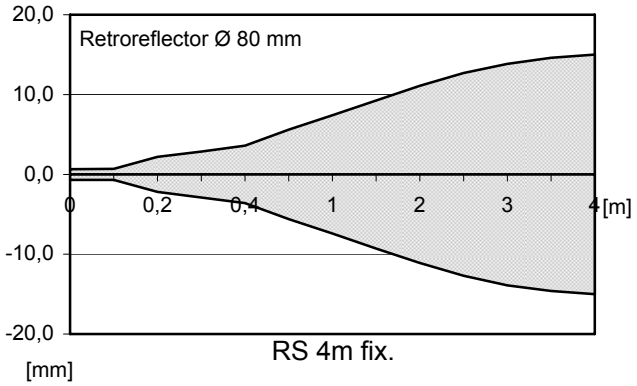
RT 200mm var.



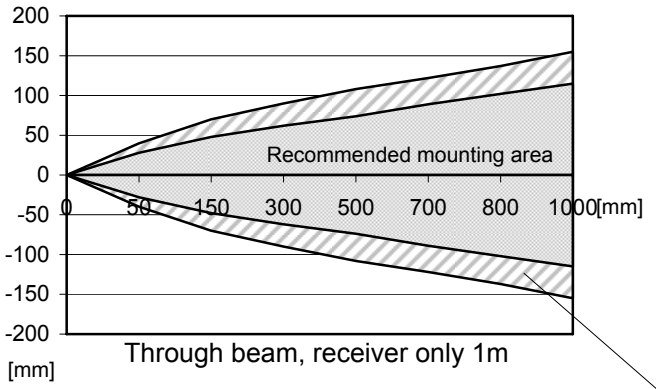
FF 50mm fix.



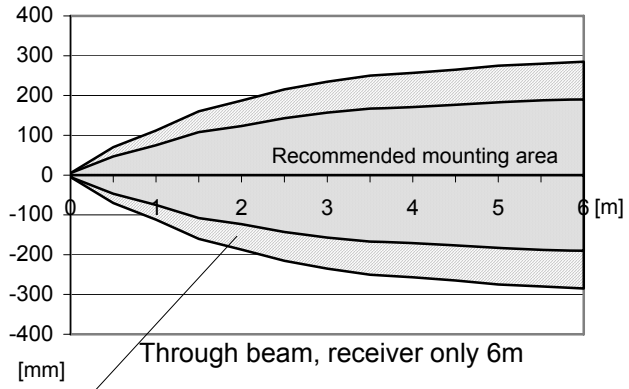
RT 1,2m var.



RS 4m fix.

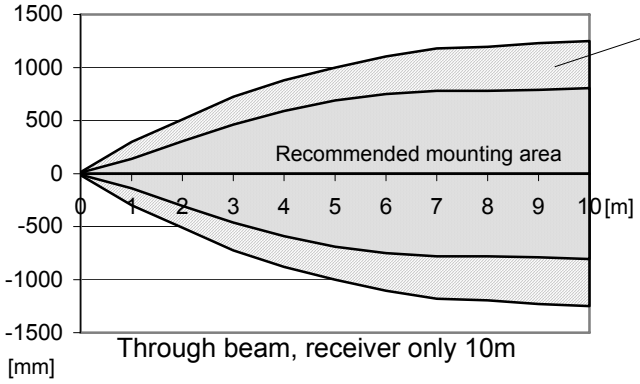


Through beam, receiver only 1m



Through beam, receiver only 6m

Typical sensing range



Through beam, receiver only 10m

Identifying characteristics in accordance with EN 60947-5-2

Electrical data		
Sensing range	S_d	See overview
Switching element function		See overview
Repeat accuracy	R	≤ 10%
Differential travel (hysteresis)	H	< 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	≤ 10mA (transmitter ≤ 30mA)
Rated conditional short–circuit current		100A
Max. rated output current		200mA
Ambient light proof		5kLux
Short–circuit protection		pulsed
Frequency of operating cycles	f	100Hz
False polarity protection		yes
Time delay before availability	t_v	< 15ms
Turn on time	t_{on}	< 5ms

Electromagnetic compatibility (EMC)		
Electromagnetic field test	IEC 61000-4-3	3V/m
Electrostatic discharge test	IEC 61000-4-2	4kV
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	Brass, nickel plated
Beam-output	PA 12
Ambient air temperature	-5°C ... +70°C
Type of protection	IP 65 (only in fully snapped-in position with it's plugs)
Pollution degree	3 (Pollution of the optic can cause impairments of the operating distances.)
Indication	LED yellow (Transmitter: green)
Termination type	Plug-in connection

EU Conformity CE