



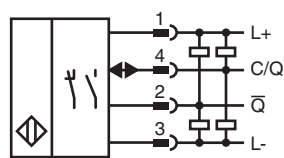
Technical Data

LED risk group labelling		exempt group
Field height		60 mm
Field width		12 mm
Object size		Minimum 2 mm, 3 mm, 5 mm, 8 mm, 10 mm; position-independent detection within detection range
Number of beams		5
Opening angle		+/- 2 °
Ambient light limit		EN 60947-5-2
Resolution		see table
Functional safety related parameters		
MTTF _d		674 a
Mission Time (T _M)		20 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Operation indicator		LED green: constantly on - power on flashing (4Hz) - short circuit flashing with short break (1 Hz) - IO-Link mode
Function indicator		Yellow LED: Permanently on: light path clear Permanently off: object detected Flashing (8 Hz) - end of compensation
Control elements		Teach-In key
Control elements		5-step rotary switch for operating modes selection
Electrical specifications		
Operating voltage	U _B	10 ... 30 V DC IO-Link mode: 18 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I ₀	< 35 mA at 24 V supply voltage
Protection class		III
Interface		
Interface type		IO-Link
IO-Link revision		1.1
Device profile		Identification and Diagnosis - I&D Smart Sensor - SSP 2.1
Process data		Input 8 Bit - switching signal 1 Bit - stability alarm 1 Bit - measurement value 6 Bit Output 2 Bit - sensor control function 1 Bit - evaluation control function 1 Bit
Vendor ID		1 (0x0001)
Device ID		0x101001 (1052673)
Transfer rate		COM2 (38.4 kBit/s)
Min. cycle time		2.3 ms
SIO mode support		yes
Compatible master port type		Class A , Class B (use 3-pole adapter or 3-wire cable)
Output		
Switching type		The switching type of the sensor is adjustable. The default setting is: C/Q - Pin4: NPN normally open / dark-on, PNP normally closed / light-on, IO-Link /Q - Pin2: NPN normally closed / light-on, PNP normally open / dark-on
Signal output		2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected, overvoltage protected
Switching voltage		max. 30 V DC
Switching current		max. 100 mA
Voltage drop	U _d	≤ 1.5 V DC
Switching frequency	f	Standard mode: 500 Hz , High resolution: 250 Hz
Response time		Standard mode: 1 ms , High resolution: 2 ms
Conformity		

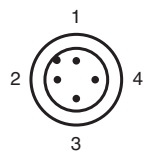
Technical Data

Communication interface	IEC 61131-9 / IO-Link V1.1.4
Product standard	EN 60947-5-2
Approvals and certificates	
UL approval	E87056 , cULus Listed , class 2 power supply , type rating 1
CCC approval	CCC approval / marking not required for products rated ≤36 V
Ambient conditions	
Ambient temperature	-40 ... 60 °C (-40 ... 140 °F) The permissible minimum ambient temperature during teach-in is -30 °C. The permissible temperature change after teach-in is ±20 K.
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)
Mechanical specifications	
Degree of protection	IP67
Connection	4-pin, M12 x 1 connector, 90° rotatable
Material	
Housing	PC (Polycarbonate)
Optical face	Plastic pane
Mass	94 g
Dimensions	
Height	89 mm
Width	25.8 mm
Depth	59.5 mm

Connection Assignment



Connection Assignment

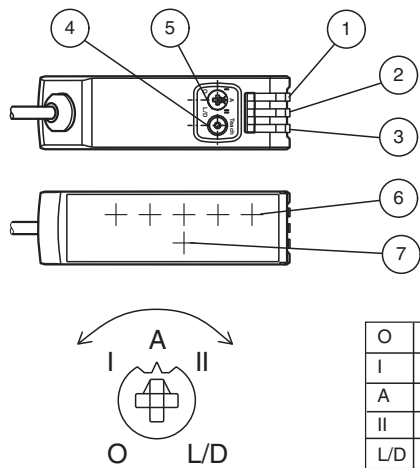


Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Release date: 2025-06-14 Date of issue: 2025-06-14 Filename: 70154427_eng.pdf

Assembly



1	Operating indicator light on	GN
2	Signal indicator	YE
3	Operating indicator dark on	GN
4	Teach-in push button	
5	Operating mode selector switch	
6	Emitter	
7	Receiver	

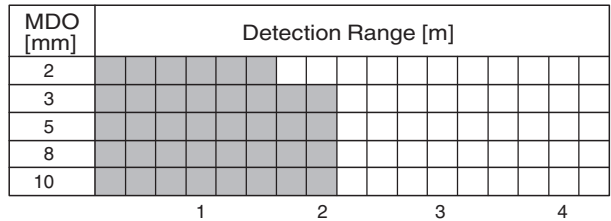
O	Keylock, operating mode, teach-in button is disabled
I	High resolution mode
A	Alignment mode
II	Standard resolution mode
L/D	Light on/dark on

Characteristic Curve

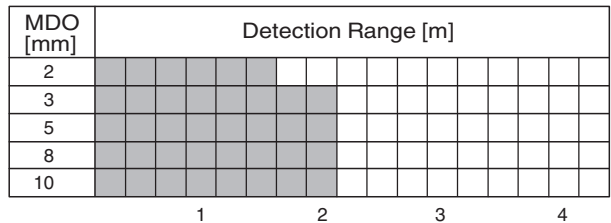
Minimum Detectable Object (MDO)

High Resolution Mode

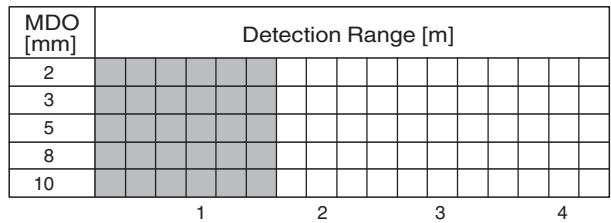
REF-H85-2



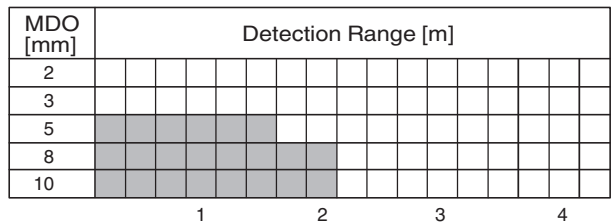
REF-A80



REF-H60-3

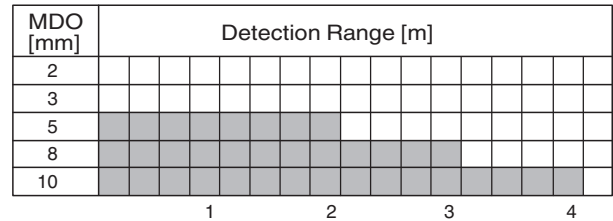


OFR-100/100

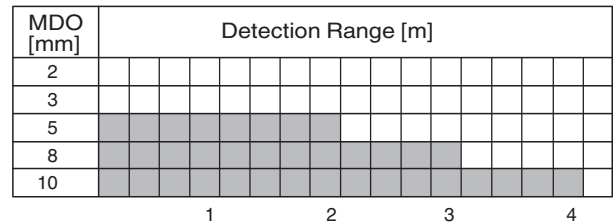


Standard Mode

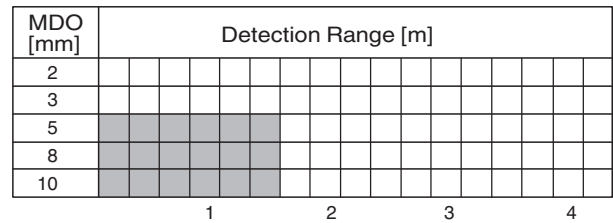
REF-H85-2



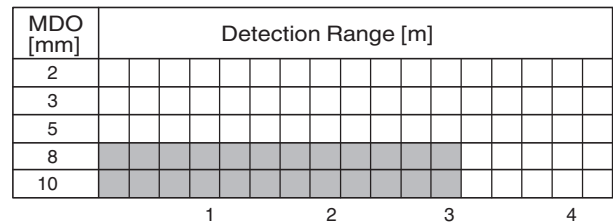
REF-A80



REF-H60-3



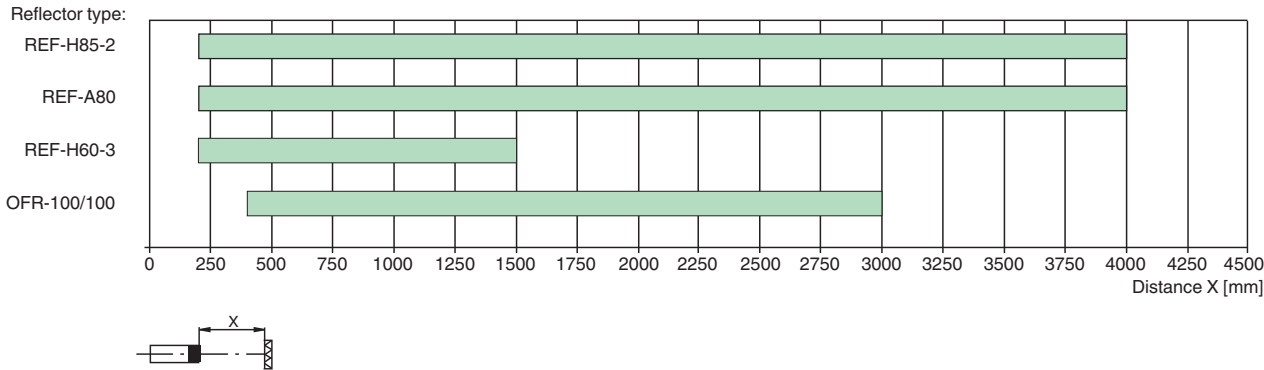
OFR-100/100



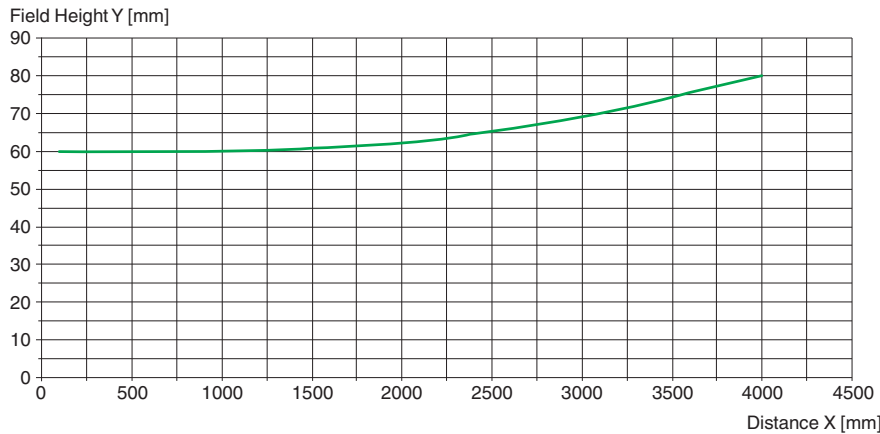
Release date: 2025-06-14 Date of issue: 2025-06-14 Filename: 70154427_eng.pdf

Characteristic Curve

Relative received light strength



Field Height



Technical Features

Resolution		
Operating mode	High resolution mode	Standard mode
Effective detection range	0 ... 2 m	0 ... 4 m
Resolution	2 mm: 0 ... 1.5 m 3 mm: 0 ... 2 m	5 mm: 0 ... 2 m 8 mm: 0 ... 3 m 10 mm: 0 ... 4 m