Distance sensor

VDM28-8-L1-8954

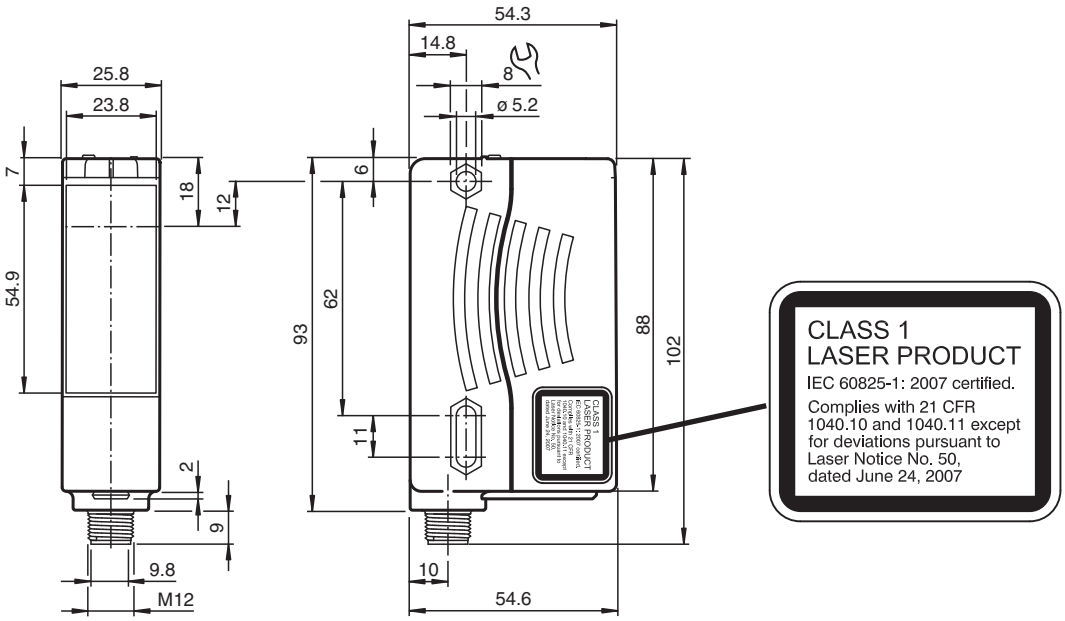
- Distance measurement using object
- Measuring method PRT (Pulse Ranging Technology)
- Accurate, clear, and reproducible measuring results
- Minimal black-white difference
- Red laser as the light emitter
- Version with laser class 1

Universal distance sensor, measurement to object, measuring method PRT, 8 m detection range, red laser light, laser class 1, push-pull output, M12 plug

Function

The VDM28 distance measurement device employs Pulse Ranging Technology (PRT). It has a repeat accuracy of 5 mm with an operating range of 0.2 ... 50 m and an absolute accuracy of 25 mm.
The compact housing of the Series 28 photoelectric sensors, with dimensions of 88 mm (height), 26 mm (width) and 54 mm (depth), make it the smallest device available in its class.

Dimensions



Technical Data

General specifications	
Object distance	Q1: < 60 mm ; Q2: 500 ... 1900 mm
Reference target	Kodak white (90%)
Light source	laser diode typ. service life 85,000 h at Ta = +25 °C

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Technical Data

Light type		modulated visible red light
Laser nominal ratings		
Note		LASER LIGHT , DO NOT STARE INTO BEAM
Laser class		1
Wave length		660 nm
Beam divergence		< 1.5 mrad
Pulse length		approx. 4 ns
Repetition rate		250 kHz
max. pulse energy		< 1.5 nJ
Angle deviation		max. ± 2°
Measuring method		Pulse Ranging Technology (PRT)
Diameter of the light spot		< 10 mm at a distance of 8 m at 20 °C
Ambient light limit		50000 Lux
Temperature influence		typ. ≤ 0.25 mm/K
Functional safety related parameters		
$MTTF_d$		200 a
Mission Time (T_M)		10 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Operation indicator		LED green
Function indicator		2 LEDs yellow for switching state
Control elements		deactivated
Electrical specifications		
Operating voltage	U_B	10 ... 30 V DC , class 2
Ripple		10 % within the supply tolerance
No-load supply current	I_0	≤ 125 mA / 24 V DC
Time delay before availability	t_v	1.5 s
Output		
Output type		PNP normally closed
Switching type		
Signal output		2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected
Switching voltage		max. 30 V DC
Switching current		max. 100 mA
Switching frequency	f	50 Hz
Response time		10 ms
Conformity		
Product standard		EN 60947-5-2
Laser safety		IEC 60825-1:2007
Measurement accuracy		
Absolute accuracy		± 25 mm
Repeat accuracy		< 5 mm
Approvals and certificates		
Protection class		III
UL approval		cULus Listed, Class 2 Power Source, Type 1 enclosure
CCC approval		CCC approval / marking not required for products rated ≤36 V
FDA approval		IEC 60825-1:2007 Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007
Ambient conditions		
Ambient temperature		-30 ... 55 °C (-22 ... 131 °F)
Storage temperature		-30 ... 70 °C (-22 ... 158 °F)
Mechanical specifications		
Housing width		25.8 mm
Housing height		88 mm

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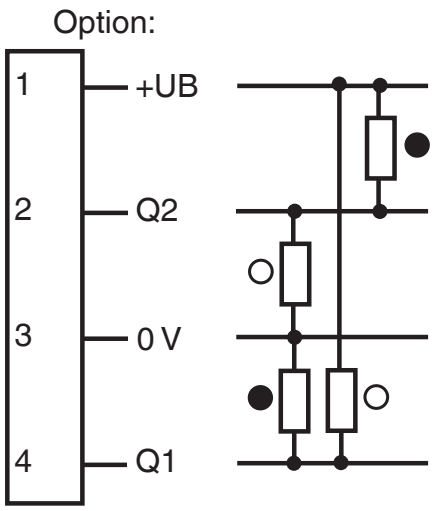
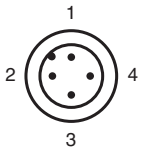
Housing depth		54.6 mm
Degree of protection		IP67
Connection		4-pin, M12 x 1 connector
Material		
Housing		Plastic ABS
Optical face		PMMA
Mass		90 g

Connection Assignment



○ = Light on
● = Dark on

Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

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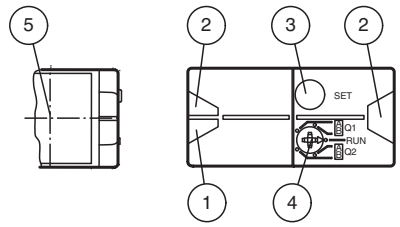
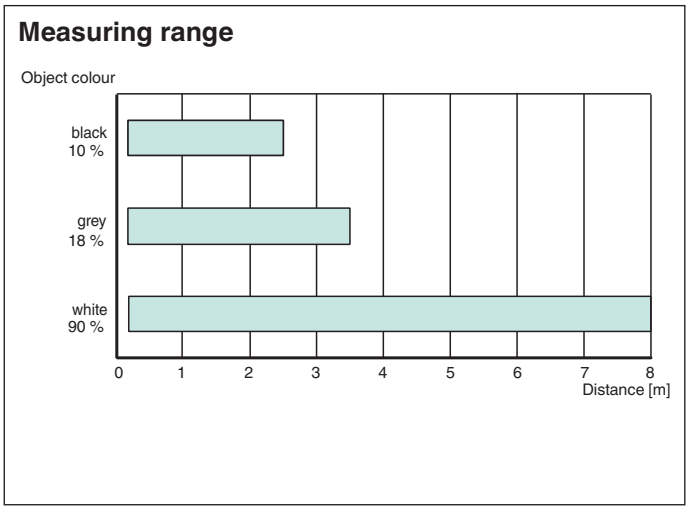
Assembly



1	Operating display	green
2	Signal display	yellow
3	TEACH-IN button	
4	Mode rotary switch	
5	Laser output	

Characteristic Curve



Application

Safety Information

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Safety Information

Laser Class 1 Information
The irradiation can lead to irritation especially in a dark environment. Do not point at people!
Maintenance and repairs should only be carried out by authorized service personnel!
Attach the device so that the warning is clearly visible and readable.
Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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