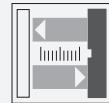




Distance sensor VDM28-8-L1-8954



- 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

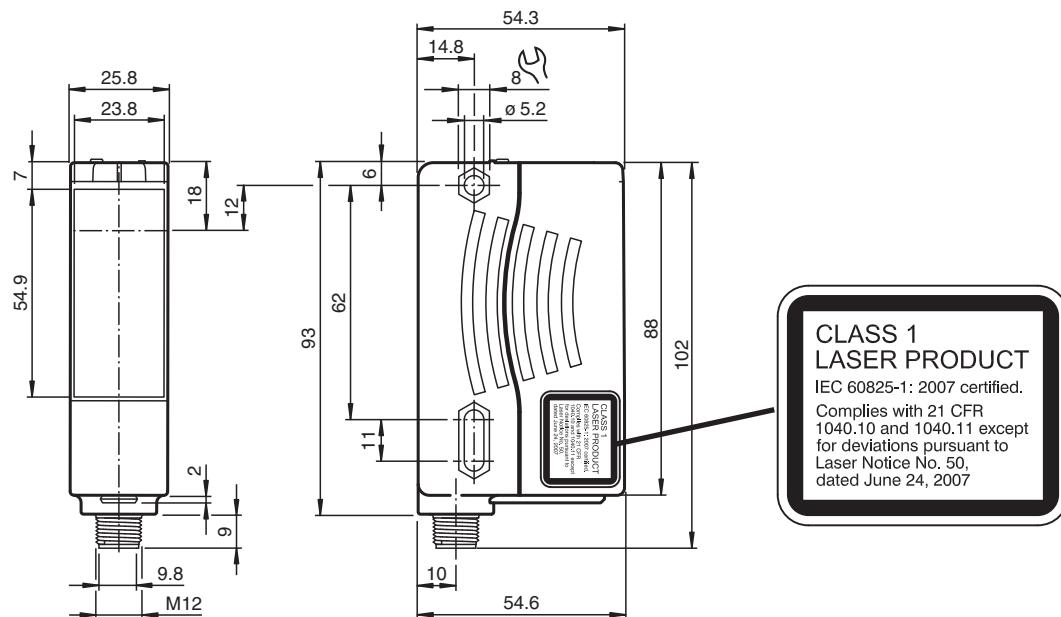
Universal distance sensor, measurement to object, measuring method PRT, 8 m detection range, red laser light, laser class 1, push-pull output, M12 plug



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



Release date: 2025-02-28 Date of issue: 2025-02-28 Filename: 70145989_eng.pdf

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

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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 PEPPERL+FUCHS

Technical Data

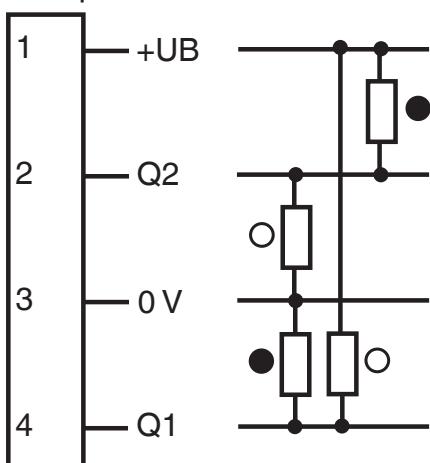
Light type	modulated visible red light	
Laser nominal ratings		
Note	LASER LIGHT , DO NOT STARE INTO BEAM	
Laser class	1	
Wave length	660 nm	
Beam divergence	< 1.5 mrad	
Pulse length	approx. 4 ns	
Repetition rate	250 kHz	
max. pulse energy	< 1.5 nJ	
Angle deviation	max. $\pm 2^\circ$	
Measuring method	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	
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	$\leq 125 \text{ mA} / 24 \text{ V DC}$
Time delay before availability	t _v	< 1.5 s at 20 °C
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		
Electromagnetic compatibility	EN 61000-6-2, EN 61000-6-4	
Laser safety	IEC 60825-1:2014	
Measurement accuracy		
Absolute accuracy	$\pm 25 \text{ mm}$	
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 $\leq 36 \text{ V}$	
FDA approval	IEC 60825-1:2014 Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3 as described in Laser Notice 56, dated May 8, 2019.	
Ambient conditions		
Ambient temperature	-30 ... 55 °C (-22 ... 131 °F)	
Storage temperature	-30 ... 70 °C (-22 ... 158 °F)	
Mechanical specifications		
Degree of protection	IP67	
Connection	4-pin, M12 x 1 connector	

Technical Data

Material	
Housing	plastic
Optical face	PMMA
Mass	90 g
Dimensions	
Height	88 mm
Width	25.8 mm
Depth	54.6 mm

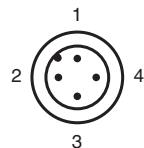
Connection Assignment

Option:



○ = Light on
● = Dark on

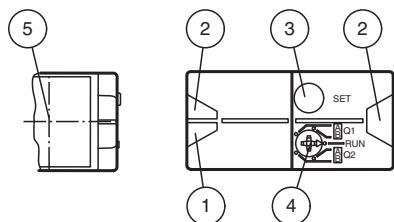
Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

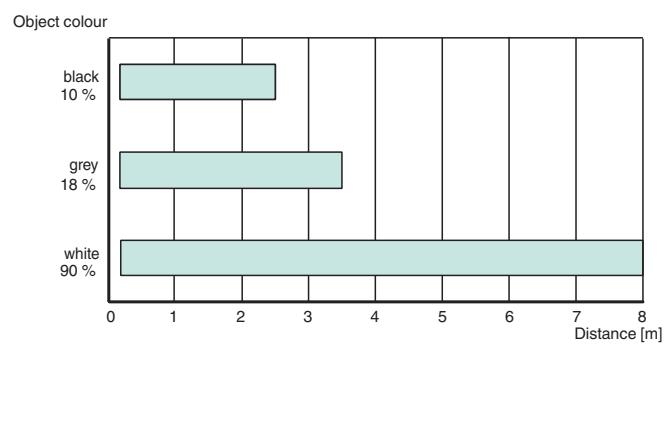
Assembly



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

Characteristic Curve

Measuring range



Application

