

Diffuse mode sensor

VT18-8-400-M-LAS/40a/118/128



- M18 threaded housing made of brass, nickel plated
- Visible red light, pulsed LASER light
- Array control panel with highly visible LED display
- Flashing power on LED in case of short-circuit
- Multiple device installation possible, no mutual interference (no cross-talk)
- Not sensitive to ambient light, even with switched energy saving lamps
- Protection class II

Diffuse mode sensor, M18 threaded housing design, metal housing, 400 mm detection range, red laser diode, sensitivity adjuster, light/dark on, push-pull output, M12 plug



Safety Information

Laser Class 1 Information

The irradiation can lead to irritation especially in a dark environment. Do not point at people!

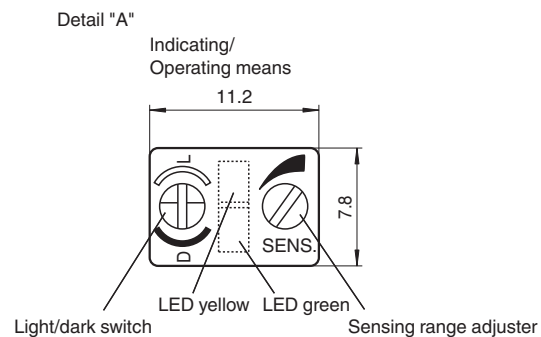
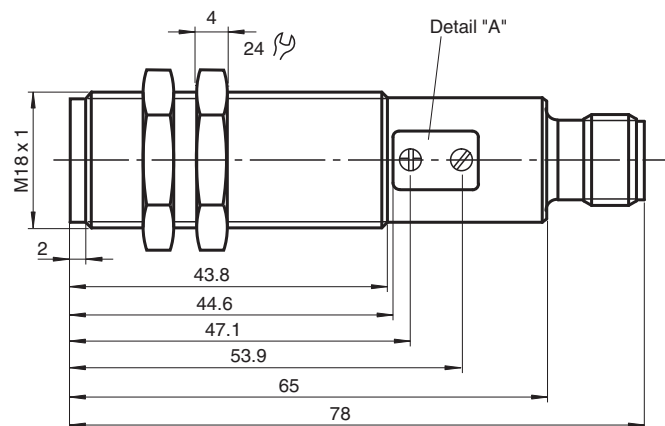
Maintenance and repairs should only be carried out by authorized service personnel!

Attach the device so that the warning is clearly visible and readable.

The warning accompanies the device and should be attached in immediate proximity to the device.

Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Dimensions



Technical Data

General specifications

Detection range	0 ... 400 mm , adjustable
Detection range min.	0 ... 25 mm
Detection range max.	0 ... 400 mm
Light source	laser diode
Light type	modulated visible red light
Laser nominal ratings	
Note	LASER LIGHT , DO NOT STARE INTO BEAM
Laser class	1
Wave length	655 nm
Beam divergence	31.5 mrad
Pulse length	4 µs
Repetition rate	11.91 kHz
max. pulse energy	4.95 nJ
Diameter of the light spot	approx. 0.5 mm at a distance of 120 mm
Optical face	frontal
Ambient light limit	30000 Lux
Hysteresis	H < 15 %

Functional safety related parameters

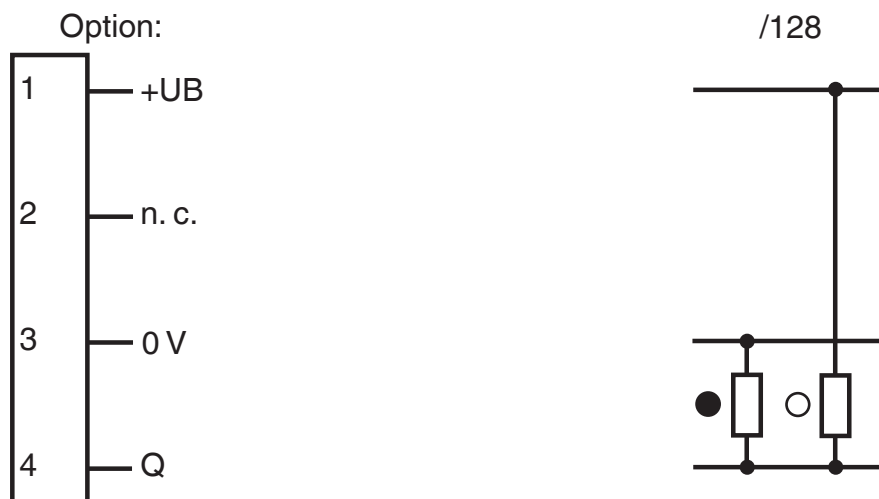
MTTF _d	700 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	0 %

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Technical Data

Indicators/operating means	
Operation indicator	LED green, flashes in case of short-circuit
Function indicator	LED yellow, lights up with receiver lit
Control elements	Sensing range adjuster, light-on/dark-on changeover switch
Electrical specifications	
Operating voltage	U_B 10 ... 30 V DC , class 2
No-load supply current	I_0 < 25 mA
Protection class	II , rated voltage \leq 50 V AC with pollution degree 1-2 according to IEC 60664-1
Output	
Switching type	light/dark on, switchable
Signal output	Push-pull output, short-circuit protected, reverse polarity protected
Switching voltage	30 V DC
Switching current	max. 200 mA
Switching frequency	f 500 Hz
Response time	1 ms
Conformity	
Product standard	EN 60947-5-2
Compliance with standards and directives	
Standard conformity	
Laser class	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
Approvals and certificates	
CE conformity	yes
UL approval	cULus Listed, Type 1 enclosure
CCC approval	CCC approval / marking not required for products rated \leq 36 V
Ambient conditions	
Ambient temperature	-25 ... 55 °C (-13 ... 131 °F)
Storage temperature	-30 ... 70 °C (-22 ... 158 °F)
Mechanical specifications	
Degree of protection	IP67
Connection	4-pin, M12 x 1 connector
Material	
Housing	brass, nickel-plated
Optical face	PMMA
Mass	60 g

Connection Assignment



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

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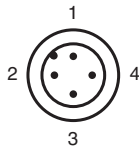
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PF PEPPERL+FUCHS

- = Light on
- = Dark on

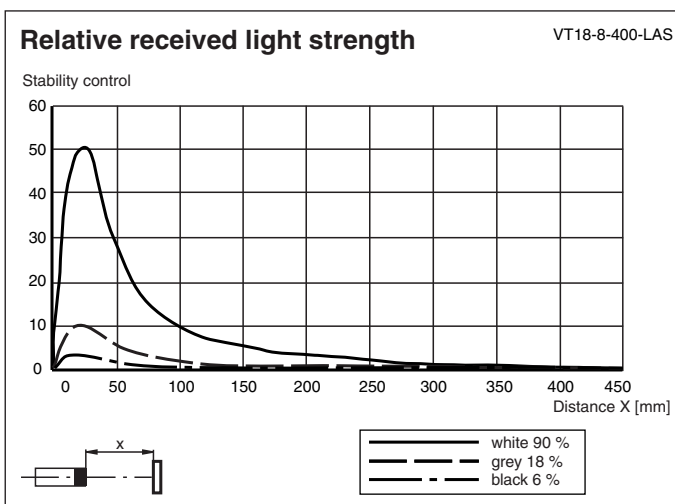
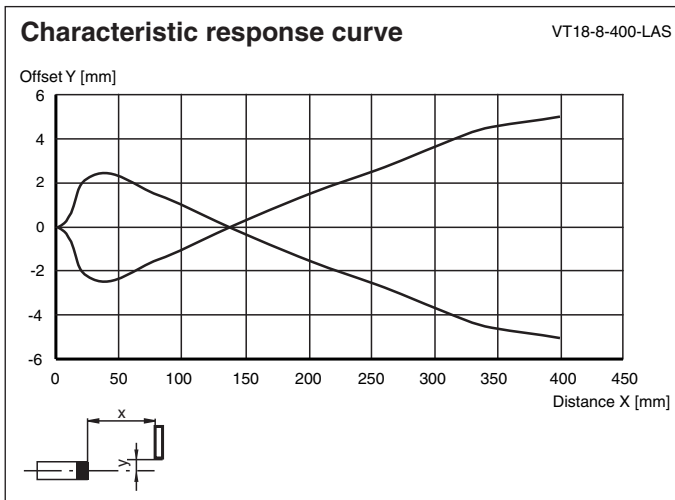
Connection Assignment



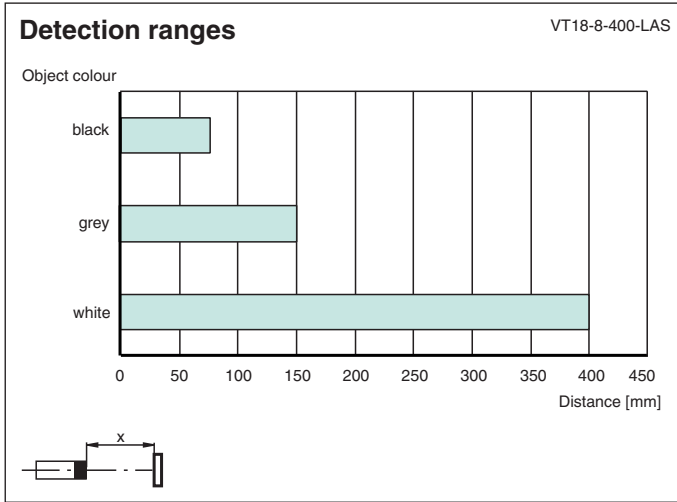
Wire colors in accordance with EN 60947-5-2

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

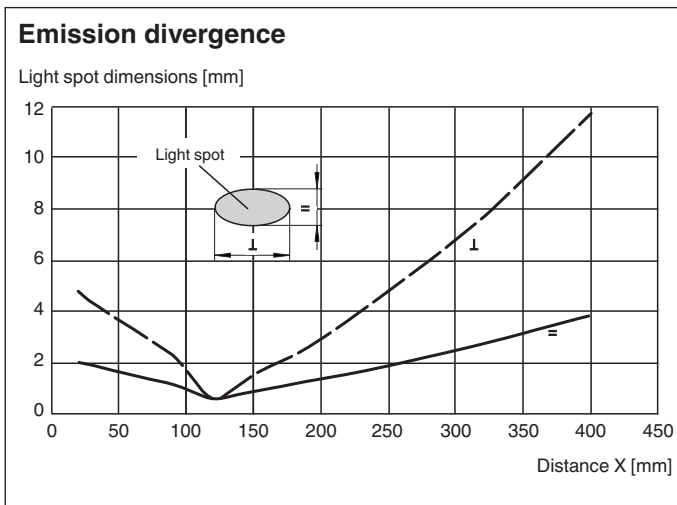
Characteristic Curve



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Characteristic Curve



Accessories

	OMH-VL18	Mounting Bracket with swivel nut
	BF 18	Mounting flange, 18 mm
	BF 18-F	Plastic mounting adapter, 18 mm
	BF 5-30	Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm
	V1-G-2M-PUR	Female cordset single-ended M12 straight A-coded, 4-pin, PUR cable grey
	V1-W-2M-PUR	Female cordset single-ended M12 angled A-coded, 4-pin, PUR cable grey

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Configuration

Sensitivity adjustment

- Turn sensitivity adjuster (counterclockwise) to minimum position.
- Place the object to be detected in the sensing range and turn the sensitivity adjuster clockwise until the yellow indication LED lights up. This setting indicates the position A of the sensitivity adjuster.
- Remove the object. Increase the sensitivity slowly (turning the sensitivity adjuster clockwise) until the yellow LED lights up again. This setting indicates the position B of the sensitivity adjuster.

Note:

In case of no background object, the LED won't light up, even in MAX. adjustment. In that case take care, that in normal operation conditions no temporal background object can appear in the sensing range (e. g. parked pallets). If this can not be excluded, place (only for adjustment matter) an object at the appropriate location. Then repeat this adjustment step. After finishing the adjustment this temporal object should be removed.

- For optimal setting, now turn the sensitivity adjuster to the middle position between the positions A and B.

