Model Number

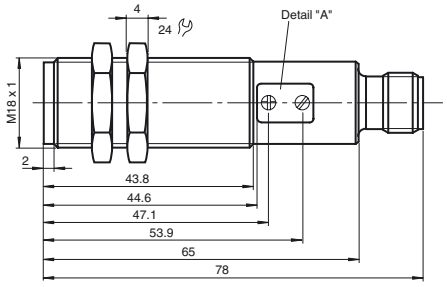
VT18-8-400-M-LAS/30/40a/118

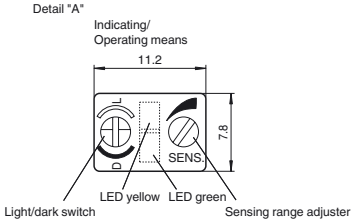
Diffuse mode sensor
with M12, 4-pin metal connector

Features

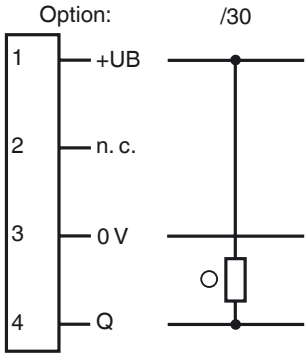
- M18 threaded housing made of brass, nickel plated
- Visible red light, pulsed LASER light
- Array control panel with highly visible LED display
- Flashing power on LED in case of short-circuit
- Multiple device installation possible, no mutual interference
- Not sensitive to ambient light, even with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

Dimensions



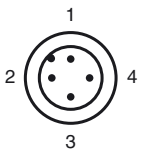


Electrical connection



○ = Light on
● = Dark on

Pinout



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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 %
Indicators/operating means		
Operating display		LED green, flashes in case of short-circuit
Function display		LED yellow, lights up with receiver lit
Controls		Detection range adjuster, light/dark 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 ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1
Output		
Switching type		light/dark on, switchable
Signal output		1 NPN output, short-circuit protected, reverse polarity protected, open collector
Switching voltage		30 V DC
Switching current		max. 200 mA
Switching frequency	f	500 Hz
Response time		1 ms
Ambient conditions		
Ambient temperature		-25 ... 55 °C (-13 ... 131 °F)
Storage temperature		-30 ... 70 °C (-22 ... 158 °F)
Mechanical specifications		
Protection degree		IP67
Connection		connector M12 x 1, 4-pin (Vario-Quick quick connect technology)
Material		
Housing		brass, nickel-plated
Optical face		plastic
Mass		60 g
Compliance with standards and directives		
Directive conformity		EMC Directive 2004/108/EC
Standard conformity		
Product standard		EN 60947-5-2:2007 IEC 60947-5-2:2007
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		
Protection class		II, rated voltage ≤ 300 V AC with pollution degree 1-2 according to IEC 60664-1
UL approval		cULus Listed, Type 1 enclosure
CCC approval		Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.

Accessories

OMH-VL18
Mounting Bracket with swivel nut

BF 18
Mounting flange, 18 mm

BF 18-F
Mounting flange with dead stop, 18 mm

BF 5-30
Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm

Additional accessories can be found in the Internet.

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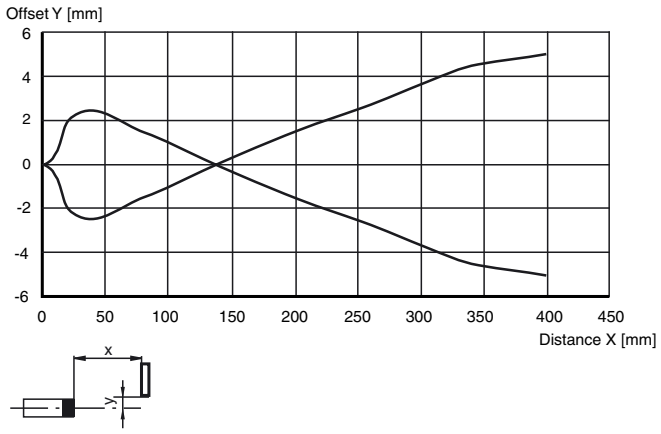
Curves/Diagrams

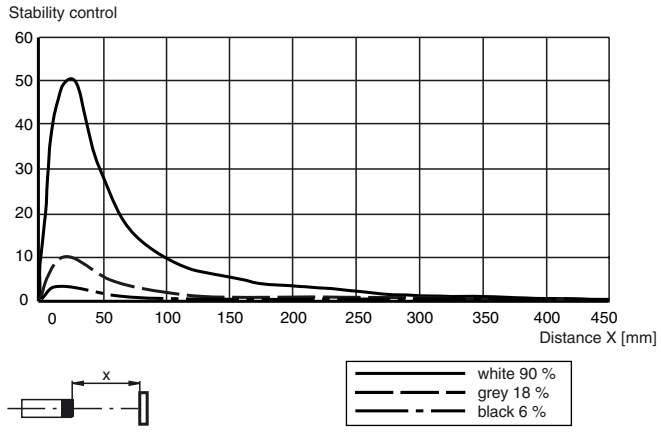
Characteristic response curve

VT18-8-400-LAS



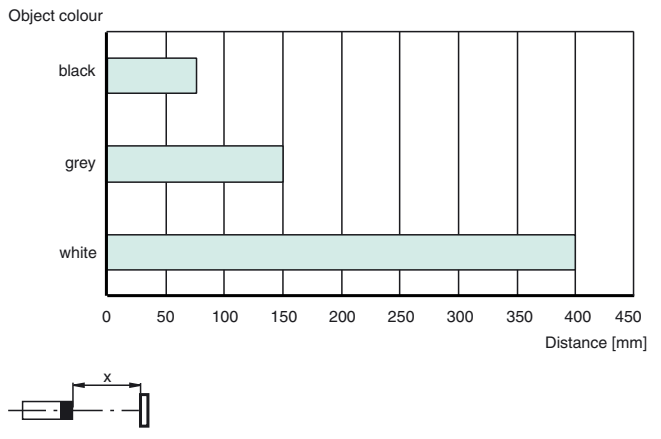
Relative received light strength

VT18-8-400-LAS



Detection ranges

VT18-8-400-LAS



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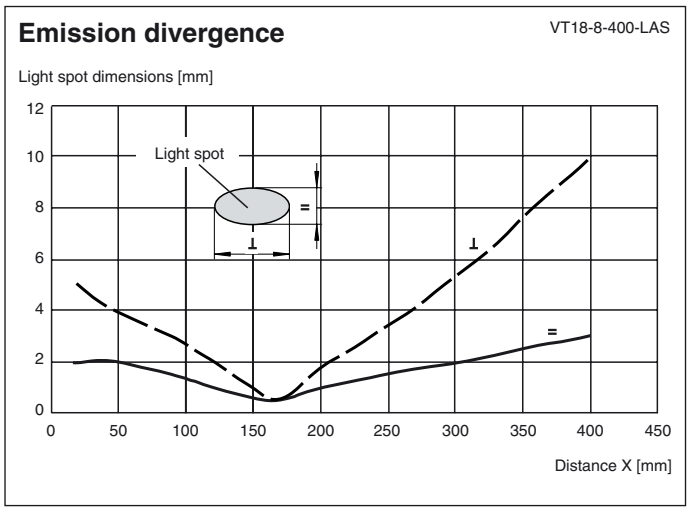
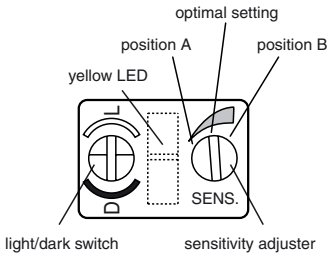
Curves/Diagrams



Adjustment

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.



Laser notice laser class 1

- 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.

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