



Model Number

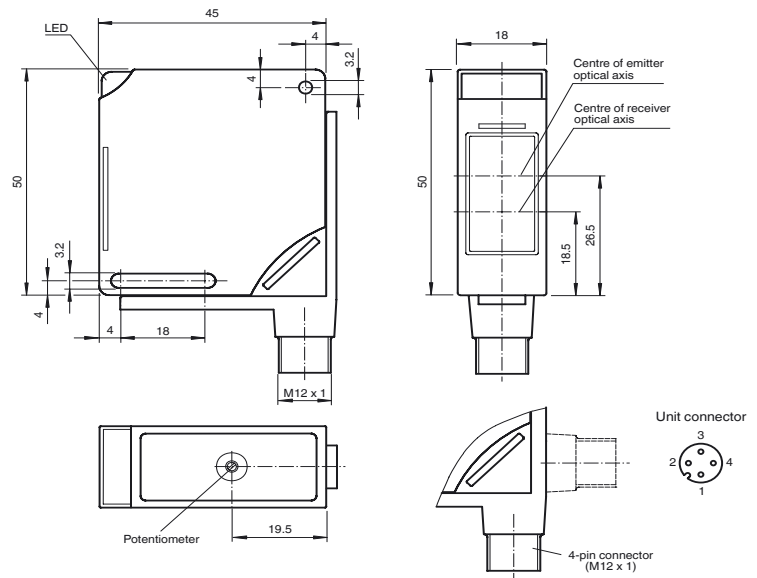
MLV11-54-Ex/40b/112

Retroreflective sensor, NAMUR
with 4-pin M12 connector, 90° adjustable
position

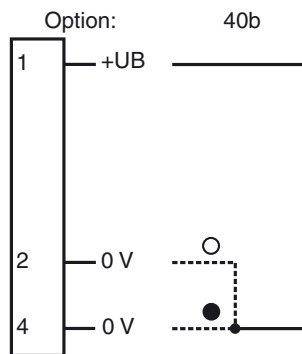
Features

- ATEX-approval for zone 1
- Intrinsically safe, Ex op is ia IIC T6
- Glare protected with polarization filter
- Visible red light
- Adjustable sensitivity
- Light/dark ON, programmable
- Protection degree IP67

Dimensions



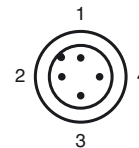
Electrical connection



○ = Light on


● = Dark on

Pinning according



Technical data

General specifications

Effective detection range	0 ... 3 m
Reflector distance	300 ... 3000 mm
Threshold detection range	3 m
Reference target	H85 reflector
Light source	LED
Light type	modulated visible red light , 660 nm
Approvals	CE
Marking	Zone 1:  II 2G Ex op is ia IIC T6 Gb
Ambient light limit	≤ 10000 Lux sun light ≤ 7500 Lux halogen light

Functional safety related parameters

MTTF _d	1319 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Function display	LED yellow: switching state
Controls	sensitivity adjustment

Electrical specifications

Operating voltage	U _B	6 ... 15.5 V DC (R _i approx. 0 Ohm)
Ripple		5 %
Power consumption	P ₀	max. 64 mW
Time delay before availability	t _v	20 ms

Output

Switching type	light/dark on, programmable	
Signal output	1 NAMUR output NC/NO programmable	
Switching voltage	8 V DC (R _i approx. 1 kΩ)	
Switching frequency	f	≥ 100 Hz
Current consumption		
Reference target detected	connection 1, 2: ≥ 2.2 mA connection 1, 4: ≤ 1 mA	
Reference target not detected	connection 1, 2: ≤ 1 mA connection 1, 4: ≥ 2.2 mA	
Response time	5 ms	

Ambient conditions

Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Storage temperature	-40 ... 80 °C (-40 ... 176 °F)

Mechanical specifications

Protection degree	IP67
Connection	V1 connector (M12 x 1), 4-pin, rotatable through 90°
Material	
Housing	PBT
Optical face	scratch resistant plastic lens
Mass	60 g

Compliance with standards and directives

Standard conformity	
Product standard	EN 60947-5-2
Standards	DIN EN 60947-5-6

Approvals and certificates

CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.
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ATEX 2G

Instruction

Manual electrical apparatus for hazardous areas

Device category 2G

Directive conformity	94/9/EG
Standard conformity	EN 60079-0, , EN 60079-11 , EN 60079-28
EC-Type Examination Certificate	PTB 99 ATEX 2036 X
Effective internal capacitance C _i	≤ 448 nF
Effective internal inductance L _i	negligibly small
General	The apparatus must be operated in accordance with the data provided in the data sheet and this operating instruction. In particular, the maximum rated voltage and the temperature range must be adhered to. The special conditions must be adhered to! The EC-Type Examination Certificate has to be observed.

Highest permissible ambient temperature

The temperature ranges, according to temperature class, are given in the EC-Type Examination Certificate.

Installation, Commissioning

The associated apparatus must, as a minimum, fulfill the requirements for degree of protection Ia and for Groups II or III, as appropriate for the operating conditions. Due to the possible risk of ignition that can occur as a result of faults and/or transient currents in the equipotential bonding system, galvanic isolation in the supply and signal current circuit is preferred. Associated apparatus without galvanic isolation may only be used if the appropriate requirements as set out in IEC 60079-14 are met. The intrinsic safety is only assured in connection with an appropriate related apparatus and according to the proof of intrinsic safety.

Maintenance

No changes can be made to apparatus, which are operated in hazardous areas. Repairs to these apparatus are not possible.

Special conditions

Protection from mechanical danger

When used in the temperature range below -20 °C the sensor should be protected from knocks by the provision of an additional housing.

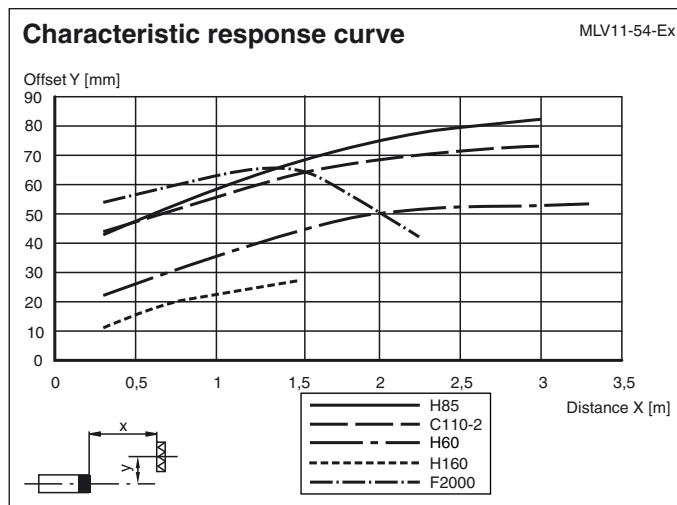
Degree of protection required when installing connecting components

IP20 according to IEC 60529:2001

Other conditions

Refer to the relevant EC type examination certificate to see the relationship between the connected circuit type, the maximum permitted ambient temperature and the temperature class as well as effective inner reactances.

Curves / Diagrams



Relative received light strength

MLV11-54-Ex

