

Original Operating Manual: Laser Pointer LPG-532-*SS-OP-**** Housing M18

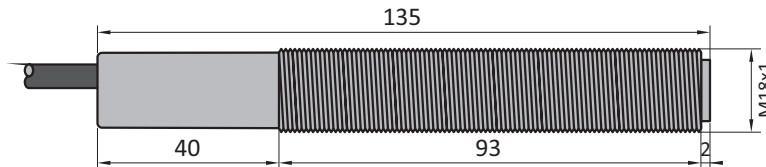


IECEx pending
Ex d [op is Ga] IIC T4 Gb
Ex d [op is Da] IIIC T135 Db IP67

•Green laser light (more visible than red)
•Eye-safe laser class 2
•Series LPG: For use in Ex zones (0), 1, 2, (20), 21, 22

Technical data	Type	LPG-532-*SS-OP-****										
Beam, type LPG-532-PSS		point										
Beam, type LPG-532-KSS		cross line										
Type of Ex protection Gas, 2014/34/EU		II 2(1)G Ex d [op is Ga] IIC T4 Gb										
Type of Ex protection Dust, 2014/34/EU		II 2(1)D Ex d [op is Da] IIIC T135 Db IP67										
For use in Ex zones		(0), 1, 2, (20), 21, 22										
Light source		Laser, visible green, 532nm, class 2										
Maximum radiant power		< 1mW										
Divergence angle		point (LPG-532-PSS): 1.7 mrad cross line (LPG-532-KSS): 9°										
Supply voltage		24 VDC ± 10%										
Absolute maximum supply voltage Um		30 VDC										
Current consumption		95mA										
Maximum power dissipation		2.5W										
Maximum ambient working temperature		0°C < T _{amb} < +40°C										
Storage temperature range		-20°C ... +70°C										
Housing		M18, brass, nickel plated										
Life time of laser (at 25°C)		5000 hours										
Enclosure rating (EN 60529)		IP67										
Vibration and shock resistance		Vibration: 30g over 20Hz to 2kHz. Shock: 100g for 3ms										
Connection cable		2+PE x 0.5mm ² , TPU jacket, shielded, halgone-free, oil and solvent resistant, cable for trailing										
Cable length		10m										
Accessories, included		2 nuts M18 (or optionally one clamp on request) Additional warning plate "LASER RADIATION. DO NOT STARE INTO BEAM. CLASS 2 LASER PRODUCT", self-adhesive for gluing near to the sensor.										
Options		Cable length: Up to 100m, on request LPG-532-*SS-OP-S229: Ambient temperature range: -20°C up to +50°C										
Connection diagram, cable:		<table border="0"> <tr> <td>Lead No:</td> <td>Function:</td> </tr> <tr> <td>1</td> <td>+24VDC</td> </tr> <tr> <td>2</td> <td>0V</td> </tr> <tr> <td>green-yellow</td> <td>PE/PA</td> </tr> <tr> <td>white</td> <td>Cable shield</td> </tr> </table>	Lead No:	Function:	1	+24VDC	2	0V	green-yellow	PE/PA	white	Cable shield
Lead No:	Function:											
1	+24VDC											
2	0V											
green-yellow	PE/PA											
white	Cable shield											

LPG-532-*SS-OP: Dimensions (in mm):



Ex related designations

CE 0158

Device type LPG-532-*SS-OP:

Manufacturer with address

II 2(1)G Ex d [op is Ga] IIC T4 Gb

II 2(1)D Ex d [op is Da] IIIC T135 Db IP67

Electrical data according to the chart

ATEX, EC Type Certification, number: BVS 10 ATEX E 130 X

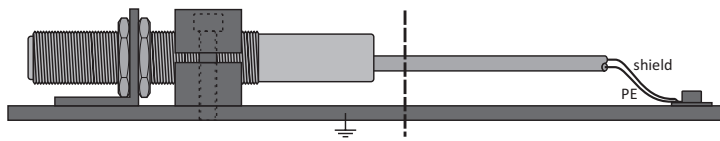
IECEx certification, number: pending

T_{amb}: 0°C < T_{amb} < +40°C

Date of production: Numeral 5 to 8 of the serial number (Year / Calendar week)

(X designation of the certification number: Fibre optics must only be applied with sensors with certificated limited optical power)

Equipotential Bonding for
Ex Devices LPG:



The end of the cable must be connected outside the hazardous locations.
Reliable, noncorrosive holding of the protection earth connection.

The local equipotential bonding has to be done with conductive corrosion-resistant clamps or nuts M18

Shield connected to PE in a wide area

Operating Manual, EC- / EU - Declaration of Conformity:

Mounting prescriptions

Ex Protection:

It is necessary to take into consideration the valid international and national rules and regulations (EN 60079-14). Do not exceed the maximum input voltage $U_m=30VDC$. Additional optical lenses are not allowed in hazardous locations. The local equipotential bonding has to be applied. The protective earth (PE) is connected to the housing inside the sensor. The cable has to be installed and protected against damages. All cable terminals must be connected outside hazardous locations or in a Ex e housing.

Type LPG-532-*SS-OP: For use in gas / dust Ex zones 1, 2, 21, 22. Its limited optical radiation can operate into hazardous locations 0 or 20. Do not separate the connector when the supply voltage is connected to the cable. When installing the sensor, the safety lock device must be fitted to the cable connector. The additional adhesive warning label must be fixed to the connector housing at the connection plug. Lumberg cordsets RKTS 5-298/xxM (straight type) or RKWTH 5-298/xxM (right-angled type), are allowed ONLY. It is necessary to take into consideration the mounting prescription of the connector manufacturer. In dusty locations, if no connection cable is connected, the sensor socket has to be covered with the protection cap.

General mounting prescriptions

Mount the laser stable and vibration-free. The electrical connections must be exactly as shown in the connection diagram. The cable shield must be connected as short as possible. The cable shield should be connected to the protection earth, large-surfaced. Do not exceed the maximum ratings or install the connection cables parallel to high voltage cables.

Function

Maximally 0.5 s after connecting the power supply the laser beam turns on, displaying a bright green dot (models LPG-532-PSS-OP) or a green cross (models LPG-532-KSS-OP). At a distance of 5 m the diameter of the dot is approximately 9 mm and the diameter of the cross approximately 70 cm. Due to the limited life time of the laser (5000 hours at 25°C) it is important that the power is switched off when the laser is not used.

Maintenance

No special maintenance is required. For a high reliability hold the sensor eyes and the mirror free from sediments. They should be cleaned only with a non-aggressive cleaning liquid. Equipment should only be repaired by the manufacturer.

Safety considerations for Class 2 laser devices

The relevant standard is EN 60825-1 "Safety of laser products", see paragraphs 12.5.1 and 12.6.1. It is only necessary to take precautions to avoid a direct and prolonged staring into the beam. A direct look into the beam is not considered hazardous if the normal eye reflex limits it to a short duration (max. 0.25 s). The laser beam path should be blocked at the end of its useful path when this is reasonably practicable. Additionally, the laser should not be directed at people.

General safety instructions

"WARNING - EXPLOSION HAZARD - WHEN IN HAZARDOUS LOCATIONS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES. DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NONHAZARDOUS". The mounting of the sensor in dusty locations without fixed cordset or protection cap results in a high ignition risk. The sensors must not be used for Accident-Prevention! In worst case the output can change to any state! When installing and operating with the sensor, it is necessary to take into consideration the relevant international and other national regulations: EN 60079-14, single directive 1999/92/EC.

The sensor and the fibre optic are conform to the following standards: IEC/EN 60079-0:2012 + A11:2013, IEC/EN 60079-1:2007, EN 60079-15:2010, IEC/EN 60079-28:2007, EN 60825-1:2006, EN 60825-2:2004; EN 60529:2014, EN 61000-4-2 to EN 61000-4-6, EN 61000-6-1/-2, EN 61000-6-4. ATEX directive: 2014/34/EU, Machine directive: 2006/42/EC, EMC directive: 2014/30/EU, RoHS directive: 2011/65/EU.

General Notes, disposal

We reserve the right to modify our equipment. Our equipment is designed such way, that it has the least possible adverse effect on the environment. It neither emits nor contains any damaging or siliconized substances and use a minimum of energy and resources. No longer usable or irreparable units must be disposed of in accordance with local waste disposal regulations.

EC-/EU-Declaration of conformity:

Types LPG: IECEx certification: Ex d [op is Ga] IIC T4 Gb. Certification No. pending.

Types LPG: ATEX certification: II 2(1)G Ex d [op is Ga] IIC T4 Gb. Certification No. BVS 10 ATEX E 130 X, Zertifizierungsstelle, Carl-Beyling-Haus, Dinendahlstrasse 9, D-44809 Bochum, Kennnummer: 0158.

ATEX certification of quality type production of Ex devices in accordance to the ATEX directive 2014/34/EU, CE 0158. Certification No: BVS 18 ATEX ZQS / E118, QAR No. DE/BVS/QAR13.0004/04.

The conformity of the devices with the EC standards and directives and the EC-type examination certificate and the observation of the Quality Safety System ISO 9001:2015 with the ATEX module "Production", declares:

Pablo Ledergerber, Matrix Elektronik AG

LPG-532-OP_e10/2019-02-18/PDL