ISO 9001:2008 ATEX

Original Operating Manual: Laser Pointer GP*-532-*SS(-OP)-S229/S232

GPD-532-*SS-OP-S229 **Housing M30** **GPN-532-*SS-OP-S229/S232**

CE 0158

IECEx BVS 14.0108X

II 2(1)G / II 2(1)D

- Green laser light (more visible than red)
- Eye-safe laser class 2
- Series GPD: For use in Ex zones (0), 1, 2, (20), 21, 22
- Series GPN: For use in Ex zones (1), 2, (21), 22
- Series GPO: Optical radiation can operate into Ex zone 2,22

CE

Ex d [op is Ga] IIB T6 Gb
Ex tb [op is Da] IIIB T100°C Db IP67

II 3(2)G Ex nA [op is Gb] IIB T4 Gc
II 3(2)D Ex tc [op is Db] IIIA T135°C

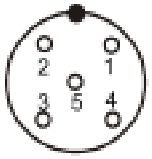
Technical data / Type	GPS-532-*SS-S229	GPO-532-*SS-OP-S229	GPN-532-*SS-OP-S229	GPD-532-*SS-OP-S229
Beam, type GP*-532-**P**SS	point			
Beam, type GP*-532-**K**SS	cross line			
Type of Ex protection Gas, 2014/34/EU	none	II (3)G [Ex op is IIB T4 Gc]	II 3(2)G Ex nA [op is Gb] IIB T4 Gc	II 2(1)G Ex d [op is Ga] IIB T6 Gb
Type of Ex protection Dust, 2014/34/EU	none	[Ex op is IIB T4 Dc]	Ex tc [op is Db] IIIA T135°C Dc IP67	Ex tb [op is Da] IIIB T100°C Db IP67
For use in Ex zones	Not for Ex zones	(2), (22)	(1), 2, (21), 22	(0), 1, 2, (0), 21, 22
Light source	Laser, visible green, 532nm, class 2			
Maximum radiant power	< 1mW			
Divergence angle	point (GP*-532-PSS): 1.7 mrad			
	cross line (GP*-532-KSS): 9°			
Supply voltage	10 - 30 VDC	24 VDC ± 10%	24 VDC ± 10%	24 VDC ± 10%
Absolute maximum supply voltage Um	30 VDC			
Current consumption	95mA			
Maximum power dissipation	2.5W			
Maximum ambient working temperature	-20°C < T_{amb} < +50°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)	IP65	IP65	IP67	IP67
Vibration and shock resistance	Vibration: 30g over 20Hz to 2kHz. Shock: 100g for 3ms			
Connection cable	2+PE x 0.5mm², TPU jacket, shielded, halgone-free, oil and solvent resistant, cable for trailing			
Cable length	5m	5m	10m	10m
Socket, type GP*-532-*SS(-OP)-S232	Male connector M12, Lumberg RSF 5, 5 terminals			--
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.			
Accessories, included only for GPN-532-*SS-OP-S232	- Safety lock device, mount at the cable connection for locking the connection (black synthetic device) - Warning plate "WARNING - Explosion Hazard - Do Not Disconnect While Circuit Is Live Unless Area Is Known To Be Non-Hazardous", self-sealing, for gluing on the cable connector. - Protection cap for the sensor socket.			
Accessories optional, only for GPS/GPN/GPO-532-*SS-S232	- Single ended cordset, straight type: RKTS 5-298/xxM or right angle type: RKWTH 5-298/xxM, Lumberg M12, 5 terminals			
Options	- Cable length: Up to 100m, on request - GPS/GPN/GPO-532-*SS-**S232**: Socket M12: Lumberg RSF 5, 5 terminals			

Connection diagram, cable:

Lead No:	Function:
1	+24VDC
2	0V
green-yellow	PE/PA
white	Cable shield

Connection diagram, LPS/LPN/LPO-532-*SS-S232:

Socket M12
5 terminals

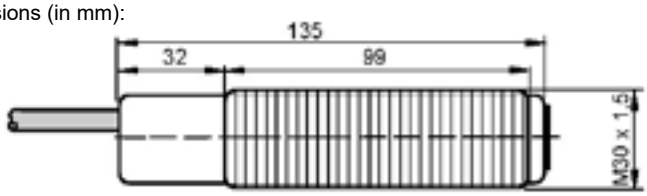


Terminal:	Function:
1/brown	+24VDC
2/white	NC
3/blue	0V
4/black	NC
5/grey	PE/PA

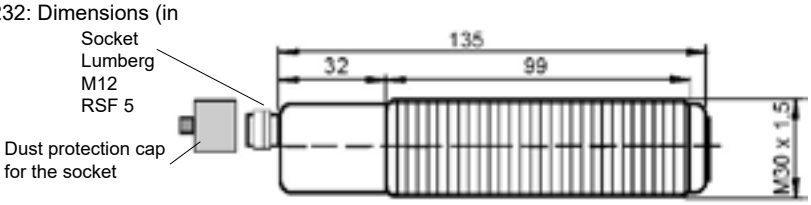
Ex related designations

CE 0158	Manufacturer with address	Electrical data according to the chart
Type GPD-532-*SS-OP-S229:	II 2(1)G Ex d [op is Ga] IIB T6 Gb II 2(1)D Ex tb [op is Da] IIIB T100°C Db IP67	ATEX, EC Type Certification, number: BVS 10 ATEX E 130 X IECEx certification, number: IECEx BVS 14.0108X
Type GPN-532-*SS-OP-S229/S232:	II 3(2)G Ex nA [op is Gb] IIB T4 Gc II 3(2)D Ex tc [op is Db] IIIA T135°C Dc IP67	Declaration by manufacturer according to 2014/34/EU
Type GPO-532-*SS-OP-S229/S232:	II (3)G [Ex op is IIB T4 Gc] II (3)D [Ex op is IIB T4 Dc]	Declaration by manufacturer according to 2014/34/EU

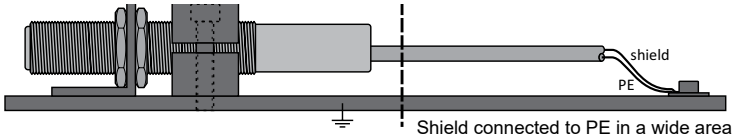
GPD/GPN/GPO/GPS-532-*SS-OP-S229: Dimensions (in mm):



GPN/GPO/GPS-532-*SS-OP-S232: Dimensions (in



Equipotential Bonding for Ex Devices GPO, GPN and GPD:



Shield connected to PE in a wide area

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

Operating Manual / 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 Um=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 GPD-532-*SS-OP-S229: For use in gas Ex zones 1, 2, 21, 22. Its limited optical radiation can operate into hazardous locations 0 or 20.

Type GPN-532-*SS-OP-S229: For use in gas Ex zones 2 and 22. Its limited optical radiation can operate into hazardous locations 1 or 21.

Type GPN-532-*SS-OP-S232: For use in gas Ex zones 2 and 22. Its limited optical radiation can operate into hazardous locations 1 or 21. 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.

Type GPO-532-*SS-OP-S229/S232: The sensor must be installed out of the explosion risk area! The limited optical radiation can operate into the Ex zone 2.

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 GP*-532-PSS) or a green cross (models GP*-532-KSS). 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 prolongued 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

Series GPN-532-*SS--OP-S232: "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.

EU-Declaration of conformity:

Types GPD: IECEx certification: Ex d [op is Ga] IIC T6 Gb, Ex tb [op is Da] IIIB T100°C Db IP67. Certification No. IECEx BVS 14.0108X. http://iecex.iec.ch/iecex/iecexweb.nsf/0/FE79714C0BAEF6F5C1257D7E0044F6A9?opendocument

Types GPD: ATEX certification: II 2(1)G Ex d [op is Ga] IIC T6 Gb, II 2(1)D Ex tb [op is Da] IIIB T100°C Db IP67. Certification No. BVS 10 ATEX E 130 X, Zertifizierungsstelle, Carl-Beyling-Haus, Dinendahlstrasse 9, D-44809 Bochum, Kennnummer: 0158.

Types GPN: ATEX certification: II 3(2)G Ex nA [op is Gb] IIB T4 Gc, II 3(2)D Ex tc [op is Db] IIIA T135°C Dc IP67. ATEX declaration by manufacturer in accordance to the ATEX directive 2014/34/EU.

Types GPO: ATEX certification: II (3)G [Ex op is IIB T4 Gc], II (3)D [Ex op is IIB T4 Dc].
ATEX declaration by manufacturer in accordance to 2014/34/EU.
ATEX certification of quality type production of Ex devices in accordance to the directive 2014/34/EU, CE 0158. Certification No: BVS 15 ATEX ZQS / E118, QAR No. DE/BVS/QAR13.0004/01.
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 9001:2008 with the ATEX module "Production", declares:

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