

Photoelectric High Speed Proximity Switch PSS-2-10KHZ, PSN/PSD-2-10KHZ-GD
PSN-2-10KHZ-GD
Housing M18
PSD-2-10KHZ-GD

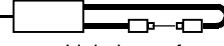
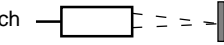

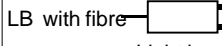
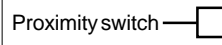
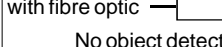
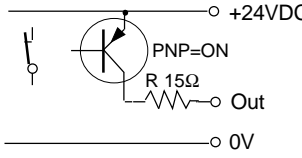
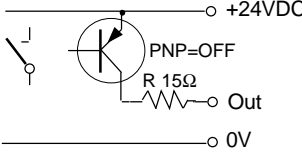
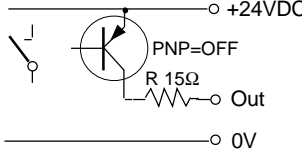
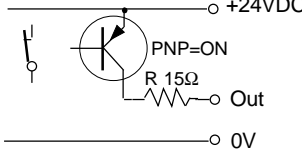
II 3G Ex nA IIB T4
II 3D Ex tD A22 IP67 T135°C

- Types PSD-1/2: Range selectable 0.1m / 0.2m
- Types PSS-2: With potentiometer
- Applicable for Ex Zones 1, 2, 20/21, 22
- Short response time 45us
- Applicable with different types of fibre optics
- Output function selectable by the polarity of the supply voltage

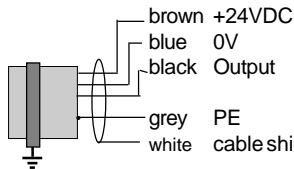
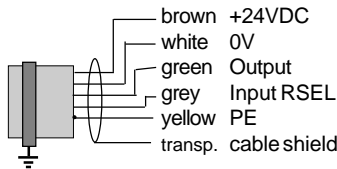


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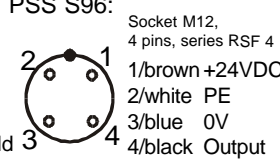

II 2G Ex d IIC T6
II 1/2D Ex tD A20/21 IP67 T90°C

Technical data	Type	PSS-2-10KHZ	PSN-2-10KHZ-GD	PSD-2-10KHZ-GD
Type of Ex protection, Gas, at 94/9/EC		None	II 3G Ex nA IIB T4	II 2G Ex d IIC T6
Type of Ex protection, Dust, at 94/9/EC		None	II 3D Ex tD A22 IP67 T135°C	II 1/2D Ex tD A20/21 IP67 T90°C
Applicable in Ex Zones		--	Zone 2, 22	Zones 1, 2, 20/21, 22
Range, on white paper, A4, 80g		0.2m, adjustable	0.1m/0.2m, switchable	0.1m/0.2m, switchable
Light source		Infrared 880nm		
Optical beam angle (Emitter)		appr.10°		
Response time		45us / 11.1kHz		
Supply voltage		24 VDC +- 10%		
Current consumption		80mA		
Maximum power dissipation		2.1W		
Output		PNP, 100mA, short circuit protected		
Potentiometer		yes	no	no
Input, Range Select RSEL		no	yes, PNP compatible	yes, PNP compatible
Housing		M18, brass Ms 58, nickel plated		
Enclosure rating, at EN 60529		IP 54	IP 67	
Operating temperature range TA		-10°C < TA < +50°C	-10°C < TA < +40°C	
Connection cable, shielded, length: 3m		4 x AWG24(0.2mm ²)	5 x 0.25mm ²	
Connection: PSS S96		Cable: 0.1m with socket M12, Binder 713/763	--	--
Connection: PSS S99		Socket: M12, Lumberg series RSF, 5 terminals	--	--
Range: PSS S99		Without potentiometer and LED, with range selection input RSEL		
Options		- Integrated delay functions on request - Cable length up to 100m on request - PSS S96: With cable 10cm, and socket Binder 713/763, 4 terminals, with LED and potentiometer - PSS S99: With socket M12, Lumberg RSF5, 5 terminals without LED and potentiometer and with range selection function		
Accessories included, all types		2 x nuts M18		
Accessories not included		- Single ended cordset M12 for S96: Lumberg RKTS 4-298/xx (straight type), RKTW/RKWTH 4-298/xx (right angle type) or Binder series 713/763 - Single ended cordset, straight type: RKTS 5-298/xx or right angle type: RKTW/RKWTH 5-298/xx, Lumberg M12/5P		
Function and LED indication (No LED indication for the types S99)		LB with fibre  Proximity switch  with fibre optic  Object detected, LED ON	LB with fibre  Proximity switch  with fibre optic  No object detected, LED OFF	
Wiring:				
PSN/D PSS S96 S99 brown brown 1/brown 1/brown +24VDC white blue 2/blue 2/blue 0V green black 3/black 3/black Output grey -- -- 2/white RSEL yellow grey 2/white 5/grey PE blank white Cable shield				
Wiring, for inverted output function: PSN/D PSS S96 S99 brown brown 1/brown 1/brown 0V white blue 2/blue 2/blue +24VDC green black 3/black 3/black Output grey -- -- 2/white RSEL yellow grey 2/white 5/grey PE blank white Cable shield				
Input RSEL: Range selection: Not or at 0V connected = Range 0.2m / Connected at 24VDC = Range 0.1m				

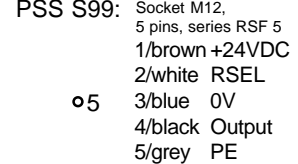
Wiring layout PSD/PSN, cable: Wiring layout PSS, cable:



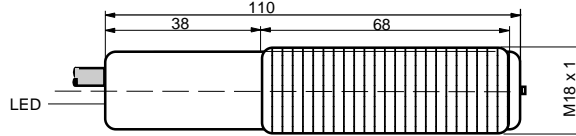
Wiring layout PSS S96:



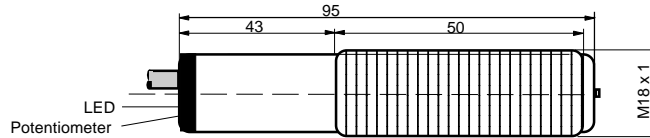
Wiring layout PSS S99:



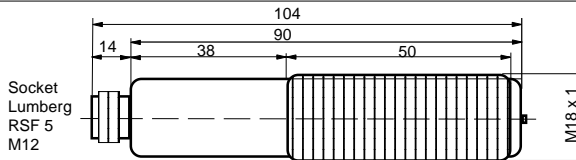
Dimensions
PSD/PSN-2-10KHZ-GD:



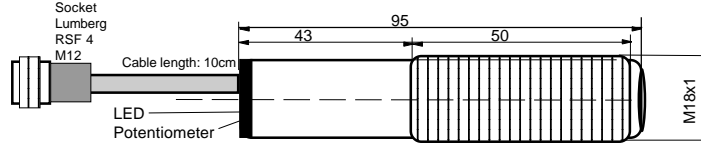
Dimensions
PSS-2-10KHZ



Dimensions
PSS-2-10KHZ S99



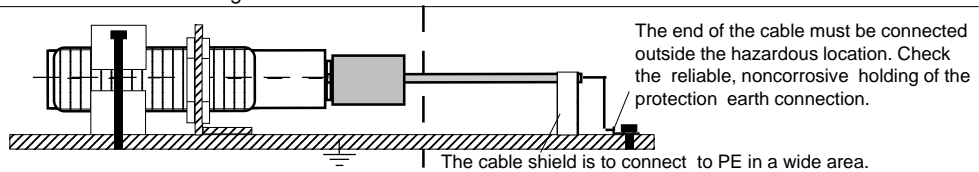
Dimensions
PSS-2-10KHZ S96



ATEX related designations:

CE 0158 Manufacturer with address Date of construction: Numeral 4 to 7 of the serial number
 Type PSD-...-GD: II 2G Ex d IIC T6, II 1/2D Ex tD A20/21 IP67 T90°C EC certification number: : DMT 99 ATEX E 056
 Type PSN-...-GD: II 3G Ex nA IIB T4, II 1/2D Ex tD A22 IP67 T135°C Declaration by manufacturer at 94/9/EC:
 TA: -10°C < TA < +40°C Electrical data according to the chart Tech File No: AN-MAT-08-EX-E056

Equipotential bonding
grounding
prescription:
PSN and PSD:



Operating Manual / EC - Declaration of Conformity:

Mounting prescriptions

INSTALLATION INSTRUCTIONS FOR HAZARDOUS LOCATIONS:
 "WARNING - EXPLOSION HAZARD - WHEN IN HAZARDOUS LOCATIONS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES."

"WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NONHAZARDOUS."

It is necessary to take into consideration the valid international and national rules and regulations (EN 60079-14). The local equipotential bonding have to be done. The protective earth (PE) is solid connected with the housing. The cable have to be installed and protected against damages. The cable with termination fittings, or in cable tray systems and installed in a manner to avoid tensile stress at the termination fittings. To connect cables inside hazardous locations only use certificated Ex e housings. All cable terminals must be connected outside hazardous locations. Other than original manufacturer, additional optical components are not allowed in hazardous locations. The maximum rated input voltage $U_m = 26.4VDC$ must not be exceeded. Type PSD-2-10KHZ-GD: Applicable in Ex Zones 1, 2 and 20/21, 22. For the zones 20/21 only the front part (optical lens) can be mounted inside the zone 20. The rear part with the cable must be in the zone 21. Type PSN-2-10KHZ-GD: Only applicable in Ex zones 2 and 22.

General mounting prescriptions

Do not exceed the maximum ratings. The electrical connections must be exactly as shown in the connection diagram. The cable shield must be connected short. The cable shield should be connected to the protection earth, large-surfaced. Connection cables must not be installed parallel to high voltage cables.

Function

The sensor will be influenced by other alternating light sources. Protect the sensing area an the sensor against alternating light sources. The sensor works basically as proximity switch on diffuse optical reflections. By changing the polarity of the supply voltage, the output function will be inverted. If the sensor detects reflected light, the LED shows yellow and the output switches on 0VDC or +24VDC dependent of the polarity of the supply voltage. If no reflected light will be recognized, the LED distinguished and the output switches on +24VDC or 0V dependent of the polarity of the supply voltage. The load must be connected 0V.

Optical range

The nominal range is defined on white paper A4, 80g. The range will be influenced by the color, kind of surface and shape of the object. The types PSS (without S99) are provided with a potentiometer for fine adjustment.

PSN/PSD-2-10KHZ-GD: Input RSEL

Selection of the maximum range for optimizing the application. The input RSEL is PNP compatible.

RSEL= 0V or not connected =Range 0.2m
 RSEL= High (24VDC) =Range 0.1m

Fibre optics

For efficiently detection solutions look for our multiple program of fibre optics, also for high temperature areas. Fibre optics for Ex zones 0 and 20 must only be driven by ATEX approved sensors with limited optical output power at DMT 99 ATEX 056!

Maintenance

No special maintenance is required. If the lenses becomes dirty, they should be cleaned with a non-aggressive cleaning liquid. Equipment must only be repaired by the manufacturer.

Safety Informations

The sensor PSS/PSN/PSD-2-10KHZ-(GD) 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. ATEX 118a, ElexV, TRbF, TRD, UVV, EX-RL(BGR104), BetrSichV(ATEX137), Single directive 1999/92/EC

- Standards met:
- EN 60079-0:2004, EN 60079-1:2004, EN 60079-15:2005, EN 60241-0:2004, EN 61241-1:2004; EN 60079-28:2007
 - EN 60825-1:2006, EN 60825-2:2004
 - EN 60529; EN 61000-4-2 to EN 61000-4-6, EN 61000-6-1/-2, EN 61000-6-4;
 - Ex protection: 94/9/EC (ATEX 100a)
 - Machine directive: 98/37/EC
 - Low voltage directive: 73/23/EWG, 93/68/EWG
 - EMC: 89/336/EWG - RoHS directive: 2002/95/EC
 - Tech.-File: AN-MAT-08-EX-E054

General Notes

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 emit or contain 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 Declaration of Conformity

Type PSD-...-GD: EC type certification. No: DMT 99 ATEX E 056
 Type PSN-...-GD: Declaration of conformity by manufacturer at 94/9/EC.
 Tech File No: AN-MAT-08-EX-E056.

ATEX certification of quality type production of Ex devices at the directive 94/9/EC Certification No: BVS 03 ATEX ZQS / E118

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 9001:2000 with the ATEX module "Production", declares:
 Hans Bracher, Matrix Elektronik AG

PSX-2-10KHZ_e1_2009-01-23/HB

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