

Brief Instructions

Stopping Plugs, Metal SP.MA.* / SP.MD.*

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Validity

Specific processes and instructions in this instruction manual require special provisions to guarantee the safety of the operating personnel.

Target Group, Personnel

Responsibility for planning, assembly, commissioning, operation, maintenance, and dismantling lies with the plant operator.

The personnel must be appropriately trained and qualified in order to carry out mounting, installation, commissioning, operation, maintenance, and dismantling of the device. The trained and qualified personnel must have read and understood the instruction manual.

Reference to Further Documentation

Observe laws, standards, and directives applicable to the intended use and the operating location. Observe Directive 1999/92/EC in relation to hazardous areas.

The corresponding datasheets, manuals, declarations of conformity, EC-type-examination certificates, certificates, and control drawings if applicable support this document. You can find this information under www.pepperl-fuchs.com.

Intended Use

The metal stopping plugs type SPM* are suitable for safely closing openings and holes for cable entries that are not used in enclosures certified according to type of protection Ex e or Ex tb as well as for Ex d.

SPMD.NPT* versions are not intended for use with Ex d enclosures.

Remarks on Assembly

For non-threaded enclosures it is recommended to use flat washer gaskets (e.g. fiber washer of Klingersil type C-4400 or similar, or chloroprene or silicone washer gaskets) between screw-in component and the enclosure.

For threaded enclosures both fiber washers or O-rings can be used.

Metric metal screw-in components when supplied as individual packaging units are equipped with washer gasket and O-ring. Variants for ambient temperatures below -50 °C are available. Please refer to the individual datasheets for details.

ENG

Mounting and Installation

Observe the installation instructions according to IEC/EN 60079-14.

If you intend to install the device or enclosure in areas that may be exposed to aggressive substances, ensure that the stated surface materials are compatible with these substances. If required, contact Pepperl+Fuchs for further information.

Install the stopping plug in the entry of the enclosure.

Use washer gasket (1) and O-Ring (2) when appropriate.

Tighten all screw threads with the appropriate torque.

IP Protection Method Mode for Ex d / Ex e

Tapered NPT threads:

In order to guarantee the specified IP66 / IP68 rating when using NPT threads, sealant agent (Loctite 577 or similar) shall be applied on at least two full threads before fitting the stopping plug to the enclosure. In any case pay attention to guarantee the metallic continuity.

Ex d enclosures and tapered NPT threads:

Assemble through a threaded hole. The enclosure wall has to be thick enough to engage at least 5 full threads.

Ex d enclosures and metric threads:

Assemble through a threaded hole with O-ring on the thread outside of the enclosure. The enclosure wall has to be thick enough to engage at least 5 full threads.

Ex e enclosures, metric threads and tapered NPT threads:

Tighten with locknut inside and fiber washer gasket on the thread outside of the enclosure. In case of O-ring it has to be positioned between fiber washer and screw head. An enclosure wall thickness of minimum 1.5 mm has to be respected.

Operation, Maintenance, Repair

Observe IEC/EN 60079-17 for maintenance and inspection.

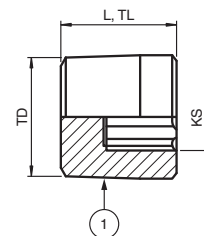
If there is a defect, always replace the device with an original device.

Do not modify or manipulate the device.

Delivery, Transport, Disposal

Disposing of device and packaging must be in compliance with the applicable laws and guidelines of the respective country.

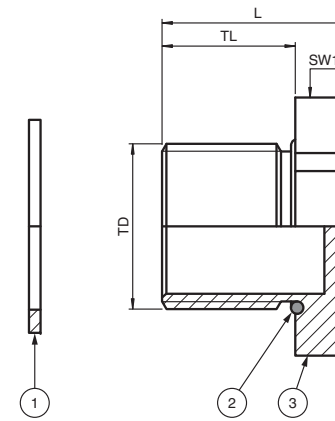
Dimensions SP.MA.*



Legend - details and values see data table

1	Stopping plug
KS	Key size
L	Total length
TD	Thread size
TL	Thread length

Dimensions SP.MD.*



Legend - details and values see data table

1	Washer gasket (accessory, metric versions only)
2	O-Ring (metric versions only)
3	Stopping plug
L	Total length
SW*	Width across flats
TD	Thread size
TL	Thread length

Type Code / Model Number

1	2	3	4	5	6	7
SP	. **	. ***	. **	. *	. **	. K**
SP	. MD	. M20	. SS	. C	. 15	. K01

Example: Stopping plug metal, hexagon head, thread size M20, body stainless steel, chloroprene seal for -40 °C ... 80 °C, installation thread length 15 mm, one piece

1	Series
SP	stopping plugs
2	Type
MA	metal stopping plugs, hexagon socket head
MD	metal stopping plugs, hexagon head
3	Thread, type and size
M*	metric ISO pitch 1.5; sizes see dimensions data table
NPT	NPT ANSI ASME B1.20.1; sizes see dimensions data table
4	Material
BN	brass nickel-plated
SS	stainless steel
5	Material seals / O-Ring
C	chloroprene / neoprene
S	silicone
X	no seal
6	Thread length for installation in enclosure
**	length in mm
7	Packaging unit
	units not packaged, for use in Pepperl+Fuchs Solution Engineering Centers
K**	units quantity per package

Technical Specifications

General	
Types and variants	SP.M* - see type code table
Mechanical specifications	
Dimensions and torques	see data table
Degree of protection	IP66 / IP68
Mass	see datasheets
Material	
Stopping plug	brass nickel-plated or AISI 316 (1.4401) stainless steel
Finish	inherent color silver
O-Ring	chloroprene / neoprene or silicone
Washer gasket	aramid fibers bonded with NBR
Ambient conditions	
Ambient temperature	chloroprene seal: -40 ... 100 °C (-40 ... 212 °F) silicone seal: -60 ... 130 °C (-76 ... 266 °F) washer gasket: -40 ... 80 °C (-40 ... 176 °F)
Data for application in connection with hazardous areas	
EU-Type Examination Certificate	CESI 15ATEX029X
Marking	II 2 GD Ex d IIC Gb (not valid for SP.MD.NPT*) Ex e IIC Gb Ex tb IIIC Db
International approvals	
UL approval - cULus	E305142 tested to UL 50E and UL 508A
CSA approval	CSA C22.2, No. 14-13
IECEx approval	IECEx CES 15.0006X
UKCA approval	CML 22 UKEX 1267X
EAC approval	RU C-DE.AA87.B.00459/20
CCC approval	2021312313000343
Conformity	
Degree of protection	EN 60529
CE marking	0102
Standards	IEC/EN 60079-0: 2012 IEC/EN 60079-1: 2007 IEC/EN 60079-7: 2007 IEC/EN 60079-31: 2009

Variant-Specific Data

Type	Thread size	Dimensions [mm]			Nut torques [Nm]
	TD	L	TL	KS	KS
SP.MA.NPT3/8.*.*.15.*	NPT 3/8"	15	15	6	7
SP.MA.NPT1/2.*.*.20.*	NPT 1/2"	20	20	10	8
SP.MA.NPT3/4.*.*.20.*	NPT 3/4"	20	20	10	9
SP.MA.NPT1.*.*.25.*	NPT 1"	25	25	14	11
SP.MA.NPT1-1/4.*.*.25.*	NPT 1-1/4"	25	25	14	13
SP.MA.NPT1-1/2.*.*.25.*	NPT 1-1/2"	25	25	14	15
SP.MA.NPT2.*.*.25.*	NPT 2"	25	25	14	18

Type	Thread size	Dimensions [mm]			Diameter thru-hole [mm]	Nut torques [Nm]
	TD	L	TL	SW1	DT	SW1
SP.MD.M16.*.*.15.*	M16	21	15.5	22	16 ... 16.2	4
SP.MD.M20.*.*.15.*	M20	21	15.5	25	20 ... 20.2	6
SP.MD.M25.*.*.15.*	M25	21	15.5	30	25 ... 25.2	8.5
SP.MD.M32.*.*.15.*	M32	21	15.5	37	32 ... 32.3	9
SP.MD.M40.*.*.17.*	M40	23	17.5	45	40 ... 40.3	9.5
SP.MD.M50.*.*.17.*	M50	23	17.5	55	50 ... 50.3	10
SP.MD.M63.*.*.17.*	M63	23	17.5	70	63 ... 63.3	10.5

Type	Thread size	Dimensions [mm]			Diameter thru-hole [mm]	Nut torques [Nm]
	TD	L	TL	SW1	DT	SW1
SP.MD.NPT3/8.*.*.16.*	NPT 3/8"	20	16	20	17.2 ... 17.4	7
SP.MD.NPT1/2.*.*.18.*	NPT 1/2"	22	18	24	21.4 ... 21.6	8
SP.MD.NPT3/4.*.*.18.*	NPT 3/4"	22	18	28	26.7 ... 26.9	9
SP.MD.NPT1.*.*.21.*	NPT 1"	25	21	35	33.5 ... 33.7	11
SP.MD.NPT1-1/4.*.*.21.*	NPT 1-1/4"	25	21	45	42.2 ... 42.4	13
SP.MD.NPT1-1/2.*.*.21.*	NPT 1-1/2"	26	21	50	48.3 ... 48.5	15
SP.MD.NPT2.*.*.21.*	NPT 2"	26	21	65	60.4 ... 60.7	18