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

Marking

Stopping Plugs, Metal SP.MA.*/SP.MD.*
ATEX certificate: CESI 15 ATEX 029X ATEX marking: Ex II 2 GD Ex db IIC Gb Ex eb IIC Gb Ex tb IIIC Db
IECEx certificate: IECEx CES 15.0006X CCC certificate: 2021312313000343 UL approval: cULus E305142 tested to UL 50E and UL 508A CSA C22.2, No. 14-13

The *-marked letters of the type code are placeholders for versions of the device.

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Target Group, Personnel

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

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

Reference to Further Documentation

Observe directives, standards, and national laws applicable to the intended use and the operating location.

The corresponding datasheets, manuals, declarations of conformity, EU-type examination certificates, certificates, and control drawings if applicable (see datasheet) are an integral part of this document. You can find this information under www.pepperl-fuchs.com.

For specific device information such as the year of construction, scan the QR code on the device. As an alternative, enter the serial number in the serial number search at www.pepperl-fuchs.com.

Intended Use

The device is only approved for appropriate and intended use. Ignoring these instructions will void any warranty and absolve the manufacturer from any liability.

The stopping plugs of the SP.M.* series are made of metal.

The device can be used indoors.

The device can be used outdoors.

The device can be used in Zone 1.

The device can be used in Zone 21.

The device can be used in Zone 2.

The device can be used in Zone 22.

The device can be used with intrinsically safe circuits.

Only use the device in fixed installations.

The stopping plugs type SP.M* 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.

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

Improper Use

Protection of personnel and the plant is not ensured if the device is not used according to its intended use.

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.

Observe the instruction manuals for the associated components.

Refer to the corresponding technical data of the installed components for the actual type of protection or any possible restrictions.

Ensure that the degree of protection is maintained by the entire installation.

Ensure that the surface of the enclosure is smooth enough to achieve the required degree of protection.

Ensure that the enclosure entries are perpendicular, circular and free of burrs.

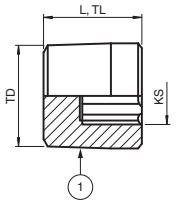
Tighten all screw threads with the appropriate torque.

Installation Sequence

Install the stopping plug in the entry of the enclosure.

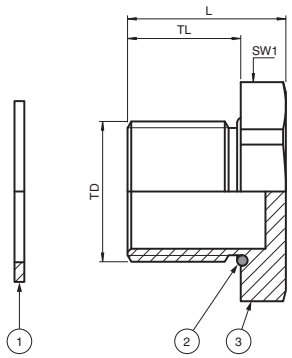
Use washer gasket (1) and O-Ring (2) when appropriate.

Dimensions SP.MA.*



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

Dimensions SP.MD.*



Legend	
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 lenght

Requirements in Relation to Flameproof Enclosure

Requirements in Relation to Tapered Threads

Ensure that the enclosure wall is thick enough to engage at least 5 full thread turns.

To ensure the degree of protection use a thread sealant. Apply the thread sealant to at least 2 full thread turns before installing the stuffing gland in the cable gland.

Ensure electrical conductivity.

Requirements in Relation to Metric Threads

Ensure that the enclosure wall is thick enough to engage at least 5 full thread turns.

Provide the tapped hole with an O-ring on the thread outside of the enclosure.

Requirements in Relation to Increased Safety

Requirements in Relation to Non-Threaded Enclosures

The minimum wall thickness of the enclosure has to be 1.5 mm.

If the enclosure has no threads, use locknuts for tightening.

Use washer gaskets between the screw-in parts and the enclosure for sealing.

Adhere to the required hole diameters.

Requirements in Relation to Tapered Threads

The minimum wall thickness of the enclosure has to be 1.5 mm.

When mounting on the enclosure, at least 3 thread turns has to be mechanically connected to the enclosure. If this is not possible, use a locknut.

To ensure the degree of protection use a thread sealant. Apply the thread sealant to at least 2 full thread turns before installing the stuffing gland in the cable gland.

Ensure electrical conductivity.

Tighten the locknut inside and the washer gasket on the thread outside of the enclosure.

If necessary, mount an O-ring between the washer gasket and the screw head.

Requirements in Relation to Metric Threads

The minimum wall thickness of the enclosure has to be 1.5 mm.

When mounting on the enclosure, at least 3 thread turns has to be mechanically connected to the enclosure. If this is not possible, use a locknut.

Tighten the locknut inside and the washer gasket on the thread outside of the enclosure.

If necessary, mount an O-ring between the washer gasket and the screw head.

Operation, Maintenance, Repair

Do not use a damaged or polluted device.

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

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

Do not modify or manipulate the device.

Only use spare parts specified by the manufacturer.

Ensure that the device is de-energized before maintain or repair the device.

Dissimilar metals will corrode when placed against each other in an assembly.

When selecting the enclosure material, observe the possible effects of galvanic corrosion.

Delivery, Transport, Disposal

Check the packaging and contents for damage.

Check if you have received every item and if the items received are the ones you ordered.

The device, built-in components, packaging, and any batteries contained within must be disposed in compliance with the applicable laws and guidelines of the respective country.

Technical Data

General	
Types and variants	SP.M* - see type code table
Mechanical specifications	
Dimensions and torques	see data table
Degree of protection	IP66 / IP68, UL Type 4X
Mass	see data table
Material	
Stopping plug	brass nickel-plated or stainless steel AISI 316 (1.4401)
Finish	inherent color silver
O-Ring	SP.MD*: chloroprene / neoprene or silicone
Washer gasket	SP.MD*: aramid fibers bonded with NBR
Ambient conditions	

Ambient temperature	SP.MD*: chloroprene seal: -40 ... 100 °C (-40 ... 212 °F) silicone seal: -60 ... 130 °C (-76 ... 266 °F) washer gasket: -40 ... 80 °C (-40 ... 176 °F) SP.MA*: -60 ... 130 °C (-76 ... 266 °F)
Conformity	
Degree of protection	EN 60529
CE marking	0102

Type Code / Model Number

1		2		3		4		5		6		7
SP	**.**	**MA**	**.**	***	**.**	**	**.**	*	**.**	**	**.**	**K****
SP	.	MA	.	NPT1	.	BN	.	X	.	25	.	K01

Example: SP.MA.NPT1.BN.X.25.K01

Stopping plug, metal, without head, for installation by means of allen key, thread size NPT 1", body brass nickel-plated, without seal, installation thread length 25 mm, one piece

1	Series
SP	Stopping plug

2	Type
MA	metal, hexagon socket head

3	Thread, type and size
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
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

Type Code / Model Number

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

Example: SP.MD.M20.BN.C.15.K01

Stopping plug, metal, hexagon head, thread size M20, body brass nickel-plated, chloropren O-ring for -40 °C ... 100 °C, installation thread length 15 mm, one piece

1	Series
SP	Stopping plug

2	Type
MD	metal, 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

Variant-Specific Data

Dimensions Metric - Brass Nickel-plated, O-Ring Chloroprene

Type	Thread size	Dimensions [mm]			Mass approx.		Diameter thru-hole [mm]	Nut torques [Nm]	Delivery quantity
	TD	L	TL	SW1	Component [g]	Packaging unit [g / kg]	TD	SW1	
SP.MD.M16.BN.C.15.K01	M16	21	15.5	22	29	38	16 ... 16.2	4	1
SP.MD.M16.BN.C.15.K50	M16	21	15.5	22	29	1.6	16 ... 16.2	4	50
SP.MD.M20.BN.C.15.K01	M20	21	15.5	25	36	52	20 ... 20.2	6	1
SP.MD.M20.BN.C.15.K50	M20	21	15.5	25	36	1.98	20 ... 20.2	6	50
SP.MD.M25.BN.C.15.K01	M25	21	15.5	30	49	68	25 ... 25.2	8.5	1
SP.MD.M25.BN.C.15.K50	M25	21	15.5	30	49	2.7	25 ... 25.2	8.5	50
SP.MD.M32.BN.C.15.K01	M32	21	15.5	37	69	93	32 ... 32.3	9	1
SP.MD.M32.BN.C.15.K25	M32	21	15.5	37	69	1.9	32 ... 32.3	9	25
SP.MD.M40.BN.C.17.K01	M40	23	17.5	45	106	140	40 ... 40.3	9.5	1
SP.MD.M40.BN.C.17.K10	M40	23	17.5	45	106	1.17	40 ... 40.3	9.5	10
SP.MD.M50.BN.C.17.K01	M50	23	17.5	55	148	217	50 ... 50.3	10	1
SP.MD.M50.BN.C.17.K05	M50	23	17.5	55	148	810	50 ... 50.3	10	5
SP.MD.M63.BN.C.17.K01	M63	23	17.5	70	313	423	63 ... 63.3	10.5	1
SP.MD.M63.BN.C.17.K05	M63	23	17.5	70	313	1.72	63 ... 63.3	10.5	5

*Knn: scope of delivery see table technical data

Dimensions Metric - Stainless Steel, O-Ring Chloroprene

Type	Thread size	Dimensions [mm]			Mass approx.		Diameter thru-hole [mm]	Nut torques [Nm]	Delivery quantity
	TD	L	TL	SW1	Component [g]	Packaging unit [g / kg]	TD	SW1	
SP.MD.M16.SS.C.15.K01	M16	21	15.5	22	29	39	16 ... 16.2	4	1
SP.MD.M16.SS.C.15.K50	M16	21	15.5	22	29	1.58	16 ... 16.2	4	50
SP.MD.M20.SS.C.15.K01	M20	21	15.5	25	34	46	20 ... 20.2	6	1
SP.MD.M20.SS.C.15.K50	M20	21	15.5	25	34	1.87	20 ... 20.2	6	50
SP.MD.M25.SS.C.15.K01	M25	21	15.5	30	51	69	25 ... 25.2	8.5	1
SP.MD.M25.SS.C.15.K50	M25	21	15.5	30	51	2.81	25 ... 25.2	8.5	50
SP.MD.M32.SS.C.15.K01	M32	21	15.5	37	67	90	32 ... 32.3	9	1
SP.MD.M32.SS.C.15.K25	M32	21	15.5	37	67	1.84	32 ... 32.3	9	25
SP.MD.M40.SS.C.17.K01	M40	23	17.5	45	105	142	40 ... 40.3	9.5	1
SP.MD.M40.SS.C.17.K10	M40	23	17.5	45	105	1.16	40 ... 40.3	9.5	10
SP.MD.M50.SS.C.17.K01	M50	23	17.5	55	151	197	50 ... 50.3	10	1
SP.MD.M50.SS.C.17.K05	M50	23	17.5	55	151	830	50 ... 50.3	10	5
SP.MD.M63.SS.C.17.K01	M63	23	17.5	70	287	387	63 ... 63.3	10.5	1
SP.MD.M63.SS.C.17.K05	M63	23	17.5	70	287	1.58	63 ... 63.3	10.5	5

*Knn: scope of delivery see table technical data

Dimensions NPT - Brass Nickel-plated

Type	Thread size	Dimensions [mm]			Mass approx.		Diameter thru-hole [mm]	Nut torques [Nm]	Delivery quantity
	TD	L	TL	SW1	Component [g]	Packaging unit [g / kg]	TD	SW1	
SP.MD.NPT3/8.BN.X.16.K01	NPT 3/8"	20	16	20	24	34	17.2 ... 17.4	7	1
SP.MD.NPT3/8.BN.X.16.K50	NPT 3/8"	20	16	20	24	1.32	17.2 ... 17.4	7	50
SP.MD.NPT1/2.BN.X.18.K01	NPT 1/2"	22	18	24	44	54	21.4 ... 21.6	8	1
SP.MD.NPT1/2.BN.X.18.K50	NPT 1/2"	22	18	24	44	2.42	21.4 ... 21.6	8	50
SP.MD.NPT3/4.BN.X.18.K01	NPT 3/4"	22	18	28	62	72	26.7 ... 26.9	9	1
SP.MD.NPT3/4.BN.X.18.K50	NPT 3/4"	22	18	28	62	3.41	26.7 ... 26.9	9	50
SP.MD.NPT1.BN.X.21.K01	NPT 1"	25	21	35	92	102	33.5 ... 33.7	11	1
SP.MD.NPT1.BN.X.21.K25	NPT 1"	25	21	35	92	2.53	33.5 ... 33.7	11	25
SP.MD.NPT1-1/4.BN.X.21.K01	NPT 1-1/4"	25	21	45	129	139	42.2 ... 42.4	13	1
SP.MD.NPT1-1/4.BN.X.21.K10	NPT 1-1/4"	25	21	45	129	1.42	42.2 ... 42.4	13	10
SP.MD.NPT1-1/2.BN.X.21.K01	NPT 1-1/2"	26	21	50	177	187	48.3 ... 48.5	15	1
SP.MD.NPT1-1/2.BN.X.21.K05	NPT 1-1/2"	26	21	50	177	970	48.3 ... 48.5	15	5
SP.MD.NPT2.BN.X.21.K01	NPT 2"	26	21	65	274	284	60.4 ... 60.7	18	1
SP.MD.NPT2.BN.X.21.K05	NPT 2"	26	21	65	274	1.51	60.4 ... 60.7	18	5

*Knn: scope of delivery see table technical data

Dimensions NPT - Stainless Steel

Type	Thread size	Dimensions [mm]			Mass approx.		Diameter thru-hole [mm]	Nut torques [Nm]	Delivery quantity
	TD	L	TL	SW1	Component [g]	Packaging unit [g / kg]	TD	SW1	
SP.MD.NPT3/8.SS.X.16.K01	NPT 3/8"	20	16	20	22	32	17.2 ... 17.4	7	1
SP.MD.NPT3/8.SS.X.16.K50	NPT 3/8"	20	16	20	22	1.21	17.2 ... 17.4	7	50
SP.MD.NPT1/2.SS.X.18.K01	NPT 1/2"	22	18	24	42	46	21.4 ... 21.6	8	1
SP.MD.NPT1/2.SS.X.18.K50	NPT 1/2"	22	18	24	42	2.31	21.4 ... 21.6	8	50
SP.MD.NPT3/4.SS.X.18.K01	NPT 3/4"	22	18	28	59	61	26.7 ... 26.9	9	1
SP.MD.NPT3/4.SS.X.18.K50	NPT 3/4"	22	18	28	59	3.25	26.7 ... 26.9	9	50
SP.MD.NPT1.SS.X.21.K01	NPT 1"	25	21	35	87	97	33.5 ... 33.7	11	1
SP.MD.NPT1.SS.X.21.K25	NPT 1"	25	21	35	87	2.39	33.5 ... 33.7	11	25
SP.MD.NPT1-1/4.SS.X.21.K01	NPT 1-1/4"	25	21	45	122	132	42.2 ... 42.4	13	1
SP.MD.NPT1-1/4.SS.X.21.K10	NPT 1-1/4"	25	21	45	122	1.34	42.2 ... 42.4	13	10
SP.MD.NPT1-1/2.SS.X.21.K01	NPT 1-1/2"	26	21	50	168	178	48.3 ... 48.5	15	1
SP.MD.NPT1-1/2.SS.X.21.K05	NPT 1-1/2"	26	21	50	168	920	48.3 ... 48.5	15	5
SP.MD.NPT2.SS.X.21.K01	NPT 2"	26	21	65	260	270	60.4 ... 60.7	18	1
SP.MD.NPT2.SS.X.21.K05	NPT 2"	26	21	65	260	1.43	60.4 ... 60.7	18	5

*Knn: scope of delivery see table technical data

Dimensions NPT - Brass Nickel-plated

Type	Thread size	Dimensions [mm]			Mass approx.		Nut torques [Nm]	Delivery quantity
	TD	L	TL	KS	Component [g]	Packaging unit [g / kg]	KS	
SP.MA.NPT3/8.BN.X.15.K01	NPT 3/8"	15	15	6	25	35	7	1
SP.MA.NPT3/8.BN.X.15.K50	NPT 3/8"	15	15	6	25	1.38	7	50
SP.MA.NPT1/2.BN.X.20.K01	NPT 1/2"	20	20	10	42	52	8	1
SP.MA.NPT1/2.BN.X.20.K50	NPT 1/2"	20	20	10	42	2.31	8	50
SP.MA.NPT3/4.BN.X.20.K01	NPT 3/4"	20	20	10	81	91	9	1
SP.MA.NPT3/4.BN.X.20.K50	NPT 3/4"	20	20	10	81	4.46	9	50
SP.MA.NPT1.BN.X.25.K01	NPT 1"	25	25	14	157	167	11	1
SP.MA.NPT1.BN.X.25.K25	NPT 1"	25	25	14	157	4.32	11	25
SP.MA.NPT1-1/4.BN.X.25.K01	NPT 1-1/4"	25	25	14	236	246	13	1
SP.MA.NPT1-1/4.BN.X.25.K10	NPT 1-1/4"	25	25	14	236	2.6	13	10
SP.MA.NPT1-1/2.BN.X.25.K01	NPT 1-1/2"	25	25	14	298	308	15	1
SP.MA.NPT1-1/2.BN.X.25.K05	NPT 1-1/2"	25	25	14	298	1.64	15	5
SP.MA.NPT2.BN.X.25.K01	NPT 2"	25	25	14	479	489	18	1
SP.MA.NPT2.BN.X.25.K05	NPT 2"	25	25	14	479	2.63	18	5

*Knn: scope of delivery see table technical data

Dimensions NPT - Stainless Steel

Type	Thread size	Dimensions [mm]			Mass approx.		Nut torques [Nm]	Delivery quantity
	TD	L	TL	KS	Component [g]	Packaging unit [g / kg]	KS	
SP.MA.NPT3/8.SS.X.15.K01	NPT 3/8"	15	15	6	24	34	7	1
SP.MA.NPT3/8.SS.X.15.K50	NPT 3/8"	15	15	6	24	1.32	7	50
SP.MA.NPT1/2.SS.X.20.K01	NPT 1/2"	20	20	10	46	56	8	1
SP.MA.NPT1/2.SS.X.20.K50	NPT 1/2"	20	20	10	46	2.53	8	50
SP.MA.NPT3/4.SS.X.20.K01	NPT 3/4"	20	20	10	77	87	9	1
SP.MA.NPT3/4.SS.X.20.K50	NPT 3/4"	20	20	10	77	4.24	9	50
SP.MA.NPT1.SS.X.25.K01	NPT 1"	25	25	14	149	159	11	1
SP.MA.NPT1.SS.X.25.K25	NPT 1"	25	25	14	149	4.1	11	25
SP.MA.NPT1-1/4.SS.X.25.K01	NPT 1-1/4"	25	25	14	224	225	13	1
SP.MA.NPT1-1/4.SS.X.25.K10	NPT 1-1/4"	25	25	14	224	2.46	13	10
SP.MA.NPT1-1/2.SS.X.25.K01	NPT 1-1/2"	25	25	14	283	293	15	1
SP.MA.NPT1-1/2.SS.X.25.K05	NPT 1-1/2"	25	25	14	283	1.56	15	5
SP.MA.NPT2.SS.X.25.K01	NPT 2"	25	25	14	454	464	18	1
SP.MA.NPT2.SS.X.25.K05	NPT 2"	25	25	14	454	2.5	18	5

*Knn: scope of delivery see table technical data