746XS VALVE WITH SF SWITCH BOX

FEATURES

The 2-way 746 XS (stainless steel) ball valve + SF is intended for the manual shut-off of networks for industrial fluids, providing position display and feedback information control. This 3-piece external tie-bolt ball valve is easy to remove for servicing. This full-bore valve has an anti-static device and double leak-proofing at the cable gland. It is EC- and ATEX- and TA-LUFT-approved. The SF switch box is equipped, as standard, with 2 dry contacts. Due to its IP67 leak-tightness, it can be installed both indoors and outdoors. Different contacts and detectors are available as options.

IR 3 | TA LUF | 3.1 Cert. | CE 0035

AVAILABLE MODELS

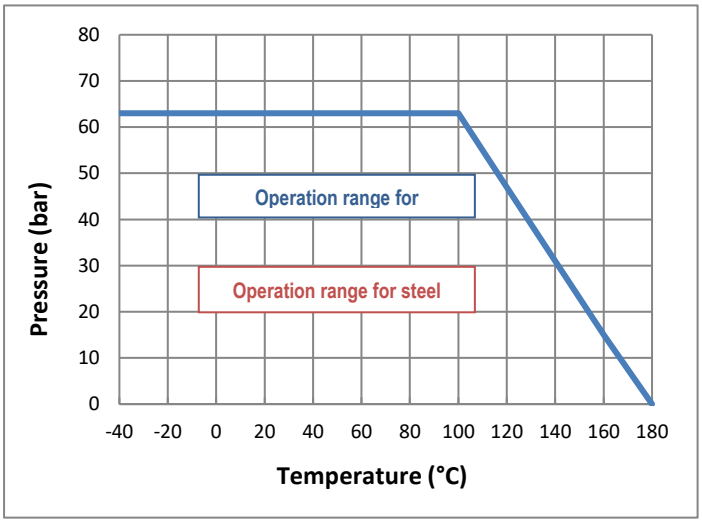
1/4'' to 4'' diameters

Electrical connection: 2 x M20x1.5

Connection	G	SW	BW
stainless steel	746 XS	743 XS	745 XS

LIMITS OF USE

Material	stainless steel
Fluid pressure: WP	63 bar (20°C)
Fluid temperature: WT°	- 10°C / +180°C
Ambient temperature	- 20°C / + 80°C
IP Code	IP 67



DIRECTIVES AND MANUFACTURING STANDARDS

OBJECT	Standard	ON	OBJECT	Standard
Pressure Equipment Directive 2014/68/EC	1/4" to 1": not subject		Final test	EN 12266
	1'' 1/4 to 4'': category III	TÜV 0035	Material certificate	EN 10204
ATEX Directive	II 2G/D Tx zones 1,2,21 and 22	SIRA 0518	Size	EN 12516-1
	EN 13463-1 and 5		Steel grades	EN 1503-1

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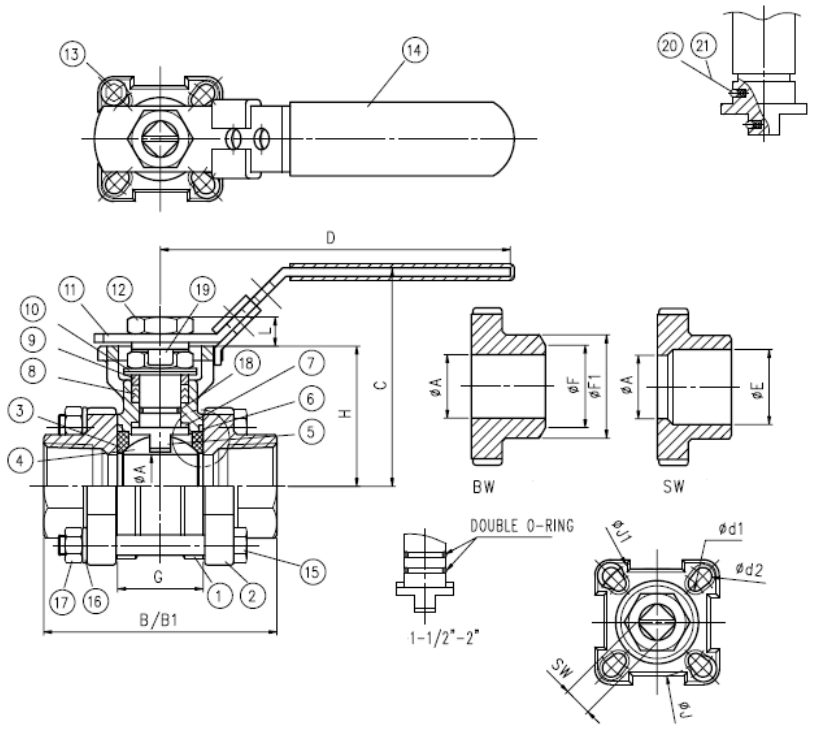
CONSTRUCTION

No.	Name	Stainless steel	No.	Name	Stainless steel
1	Body	1.4408	**12**	Nut	304 SS
2	Ends	1.4408	**13**	Stop	304 SS
3*	Seats	PTFE+15%GF	**14**	Coupling	PVC
4	Sphere	CF8M / 316	**15**	Tie-bolts	304 SS
5	Stem	316 SS	**16**	Washer	304 SS
6*	Body gasket	PTFE	**17**	Nuts	304 SS
7*	Washer	PTFE+15%GF	**18***	O-ring	FPM
8*	Gasket	PTFE	**19**	Tab washer	304 SS
9	Spacer	304 SS	**20**	Anti-static	316 SS
10	B. washer	301 SS	**21**	Spring	304 SS
11	Lever	304 SS	* Parts included in the maintenance kit		



DIMENSIONS (mm)

DN	A	B (G)	B (SW)	B1 (BW)	C	D	E	F	F1	G	H	J1	SW
1/4''	10	65	65	70	46.5	110	14	13	17.0	26.0	41.0	42	9
3/8''	12.5	65	65	70	46.5	110	14	13	17.0	24.5	42.3	42	9
1/2''	16	75	75	75	70.9	110	21.9	17	22.4	25.2	42.3	42	9
3/4''	20	80	80	90	73.4	110	27.2	22	28.2	27.7	44.8	42	9
1''	24.5	90	90	100	84.1	135	34.0	28	33.7	33.0	54.0	50	11
1'' 1/4	32	110	110	110	89.3	135	42.7	37	44.0	41.2	59.2	50	11
1'' 1/2	38	120	120	125	109.5	165	48.8	43	50.8	49.3	73.5	70	14
2''	50	140	140	150	118.9	165	61.3	54	62.6	63.6	82.9	70	14
2'' 1/2	65	185	185	190	155.0	300	77.0	74	76.1	82.1	107.0	102	17
3''	80	205	205	220	165.0	335	90.0	83	88.9	95.8	117.3	102	17
4''	100	240	240	270	180.0	335	115.5	110	114.3	117.8	132.3	102	17

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ASSEMBLY AND MAINTAINANCE INSTRUCTIONS

1 - Installation

1.1 - Checks

- Check that the material of the valve body is chemically compatible with the fluid.
- Check that the pressure and service conditions are compatible with the (P, T) diagram of the valve. See § “Service limits”
- Check that the fluid is clean and free of particles. The latter could scratch the ball and damage the seats, hence causing the valve to leak. If need be, install an upstream filter.
- Check that there is no risk of thermal expansion of the fluid, which could damage the seats. In the open position, a hole at the top of the ball balances the pressures between the body cavity and the flow of the fluid. As an option, we recommend a relief hole upstream of the valve for balancing the pressures for fluids such as ammonia, LPG, chlorine, etc.
- Check that the valve is not used for flow or pressure control since it is not intended for this use and there is a risk of premature wear of the seats, in particular in the event of high pressure and/or temperature. For this special application, preferably use our ‘”V-port” version with a V-shaped hole in the ball. Please contact us.
- Check that the valve is not used on a gas which might condense at certain times during the process. In such a case, the pressure within the body cavity could become negative, which could lead to a significant deformation of the seats. Please contact us.
- Static electricity: the valve will be supplied with a ball-stem-body internal electrical continuity tester. If the service conditions require the electrical continuity of the installation, check its earthing.
- If the valve is installed in an explosive zone, you must follow the additional “IMEVMATEX” instructions.

1.2 - Storage before installation

- Follow our general “IMESTOCK” instructions for storage.
- Check that the tie-bolts of the valves were not loosen during transport.

1.3 - Installation

- Before any installation, isolate the piping upstream and downstream, depressurize the piping and bring the installation to ambient temperature. Carefully clean the piping of any particle (foreign body, dust, rust, etc.) or shavings by water rinsing or air blowing.
- For valves with a size above DN50, plan to use a hoist.
- Remove the protective tips from the valve ends.
- Check the cleanliness of the internal surfaces of the valve and if need be, clean them.
- Direction of mounting: the valves do not have a preferred direction of mounting, unless a relief hole was drilled into the ball.
- Check the perfect alignment and the proper support of the pipe installation upstream and downstream of the valve. Alignment defects cause mechanical deformations which can block the valve or lead to leaks at the body gaskets.

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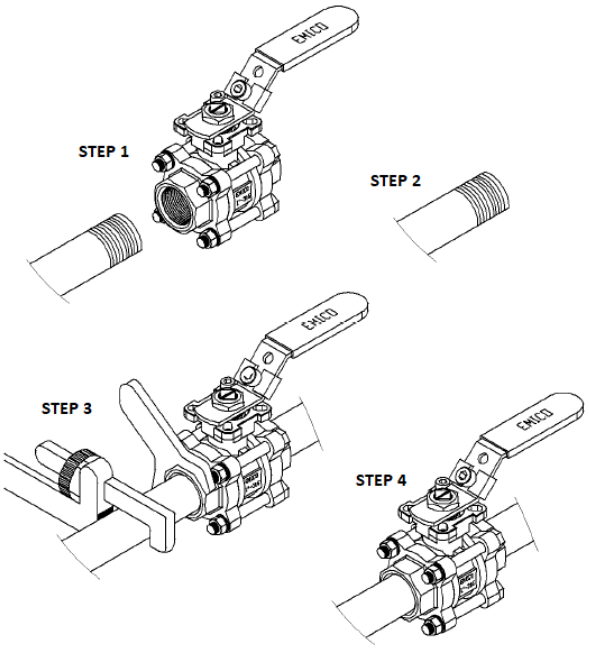
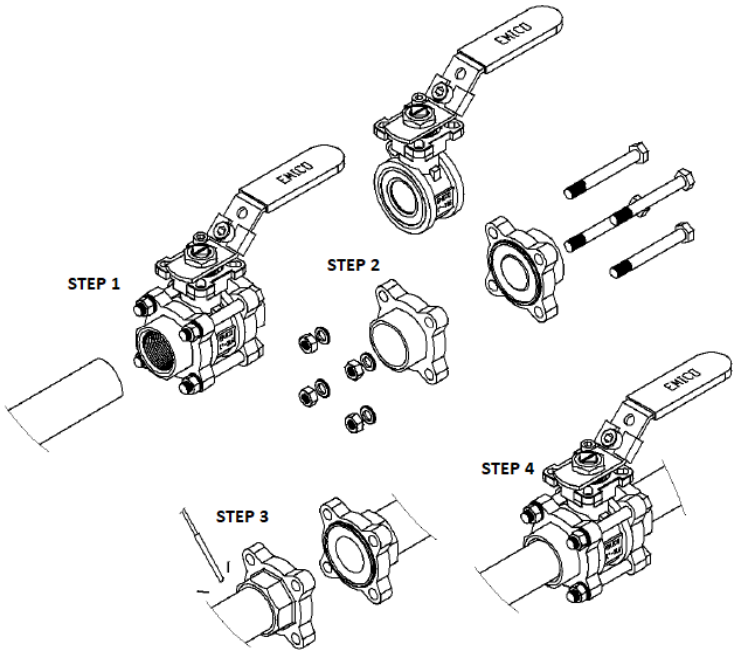
- **Threaded valve connection**:
  - Check that the standards for the valve internal thread and pipe thread are the same.
  - Cover the pipe threads using a sealing material (tow, PTFE tape, sealing glue, etc.) which is suitable for the fluid.
  - Screw the tube into the valve end clockwise, as shown in the diagram below.
  - Check the sealing of the connection using a suitable test (hydrostatic test or leak detection spray).



- **Connection of weld-on valves**:
  - Remove the end (items 2) by unscrewing the tie-bolts, and remove the central body.
  - Weld each end onto the upstream or downstream pipe, following the alignment of the tie-bolt holes.
  - Cool down to the room temperature the welded ends, then put back the central body complying with the tightening torques shown in the table below.
  - Check the sealing of the connection using a suitable test (hydrostatic test or leak detection spray).



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- Hydraulic test of the installation
  - Valves were tested at the factory at 1.5 x WP.
  - If a hydrostatic test is carried out on the installation, do not exceed the authorised pressure.

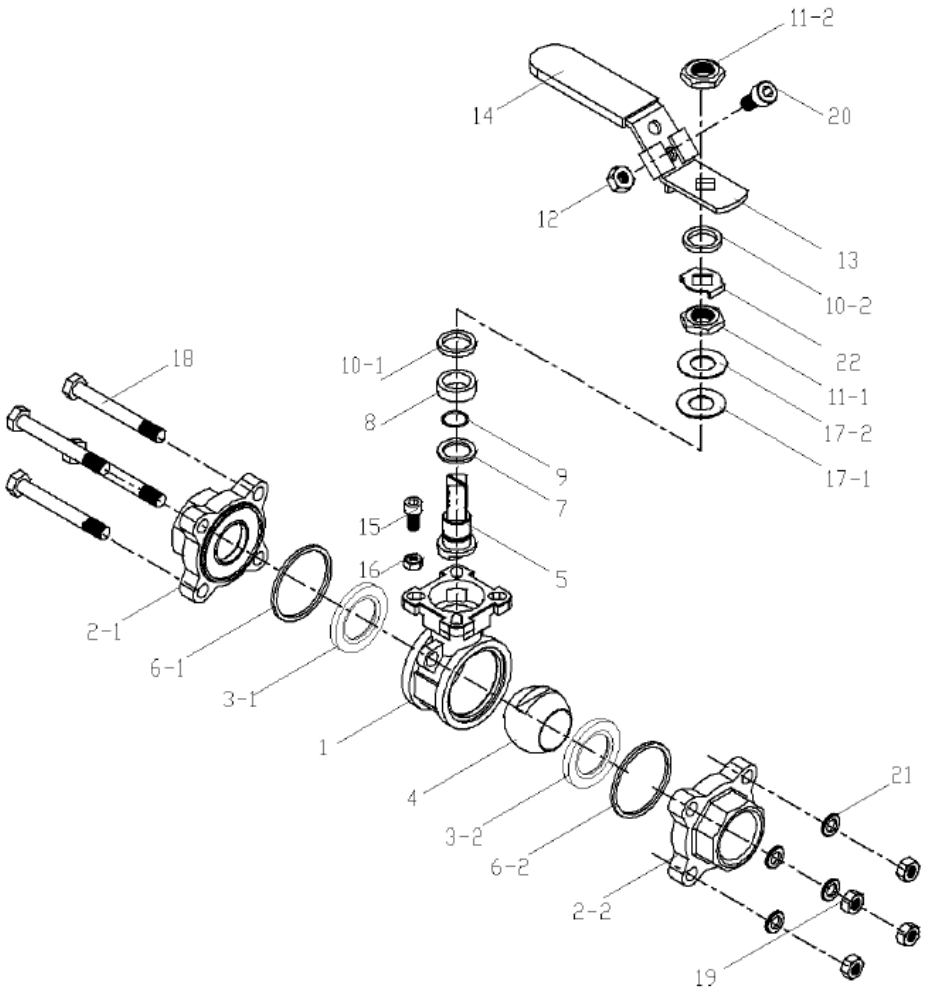
2 - Service

- If a hot fluid flows across the valve, do not touch the valve surface.
- Always operate the valve slowly and smoothly.
- Opening clockwise, closing anti-clockwise.

3 - Servicing

3.1 - Frequency of servicing

- The servicing frequency depends upon the use of the valve, of the type of fluid, of its velocity, of its frequency of operation, of the cycles of rise and fall in pressure and temperature.
- Before any intervention, isolate the upstream and downstream pipe installation using the valves provided for this purpose. Depressurize the pipe installation and bring it to ambient temperature.
- If the lever has to be removed, do that before disassembling the body.
- To remove the central body, unscrew the tie-bolts symmetrically. Then gently remove the central part avoiding to drop the ball.
- To remove the ball from the body, turn the stem by a quarter turn.



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3.2 – Inspecting the state of the valve and possible repair

- Check the state of the ball (Item 4): it has to be clean and unscratched. If the cleaning or polishing is not possible, replace it (see the § on spare parts).
- Check the state of the seats (3.1 and 3.2): they must not be deformed, nor scratched, nor worn, or dirty. Otherwise, replace them with parts from the gasket kit.
- Check the state of the packing gland (7.8 and 9): no leak should be found at the stem and the rings should not be excessively worn. If need be, replace the gaskets.
- Check the state of the body gaskets (6.1 and 6.2). Replace them if necessary.
- Reassemble the different parts of the valve, following the tightening torques shown in the table below.
- Check that the stem manoeuvring is smooth. Perform about ten manoeuvres.

TABLE OF THE TIGHTENING TORQUES OF THE TIE-BOLTS AND OF THE LEVER NUT

DN	Tie-bolts	Torque (Nm)	Lever nut (Nm)
1/4'' - 6	M6	**190**	4
3/8'' - 10	M6	190	4
1/2'' - 15	M6	190	4
3/4'' - 20	M8	220	4
1'' - 25	M8	250	4.5
1''1/4 - 32	M10	310	4.5
1''1/2 - 40	M10	410	5.5
2'' - 50	M10	410	5.5
2''1/2 - 65	M12	1000	7
3'' - 80	M16	1220	7
4 '' - 100	M16	1430	7

SPARE PARTS

DN	Gasket kit	Ball	V30° ball	V60° ball	Tie-bolt kit	Lever
Reference mark	**3-6-7-8-18**	**4**	**4**	**4**	**15-16-17**	**11**
1/4'' - 6	Please contact us.	Please contact us.	Please contact us.	Please contact us.	Please contact us.	Please contact us.
3/8'' - 10	Please contact us.	Please contact us.	Please contact us.	Please contact us.	Please contact us.	Please contact us.
1/2'' - 15	982852	980032	980042	980052	982832	982802
3/4'' - 20	982853	980033	980043	980053	982833	982802
1'' - 25	982854	980034	980044	980054	982834	982804
1''1/4 - 32	982855	980035	980045	980055	982835	982804
1''1/2 - 40	982856	980036	980046	980056	982836	982806
2'' - 50	982857	980037	980047	980057	982837	982806
2''1/2 - 65	982858	Please contact us.	Please contact us.	Please contact us.	982838	982808
3'' - 80	982859	Please contact us.	Please contact us.	Please contact us.	Please contact us.	982808
4 '' - 100	982860	Please contact us.	Please contact us.	Please contact us.	Please contact us.	982808

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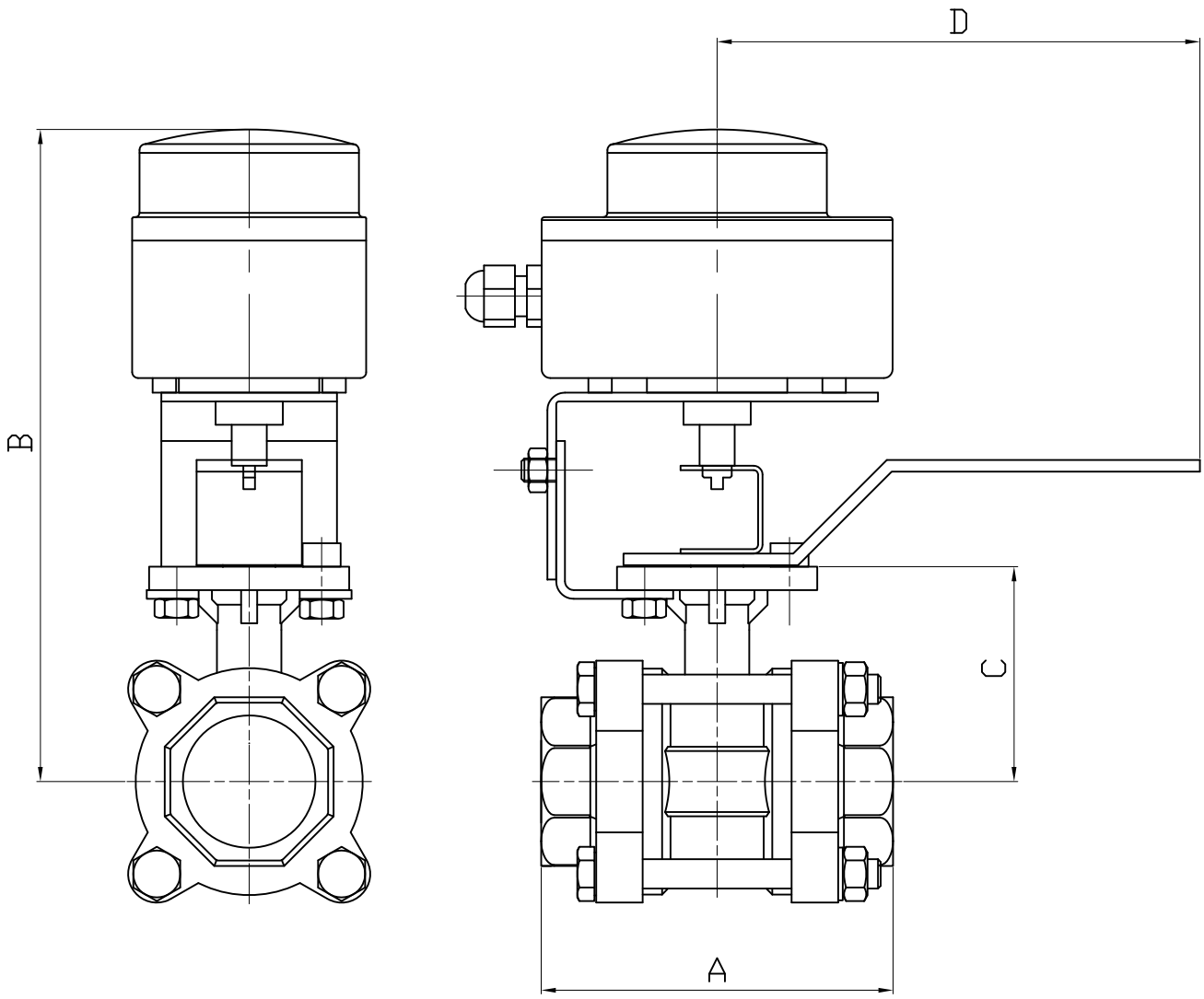

DN	1/4"	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	2"	2"1/2	3"	4"
A	75	75	75	80	90	110	120	140	185	205	240
B	206.5	206.5	206.5	209.5	218.5	223.5	238	247.5	271.5	281.5	296.5
C	42.3	42.3	42.3	44.8	54	59.2	73.5	82.9	107	117.3	132.3
D	110	110	110	110	135	135	165	165	300	335	335
KG	1.29	1.29	1.46	1.76	2.22	2.95	3.93	5.55	10.87	16.14	24.77

Informations données à titre indicatif et sous réserve de modifications éventuelles
data subject to alteration

				Maj cote B	19/12/2014	A
Ech: /	Date :05/04/2012	Dessiné par : E.D	Tolérances générales : +/- 0.2	Modifications	Date	REV.
ROBINET A TOURNANT SPHERIQUE 736XS-746XS + BFC/BALL VALVE 736XS-746XS + LIMIT SWITCH BOX				Matière :		
				Poids (Kg) :		
SECTORIEL	45, Rue du Ruisseau 38297 SAINT QUENTIN FALLAVIER			Traitement : SANS		
				Plan n° Ens 1134A		

SF-TYPE SOLDO SWITCH BOXES

FEATURES

The SF-type switch box is intended for equipping quarter-turn pneumatic actuators and manual valves. It makes it possible to have an easy, direct view of the valve position and of the feedback information to control. Of robust construction, it can be installed outdoors. The position indicator provides a very good visual reading of the valve position. The SF switch box can be equipped with many switches and detectors (see below). The notched cams can be manually adjusted with great accuracy, and are insensitive to vibrations.

AVAILABLE MODELS

SF: IP67 model

LIMITS OF USE

Ambiant temperature	-20°C / +80°C
IP Code	IP 67
SF	Outiside ATEX zone

MECHANICAL CONNECTION

Axis dimension	According to VDI/VDE 3845
Attachment	ISO 5211 F05
Stainless steel arches for attachment on to the actuator	NAMUR 0 : 50x25x20 mm NAMUR 1 : 80x30x20 mm NAMUR 2 : 80x30x30 mm NAMUR 3 : 130x30x30 mm NAMUR 4 : 130x30x50 mm

ELECTRICAL CONNECTION

Standard cable inputs	2 x M20x1.5

CONSTRUCTION

Casing and lid	Aluminium
Coating	Polyester paint
Stem	Stainless steel
Dome	Polycarbonate

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SF-TYPE SOLDO SWITCH BOXES

SWITCH DETAILS SF model

Ref.	Switch	Features
01	SPDT el.mech. switch silver plated contacts	Max 5A-250Vac / min 50mA-250Vac Max 5A-125Vac / min 50mA-125Vac Max 3A-24Vdc / min 50mA-24Vdc
03	SPDT el.mech. switch gold plated contacts (for Exia cert)	Max 1,8A/3A-250Vac / min 5mA-250Vac Max 2A/3A-125ac / min 5mA-125Vac Max 1,2A/1,5A-24Vdc / min 1mA-24Vdc
1F	DPDT el.mech. switch silver plated contacts	
C4	SPDT magnetic hermetically sealed reed switch.	Max 0,1A-120Vac / 1A-24Vdc
C8	DPDT magnetic hermetically sealed reed switch.	Max 0,1A-120Vac / 1A-24Vdc
N1	SPDT magnetic hermetically sealed silver plated snap acting contacts	Max 5A-250Vac / 5A-28Vdc
N3	SPDT magnetic hermetically sealed gold plated snap acting contacts	Max 1A-250Vac / 1A-30Vdc
N4	DPDT magnetic hermetically sealed silver plated snap acting contacts	Max 5A-250Vac / 5A-28Vdc
60	Inductive proximity NAMUR sensor SJ3,5-N	2 wire NC logic (for Exia cert)
62	Inductive proximity NAMUR sensor SJ3,5-SN	2 wire NC logic (for Exia cert, safety funct. low temp)
63	Inductive proximity NAMUR sensor - SJ3,5-S1N	2 wire NO logic (for Exia cert, safety funct)
70	Inductive proximity NAMUR - NJ2-V3-N	2 wire (for Exia cert)
73	Inductive proximity sensor (+70°C max.) - NBB2-V3-E2	P+F - 3 wire PNP NO amplified 10-30 Vdc, 100 mA
75	Inductive proximity sensor - IS 5026	IFM - 2 wire NO/NC amplified 5-36 Vdc, 200 mA
83	Inductive proximity sensor - NBB3-V3-Z4	P+F - 2 wire NO amplified 5-60 Vdc, 100 mA
TO	4-20 mA position transmitter	12-30 Vdc
HO	4-20 mA HART position transmitter	Atex Ex ia IIC T6 / T4 – certified 8-30Vdc

OPTIONS

There are many options for which you are invited to contact our sales service:

	SS : stainless steel box
	3-Channel L or T indicators
L	**LT** : version -40°C (according to the type of switch)
P	**LT 1** : version -55°C (according to the type of switch)
1	Cable inputs 1/2" NPT
	Pilot-solenoid valve wiring
G	EAC Certificate
U	UL Certificate

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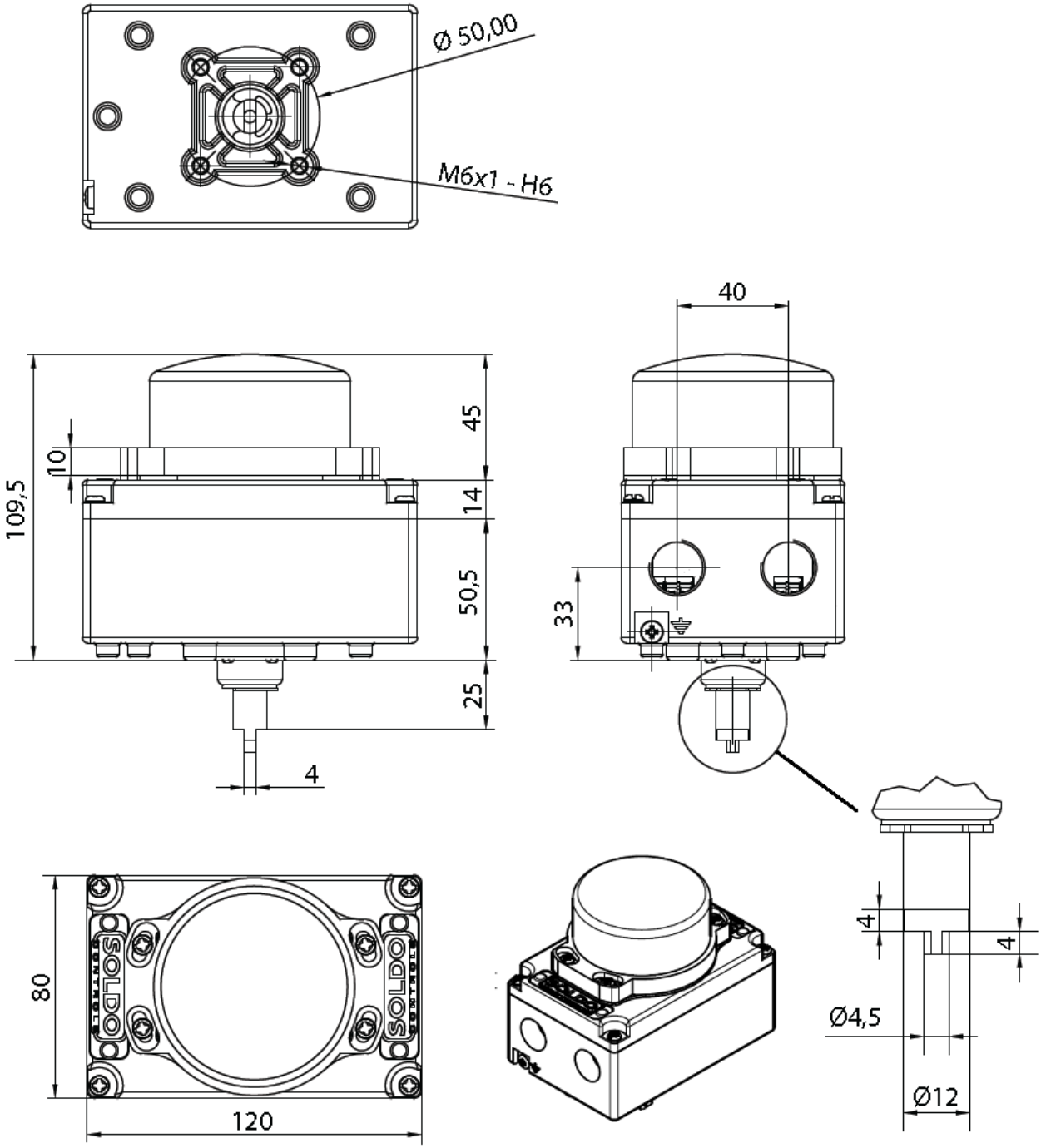
DIMENSIONS (mm)



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