



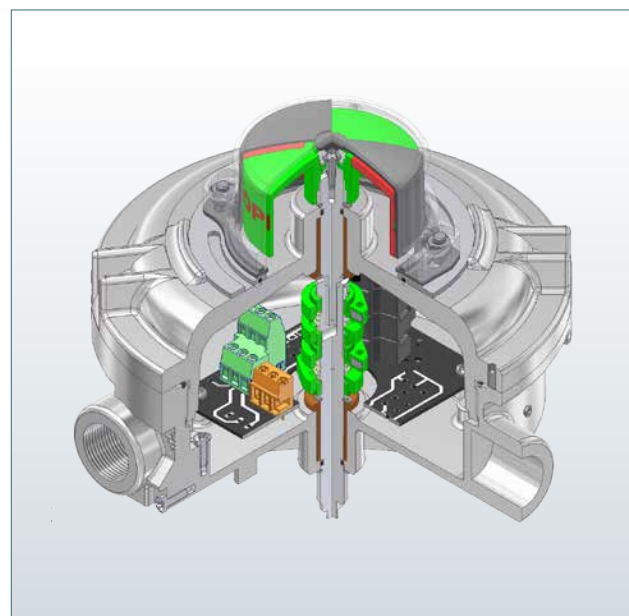
## SY - SW limit switch box series

Heavy-duty limit switch boxes, designed for hazardous areas, provide a visual and electrical remote position feedback on automated valves.

Available in either copper free aluminum or 316 stainless steel, the explosionproof enclosure matches Exd IIC T6 standards. The SY - SW limit switch box series, thanks to its large inner volume, is able to host up to 6 switches and spare pass through terminals. The availability of four cable entries, either metric or imperial, provide a highly customizable solution meeting a wide range of applications. These include, but are not limited to, oil and gas (both on-shore and off-shore) and petrochemical industries.

### Features

- Twin shaft design, ensuring a complete sealed device: the shaft is split into two parts, each fitted and sealed into the body and cover for the best weather insulation even during opening operation
- Suitable for arctic application, down to -60 °C
- Enhanced flexibility of electrical feedback options
- Up to four cable entries available in different sizes
- Enhanced corrosion resistance thanks to copper free aluminum body and cover with polyester powder coating
- 316 stainless steel housing for extremely hostile and corrosive environments
- Easy wiring through the terminal PCB board
- NOVA V3™ switch option ensures extreme durability and high power switching capabilities
- 4-20 mA position transmitter options
- Single tool opening design, allowing the operator to unscrew the lid by hand after removing the lock
- Partial stroke test device option



*Linking the Process  
with the Control Room*

# Product Specification

## Technical Data:

### Materials

- Copper free aluminum body and cover with polyester powder coating
- AISI 316 Stainless steel body and cover with electro-polished finishing
- Stainless steel fasteners and shafts

### Approvals:

ATEX, IECEx, EAC, CCOE, INMETRO, NEPSI

Ex II 2GD Ex d IIC T4/T5/T6 Gb

Ex tb IIC T140/T110/T110°C Db

Ta: -60 °C ≤ Ta ≤ 105 °C / 80 °C / 60 °C

### UL:

Class I Division 1 Groups B,C,D Division 2 Groups A, B, C, D

Class II Division 1 Groups E,F,G Division 2 Groups F, G

**SIL certificate:** Up to SIL 3 certified by TÜV

**Protection rating:** IP 66 / 68 up to 10 meters for 48 hours

### Cable entries options:

Up to four cable entries for metric and imperial sizes

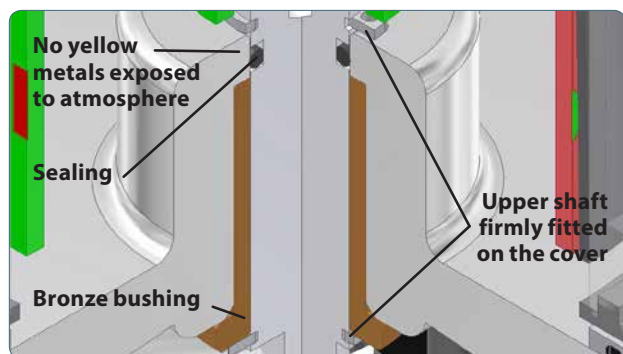
### Temperature:

-20 °C +80 °C as standard temperature range  
(depending on switch selection)

-60 °C +105 °C available on request

## Twin shaft design features

- The shaft is split into two parts; both parts fitted and sealed respectively on body and cover
- During opening and closing the grease remains in place ensuring a safe and smooth operation
- Self lubricant bushing on both sides aligning shafts and hedging in o-rings
- The indicator is hardly connected to the upper shaft, avoiding any matching and aligning issue
- The interior electrical components are completely protected against atmosphere environments



Upper shaft

## Soldo switch and sensors options:

### NOVA V3™ N1

- Proximity hermetically sealed snap acting SPDT switch
- High power loop: rating up to 5A @ 250 VAC - 5A @ 28 VDC
- Temperature range -50 °C , +95 °C



### NOVA V3™ N3

- Proximity hermetically sealed snap acting SPDT switch
- High power loop: rating up to 1A @ 250 VAC - 1A @ 30 VDC
- Temperature range -50 °C , +95 °C



### NOVA V3™ N4

- Proximity hermetically sealed snap acting DPDT switch
- High power loop: rating up to 5A @ 250 VAC - 5A @ 28 VDC
- Temperature range -50 °C , +95 °C



### REED C4

- Proximity hermetically sealed reed SPDT switch
- Inert gas contact chamber
- Rating up to 1A @ 24 VDC
- Temperature range -60 °C , +100 °C

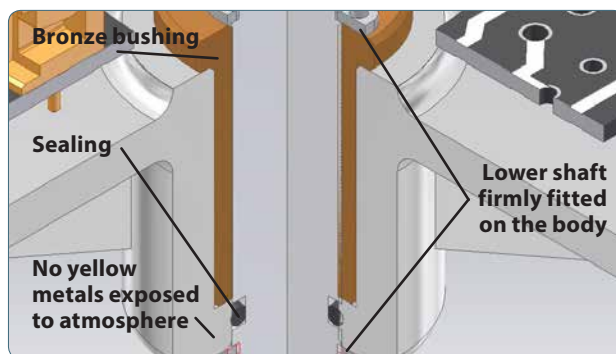


### REED C8

- Proximity hermetically sealed reed DPDT switch
- Inert gas contact chamber
- Rating up to 1A @ 24 VDC
- Temperature range -60 °C , +100 °C



More options available on request.



Lower shaft

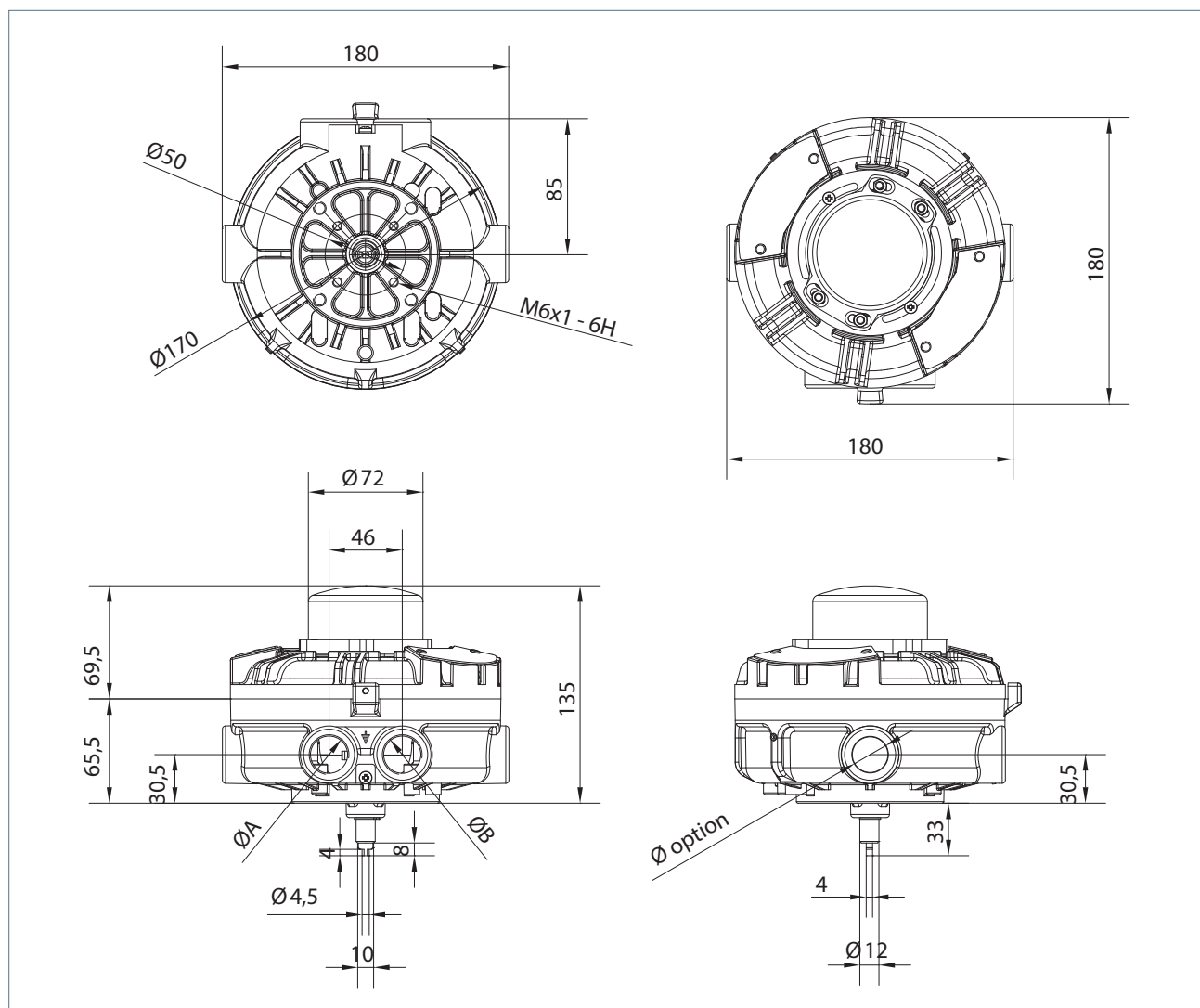


# Product Ordering Matrix

## Nomenclature

Nomenclature			SY	N1	2	0	0	-	1	0	X	2	3	A	4	
SY	Copper free aluminum enclosure	Aluminium	Box													
SW	Stainless steel 316 enclosure	Stainless Steel														
01	SPDT elec.mech. switch silver plated contacts		Switch													
1F	DPDT elec.mech. switch silver plated contacts															
C4	SPDT magnetic hermetically sealed reed switch, rating max. 0,1A @ 120 VAC, 1A @ 24 VDC															
C8	DPDT magnetic hermetically sealed reed switch, rating max. 0,1A @ 120 VAC, 1A @24 VDC															
N1	SPDT magnetic hermetically sealed silver plated snap acting contacts, max 5A @ 28 VDC, 250 VAC															
N4	DPDT magnetic hermetically sealed silver plated snap acting contacts, max 5A @ 28 VDC, 250 VAC															
32	Inductive proximity sensor model NBN4-12GM40-Z0 2 wire, 5-60 VDC 2-100 mA															
73	Inductive proximity sensor model NBB2-V3-E2, 3 wire PNP NO, 10-30 VDC, 0-100 mA															
T0	4-20mA position transmitter, 12-30 VDC															
H0	4-20 mA HART position transmitter Atex EEx ia IIC T6 / T4 certified 8-30 VDC															
P0	Partial Stroke Test device with either remote or local magnetic key activation															
2	N°2 switches		Switch Quantity													
4	N°4 switches															
6	N°6 switches															
0	Standard pcb board with 3 extra terminal poles		Terminals													
D	Stainless steel board with cage clamp terminals															
A	Stainless steel plate with screw type terminals															
0	Black powder coating (SY Series)	Aluminium	Coating													
E	Electro polish finishing (SW Series)	Stainless Steel														
1	N°2 cable entries 1/2" NPT		Cable Entries													
2	N°2 cable entries M20 x 1,5															
T	N°4 cable entries 1/2" NPT															
U	N°4 cable entries M20 x 1,5															
0	3D plastic visual position indicator red and green		Visual Position Indicator													
T	3D stainless steel position indicator															
X	ATEX and IECEx certified box		Approval													
D	ATEX and IECEx certified box with SIL2 approval															
E	ATEX and IECEx certified box with SIL3 approval															
G	EAC certification for Russian market															
I	INMETRO certification for Brazilian market															
N	NEPSI certification for Chinese market															
J	CCOE certification for Indian market															
U	UL certified box															
W	Weather proof															
* SIL2 / SIL3 options available on request																
0	Ordinary location		Marking													
2	Certification marking: Ex II 2GD Exd IIC															
7	cULus Class1/2 Div1															
8	cULus Class1/2 Div2 (with switches code: C4,C8,N1,N3)															
3	Weather proof IP66 / IP68		IP Protection rating													
7	Nema 4 and 4X															
A	Ambient temperature range: -20 °C + 80 °C		Temperature													
L	Ambient temperature range: -40 °C + 80 °C															
P	Ambient temperature range: -60 °C + 80 °C (Switch codes: C4, C8)															
4	Copper free aluminum heavy duty body and cover (SY series)		Material													
6	316 stainless steel heavy duty enclosure (SW series)															

## Dimensional Data



Cable entry dimensions

Code	Entry A	Entry B
1	1/2" NPT	1/2" NPT
2	M20 x 1,5	M20 x 1,5
7	3/4" NPT	3/4" NPT
8	M25 x 1,5	M25 x 1,5

