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
Product Specification

Technical Data:
Materials
- Copper free aluminum body and cover with polyester powder coating
- AISI 316 Stainless steel body and cover with electropolished 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

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.
## Nomenclature

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>SY</td>
<td>Copper free aluminum enclosure</td>
<td>Aluminium</td>
</tr>
<tr>
<td>SW</td>
<td>Stainless steel 316 enclosure</td>
<td>Stainless Steel</td>
</tr>
</tbody>
</table>

### Product Ordering Matrix

<table>
<thead>
<tr>
<th>Switch Quantity</th>
<th>Terminals</th>
<th>Coating</th>
<th>Cable Entries</th>
<th>Visual Position Indicator</th>
<th>Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>X</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>E</td>
<td>2</td>
<td>X</td>
<td>D</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>A</td>
<td>4</td>
<td>T</td>
<td>G</td>
</tr>
</tbody>
</table>

### Switches

- N2 switch (296x682)
- N4 switch (78x682)
- N6 switch (78x682)

### Box

- SY Box (279x709)
- N1 Box (78x725)
- 01 Box (365x725)
- 1F Box (385x725)
- C4 Box (54x725)
- C8 Box (74x725)
- N1 Box (94x725)
- N4 Box (352x725)

### Coatings

- Black powder coating (SY Series)
- Electro polish finishing (SW Series)

### Cable Entries

- 1/2" NPT (1/2"
- M20 x 1,5 (M20 x 1,5)

### Visual Position Indicator

- 3D plastic visual position indicator red and green
- 3D stainless steel position indicator

### Approval

- ATEX and IECEx certified box
- ATEX and IECEx certified box with SIL2 approval
- ATEX and IECEx certified box with SIL3 approval
- EAC certification for Russian market
- INMETRO certification for Brazilian market
- CCC certification for Indian market
- ULC certified box
- Weather proof

### Marking

- Ordinary location
- Certification marking: Ex II 2GD Exd IIC
- UL Class 1/2 Div 1
- UL Class 1/2 Div 2 (with switches code: C4,C8,N1,N3)
- Weather proof IP66 / IP68
- Nema 4 and 4X

### IP Protection rating

- 3 | Weather proof IP66 / IP68
- 7 | Nema 4 and 4X

### Temperature

- Ambient temperature range: -20 °C + 80 °C
- Ambient temperature range: -40 °C + 80 °C
- Ambient temperature range: -60 °C + 80 °C (Switch codes: C4,C8)

### Material

- Copper free aluminum heavy duty body and cover (SY series)
- 316 stainless steel heavy duty enclosure (SW series)
Dimensional Data

<table>
<thead>
<tr>
<th>Code</th>
<th>Entry A</th>
<th>Entry B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1/2&quot; NPT</td>
<td>1/2&quot; NPT</td>
</tr>
<tr>
<td>2</td>
<td>M20 x 1,5</td>
<td>M20 x 1,5</td>
</tr>
<tr>
<td>7</td>
<td>3/4&quot; NPT</td>
<td>3/4&quot; NPT</td>
</tr>
<tr>
<td>8</td>
<td>M25 x 1,5</td>
<td>M25 x 1,5</td>
</tr>
</tbody>
</table>

Cable entry dimensions

Europe
Soldo SRL
60, Via Monte Baldo 25015
Desenzano Del Garda
Brescia, Italy
Tel: +39 030 9991309
Fax: +39 030 91419779
Email: sales@soldo.net

USA
Soldo USA LLC
3920 Westpoint Blvd.
Winston-Salem
NC 27103
Tel: +1 (336) 659 3400
Fax: +1 (336) 659 9323
Email: sales@soldousa.com

As part of a process of on-going product development, Soldo reserves the right to amend and change specifications without prior notice. Published data may be subject to change. For the very latest version release, visit our website at www.soldo.net.

www.soldo.net