sx - SH limit switch box series

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

The SX matches the Exd IIB T6 standards. The SH is our solution reaching Exd IIB + H2 T6 requirements. SX and SH, thanks to spare pass through terminals, the three cable entries either metric or imperial and different visual position indications, 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 in two parts, each fitted and sealed into the body and cover for the best weather insulation even during opening operation
- Enhanced flexibility of electrical feedbacks options
- Up to three cable entries available in different sizes
- 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
- Captive bolts on the screwed lid
Product Specification

Technical Data:

Materials
- Die-cast aluminum body and cover with polyester powder coating
- Stainless steel fasteners and shafts

Approvals:
ATEX, IECEx, EAC, CCOE, INMETRO
Ex II 2GD Ex d IIB T4/T5/T6 Gb (SX series)
Ex II 2GD Ex d IIB + H2 T4/T5/T6 Gb (SH series)
Ex tb IIIC T135/T100/T85°C Db
Ta: -20 °C ≤ Ta ≤ 105 °C / 75 °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 / 67

Cable entries options:
Up to three cable entries for metric and imperial sizes

Temperature:
-20 °C +80 °C as standard temperature range
(depending on switch selection)
-40 °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 hugging 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.
## Product Ordering Matrix

### Nomenclature

<table>
<thead>
<tr>
<th>SX</th>
<th>N1</th>
<th>2</th>
<th>0</th>
<th>0</th>
<th>-</th>
<th>1</th>
<th>1</th>
<th>x</th>
<th>3</th>
<th>2</th>
<th>A</th>
<th>4</th>
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<tbody>
<tr>
<td>Box</td>
<td></td>
<td></td>
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### Switch Quantity

<table>
<thead>
<tr>
<th>Switch</th>
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<tbody>
<tr>
<td>N2 switches</td>
</tr>
<tr>
<td>N4 switches (on Exd IIB certification)</td>
</tr>
</tbody>
</table>

### Terminals

- 0 Standard pcb board with 3 extra terminal poles
- D Stainless steel board with cage clamp terminals
- A Stainless steel plate with screw type terminals

### Coating

- 0 Black powder coating
- Aluminium

### Cable Entries

- 1 N2 cable entries 1/2" NPT
- 2 N2 cable entries M20x1,5
- X N3 cable entries 1/2" NPT
- L N3 cable entries M20x1,5

### Visual Position Indicator

- 0 3D plastic visual position indicator red and green
- T 3D stainless steel position indicator

### Approval

- X ATEX and IECEx certified box
- 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

### Marking

- 0 Ordinary location
- 3 Certification marking: Ex II 2GD Exd IIB
- 4 Certification marking: Ex II 2GD Exd IIB + H2
- 7 cULus Class1/2 Div1
- 8 cULus Class1/2 Div2 (with switches code: C4, C8, N1, N3)

### IP Protection rating

- 2 Weather proof IP67
- 7 Nema 4 and 4X

### Temperature

- A Ambient temperature range: -20 °C + 80 °C
- L Ambient temperature range: -40 °C + 80 °C

### Material

- 3 Die cromated aluminum heavy duty body and cover
Dimensional Data

Cable entry dimensions

<table>
<thead>
<tr>
<th>Code</th>
<th>Entry A+A</th>
<th>Entry B</th>
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<tbody>
<tr>
<td>1</td>
<td>n.2 1/2&quot; NPT</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>n.2 M20 x 1.5</td>
<td>-</td>
</tr>
<tr>
<td>X</td>
<td>n.2 1/2&quot; NPT</td>
<td>n.1 1/2&quot; NPT</td>
</tr>
<tr>
<td>L</td>
<td>n.2 M20 x 1.5</td>
<td>n.1 M20 x 1.5</td>
</tr>
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