FINE CONTROLS (UK) LTD

Fine Controls have been supplying process controls & instrumentation equipment since 1994, & now serves an ever expanding customer base, both in the UK & globally.

We offer a full range of valve & instrumentation products & services, with our product rangerepresenting leading technologies & brands:

Flow: Flow Meters & Transmitters, Flow Switches, Flow Control Valves & Batch Control Systems

Temperature: Temperature Probes & Thermowells, Temperature ransmitters,Temperature Regulators & Temperature Displays

Level: Level Transmitters & Switches

Pressure: Pressure Gauges &Transmitters, Precision & High Pressure Regulators & I-P Converters, Volume boosters.

Precision Pneumatics: Pressure Regulators, I-P Converters, Volume Boosters, Vacuum Regulators

Valves: Solenoid & Pneumatic Valves, Control Valves & Positioners, Actuated Ball, Globe or Diaphragm Valves & Isolation Valves

Services: Repair, Calibration, Panel Build, System Design & Commissioning

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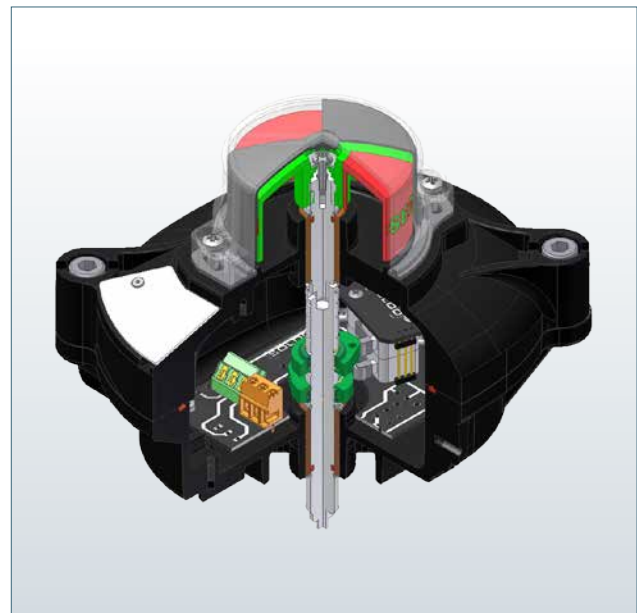
Bourdon
Baumer Group

SOLDO
CONTROLS
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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

Linking the Process
with the Control Room

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:

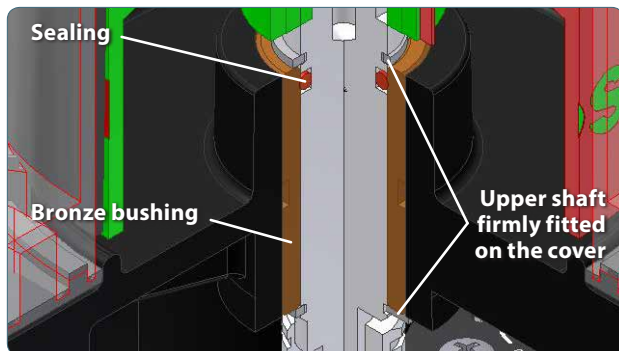Up to three cable entries for metric and imperial sizes

Temperature:

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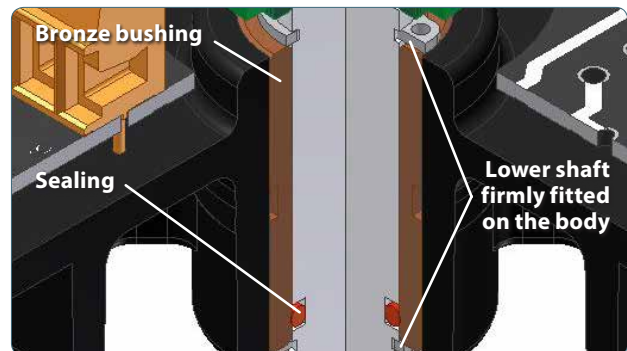(depending on switch selection)

-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 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
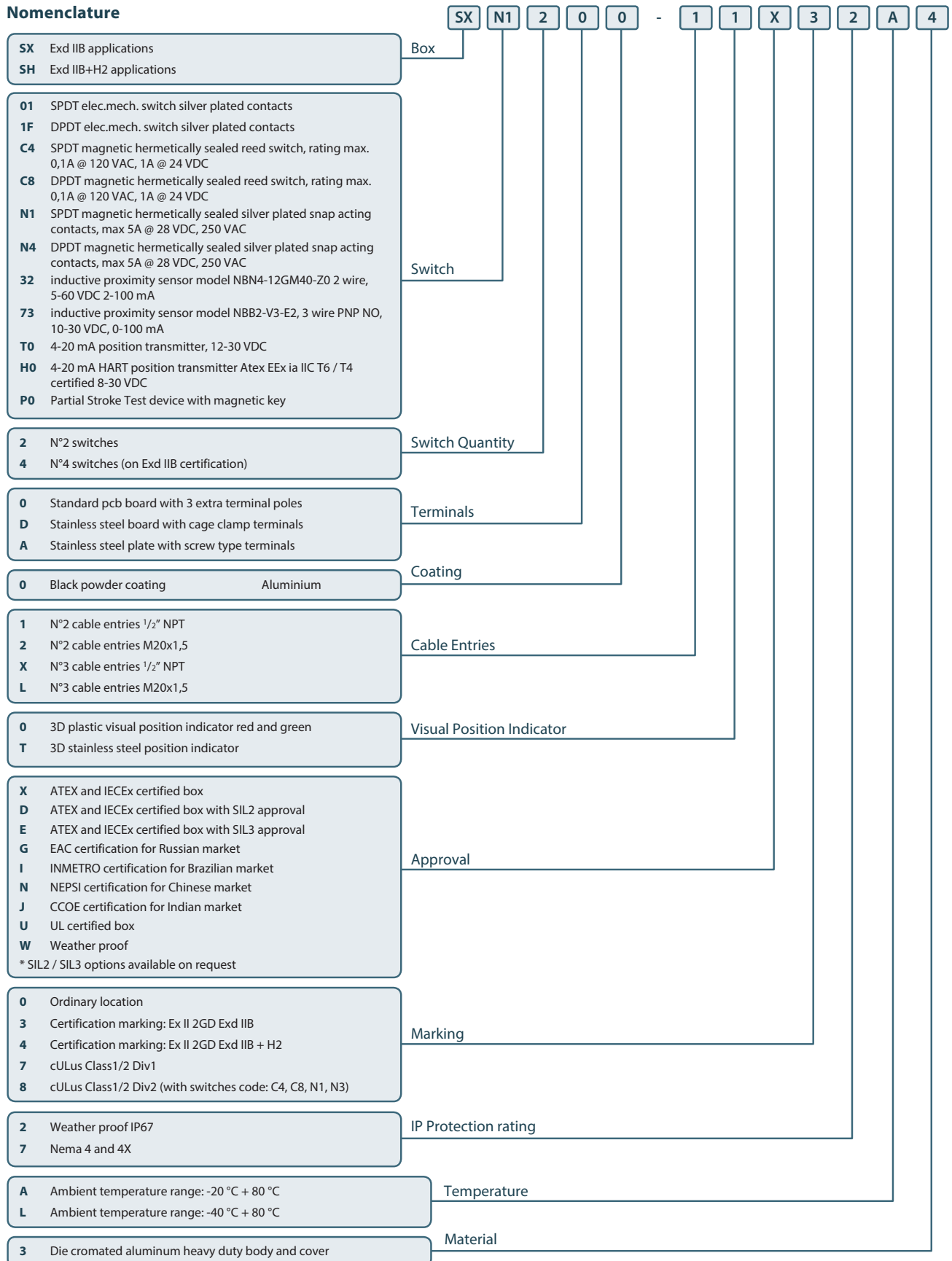- Temperature range -60 °C , +100 °C

REED C8

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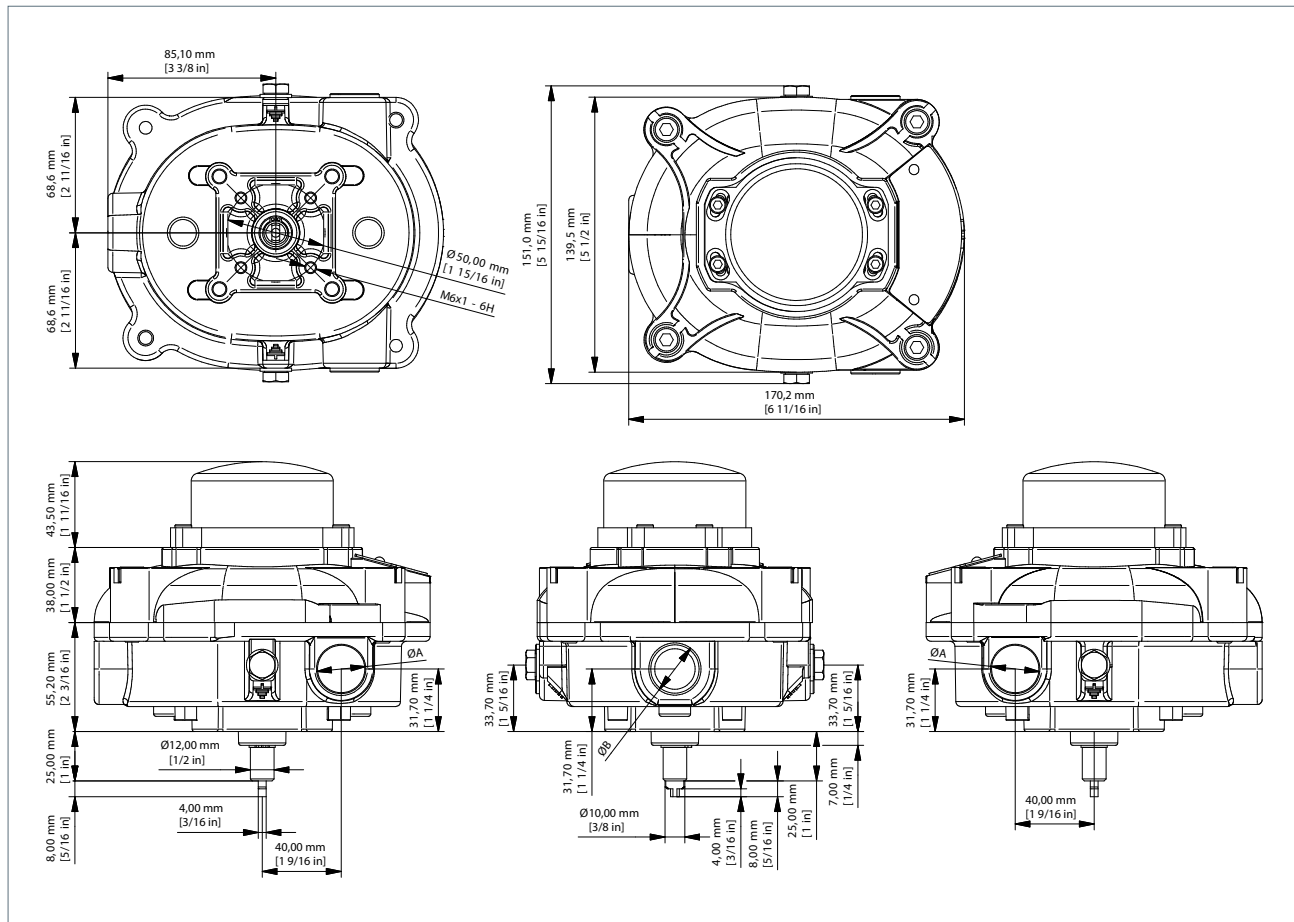- Rating up to 1A @ 24 VDC
- Temperature range -60 °C , +100 °C

More options available on request.

Sealing
Bronze bushing
Upper shaft firmly fitted on the cover

Upper shaft

Bronze bushing
Sealing
Lower shaft firmly fitted on the body

Lower shaft

Product Ordering Matrix

Nomenclature

`SX` `N1` `2` `0` `0` - `1` `1` `X` `3` `2` `A` `4`

Box

SX	Exd IIB applications
SH	Exd IIB+H2 applications

Switch

01	SPDT elec.mech. switch silver plated contacts
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	4-20 mA 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 magnetic key

Switch Quantity

2	N°2 switches
4	N°4 switches (on Exd IIB certification)

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	N°2 cable entries 1/2" NPT
2	N°2 cable entries M20x1,5
X	N°3 cable entries 1/2" NPT
L	N°3 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

Code	Entry A+A	Entry B
1	n.2 $^1/_2$" NPT	-
2	n.2 M20 x 1,5	-
X	n.2 $^1/_2$" NPT	n.1 $^1/_2$" NPT
L	n.2 M20 x 1,5	n.1 M20 x 1,5