

Indicating Pressure Switches



MODEL : IPSH (Dry Case)
LFIPSH (Liquid Filled Case)

Features

- Combination of indication and switching
- Choice of electrical contacts and microswitch
- One or two contacts available
- Switch setting throughout the range externally
- High repeatability and low hysteresis
- Weatherproof or Flameproof housing
- Mil connector provided optionally.



Specifications

| | |
|--------------------------------|--|
| Dial | 100mm / 150mm, aluminium, white background, black markings |
| Case | SS 304 / SS 316 with bayonet bezel (Weatherproof) Die Cast Aluminium (Flameproof) |
| Protection | Weatherproof to IP - 68 (IS:13947 part I / IEC:60529) Flameproof to IIA, IIB (equivalent to NEC Cl. 1, Div. 2, Gr. C & D) |
| Window | Safety glass |
| Bourdon | SS316, SS316 Ti, SS316L, Monel |
| Socket | 22 mm Square in SS316, SS316L, SS316 Ti, Monel |
| Movement | Brass / SS304 / SS316 |
| Connection | 1/2" NPT (M) as standard (other optional) |
| Range | Upto 1600 kg /cm ² with minimum span of 4 kg/cm ² as shown in the Table |
| Accuracy | ±1% FSD for indication ±2% FSD for switching |
| Over range | As per EN 837 |
| Blow out disc | Provided |
| Zero reset | Provided (Micrometer Pointer) |
| Temperature suitability | Ambient (-)20°C to 60°C, Media 100°C |
| Temperature Effect | Within ±0.4% FSD/10°C, when temperature changes from reference temperature of 20°C (as per EN-837 standard) |
| Contacts | 1SPST, single, normally open, closing on rise in pressure or vice versa, rated 30VA @ 230V AC 2 SPST, two contacts, independently adjustable, one normally open, other normally closed or both normally open or both normally closed, rated 30VA @ 230V AC 1SPDT, single microswitch, adjustable over entire range, rated 5 amp @ 230V AC (3A @ 28 VDC) 2SPDT, double microswitch, independently adjustable over entire range, rated 5 amp @ 230V AC (3A @ 28 VDC) Relay for the contact assembly to suit 5 amp @ 230V AC, separately mounted. |
| Optional | |

Ranges

| Gauge | bar, kg/cm ² | Least count |
|-------------------------------------|-------------------------|-------------|
| Compound | (-)1 to 3 | 0.10 |
| | (-) 1 to 5 | 0.10 |
| | (-)1 to 9 | 0.20 |
| | (-)1 to 15 | 0.50 |
| | (-)1 to 24 | 0.50 |
| | (-)1 to 39 | 1.0 |
| Pressure Gauge ('C' shaped Bourdon) | 0 to 4 | 0.10 |
| | 0 to 6 | 0.10 |
| | 0 to 10 | 0.20 |
| | 0 to 16 | 0.50 |
| | 0 to 25 | 0.50 |
| | 0 to 40 | 1.0 |
| | 0 to 60 | 1.0 |
| Pressure Gauge | 0 to 100 | 2.0 |
| | 0 to 160 | 5.0 |
| | 0 to 250 | 5.0 |
| | 0 to 400 | 10.0 |
| | 0 to 600 | 10.0 |
| Coil type Bourdon | 0 to 800 | 20.0 |
| | 0 to 1000 | 20.0 |
| | 0 to 1600 | 50.0 |

For range other than above please contact our design dept.

Benefits of Microswitch type over Electrical Contact assembly

- Microswitch is rated 5 amp @ 230 VAC (3A @ 28 VDC). Hence use of relay is not required
- Microswitch offered as a combination of movement and switch is procured from Internationally reputed vendor.
- Microswitch assembly provides better switching accuracy and repeatability
- Compact design.

Notes

- 1) Electrical contact assembly is not offered in flameproof version.
- 2) Flameproof version available only in Die cast aluminium case.
- 3) Flameproof version available with bottom entry surface mounting only
- 4) Pressure switch can also be offered with chemical seal in weatherproof and flameproof cases.
- 5) Surface mounted flameproof housing with chemical seal pressure gauge is available with capillary.
- 6) Blow out disc not applicable for flameproof case

The parameters mentioned here are the standard specifications / values generally used for most of the process applications. Any other specification not appearing here also can be provided as per customer requirement. For higher temperature services above 100°C, we recommend to provide suitable cooling arrangement (Syphon, Cooling Tower, Impulse Tubing, Diaphragm Seal etc.)

Under Technical Collaboration with M/s. Gauges Bourdon, France

Ordering Information

MODEL



BASIC MODEL CODE

IPSH Dry Case
LFIPSH Liquid Filled Case

MOUNTING

V Bottom Entry, Local Mounting
S Bottom Entry, Surface Mounting
Y Bottom Entry, 2" Pipe Mounting
C Back Entry, Local Mounting
P Back Entry, Flush Panel Mounting

DIAL SIZE

100 100 mm **150** 150 mm

CASE

S4S SS 304
S6S SS 316
ALM Die Cast Aluminium

BOURDON

S6S SS 316
S6L SS 316L
S6T SS 316Ti
MN4 Monel

SOCKET

S6S SS 316
S6L SS 316L
S6T SS 316Ti
MN4 Monel

MOVEMENT

S4S SS 304
S6S SS 316
BRS Brass

CONNECTION

| Conn | Code | Size | Code | Type | Code | Male/ Female | Code |
|--------|------|-----------|------------|--------|-----------|--------------|----------|
| Thread | T | 1/4" | 06 | NPS | NS | Male | M |
| | | 3/8" | 10 | NPT | NT | Female | F |
| | | 1/2" | 15 | BSP | BP | | |
| | | 3/4" | 20 | BSPT | BT | | |
| | | 1" | 25 | JIS-PF | PF | | |
| | | M20 | M20 | JIS-PT | PT | | |
| | | | | Gas | GS | | |
| | | | | R | RR | | |
| | | Rp | RP | | | | |
| | | Pitch 1.5 | C | | | | |

e.g. For 1/2"NPT(M), Code: **T15NTM**
For M20x1.5 (F), Code: **TM20CF**

OPTION

1DT 1SPDT Micro Switch
2DT 2SPDT Micro Switch
1ST 1SPST Electric Contact
2ST 2SPST Electric Contact
FAB Flame Proof Case - IIA/IIB
F2C Flame Proof Case - IIC
FAT Flame Proof Case - IIC (ATEX)
BGS Built In Gauge Saver
BOB Blow out disc at back
BSN Built In Snubber
CLB Colour Band
CEM CE marking
TRO Transformer Oil filled Case*
DUS Dual Scale
FLG Flanged Process Conn
NAC NACE
OXY O2 Cleaning
OR5 150% FSD Over range
VCP Vacuum Protection
CSU Chemical Seal
ACC Accessory
XXX Other (Specify)

UNIT

KSC kg/cm²(g)
BAR bar(g)
PSI psi(g)
KPA kPa(g)
MPA Mpa(g)
MBR mbar(g)
MMW mm WC(g)
CMW cm WC(g)
MWC m WC(g)
INW inch WC(g)
MMH mm Hg(g)
CMH cm Hg(g)
INH inch Hg(g)
XXX Other (Please specify)

RANGE

Please select from Table

FLG - FLANGE

| Conn | Code | Size | Code | Rating# | Code | Facing | Code |
|--------|------|--------|-----------|---------|----------|--------|-----------|
| Flange | F | 1/2" | 15 | 150 | A | RF | RF |
| | | 3/4" | 20 | 300 | B | FF | FF |
| | | 1" | 25 | 600 | C | RTJ | RJ |
| | | 1-1/2" | 40 | 900 | D | LT | LT |
| | | 2" | 50 | 1500 | E | LG | LG |
| | | 3" | 80 | 2500 | F | | |

e.g. For 40 NB 300# RF flange, Model Code: **F40BRF**

Sample model Code: IPSH-V-150-S4S-S6S-S6S-S4S-T15NTM-(0-10)-BAR-2DT

*Case filling in Weatherproof SS Case only

Indicating Pressure Switches

Inductive / Proximity / NAMUR Contacts

MODEL : IPSN

Inductive contacts may be used for almost all industrial applications, due to their proximity type of switching, their switching accuracy and their long service life. Inductive contacts are given special preference for oil filled measuring instruments and in areas chemical, petrochemical Industries, power plants, mining, Ships and nuclear plants.

Features

- Combination of indication and switching
- Completely fail-safe switching, even in explosion hazardous areas
- Switch setting between 10% & 90% of the range externally
- Weatherproof or Flameproof Versions
- Available with Diaphragm Seals of various Materials & Designs



Operating Principle

Inductive contacts work in a “non-contact” way. They are equipped with electrical distance sensors (proximity sensors) in accordance with EN 60947-5-2. The proximity sensor (NAMUR) is having slot design. An electromagnetic field is concentrated between two axially opposed coils. The switch operates when the aluminium control vane (flag) moved by the actual value pointer (main pointer which indicates the Gauges reading on Dial) enters into the slot between the two coils of the control head. The control head is supplied with a DC voltage. When the flag enters the slot in the control head, it increases its internal resistance, which subsequently cause change in the current which acts as the input signal for the switching amplifier of the control unit.

The default settings of contacts shall be as follows:

Case-1: NO (Normally Open) - Contact makes when the Gauge Pointer approaches the set point in clockwise direction.

(i.e., Flag leaves control head)

Case-2: NC (Normally Closed) - Contact breaks when the Gauge Pointer approaches the set point in a clockwise direction.

(i.e., Flag enters control head)

Specifications

Ranges

| | | | | |
|--------------------------------|---|----------------------|-------------------------------|--------------------|
| Ref Standards | EN-837 / EN 60947-5-2 (NAMUR) | Gauge | bar, kg/cm² | Least count |
| Dial | 100 mm/150 mm, Aluminium, white background, black markings | Compound | (-)1 to 1.5 | 0.05 |
| Case | SS304 / SS316 with bayonet bezel (Weatherproof) | | (-)1 to 3 | 0.10 |
| Protection | Weatherproof to IP-68 as per IS / IEC:60529 | | (-) 1 to 5 | 0.10 |
| | Flameproof to Gas Groups IIA/ IIB & IIC as per IEC:60079-1 | | (-)1 to 9 | 0.20 |
| | Exd IIC T6, Atex Certified & Weather proof to IP-66 as per IS/ IEC: 60529 | | (-)1 to 15 | 0.50 |
| Electrical Connection | Weatherproof / Flame proof Junction Box in Die Cast Aluminium | | (-)1 to 24 | 0.50 |
| Window | Safety glass with adjusting Knob | | (-)1 to 39 | 1.0 |
| Bourdon | SS316, SS316 Ti, SS316L, Monel | Pressure | 0 to 1 | 0.02 |
| Socket | 22 mm Square in SS316, SS316L, SS316 Ti, Monel | Gauge | 0 to 1.6 | 0.05 |
| Movement | SS304 / Ss316 | ('C' shaped Bourdon) | 0 to 2.5 | 0.05 |
| Connection | 1/2" NPT (M) as standard (other optional) | | 0 to 4 | 0.10 |
| Range | Refer Table | | 0 to 6 | 0.10 |
| Accuracy | ±1% FSD for indication & switching | | 0 to 10 | 0.20 |
| Over range | As per EN 837 | | 0 to 16 | 0.50 |
| Blow out disc | Provided | | 0 to 25 | 0.50 |
| Zero reset | Provided (Micrometer Pointer) | | 0 to 40 | 1.0 |
| Temperature suitability | Ambient (-)20°C to 60°C, Media 100°C | | 0 to 60 | 1.0 |
| Temperature Effect | Within ±0.4% FSD/10°C, when temperature changes from reference temperature of 20°C (as per EN-837 standard) | | 0 to 100 | 2.0 |
| Contact | Inductive Contacts, Single or Double, adjustable between 10% & 90% of the Range | | 0 to 160 | 5.0 |
| | Nominal Voltage, 8.32 V DC | Gauge | 0 to 250 | 5.0 |
| | Operating Voltage, 5 to 25 V DC | Coil type | 0 to 400 | 10.0 |
| | | Bourdon | 0 to 600 | 10.0 |
| | | | 0 to 800 | 20.0 |
| | | | 0 to 1000 | 20.0 |
| | | | 0 to 1600 | 50.0 |

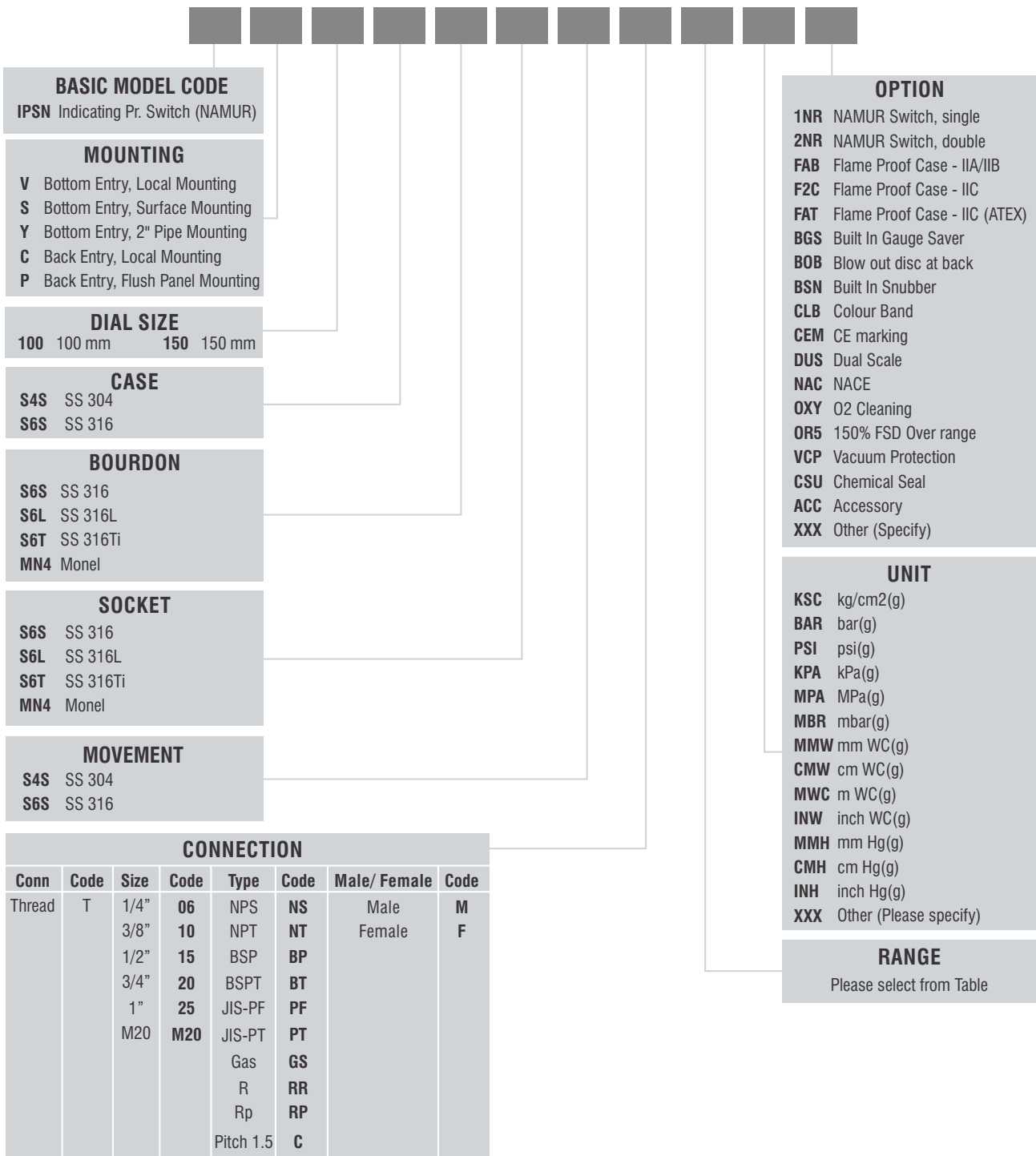
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For range other than above please contact our design dept.

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Ordering Information

MODEL



e.g. For 1/2"NPT(M), Code: **T15NTM**
For M20x1.5 (F), Code: **TM20CF**

Sample model Code: **IPSN-V-150-S4S-S6S-S6S-S4S-T15NTM-(0-10)-BAR-1NR**