

Indicating Pressure Switches

General

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 /cm2 with minimum span of 4 kg/cm2 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)
Optional	Relay for the contact assembly to suit 5 amp @ 230V AC, separately mounted.

Ranges

Gauge	bar, kg/cm2	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	0 to 4	0.10
Gauge	0 to 6	0.10
('C' shaped Bourdon)	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	0 to 100	2.0
Gauge	0 to 160	5.0
Coil type	0 to 250	5.0
Bourdon	0 to 400	10.0
	0 to 600	10.0
	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.)

Ordering Information

MODEL

BASIC MODEL CODE								OPTION																																																																													
IPSH Dry Case LFIPSH Liquid Filled Case								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)																																																																													
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								UNIT KSC kg/cm ² (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)																																																																													
DIAL SIZE 100 100 mm 150 150 mm								RANGE Please select from Table																																																																													
CASE S4S SS 304 S6S SS 316 ALM Die Cast Aluminium								FLG - FLANGE <table border="1"> <thead> <tr> <th>Conn</th> <th>Code</th> <th>Size</th> <th>Code</th> <th>Rating#</th> <th>Code</th> <th>Facing</th> <th>Code</th> </tr> </thead> <tbody> <tr> <td rowspan="5">Flange</td> <td rowspan="5">F</td> <td>1/2"</td> <td>15</td> <td>150</td> <td>A</td> <td>RF</td> <td>RF</td> </tr> <tr> <td>3/4"</td> <td>20</td> <td>300</td> <td>B</td> <td>FF</td> <td>FF</td> </tr> <tr> <td>1"</td> <td>25</td> <td>600</td> <td>C</td> <td>RTJ</td> <td>RJ</td> </tr> <tr> <td>1-1/2"</td> <td>40</td> <td>900</td> <td>D</td> <td>LT</td> <td>LT</td> </tr> <tr> <td>2"</td> <td>50</td> <td>1500</td> <td>E</td> <td>LG</td> <td>LG</td> </tr> <tr> <td></td> <td></td> <td>3"</td> <td>80</td> <td>2500</td> <td>F</td> <td></td> <td></td> </tr> </tbody> </table>								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																								
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e.g. For 1/2"NPT(M), Code: **T15NTM**
 For M20x1.5 (F), Code: **TM20CF**

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

General

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

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.)

For range other than above please contact our design dept.

Ordering Information

MODEL

MODEL							
BASIC MODEL CODE IPSN Indicating Pr. Switch (NAMUR)							
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							
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							
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		
OPTION 1NR NAMUR Switch, single 2NR NAMUR Switch, double 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 DUS Dual Scale 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							

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**