

# 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

<b>Dial</b>	100mm / 150mm, aluminium, white background, black markings
<b>Case</b>	SS 304 / SS 316 with bayonet bezel (Weatherproof) Die Cast Aluminium (Flameproof)
<b>Protection</b>	Weatherproof to IP - 68 (IS:13947 part I / IEC:60529) Flameproof to IIA, IIB (equivalent to NEC Cl. 1, Div. 2, Gr. C & D)
<b>Window</b>	Safety glass
<b>Bourdon</b>	SS316, SS316 Ti, SS316L, Monel
<b>Socket</b>	22 mm Square in SS316, SS316L, SS316 Ti, Monel
<b>Movement</b>	Brass / SS304 / SS316
<b>Connection</b>	1/2" NPT (M) as standard (other optional)
<b>Range</b>	Upto 1600 kg /cm2 with minimum span of 4 kg/cm2 as shown in the Table
<b>Accuracy</b>	±1% FSD for indication ±2% FSD for switching
<b>Over range</b>	As per EN 837
<b>Blow out disc</b>	Provided
<b>Zero reset</b>	Provided (Micrometer Pointer)
<b>Temperature suitability</b>	Ambient (-)20°C to 60°C, Media 100°C
<b>Temperature Effect</b>	Within ±0.4% FSD/10°C, when temperature changes from reference temperature of 20°C (as per EN-837 standard)
<b>Contacts</b>	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)
<b>Optional</b>	Relay for the contact assembly to suit 5 amp @ 230V AC, separately mounted.

## Ranges

Gauge	bar, kg/cm <sup>2</sup>	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
Pressure Gauge ('C' shaped Bourdon)	(-)1 to 39	1.0
	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
Pressure Gauge (Coil type Bourdon)	0 to 40	1.0
	0 to 60	1.0
	0 to 100	2.0
	0 to 160	5.0
	0 to 250	5.0
	0 to 400	10.0
Pressure Gauge (Coil type Bourdon)	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.)

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

### 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/cm<sup>2</sup>(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

### CONNECTION

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

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

### FLG - FLANGE

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

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**

# 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/cm <sup>2</sup>	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)																		
Protection	Weatherproof to IP-68 as per IS / IEC:60529																		
	Flameproof to Gas Groups IIA/ IIB & IIC as per IEC:60079-1																		
	Exd IIC T6, Atex Certified & Weather proof to IP-66 as per IS/ IEC: 60529																		
Electrical Connection	Weatherproof / Flame proof Junction Box in Die Cast Aluminium				Pressure	0 to 1	0.02												
Window	Safety glass with adjusting Knob																		
Bourdon	SS316, SS316 Ti, SS316L, Monel																		
Socket	22 mm Square in SS316, SS316L, SS316 Ti, Monel																		
Movement	SS304 / Ss316																		
Connection	1/2" NPT (M) as standard (other optional)																		
Range	Refer Table																		
Accuracy	±1% FSD for indication & switching																		
Over range	As per EN 837																		
Blow out disc	Provided																		
Zero reset	Provided (Micrometer Pointer)	Gauge	0 to 1.6	0.05															
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)																		
	Inductive Contacts, Single or Double, adjustable between 10% & 90% of the Range																		
	Nominal Voltage, 8.32 V DC																		
Contact	Operating Voltage, 5 to 25 V DC																		
					Bourdon	0 to 4	0.10												
					Gauge	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						
														0 to 100	2.0				
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					0 to 600	10.0													
	0 to 800	20.0																	
			0 to 1000	20.0															
							0 to 1600	50.0											

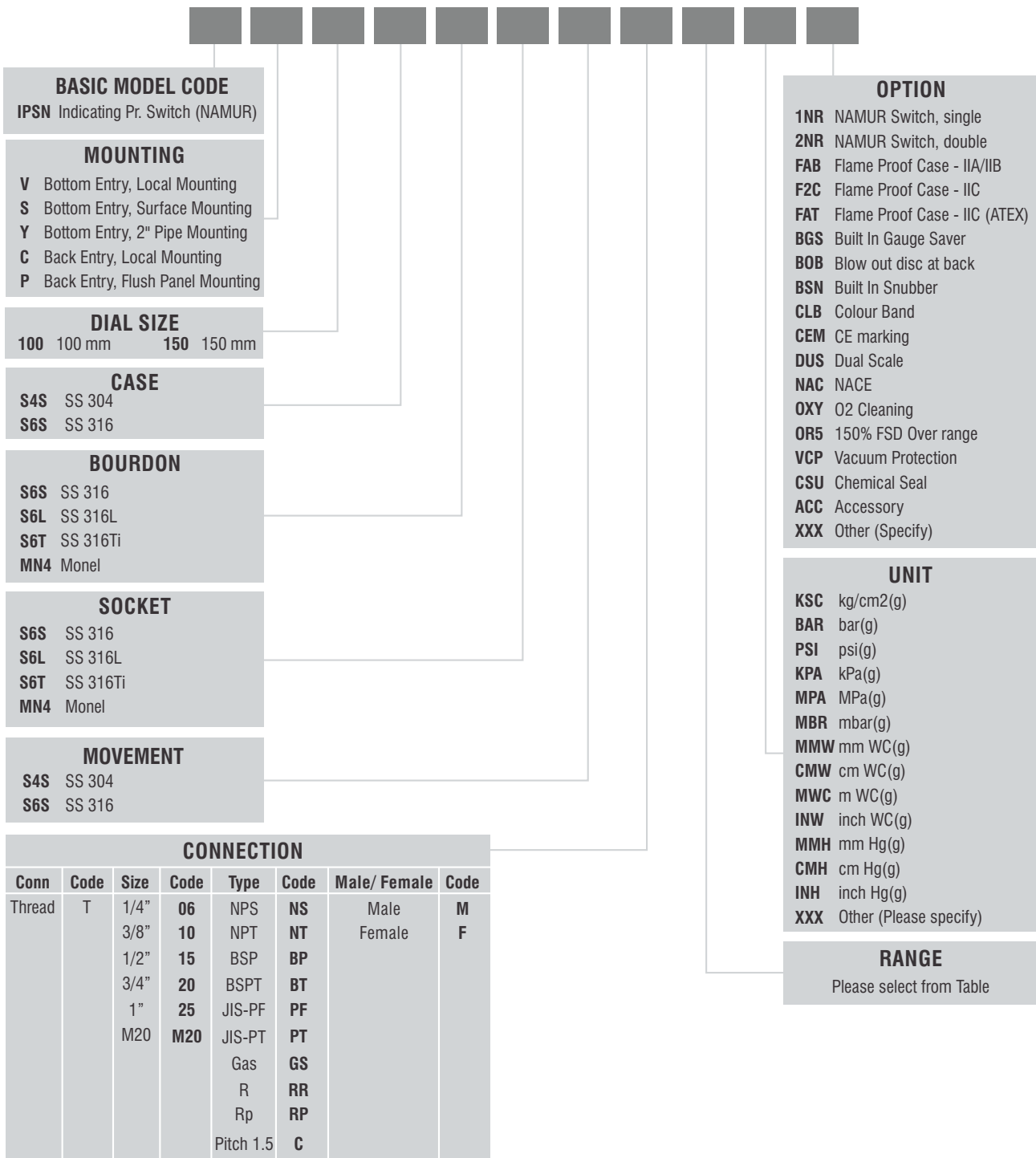
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# Ordering Information

## 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**