

# Model IPS

## Semiconductor Gas Indicating Pressure Switch



### Description

The IPS Indicating Pressure Switch is designed to provide economical pressure monitoring with setpoint indication of the high purity, toxic and corrosive gases used in the semiconductor manufacturing industry.

In addition to providing accurate ( $\pm 2\%$  of span) indication of gas pressure, this 2 inch diameter instrument incorporates a magnetically actuated, hermetically sealed reed switch capable of operating low voltage annunciators, lights or relays. When used with the appropriate pull-up or pull-down resistors, the monitor can be connected to the input port of a microprocessor or to a logic network. It may also be used as an input to a programmable controller.

Moving the index on the front dial to the desired set point sets the switch. A small magnet fastened to the indicating pointer actuates the switch. A magnetic latch on the switch permits the switch to remain "on" or "off" after the pointer passes the operating point, without restraint on the indicating pointer.

The switch action is configurable to close on increasing

pressure (HA) or close on decreasing pressure (LA). In both models, the user can change the switch action by removing the front bezel, loosening the pointer screw, and flipping the pointer over. The switch action will be noted on the tail of the pointer.

The IPS Pressure Switch offers the ease of adjustment and economy that permits field use of several units covering a variety of pressure range set-points. It is also a low cost alternative to analog transducers with A/D conversion for digital input to PLCs and microprocessors.

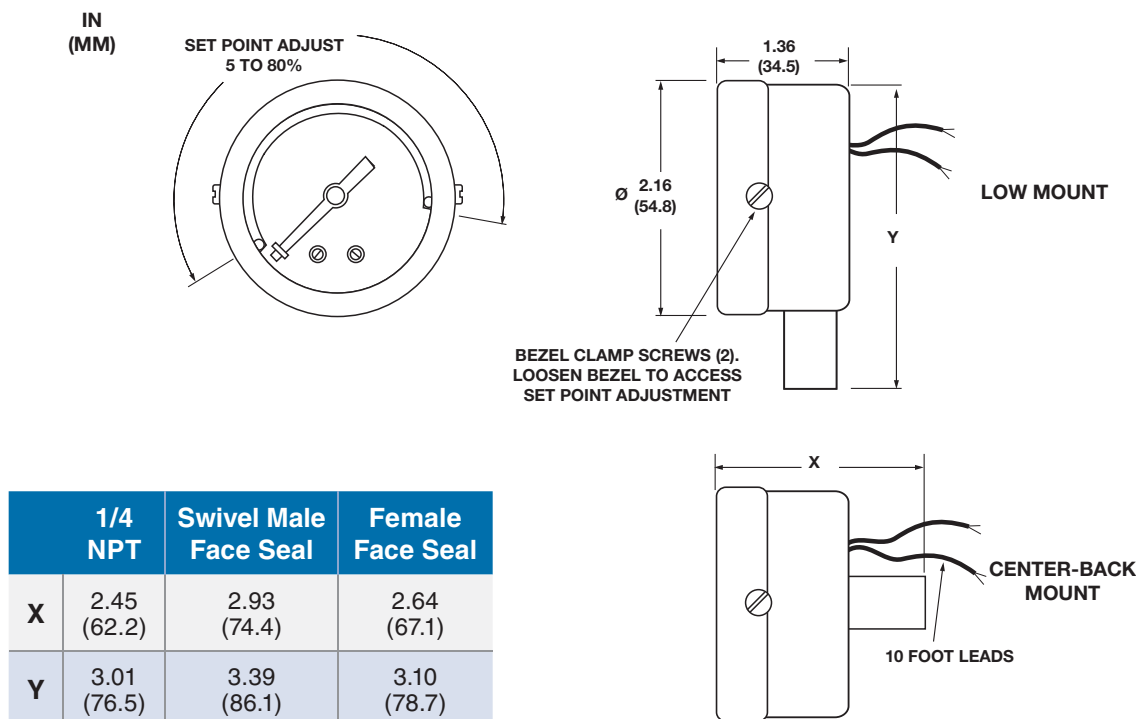
The IPS Pressure Switch provides many advantages over other instruments, including: fast, easy, accurate setting of set points; pressure and setpoint indication on the same dial face; quick, at a glance monitoring of the pressure and setpoint, and substantial cost savings to the end user.

### Features

- Operates low voltage audible/visual alarms and relays
- No switch input power required
- Provides input to logic networks, microprocessors and PLCs
- Intrinsically safe apparatus when connected to approved barrier
- Available in low mount and center-back mount configuration
- Available with face seal fittings, tube stub or NPT connections
- Switch setpoint adjustments accessible from front of monitor
- Switch setting may be adjusted on or off-line
- User selectable switch action
- Type 316L stainless steel internal surfaces
- Electropolished face seal, gland and socket with less than 10 Ra surface finish
- Polished stainless steel outer case and window ring
- Helium leak tested to  $10^{-9}$  scc/sec
- Cleaned and packaged for high purity gas applications, exceeds ANSI B40.1
- Immune to EMI fields

# Model IPS Semiconductor Gas Indicating Pressure Switch

## Dimensions



## Specifications

### Mechanical

- **Size:** 2 inch diameter
- **Ranges (PSI or BAR):**  
Compound: VAC-0-30 psi,  
VAC-0-60 psi, VAC-0-100 psi,  
VAC-0-200 psi, VAC-0-300 psi  
Note: VAC=30 inches Hg vacuum  
Gauge Pressure: 0 to 60, 100, 200, 300, 600,  
1000, 2000, 3000, and 4000 psi; dual scales are  
available (consult factory); proof pressure is 110%
- **Internal Surface:** Type 316L stainless steel
- **Case:** 300 series polished stainless steel
- **Ring and Window:** Polycarbonate window  
permanently retained in stainless steel ring  
fastened to case with 2 screws
- **Set Point Index:** Adjustable from 5% to 80%  
of span
- **Operating Temperature:** 105°C maximum
- **Movement:** 300 series stainless steel
- **Dial:** Electrically insulated laminate, white  
background, black markings; 270° arc of  
graduations
- **Bourdon Tube:** Type 316L seamless stainless  
steel, TIG welded
- **Connection:** Type 316L stainless steel face  
seal connection or 1/4 inch NPT; low mount  
or center-back mount
- **Surface Finish:** Face seal connections 10 Ra,  
1/4 inch NPT connections 32 Ra, connectors  
shipped with protective plastic caps

## Electrical

- **Connection:** 26 AWG, Teflon<sup>1</sup> insulated, 10 foot leads; IPS-200 (2 black wires)
- **Maximum Power:** 10 watts DC, 12 VA AC
- **Maximum Switching Current:** 0.5 amps AC/DC noninductive (consult factory when using for inductive loads such as relays)
- **Maximum Switch Voltage:** 28 V AC/DC
- **Indication Accuracy:**  $\pm 2\%$  of span

- **Switch Point Accuracy:** Switch will operate when pressure is within  $\pm 2\%$  span of setpoint
- **Switch Operation:**  
End user configurable or factory set choices of:  
Closes on decreasing pressure/opens on increasing pressure (LA option);  
Closes on increasing pressure/opens on decreasing pressure (HA option)

<sup>1</sup> TM Du Pont and Teflon

## Model Numbering:

IPS Gas indicating pressure switch		
IPS	Indicating pressure switch	
Setpoints		
200	Single	
Switch action		
LA	Closes on decreasing pressure	
HA	Closes on increasing pressure	
Pressure range		
0060	0 to 60 psi	
0100	0 to 100 psi	
0200	0 to 200 psi	
0300	0 to 300 psi	
0600	0 to 600 psi	
1000	0 to 1000 psi	
2000	0 to 2000 psi	
3000	0 to 3000 psi	
4000	0 to 4000 psi	
V to 0 to 30	Compound (Vac to 30 psig)	
V to 0 to 60	Compound (Vac to 60 psig)	
V to 0 to 100	Compound (Vac to 100 psig)	
V to 0 to 200	Compound (Vac to 200 psig)	
V to 0 to 300	Compound (Vac to 300 psig)	
Process connection		
LM-NPT	Low mount, 1/4 NPT male	
CBM-NPT	Center-back mount, 1/4 NPT male	
LM-FVCR	Low mount, female face seal	
LM-MVCR	Low mount, male face seal	
CBM-FVCR	Center-back mount, female face seal	
CBM-MVCR	Center-back mount, male face seal	

IPS 200 LA 0200 LM-NPT

# Model IPS Semiconductor Gas Indicating Pressure Switch



820 Pennsylvania Boulevard • Feasterville, PA 19053 • U.S.A.  
Tel: 215-355-6900 • Fax: 215-354-1802 • [www.ametekpmt.com](http://www.ametekpmt.com)

© AMETEK, Inc. All rights reserved • Printed in the U.S.A. • PDF608 (110098) K796432