

## MEDIUM PRESSURE

ANC4B 316 stainless steel or black anodised aluminium switchcase to IP66 standards.

Low deadband option.

Calibrated adjustment scale.

Settings from 0.1 to 40 Bar.

Single or dual microswitch option.

Wetted parts NACE MR-01-75 compliant.

**ATEX/IECEX Flameproof version**  
CE Ⓜ II2 G Exd IIB + H2 T6...T2 Gb  
Tamb -60°C to 40°C...90°C

**ATEX/IECEX Intrinsically safe version**  
CE Ⓜ II1G Exia IIC T6...T2 Ga  
Tamb -50°C to 78°C...128°C

## PF261 & PF262 TITAN ATEX/IECEX Exd, Exia CERTIFIED & INDUSTRIAL PRESSURE SWITCH



(For resistor certification refer to page 45)

This range has been used on rotating machinery and process applications worldwide and has been specified extensively for offshore applications. Diaphragm actuated for operating pressures up to 40 Bar with a Bellofram option offering extremely low switching deadband. Resistors can be incorporated for 'end of line' and short circuit monitoring. For specification and introduction to the Titan switch range refer to pages 44 & 45.

ADJUSTMENT RANGE (BAR G)	ADJUSTMENT RANGE (PSI)	MAX WORKING PRESSURE (BAR G)	DEADBAND FIXED (BAR G)	SPRING CODE	DIAPHRAGM CODE	BOTTOM COVER
0.15 - 0.65	2 - 10	12	0.05 - 0.16	R	32B	32
0.2 - 1.4	3 - 21	12	0.06 - 0.18	U	32B	32
0.5 - 2.5	8 - 40	12	0.07 - 0.20	B	32B	32
1 - 7	20 - 100	12	0.10 - 0.45	W	32B	32
0.5 - 3	8 - 48	25	0.20 - 0.25	G	22B	22
1 - 5	15 - 75	25	0.20 - 0.30	B	22B	22
2 - 14	30 - 190	25	0.30 - 0.70	W	22B	22
2 - 10	30 - 150	50	0.35 - 0.70	B	16B	16
4 - 28	60 - 380	50	0.50 - 1.50	W	16B	16
8 - 40	120 - 600	50	0.75 - 2.00	X	16B	16

### LOW DEADBAND OPTION

(Use number "7" for diaphragm material)

RANGE (BAR)	MAX PRESS (BAR)	DEADBAND FIXED (BAR)	SPRING CODE	BELLOFRAM CODE	BOTTOM COVER
0.15 - 0.75	25	<0.035	R	12P	32
0.35 - 1.75	25	<0.07	G	12P	32
0.35 - 3.35	25	<0.10	B	12P	32
0.75 - 8.75	25	<0.15	W	12P	32
3.00 - 15.0	35	<0.35	W	75P	22
7.5 - 27.5	40	<0.70	X	75P	22

## PART NUMBER BREAKDOWN

<b>B</b> = ATEX Exd CERTIFIED <b>O</b> = ATEX Exia CERTIFIED <b>A</b> = INDUSTRIAL		<b>DIAPHRAGM MATERIAL</b> <b>1</b> = NITRILE <b>2</b> = VITON <b>7</b> = VITON BELLOFRAM (LOW DEADBAND)		<b>WETTED PARTS</b> <b>S</b> = 316 STAINLESS STEEL <b>M</b> = MONEL 400L			
<b>A</b> = ALUMINIUM CASE <b>S</b> = ST. STEEL CASE		<b>SPRING CODE</b> (SEE RANGE SHEET)		<b>DIAPHRAGM OR BELLOFRAM CODE</b> (SEE RANGE SHEET)		<b>A</b> = STANDARD BRACKET <b>E</b> = 2" STANDPIPE BRACKET <b>X</b> = COVER PLATE (MODEL PF262) <b>M</b> = P280 SERIES REPLACEMENT	
<b>1</b> = CASE MOUNTED <b>2</b> = STEM MOUNTED							
<div>↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓</div> <div><b>PF261S1B/2W10F22B/22S6AA</b></div> <div>↑ ↑ ↑ ↑</div>						<b>ELECTRICAL ENTRY</b> <b>A</b> = M20 STRAIGHT <b>B</b> = M20 ANGLED <b>C</b> = 1/2" NPT STR. <b>F</b> = M25 STRAIGHT	
<b>1</b> = 1 x SPDT SWITCH <b>2</b> = 2 x SPDT SWITCH <b>7</b> = 1 x DPST HIGH DIFF - SPECIAL DUAL SWITCHES ARE MECHANICALLY LINKED TO PROVIDE DPDT SWITCHING ACTION		<b>PROCESS CONNECTIONS</b> <b>PF261</b> - (FEMALE) <b>10F</b> = STANDARD (F) <b>PF262</b> - MALE <b>22F</b> = 1/2" BSP.P (M) <b>24F</b> = 1/2" NPT (M)		<b>BOTTOM COVER CODE</b> (SEE TABLE ON PAGE 48)		<b>1</b> = 1/4" BSP.P FEMALE <b>2</b> = 1/4" NPT FEMALE <b>5</b> = 1/2" BSP.P FEMALE <b>6</b> = 1/2" NPT FEMALE FOR PF262 USE = 1	

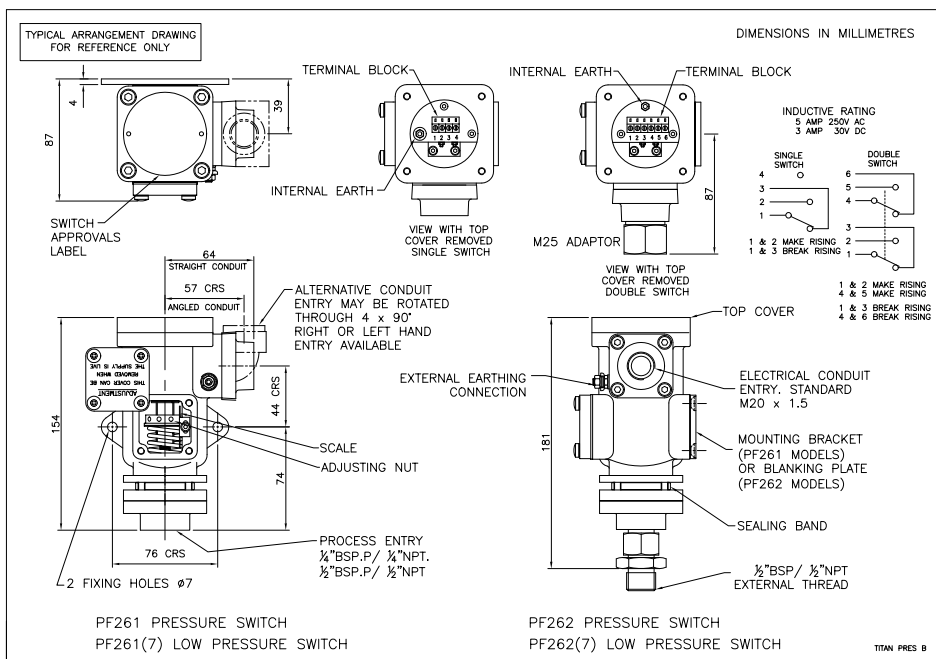
NOTE: RESISTORS ARE INDICATED BY THE PREFIX "PR" IN PLACE OF "PF".

## SPECIFICATION

**Wetted parts** : 316 St. steel or Monel

**Process connections** : 1/4" or 1/2" BSP.P or NPT female (bottom)  
 1/2" BSP.P or NPT male (bottom)

**Diaphragm** : Nitrile or Viton



# TITAN (XPB) ATEX/IECEX Exd, Exia INDUSTRIAL SWITCHES

## INTRODUCTION

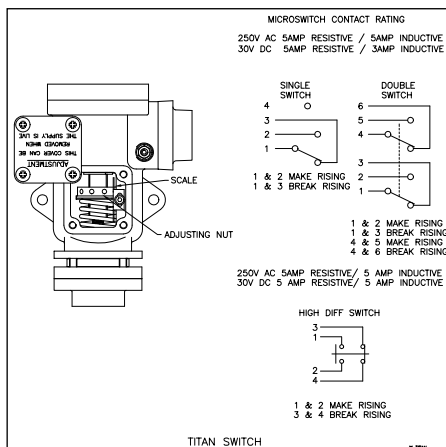
The Titan **pressure, differential pressure, temperature, level and flow** switches are designed for use in environments where explosive gases can be present (e.g. Gas fields, Oil rigs and Chemical plants etc.) and are dual ATEX/IECEX certified for CAT 1 Exia IIC T6...T2 and CAT 2 Exd IIB +H<sub>2</sub> T6...T2.

These switches are manufactured from a high quality casting which offers robust construction and protection to IP66 for use within heavily polluted industrial and marine environments. A special feature of the instruments is the separation of the flameproof and adjustment compartments allowing for safe on-site adjustment of the set point with power on and the switch in operation.

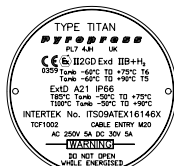
The TITAN Exd certified switches must be installed in accordance with BS EN 60017-14. The certification allows for mounting against a wall or bulkhead with the minimum flamepath distances specified not being applicable.

## CALIBRATION

The design features a simple form of calibration adjustment against a scale plate. This allows users to either order units with a specific setting, or stock a mid range setting and then adjust to suit the application. This can be set safely with the switch supply live. On removal of the adjustment cover the adjusting ring can be turned with a small Tommy bar or Allen key. The setting is read from the centre of the red pointer ring against the calibrated scale plate. Rotation to the left will increase the set point and to the right decrease the set point. The adjustment mechanism incorporates a friction device to ensure set point will not change under vibration conditions.



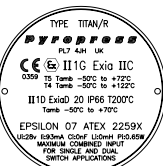
When we are requested to supply switches set at a specific point we can guarantee setting accuracy of less than 2%.



TITAN Exd



TITAN Exia (IS)



TITAN Exia (IS)  
WITH RESISTORS

## TECHNICAL SPECIFICATION

**Switchcase and covers** : ANC4B 316 stainless steel or black anodised aluminium.

**Microswitch** : 1 x SPCO/SPDT or 2 x SPCO/SPDT gold plated silver contacts. Dual switches are mechanically linked to provide DPDT switching action, reset of switches could be up to 3% apart. Dual microswitches may increase deadband by a factor of two.

### **Microswitch rating**

5 Amps @ 250 VAC resistive and inductive.

5 Amps @ 30VDC resistive, 3 Amps @ 30 VDC inductive.

**Electrical connections** : Terminals suitable for cable 0.5 - 2.5 mm<sup>2</sup>.  
(Max 1.5mm<sup>2</sup> for dual microswitch version)

**Electrical Conduit Entry** : M20 x 1.5 straight or angled entry. ½" NPT via adaptors

**Environmental Protection** : Switches have been tested and certified by an external test house to IP66 in accordance with BS EN 60529 : 1992.

**Vibration and shock parameters** : Switches were subjected to Ministry of Defence Type Approval System Test Vibration DGS 350 Paras 0602 & 0603. Shock – BR3021.

**Temperature Limitations** : Pressure, Vacuum and Differential Pressure

**Ambient** : -50 to +85°C (standard) -60°C to 125°C (special).

**Process** : Diaphragm actuated\* -50 to +90°C (Nitrile) or -20 to +150°C (Viton).

Piston actuated -40 to 120°C (Nitrile) or -20 to +150°C (Viton).

**Storage\*** : -60 to +85°C.

\* Unless otherwise stated

(for temperature, level and flow switches please refer to specific pages).

**Certification** : Dual ATEX/IECEx certified for gas hazardous areas.

**Exd Flameproof** (with or without resistors)

CE Ex II2G Exd IIB + H<sub>2</sub> T6...T2 Gb Tamb -60°C to +40°C...+90°C

Special conditions for safe use. 1) No modifications must be made to the flamepaths of the unit without consultation of the drawings listed on the certificate. 2) If temperature of the cable entry could exceed 70°C, suitably rated cable must be selected based on the Tmax shown above.

**Exia Intrinsically Safe** (without resistors)

CE Ex II1G Exia IIC T6...T2 Ga Tamb -50°C to +78°C...+128°C

**Exia Intrinsically Safe** (with resistors)

CE Ex II1G Exia IIC T5...T2 Ga Tamb -50°C to +72°C...+122°C

Special conditions for safe use. (Category 1, Zone 0) Aluminium may only be used when the ignition hazardous assessment shows that there is not risk of ignition from incandive, impact or abrasion sparks.

**Accuracy** : +/-1% at 20°C