TEMPERATURE

TF171 & TF172 TITAN ATEX/IECEx, Exd, Exia CERTIFIED & INDUSTRIAL TEMPERATURE SWITCH

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

Calibrated adjustment scale.

Capillary version available.

Settings from -40 to 250˚C.

Single or dual microswitch option.

Wetted parts NACE MR-01-75 compliant.

ATEX/IECEx Flameproof version
CE Ⓔx II2G Exd IIB + H_2 T6...T2 Gb
Tamb -60°C to 40°C...90°C

ATEX/IECEx Intrinsically safe version
CE Ⓔx II1G Exia IIC T6...T2 Ga
Tamb -50°C to 78°C...+128°C

(For resistor certification refer to page 45)

The standard range represents the basic models to cover temperature applications from -10 to +250°C. TF171 is supplied fitted with a screwed thermowell, TF172 has no thermowell but is supplied with a screwed stem. For specification and introduction to the Titan switch range refer to pages 44 and 45.

Thermowell and stem material : 316 stainless steel.
Max working pressure : 35 Bar - standard, 420 Bar - high pressure
Thermowells can be provided flanged or screwed to suit the application. All exotic metals can be catered for. Material certificates and wake frequency analysis calculations can be provided.

ADJUSTMENT RANGE (°C)	MAXIMUM TEMPERATURE (°C)	DEADBAND - FIXED WITH THERMOWELL (°C)	TEMPERATURE CODE	THERMOWELL "U" DIMENSIONS IN MM
-10 TO +40	100	<4	LT	38, 45, 50, 60*, 75*, 100, 125, 150, 175, 20, 225, 250, 300, 350, 400, 600, 660, 800, 1000 & 1200 *STANDARD LENGTHS
0 TO 50	100	<4	LT	
25 TO 75	125	<4	MT	
50 TO 100	150	<4	MT	
75 TO 125	175	<8	MT	
100 TO 150	200	<8	MT	
125 TO 175	200	<8	MT	
150 TO 200	250	<12	HT	
175 TO 225	280	<12	HT	
200 TO 250	280	<12	HT	

Repeatability : +/-1.5% of range (at operating temperature up to 40°C).
Temperature limitations : Ambient : -50 to +85ºC, Storage : -60 to +85ºC
Calibration rate : 2ºC per minute.

PART NUMBER BREAKDOWN

B = ATEX Exd CERTIFIED
O = ATEX Exia CERTIFIED
A = INDUSTRIAL

A = ALUMINIUM CASE
S = ST. STEEL CASE

P = WITH THERMOWELL
S = LESS THERMOWELL

TEMPERATURE ELEMENT CODE (REFER TO TABLE)

"U" DIMENSION
(REFER TO TABLE)

ELECTRICAL ENTRY
A = M20 STRAIGHT
B = M20 ANGLED
C = 1/2" NPT STR.
F = M25 STRAIGHT

T F 1 7 1 S 1 B / 0 6 0 M T / P A 1 X A

1 = WITH THERMOWELL
2 = LESS THERMOWELL

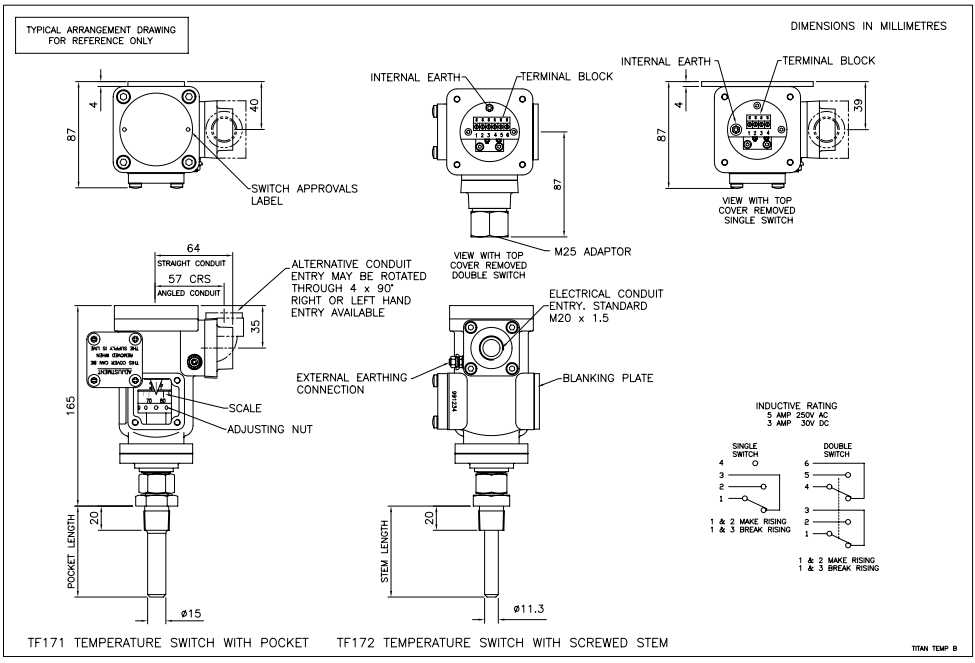
1 = 1 x SPDT SWITCH
2 = 2 x SPDT SWITCH

DUAL SWITCHES ARE MECHANICALLY LINKED TO PROVIDE DPDT SWITCHING ACTION

PROCESS CONNECTION
A = 1/2" BSP.P **B** = 1/2" NPT
C = 3/8" BSP.P **D** = 3/4" BSP.P
E = 3/4" NPT **F** = 1" BSP.P
O = FLANGE OR SPECIAL THERMOWELL

THERMOWELL STEM
1 = 316 ST.ST **4** = HIGH PRESSURE **8** = SLIDING GLAND
0 = FLANGED (SPECIAL THERMOWELL)

X = BLANKING PLATE STD.
E = 2" STANDPIPE BRACKET
A = MOUNTING BRACKET



TITAN (XPB) ATEX/IECEx Exd, Exia INDUSTRIAL SWITCHES

INTRODUCTION

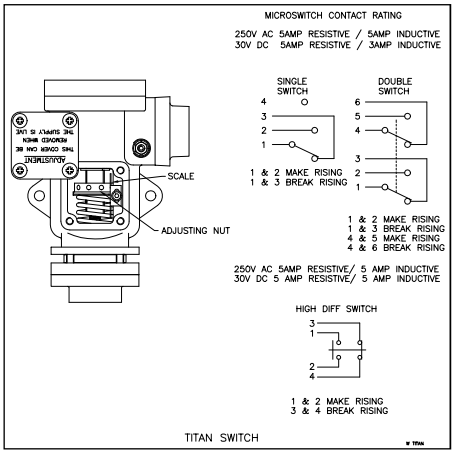
The Titan **pressure, differential pressure, temperature, level and flow** switches are designed for use in environments where explosive gases can be present (e.g. Gas fields, Oil rigs and Chemical plants etc.) and are dual ATEX/ IECEx certified for CAT 1 Exia IIC T6...T2 and CAT 2 Exd IIB +H_2 T6...T2.

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^2.
(Max 1.5mm^2 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 +85ºC.
* 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_2 T6...T2 Gb Tamb -60°C to +40°...+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 incendive, impact or abrasion sparks.

Accuracy : +/-1% at 20°C