LOW - MEDIUM - HIGH PRESSURE

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

Calibrated adjustment scale.

Settings from -40 to 250˚C.

Capillary option available.

Single or dual microswitch option.

Wetted parts NACE MR-01-75 compliant.

ATEX/IECEx Flameproof version
CE Ⓔx II2G Exd IIB + H2 T6...T2 Gb
Tamb -60°C to 40°C...90°C

ATE/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)

TF175 & TF176 TITAN ATEX/IECEx Exd, Exia & NON Ex CAPILLARY TEMPERATURE SWITCH

The standard range represents the basic models to cover temperature applications spanning -40 to +250°C. The TF175 is supplied fitted with a screwed thermowell, the TF176 has no thermowell but is supplied with a sliding gland. Capillary is 316 Stainless steel armoured and is available from 2 to 10 metres in length. Dual microswitch options are available for alarm and shutdown applications. For specification and introduction to the Titan range refer to pages 44 & 45.
Deadband figures shown in the table below refer to single set points only, if dual microswitches are specified deadband may increase up to a factor of 2.

ADJUSTMENT RANGE (°C)	MAXIMUM TEMPERATURE (°C)	DEADBAND (°C)	CAPILLARY CODE	Min bulb length according to capillary length		
				2m - 4m	5m - 7m	8m - 10m
-40 TO -0	40	<5.0	40	100	100	100
-20 TO +20	70	<5.0	41	100	150	200
0 TO 45	80	<5.0	42	100	150	200
20 TO 90	120	<5.0	45	100	150	200
40 TO 100	145	<7.5	43	100	100	100
60 TO 120	145	<8.0	43	100	100	100
100 TO 180	200	<8.0	44	100	100	100
160 TO 250	280	<9.0	46	100	100	100

Repeatability : +/-1.5% of range (at operating temperature up to 40°C).

Calibration rate : without thermowell, at 2ºC per minute rate of change.

Temperature limitations :
Ambient : -40 to +85ºC standard
Process : -40 to max on table
Storage : -40 to +85ºC

PART NUMBER BREAKDOWN

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

TF175 = WITH THERMOWELL
TF176 = WITHOUT THERMOWELL

CAPILLARY CODE
REFER TO TABLE ON OPPOSITE PAGE

STEM LENGTH
1 = 150MM - STANDARD
2 = 250MM, **4** = 400MM
6 = 600MM
(150MM NOT AVAILABLE WITH 150MM OR 200MM BULB LENGTH

ELECTRICAL ENTRY
A = M20 STRAIGHT
B = M20 ANGLED
C = 1/2" NPT STRAIGHT

THERMOWELL
PA = 1/2" BSP.P
PB = 1/2" NPT
LEAVE BLANK IF NOT REQUIRED

T F 1 7 5 S 1 B / 4 3 - 3 - 1 - 6 / A A P A 1 0 0

A = ALUMINIUM CASE
S = STAINLESS STEEL CASE

1 = 1 x SPDT SWITCH
2 = 2 x SPDT SWITCH
DUAL SWITCHES ARE MECHANICALLY LINKED TO GIVE DPDT SWITCHING ACTION

CAPILLARY LENGTH
2 METRES MINIMUM
10 METRES MAXIMUM

SLIDING GLAND THREAD
3 = 1/2" BSP.P
6 = 1/2" NPT

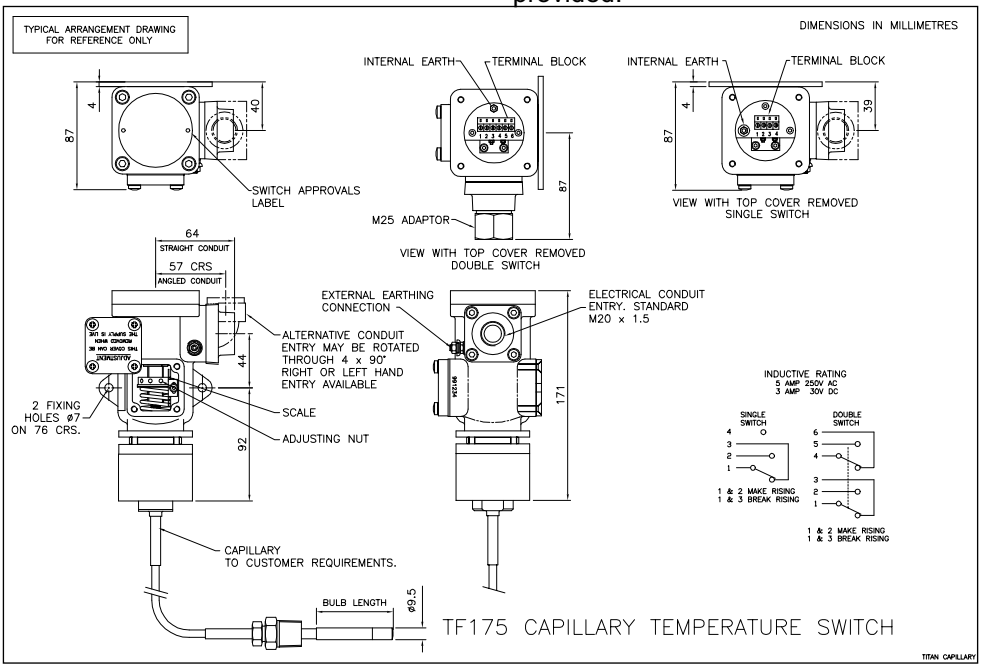
A = STANDARD BRACKET
E = 2" PIPE BRACKET

THERMOWELL LENGTH
100 = 100MM STANDARD
IF NOT REQUIRED LEAVE BLANK (OTHER LENGTHS, THREADS AND FLANGES ARE AVAILBLE

Thermowell and stem material :
316 stainless steel

Max working pressure :
35 Bar - standard
420 Bar – upon request

Thermowells can be provided flanged or screwed to suit the application. All exotic metals can be catered for. Material certificates and wake frequency vibration analysis calculations can be provided.



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

INTRODUCTION

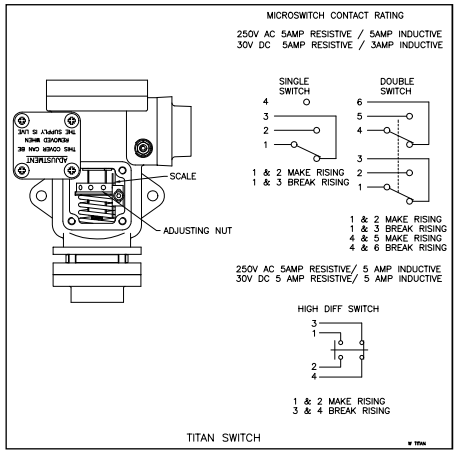
The Titan **pressure, differential pressure, temperature, level and flow** switches are designed for use in environments where explosive gases can be present (e.g. Gas fields, Oil rigs and Chemical plants etc.) and are dual ATEX/ IECEx certified for CAT 1 Exia IIC T6...T2 and CAT 2 Exd IIB +H_2 T6...T2.

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

Pyropress Engineering
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Fax: +44 (0)1752 336681
E-mail: sales@pyropress.com
Website: www.pyropress.com
Revision: F 06/14

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