

LEVEL

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

Horizontal or vertical mounting.

Single or dual microswitch option.

ATEX Flameproof version

CE Ⓜ II2GD Exd IIB + H₂

T6 Ta -60 to +75°C, T5 Ta +90°C

ExtD A21 IP66

T85°C Ta -50 to +75°C, T100°C Ta +90°C

ATEX Intrinsically safe version

CE Ⓜ II1G Exia IIC T6 Ta -50 to +78°C

T5 Ta +93°C, T4 Ta +128°C

II1D ExiaD 20 IP66 T200°C

Ta -50 to +70°C

(For resistor certification refer to page 45)

LF34 & LF35 TITAN ATEX Exd, Exia CERTIFIED & INDUSTRIAL LEVEL SWITCH



TYPE LF34 HORIZONTAL LEVEL SWITCH

Switching is effected in this unit through transforming, by means of an eccentric cam at fulcrum, the vertical motion of the float with level change to the considerably reduced movement of a horizontal switch plunger which is arranged to operate a SPDT/SPCO microswitch. Isolation of the switch mechanism from liquid monitored is effectively maintained by the use of an 'O' Ring seal on the horizontal switch plunger.

This type of level switch can therefore be used on tanks under pressure or vacuum, being suitable for pressures up to 3.5 Bar and liquid temperatures up to 100°C.

The device can be mounted through a 27mm hole drilled in the side tank with joint washer and back nut provided. Alternatively it can be fitted in a suitable tank cover plate of sufficient dimension to allow insertion of the switch complete with float.

TYPE LF35 VERTICAL LEVEL SWITCH

This design is suitable for mounting through a tank top or cover and utilises a free float principle. The float is allowed to travel unrestricted up or down the rod in response to level change between the limits set by the upper and lower adjustable rod collars which are fixed in position at preselected points.

Both types LF35A (for high or low alarms) and type LF35B (with a latching mechanism suitable for pump control) can be installed in non-pressurised tanks and sumps with liquid temperatures up to 100°C. They can be fitted with a cover plate or flange to ease installation. The float rod can be supplied between 500mm and 2000mm to suit application, the required length must be stated upon ordering. Each float switch is tested and adjusted individually to suit float/float rod fitted.

PART NUMBER BREAKDOWN

MODE OF OPERATION

A = HIGH OR LOW LEVEL ALARM OR
B = PUMP CONTROL (TYPE LF35 ONLY)

FS050 = LF34 SPHERICAL FLOAT 4" ROD
FS051 = LF34 CYLINDRICAL FLOAT 4" ROD
FS052 = LF34 CYLINDRICAL FLOAT 8" ROD
FS053 = LF34 CYLINDRICAL FLOAT 2" ROD

ELECTRICAL ENTRY

A = M20 STRAIGHT
B = M20 ANGLED
C = 1/2" NPT STR.

FS001 = LF35 MODE A
FS002 = LF35 MODE B

L F 3 4 A A 1 B / F S 0 5 0 S / X A

LF34 = HORIZONTAL
LF35 = VERTICAL

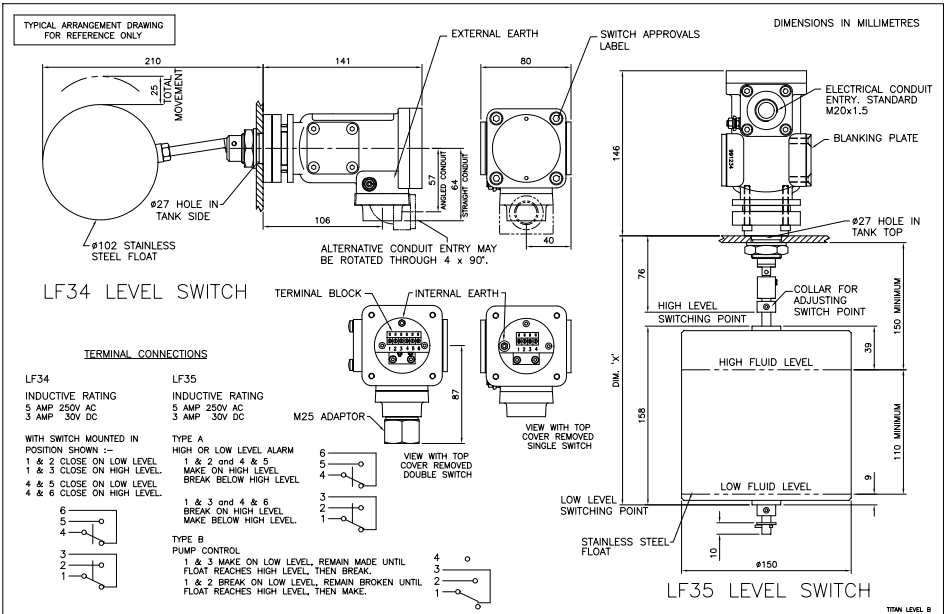
B = ATEX Exd CERTIFIED
O = ATEX Exia CERTIFIED
A = INDUSTRIAL

FLOAT MATERIAL

S = 316 STAINLESS STEEL - STANDARD
P = POLYPROPYLENE - (LF34 ONLY)

A = ALUMINIUM CASE
S = ST. STEEL CASE

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



TITAN (XPB) ATEX Exd, Exia INDUSTRIAL SWITCHES

INTRODUCTION

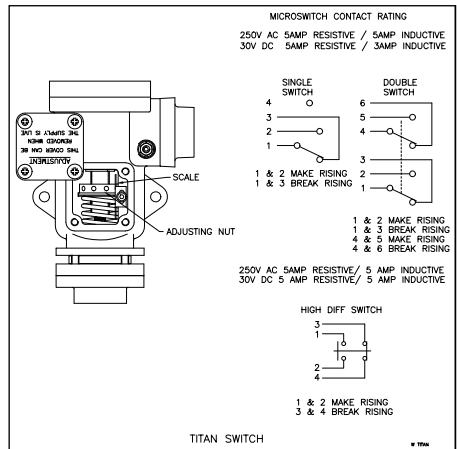
The Titan **pressure, differential pressure, temperature, level and flow** switches are designed for use in environments where explosive gases and dust can be present (e.g. Gas fields, Oil rigs and Chemical plants etc.) and have been ATEX certified for CAT 1 Exia IIC T6, T5 & T4 and CAT 2 Exd IIB +H² T6 & T5.

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



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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 mm².
(Max 1.5mm² 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 : Switches are ATEX certified for gas and dust hazardous areas.

Exd Flameproof (with or without resistors)

CE Ex II2GD Exd IIB + H₂ T6 Ta -60 to +75°C, T5 Ta +90°C

ExtD A21 IP66 T85°C Ta -50 to +75°C, T100°C Ta +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 Ta -50 to +78°C, T5 Ta +93°C, T4 Ta +128°C

II1D ExiaD 20 IP66 T200°C Ta -50 to +70°C

Exia Intrinsically Safe (with resistors)

CE Ex II1G Exia IIC T5 Ta -50 to +72°C, T4 Ta +122°C

II1D ExiaD 20 IP66 T200°C Ta -50 to +70°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