

PERSEUS TEMPERATURE CAPILLARY SWITCH

TF61 & TF62 PERSEUS ATEX / IECEx OR TRI-CERTIFIED WITH AEx (NEC 505) Exd, Exia & INDUSTRIAL TEMPERATURE SWITCH

This range of switches features a robust high quality housing with 1 or 2 sealed SPDT microswitches and has been designed for use in environments where explosive gases can be present (e.g. gas fields, oil rigs & chemical plants etc).

One of the benefits of the Perseus range is the separation of the flameproof and adjustment chambers allowing adjustment of the set point with power on and the switch in operation.



TEMPERATURE SWITCH

FEATURES

- ✓ Black anodised aluminium switchcase to IP67 standards.
- ✓ Internal adjustment scale.
- ✓ SIL 2 – IEC61508 proven reliability.
- ✓ Single or dual microswitch option.
- ✓ Settings from -30 to +240°C
Standard length 3 metres; others available
- ✓ ATEX/IECEx/AEx Flameproof version
CE II2G Exd IIC
T6 Ta = - 50 to +74°C & T5 Ta = - 50 to +89°C. (with or without resistors)
- ✓ ATEX/IECEx/AEx Intrinsically safe
CE II1G Exia IIC
T6 - 50 to +78°C, T5 +93°C, T4 +128°C
(without resistors)
- ✓ ATEX/IECEx/AEx Intrinsically safe
CE II1G Exia IIC
T5 - 50 to +72°C & T4 - 50 to +122°C
(with resistors)
- ✓ Wetted parts NACE MR-01-75 compliant

ADJUSTMENT RANGE (°C)	MAXIMUM TEMPERATURE (°C)	DEADBAND (°C)	CAPILLARY CODE	Min. bulb length according to capillary length		
				2m - 4m	5m - 7m	8m - 10m
-30 TO 0	40	<15	40	100	100	100
-20 TO +20	70	<15	41	100	150	200
0 TO 45	80	<15	42	100	150	200
20 TO 90	120	<15	45	100	150	200
40 TO 120	145	<15	43	100	100	100
100 TO 180	200	<15	44	100	100	100
160 TO 240	280	<15	46	100	100	100

(Dimensions in mm)

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

Calibration rate : without thermowell 2°C per minute rate of change.

Max. working pressure : 35 bar standard. 420 bar high pressure

Temperature Limitations :

Ambient : -40 to +85°C standard

Process : -40 to max on table

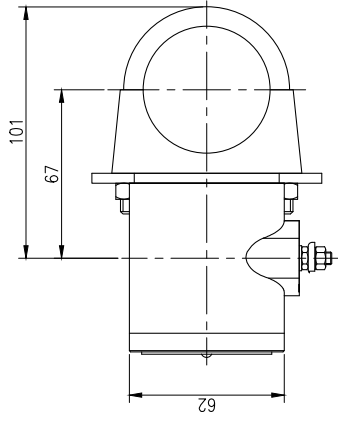
Storage : -40 to +85°C

PART NUMBER BREAKDOWN			
MICROSWITCH TF61 = 1 X SPDT TF62 = 2 X SPDT Dual switches are mechanically linked to give DPDT switching action	CAPILLARY CODE REFER TO TABLE ON PREVIOUS PAGE	STEM LENGTH 1 = 150mm - STANDARD 2 = 250mm, 4 = 400mm 6 = 600mm (150mm NOT AVAILABLE WITH 150mm OR 200mm BULB LENGTH) X = STD BRK E = 2" PIPE BRK	ELECTRICAL CONNECTION ENTRY B = RIGHT HAND SIDE THERMOWELL LENGTH 100 = 100mm STANDARD IF NOT REQUIRED LEAVE BLANK
T F 6 1 5 A B / 4 3 - 3 - 1 - 6 / X B _ P A 100			
5 = WITH THERMOWELL 6 = NO THERMOWELL	CAPILLARY LENGTH 2 METRES MINIMUM 10 METRES MAXIMUM	SLIDING GLAND THREAD 3 = 1/2" BSP.P 6 = 1/2" NPT	THERMOWELL CONNECTION PA = 1/2" BSP.P PB = 1/2" NPT PD = 3/4" BSP.P PE = 3/4" NPT PF = 1" BSP.P PG = 1" NPT
CASE MATERIAL A = ALUMINIUM SWITCHCASE	ELECTRICAL CONNECTIONS _ = M20 LEAVE BLANK C = 1/2" NPT ADAPTER F = M25 ADAPTER	THERMOWELL CONNECTION (HIGH PRESSURE) HA = 1/2" BSP.P HB = 1/2" NPT HC = 3/8" BSP.P HD = 3/4" BSP.P HE = 3/4" NPT HF = 1" BSP.P HG = 1" NPT	
CERTIFICATION A = INDUSTRIAL O = ATEX/IECEX Exia INTRINSICALLY SAFE B = ATEX/IECEX Exd FLAMEPROOF C = TRI-CERTIFIED Exd FLAMEPROOF D = TRI-CERTIFIED Exia INTRINSIC. SAFE			

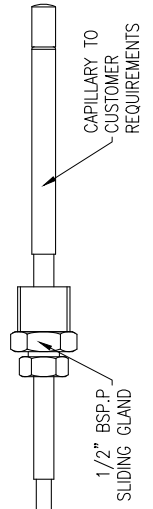
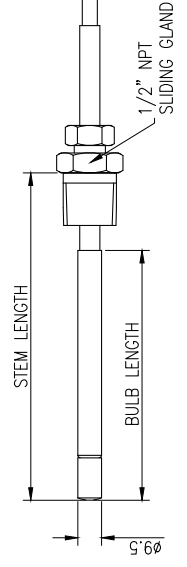
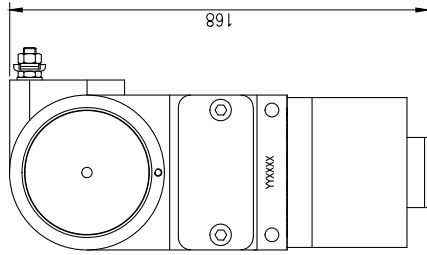
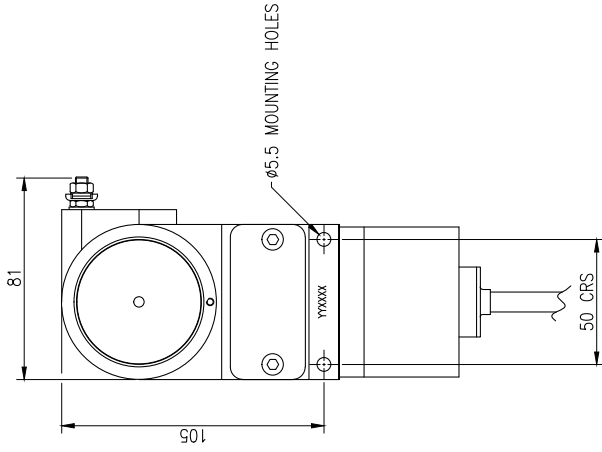
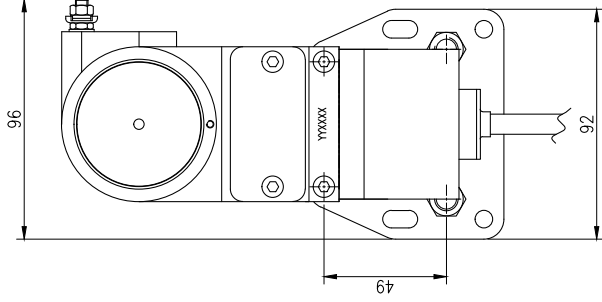
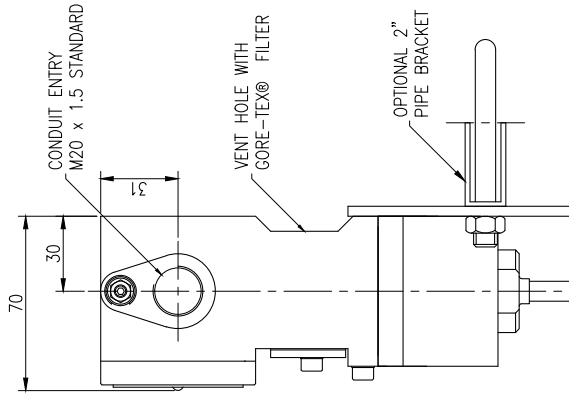
DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED

TYPICAL ARRANGEMENT DRAWING FOR REFERENCE ONLY

NOTE:
THERMOWELL OPTIONS NOT SHOWN. DETAILS AVAILABLE UPON REQUEST



BRACKET OPTIONS



INDUSTRIAL SWITCHES

INTRODUCTION

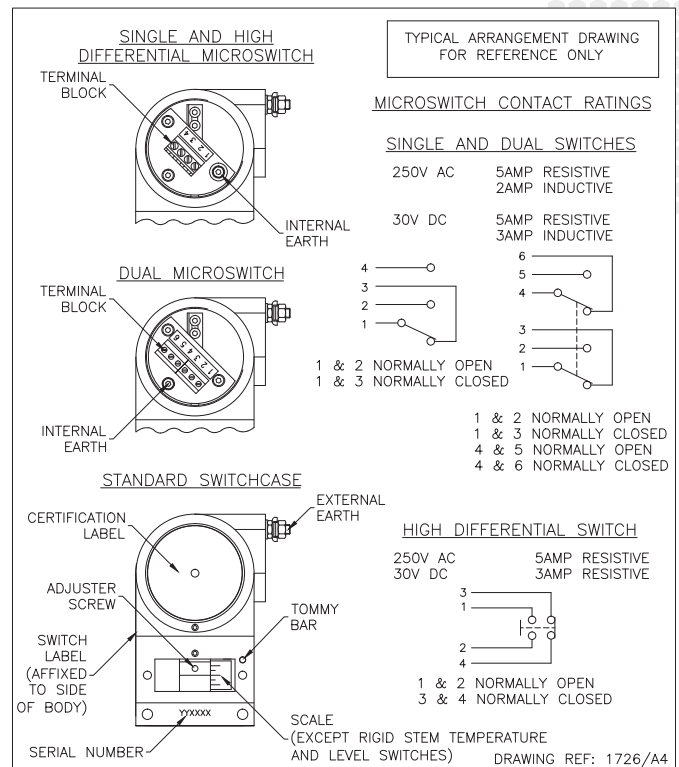
The Perseus **pressure, vacuum, differential pressure, temperature, and level** switches are designed for use in environments where explosive gases can be present (e.g. Gas fields, Oil rigs and Chemical plants etc.) and have been ATEX and IECEx certified as detailed overleaf (SIL2 - IEC61508 proven reliability).

These switches are manufactured from a high quality casting which offers robust construction and protection to IP67 for use within heavily polluted industrial 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.

Perseus Exd switches must be installed in accordance with BS EN 60079-14

CALIBRATION

The design features a simple form of adjustment against a calibrated scale. This enables a user to order switches set at a predetermined point or stock a mid range setting and adjust switches to suit the particular application. The set point can be safely adjusted with the switch electrically live. Adjustment is made by removing the access cover and rotating the set point adjuster using the supplied tommy bar stowed to the right of the scale plate. The setting is read from the centre of the set point adjuster against the calibrated scale. Rotation to the left will increase the set point and to the right decrease it.



TECHNICAL SPECIFICATION

Switchcase & covers: Black anodised aluminium case and 316 stainless steel adjustment cover.

Microswitch: 1 x SPCO/SPDT or 2 x SPCO/SPDT gold flashed 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, 2 Amps @ 250VAC inductive
5 Amps @ 30VDC resistive, 3 Amps @ 30 VDC inductive

Electrical Connections: Terminals suitable for cable 0.5 - 2.5 mm².
(Max 1.5 mm² for dual microswitch version)

Electrical Conduit Entry: M20 x 1.5 ISO. ½" NPT via adaptors

Environmental Protection: IP67 in accordance with BS EN 60529 : 1992 & IEC 60529 : 2001.

Vibration and shock parameters: Switches were subjected Lloyds Register Test Specification 1, section 13 BS EN 60068-2-6 : 1996 (Test Fc vibration) and BS EN 60068-2-27 : 1995 (Test Ea shock).

Temperature Limitations: Pressure, Vacuum and Differential Pressure.

Process: Diaphragm actuated (unless otherwise stated) -30 to +100°C (Nitrile) or -20 to +150 Deg.C (Viton). Piston actuated -30 to 100°C (Nitrile), -20 to +150°C (Viton), -50 to +150°C (PTFE) or -30 to +125°C (EPDM).

Ambient: -50 to +85°C (standard). **Storage:** -50 to +85 Deg.C
(For temperature, level and flow switches please refer to specific pages).

Certification: Switches can be supplied for gas environments.

ATEX/IECEx certified Exd Flameproof - Gas (with or without resistors)
CE Ex II2G Exd IIC T* Gb. T6 Tamb -50°C to +74°C, T5 Tamb -50°C to +89°C.

Special conditions for safe use. 1) No modifications must be made to the flamepaths of the unit without consultation of the drawings. 2) When conduit is utilised it must be sealed in accordance with Clause 13.2.2 of EN 60079-1:2007 with a suitably approved (Ex d IIC Gb) conduit sealing devise. 3) Suitably rated cable must be selected based on T Class shown above. 4) Only suitably certified Ex d IIC Gb cable glands to be used.

ATEX/IECEx certified Exia Intrinsically Safe – Gas
CE Ex II1G Exia IIC T6 Ta -50 to +78°C, T5 Ta +93°C, T4 Ta +128°C or
CE Ex II1G Exia IIC T5 Ta -50 to +72°C, T4 Ta +122°C (with resistors).

Special conditions for safe use. 1) Aluminium may only be used when the ignition hazardous assessment shows there is no risk of ignition from incendive impact or abrasion sparks.

AEX certification is available on medium pressure, metal diaphragm and high pressure switches and rigid stem temperature switches.

Accuracy: +/-1% at 20°C.

ABOUT PYROPRESS

Our products are designed to work in demanding and hazardous environments which require fast and cost effective solutions in instrumentation and control.

Pyropress control sensors provide safe and reliable electrical switching of alarm or control circuits in response to changes in temperature, pressure, differential pressure, vacuum, fluid, flow and level conditions.

QUALITY

To support the design of state of the art products the company has invested heavily in the latest CNC technology.

We are able to produce our own components to a high degree of accuracy assuring a reliable and consistent quality product.

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