

PERSEUS LOW - MEDIUM - HIGH TEMPERATURE

TF61 & TF62 PERSEUS ATEX & IECEx CERTIFIED 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). Microswitches can be set for single, dual simultaneous or dual independently adjustable operation. Environmentally sealed or hermetically sealed microswitch options available

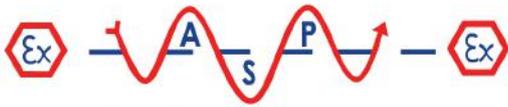
One of the benefits of the Perseus range is the separation of the flameproof and adjustment chambers allowing adjustment of the set point with power on and the switch in operation. The housing is available with one or two electrical entries.



TEMPERATURE

FEATURES

- ✓ Stainless steel or black anodised aluminium switchcase to IP66 & IP67 standards.
- ✓ Internal adjustment scale.
- ✓ SIL 2 – IEC61508 proven reliability.
- ✓ Single or dual microswitch option.
- ✓ Settings from -10 to +240°C
- ✓ ATEX/IECEx Flameproof version
CE II2G Exd IIC
T6 Ta = - 50 to +75°C & T5 Ta = - 50 to +90°C. (with or without resistors)
- ✓ ATEX/IECEx Intrinsically safe
CE II1G Exia IIC
T6 - 50 to +78°C, T5 +93°C, T4 +128°C (without resistors)
- ✓ ATEX/IECEx 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 - FIXED WITH THERMOWELL (°C)	TEMPERATURE CODE	THERMOWELL "U" DIMENSIONS IN MM
-10 TO +40	100	<10	L1	38, 45, 50, 60* 75, 100, 125, 150, 175, 200, 225, 250, 300, 350, 400, 600, 660, 800, 1000 & 1200 *STANDARD CUSTOM LENGTHS AVAILABLE
0 TO 50	100	<10	L2	
25 TO 75	125	<10	M1	
50 TO 100	150	<10	M2	
75 TO 125	175	<10	M3	
100 TO 150	200	<10	M4	
125 TO 175	200	<10	M5	
150 TO 200	250	<10	H1	
175 TO 225	280	<10	H2	
200 TO 240	280	<10	H3	

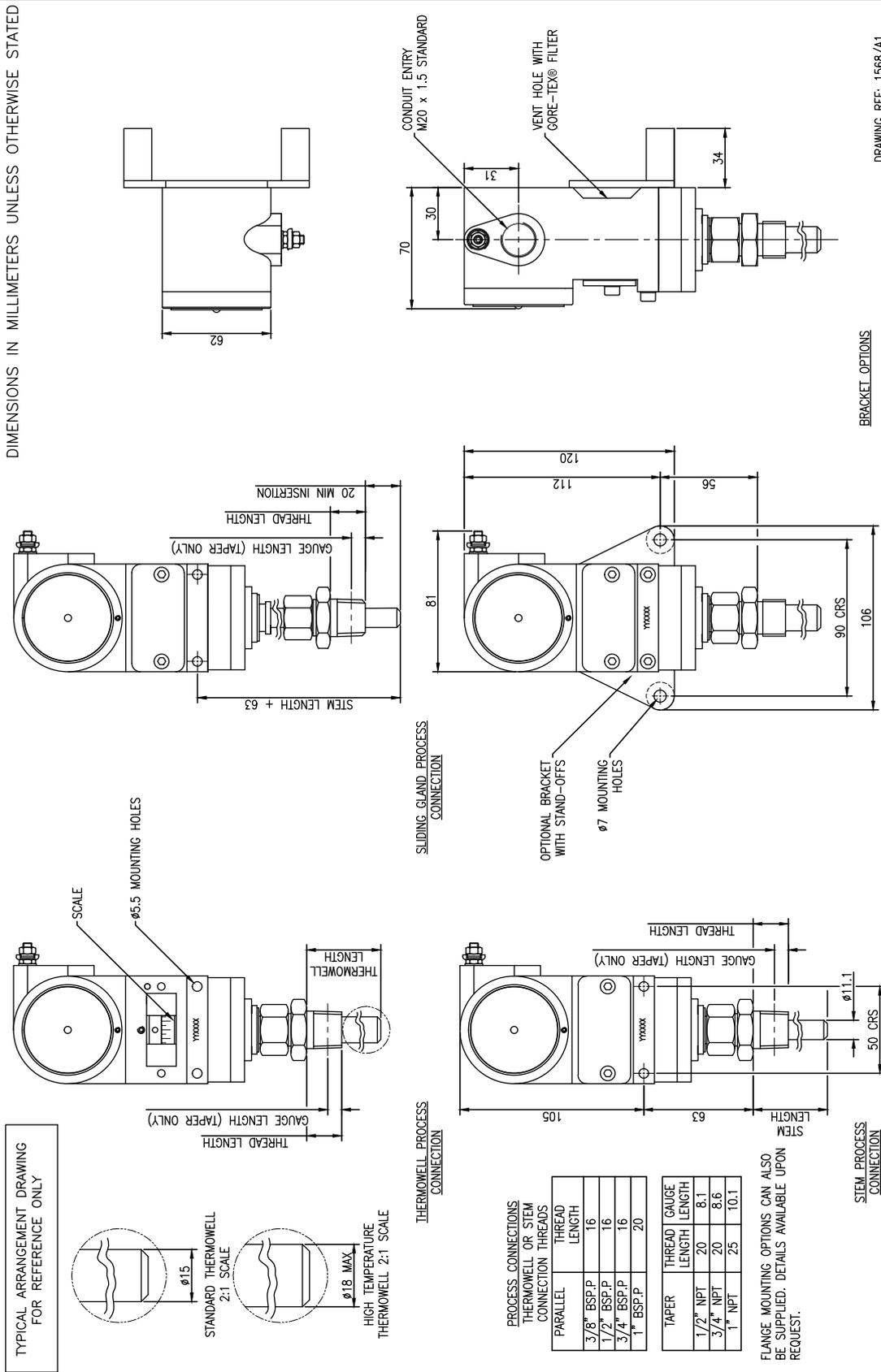
Repeatability : +/-1.5% of range (at operating temperature up to 40°C)
Calibration rate : without thermowell 2°C per minute rate of change.
 Max. working pressure : 35 bar standard. 420 bar high pressure

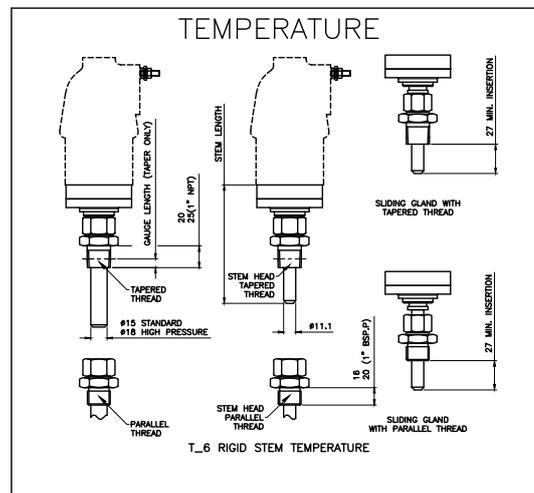
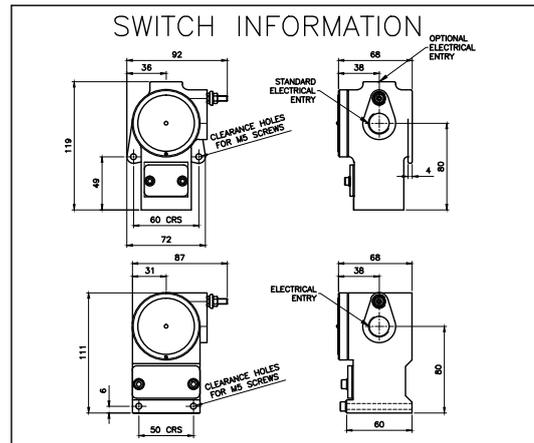
Temperature Limitations : Ambient : -20 to +85°C
 (Can be elevated to +90°C for ambient temperature monitoring)
 Process : -20 to max on table Storage : -20 to +85°C

PART NUMBER BREAKDOWN		ELECTRICAL CONNECTION _ = M20 LEAVE BLANK C = 1/2" NPT ADAPTOR F = M25 ADAPTOR	
MICROSWITCH OPTION TF61 = 1 X SPDT TF62 = 2 X SPDT Linked TF63 = 1 X SPDT Adjustable deadband TF64 = 2 X SPDT Independantly adjustable TF65 = 1 X SPDT Hermetically sealed TF66 = 2 X SPDT Hermetically sealed	"U" DIMENSIONS WITH THERMOWELL	ELECTRICAL CONNECTION ENTRY B = RIGHT HAND SIDE L = DUAL ENTRY T = DUAL ENTRY (TOP PLUGGED) R = DUAL ENTRY (SIDE PLUGGED)	P = WITH THERMOWELL S = WITHOUT THERMOWELL

T F 6 1 1 A B / 0 6 0 M 1 / P B 1 X B _

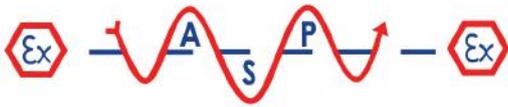
1 = WITH THERMOWELL 2 = NO THERMOWELL	TEMPERATURE CODE REFER TO TABLE ABOVE	X = NO BRACKET (STD) C = BRACKET
CASE MATERIAL A = ALUMINIUM SWITCHCASE S = STAINLESS STEEL	THERMOWELL/STEM THREAD A = 1/2" BSP.P B = 1/2" NPT C = 3/8" BSP.P D = 3/4" BSP.P E = 3/4" NPT F = 1" BSP.P G = 1" NPT K = 1/2" BSPT O = SPECIAL CONNECTION (FLANGE THEROWELL OR BRACKET MOUNTED)	THERMOWELL 1=316 ST.ST (STD) 4=HIGH PRESSURE 8=SLIDING GLAND 9=BRACKET MOUNTED O=FLANGE OR SPECIAL THERMOWELL
CERTIFICATION A = INDUSTRIAL O = ATEX/IECEx Exia INTRINSICALLY SAFE B = ATEX/IECEx Exd FLAMEPROOF		





Details of Perseus Stainless steel switchcase with dual electrical connection options





INDUSTRIAL SWITCHES

INTRODUCTION

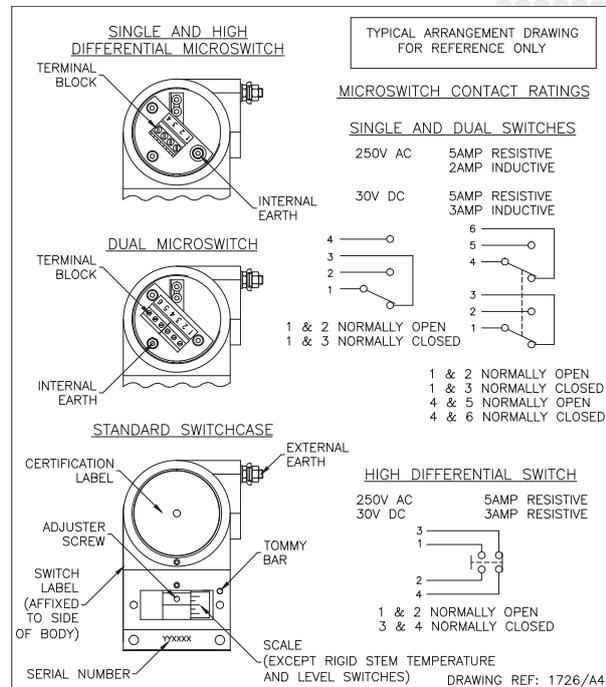
The Perseus **pressure, vacuum, differential pressure, temperature, and level** switches are designed for use in environments where explosive gases can be present (e.g. Gas fields, Oil rigs and Chemical plants etc.) and have been ATEX and IECEx certified as detailed overleaf (SIL2 - IEC61508 proven reliability).

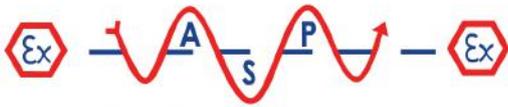
These switches are manufactured from a high quality casting which offers robust construction and protection to IP67 for use within heavily polluted industrial environments. A special feature of the instruments is the separation of the flameproof and adjustment compartments allowing for safe on-site adjustment 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 a suitable Allen key or adjuster bar. 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: 316 Stainless steel or black anodised aluminium case and 316 stainless steel adjustment cover.

Microswitch: 1 x SPCO/SPDT or 2 x SPCO/SPDT gold flashed silver contacts. Single switch is available with adjustable deadband option. Dual switches are either mechanically linked to provide DPDT switching action (reset of switches could be up to 3% apart) or independantly adjustable. Microswitches are environmentally sealed as standard, hermetically sealed can be supplied as an option. 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. 1(Max .5 mm² for dual microswitch version)

Electrical Conduit Entry: One or two M20 x 1.5 ISO. ½" NPT or M25 via adaptors

Environmental Protection: IP66 & 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 +75°C, T5 Tamb -50°C to +90°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.

Accuracy: +/-1% at 20°C.