

LOW - MEDIUM - HIGH TEMPERATURE

ANC4B 316 stainless steel or black anodised aluminium switchcase.

IP66/IP67 certified housing.

Low switching differential.


Calibrated adjustment scale.

Temperature Settings from -40 to +250°C.

Single or dual microswitch option.

Manual reset pushbutton option.

ATEX Certified Option

CE  II1G EEx ia IIC

T6 Tamb -50 to +78°C

T5 Tamb -50 to +93°C

T4 Tamb -50 to +128°C

T1100 & T1200 GUARDIAN INDUSTRIAL & ATEX CERTIFIED EExia TEMPERATURE SWITCH



The standard range represents the basic models to cover temperature applications spanning -40 to +230°C. The T1100 is supplied fitted with a screwed thermowell, the T1200 has no thermowell but is supplied with a screwed stem. Dual microswitch options are available for alarm and shutdown applications. For specification and introduction to the Guardian range refer to pages 10 & 11.

ADJUSTMENT RANGE (°C)	MAXIMUM TEMPERATURE (°C)	SWITCHING DIFFERENTIAL (°C) (WITHOUT THERMOWELL)		TEMPERATURE CODE	THERMOWELL "U" DIMENSIONS IN MM
		MEDIUM DIFF.	LOW DIFF.		
-40 TO +10	70	5	3	EL	38, 45, 50, 60*, 75*, 100, 125, 150, 175, 200, 225, 250, 300, 350, 400, 600, 660, 800, 1000 & 1200 *STANDARD LENGTHS
-10 TO +40	100	4	2	LT	
0 TO 50	100	4	2	LT	
20 TO 70	120	4	2	MT	
50 TO 100	150	4	2	MT	
70 TO 120	150	8	4	MT	
100 TO 180	230	8	4	HT	
150 TO 230	280	8	4	HT	

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

Calibration rate : 2°C per minute rate of charge.

Temperature Limitations :

Ambient : -10 to +80°C standard

-55 to +130°C special

Storage : -60 to +80°C

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PART NUMBER BREAKDOWN			THERMOWELL / STEM
T11 - WITH THERMOWELL T12 - WITHOUT THERMOWELL	"U" DIMENSION WITH THERMOWELL	P = WITH THERMOWELL S = WITHOUT THERMOWELL	1 = 316 ST. ST. 4 = HIGH PRESS. 0 = FLANGE OR SPECIAL THERMOWELL
<p style="text-align: center;"> PREFIX WITH 'S' FOR STAINLESS STEEL CASE </p>			
<p style="font-size: 2em; font-weight: bold;">T 1 1 0 1 / 0 6 0 M T / P A 1 X</p>			
MICROSWITCH OPTIONS 01 = SINGLE SWITCH (LOW DIFF) 02 = DUAL SWITCHES (LOW DIFF) 03 = SINGLE SWITCH (MEDIUM DIFF) 04 = DUAL SWITCHES (MEDIUM DIFF) 05 = SINGLE - FOR EExia 06 = DUAL FOR EExia 09 = MANUAL AND AUTO (RESET FALLING) 0A = MANUAL AND AUTO (RESET RISING) 0C = MANUAL (RESET FALLING) 0D = MANUAL (RESET RISING)	TEMPERATURE ELEMENT CODE REFER TO TABLE ON OPPOSITE PAGE	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 0 = FLANGE OR SPECIAL THERMOWELL	
PLEASE REFER TO MICROSWITCH RATINGS ON PAGE 11.			

SPECIFICATION

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 vibration analysis calculations can be provided,

CAPILLARY OPTION

All switches can be provided with 316 stainless steel armoured capillary between 2 and 10 metres in length. Full part number will be advised by our sales department upon receipt of your specification.

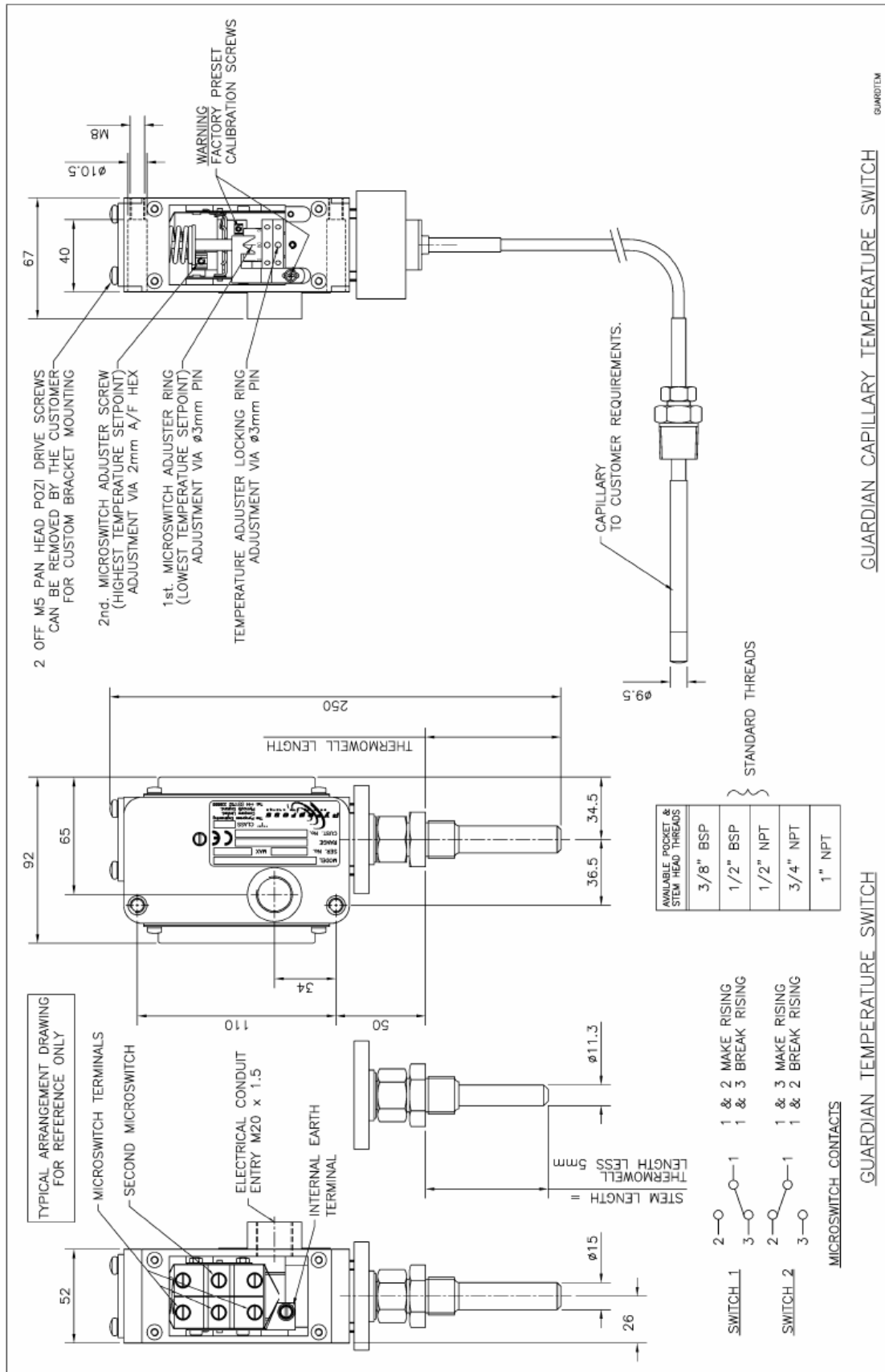
RANGE °C	TEMP. CODE	MAX. TEMP
-46 TO 0	40	40
-20 TO +20	41	70
0 TO 45	42	80
20 TO 90	45	120
60 TO 120	43	145
100 TO 180	44	200
160 TO 250	46	290

Insertion length between 100 and 600mm. Supplied with 1/2" BSP.P or NPT sliding gland. Custom manufactured thermowell can be provided.

For detailed drawing showing options refer to Fig. 13 page 36.

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FIG. 13 TYPE T1000 GUARDIAN TEMPERATURE SWITCH



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GUARDIAN INDUSTRIAL & ATEX EExia SWITCHES

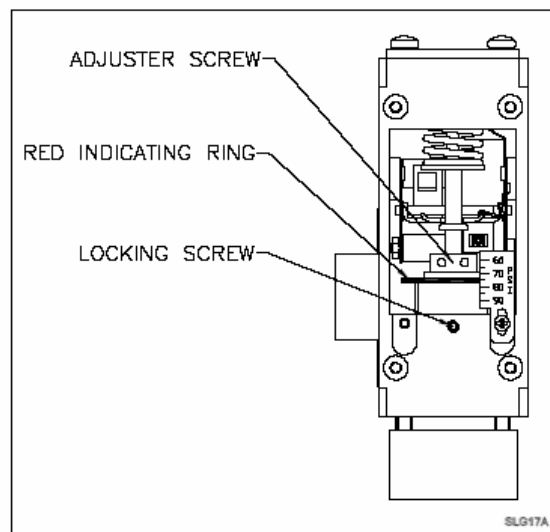
INTRODUCTION

The Guardian **pressure, differential pressure, temperature, level and flow** switches are a part of our extensive range of specialist process sensors. They utilise the expertise gained from over 55 years experience of designing and manufacturing control devices for industrial, marine and hazardous area applications.

These switches are constructed with either a robust aluminium or stainless steel enclosure. The aluminium casting is black anodised and supplied with 316 stainless steel covers. The stainless steel case is a natural finish. Covers are gasketed and sealed to achieve an environmental seal to IP66 & IP67 standards. The internals utilise a unique mechanism designed by the engineers at PYROPRESS to produce a wide range, low switching differential and excellent repeatability. This combined with a variety of microswitches, mountings and sensor options has produced a switch range suitable for all weatherproof and intrinsically safe applications.

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 calibrate to suit the application. Calibration is performed on the opposite side of the switch to the electrical connections, and can be set safely with the switch supply live. On removal of the adjustment cover a small grub screw can be loosened allowing the adjusting ring to be turned with a small Tommy bar or Allen key. The setting is read from the centre of the red indicating ring against the calibrated scale plate.



Calibration procedures for dual microswitches and adjustable switching differential switches are detailed on the operating and maintenance instructions supplied with each switch.

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TECHNICAL SPECIFICATION

Switchcase and covers : ANC4B 316 stainless steel switchcase with 316 stainless steel covers or black anodised aluminium switchcase and 316 stainless steel covers. Optional 304 stainless steel mounting bracket.

Microswitch : SPCO/SPDT. Options include single or twin switch assemblies for simultaneous or separately adjustable set points, adjustable switching differential, manual reset and noble metal contacts for use on intrinsically safe circuits.

Microswitch rating

Low differential microswitch : 5 Amps @ 250 V.AC/1 Amp @ 24 V.DC
Medium, high differential : 10 Amps @ 250 V.AC
and manual reset : 3 Amps @ 24 V.DC
Special (magnetic blow-out) : 10 Amps @ 250V.AC or DC

Electrical Connections : Screwed terminals direct onto microswitch, suitable for cable up to 2.5 mm². (Manual reset microswitch is supplied with 6BA solder tags).

Electrical Conduit Entry : M20 x 1.5 straight entry. Adaptors are available.

Environmental Protection : Switches have been tested and certified by an external test house to IP66 in accordance with BS EN 60529 : 1992. In addition further internal tests confirm that the switchcase meets the requirements of IP67.

Vibration and shock parameters : Switches were subjected to Lloyds Register Type Approval System Test Specification No.1 Clause 130 Vibration Test 142 and shock tested to BS EN 60068-2-27 : 1987.

Temperature Limitations: Pressure, Vacuum and Differential Pressure.

Ambient : -10 to +80 Deg.C (standard). -55°C to +130°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) or -60 to +150°C (PTFE).

Storage : -60 to +80°C.

(For temperature, level and flow switches please refer to specific pages).

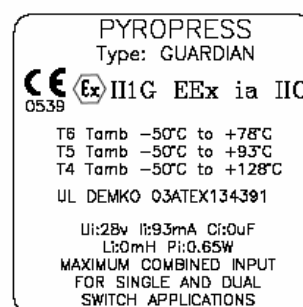
Certification: All switches are CE certified and marked in accordance with the following EU directives.

Industrial : 73/23/EEC (Low Voltage Directive).

EExia : 94/9/EEC ATEX coded CE  II1G EExia IIC

CAT 1 (Zone 0) areas.

Accuracy: 1% @ 20°C (setting accuracy : 2%).



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