

MEDIUM PRESSURE

ANC4B 316 stainless steel or black anodised aluminium switchcase.

IP66/IP67 certified housing.

Low switching differential.


Calibrated adjustment scale.

Pressure Settings from 100 mBar to 12.4 Bar.

Single or dual microswitch option. Adjustable deadband option.

Wetted parts NACE MR-01-75 compliant.

Manual reset pushbutton option.

ATEX Certified Option
 CE  IIIG EEx ia IIC
 T6 Tamb -50 to +78°C
 T5 Tamb -50 to +93°C
 T4 Tamb -50 to +128°C

P1100 & P1200 GUARDIAN INDUSTRIAL & ATEX EExia CERTIFIED PRESSURE SWITCH



The standard range represents the basic models to cover pressure applications for settings of between 0.1 and 12.4 bar (2 to 180 PSI). Dual microswitch and adjustable differential options are available as detailed on the opposite page. For specification and introduction to the Guardian switch range refer to pages 10 & 11.

STANDARD NITRILE DIAPHRAGM		The fitting of a Viton diaphragm or dual microswitches may increase the deadband by a factor of two. Microswitches other than shown below may also increase switching differential.					
ADJUSTMENT RANGE (BAR)	ADJUSTMENT RANGE (PSI)	MAX WORKING PRESS. (BAR)		SWITCH DIFF (LOW DIFF) (BAR)	SWITCH DIFF (MED DIFF) (BAR)	DIAPHRAGM CODE	SPRING CODE
		NITRILE	VITON				
4 - 12	60 - 180	24	50	0.2 - 0.6	<1.2	15	0
2 - 6	30 - 90	16	40	0.1 - 0.3	<0.6	21	0
1 - 3	15 - 45	8	30	0.05 - 0.15	<0.3	30	0
0.1 - 1.7	2 - 24	8	30	0.01 - 0.17	<0.1	30	1
0.3 - 3.1	5 - 45	8	30	0.02 - 0.15	<0.3	30	2
0.6 - 6.2	10 - 90	16	40	0.03 - 0.35	<0.6	21	2
1.2 - 12.4	20 - 180	24	50	0.07 - 0.7	<1.3	15	2

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PART NUMBER BREAKDOWN				PROCESS ENTRY ORIENTATION S = STRAIGHT ENTRY A = ANGLED ENTRY	
P11 : CASE MOUNTED - STANDARD P12 : STEM MOUNTED		DIAPHRAGM A = NITRILE B = VITON - STD	SPRING CODE SEE RANGE SHEET	DIAPHRAGM CODE SEE RANGE SHEET	WETTED PARTS S = 316 STAINLESS M = MONEL
SWITCHCASE S = STAINLESS STEEL CASE IF ALUMINIUM CASE REQUIRED LEAVE BLANK	S P 1 1 0 3 / A 0 1 0 N 3 0 / S S 1 X				X = CASE MOUNTED N = OPTIONAL MOUNTING BRACKET
MICROSWITCH OPTIONS 01 = SINGLE SWITCH (LOW DIFF) 02 = DUAL SWITCHES (LOW DIFF) 03 = SINGLE SWITCH (MEDIUM DIFF) - STANDARD 04 = DUAL SWITCHES (MEDIUM DIFF) 05 = SINGLE (LOW DIFF) USE FOR EExia 06 = DUAL (LOW DIFF) USE FOR EExia		P11 10 - STD (FEMALE) P12 22 = 1/2" BSP (MALE) 24 = 1/2" NPT (MALE)	N = STANDARD ADJUSTER A = SECONDARY ADJUSTER (FOR DUAL SETTING AND ADJUSTABLE DEADBAND)	PROCESS ENTRY SIZE FOR P1100 1 = 1/4" BSP.P FEMALE 2 = 1/4" NPT. FEMALE 5 = 1/2" BSP.P FEMALE 6 = 1/2" NPT. FEMALE FOR P1200 (MALE) USE = 1	
ADJUSTABLE DEADBAND 07 = SINGLE SWITCH - STANDARD 08 = SINGLE SWITCH - USE FOR EExia 09 = MANUAL AND AUTO (RESET FALLING) 0A = MANUAL AND AUTO (RESET RISING)		0C = MANUAL (RESET FALLING) 0D = MANUAL (RESET RISING) 0E = DUAL HIGH CURRENT DC 0M = SINGLE HIGH CURRENT DC SWITCHING 0K = DPDT MICROSWITCH		PLEASE REFER TO MICROSWITCH RATINGS ON PAGE 11.	

SPECIFICATION

Wetted parts : 316 St. steel or Monel
Diaphragm : Nitrile or Viton
Pressure Limitations : Please refer to details opposite. All switches can be subjected to a full vacuum.

Process connections : 1/4" or 1/2" BSP.P or NPT female (bottom) 1/4" BSP.P or NPT female (side) or 1/2" BSP.P or NPT male (bottom)

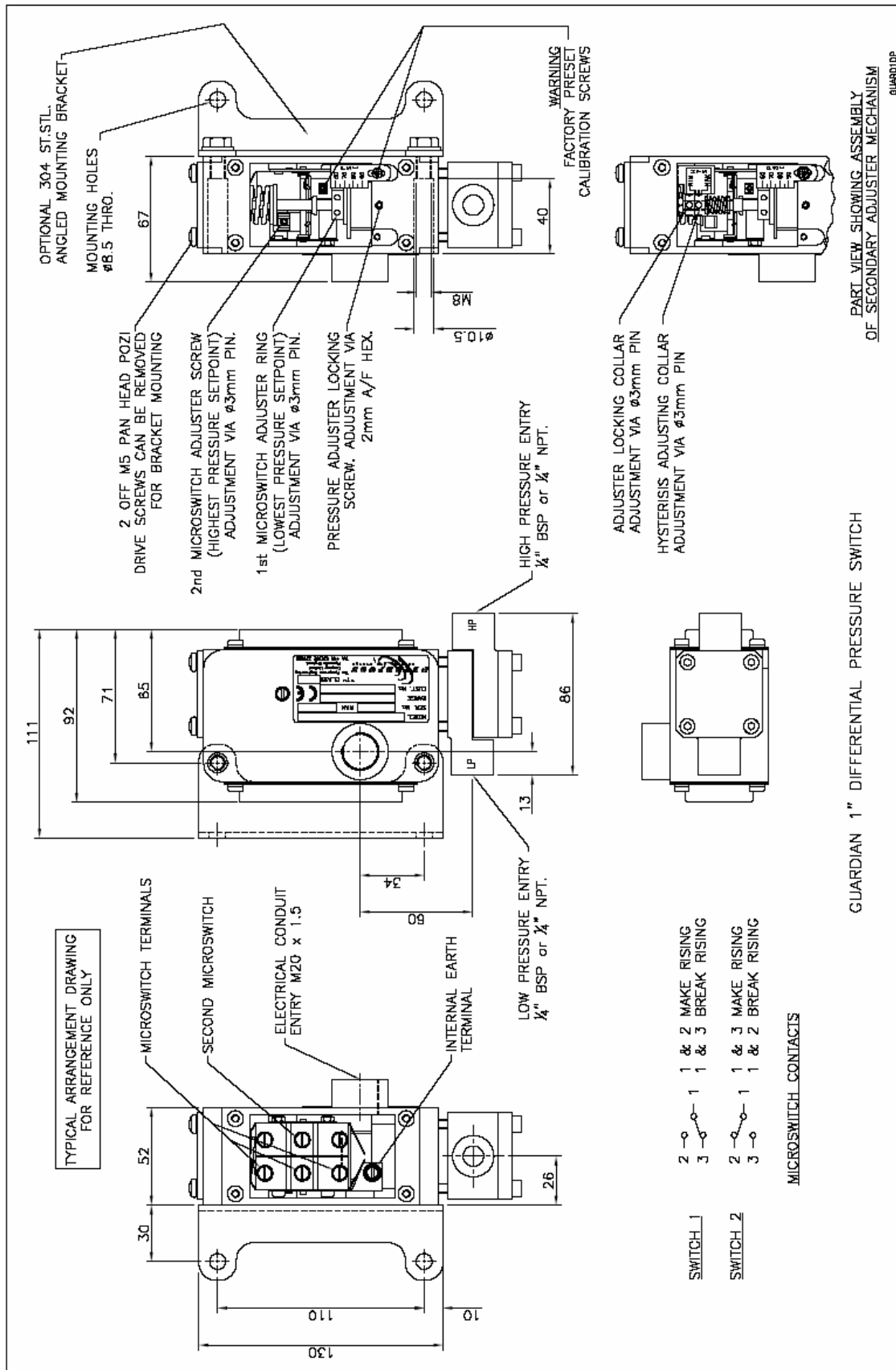
For detailed drawing showing options refer to Fig.1 page 16

EXAMPLE. DUAL MICROSWITCHES. SWITCH 1 SETTING : 10 BAR RANGE 4 - 12 BAR. SWITCH 2 CAN BE SET AT THE SAME POINT OR BETWEEN 10.2 AND 12 BAR WITH STANDARD ADJUSTER OR BETWEEN 10.7 AND 14.5 BAR WITH SECONDARY ADJUSTER. WITH SECONDARY ADJUSTER FITTED MICROSWITCHES CANNOT BE SET TOGETHER.

ADJUSTABLE DEADBAND SWITCHING LIMITS			DUAL MICROSWITCH ADJUSTMENT LIMITS					
MINIMUM DIFF AT BOTTOM OF RANGE (BAR)	MAXIMUM DIFF AT BOTTOM OF RANGE (BAR)	ADJUSTMENT RANGE (BAR) (FALLING SET POINTS ONLY) SWITCH 1	MINIMUM DIFF AT TOP OF RANGE (BAR)	MAXIMUM DIFF AT TOP OF RANGE (BAR)	SWITCH 2 RELATIVE TO SWITCH 1 MIN - (BAR) - MAX (STANDARD ADJUSTER)		SWITCH 2 RELATIVE TO SWITCH 1 MIN - (BAR) - MAX (SECONDARY ADJUSTER)	
1.1	3.5	4 - 12	1.6	3.7	0.2	2.0	0.7	4.5
0.5	2.5	2 - 6	0.7	3.5	0.08	1.0	0.3	2.8
0.3	1.7	1 - 3	0.45	2	0.05	0.35	0.17	1.2
0.15	0.55	0.1 - 1.7	0.25	0.75	NOT AVAILABLE		0.08	1.1
0.15	0.45	0.3 - 3.1	0.25	0.6			0.3	2.0
0.25	1.45	0.6 - 6.2	0.4	2.5			0.3	2.6
0.6	3.25	1.2 - 12.4	1.5	4			1.0	7.5

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FIG. 10 TYPE DP1500 GUARDIAN DIFFERENTIAL PRESSURE SWITCH (DIAPHRAGM CODE 01SB)



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GUARDIAN INDUSTRIAL & ATEX EExia SWITCHES

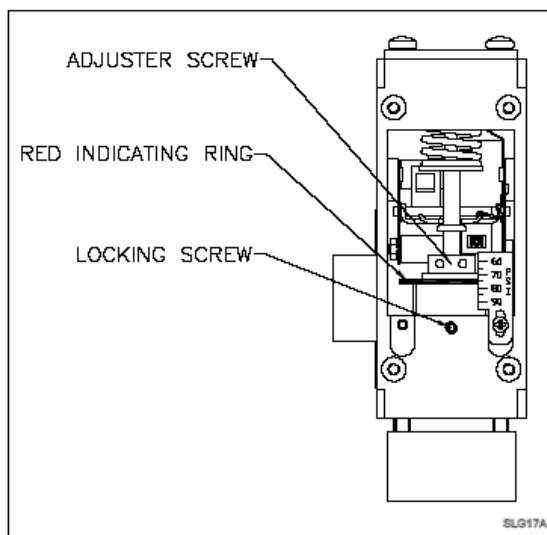
INTRODUCTION

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).

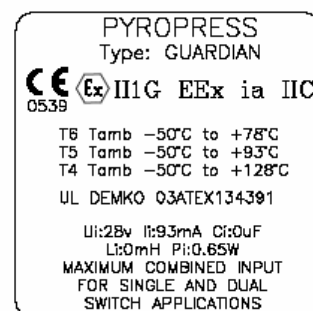
Certification: All switches are CE certified and marked in accordance with the following EU directives.

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

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

CAT 1 (Zone 0) areas.

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



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