HIGH PRESSURE

ANC4B 316 stainless steel or black anodised aluminium switchcase.

IP66/IP67 certified housing.

Low switching differential.

Calibrated adjustment scale.

Pressure Settings from 1.5 Bar to 640 Bar.

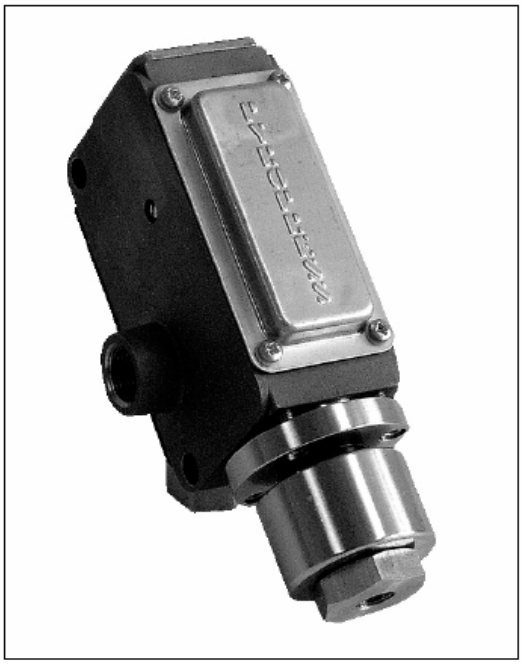
Single or dual microswitch option. Adjustable deadband option.

Wetted parts NACE MR-01-75 compliant.

Manual reset pushbutton option.

ATEX Certified Option
CE Ⓔx II1G EEx ia IIC
T6 Tamb -50 to +78˚C
T5 Tamb -50 to +93˚C
T4 Tamb -50 to +128˚C

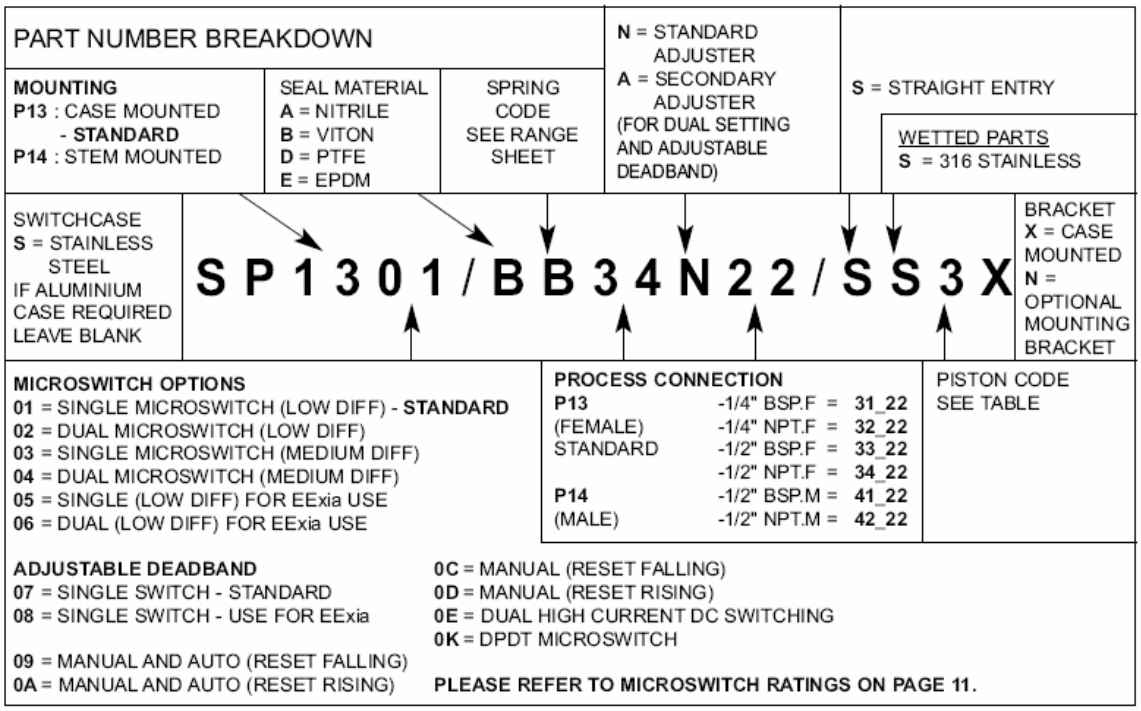
P1300 & P1400 GUARDIAN INDUSTRIAL & ATEX EExia CERTIFIED PRESSURE SWITCH



The range incorporates a 316 stainless steel piston with 'O' ring seal to cover settings from 1.5 to 640 Bar (20 to 9300 PSI) with a maximum pressure of 700 Bar (10000 PSI). Dual microswitch and adjustable deadband options are available. For general specification and introduction to the Guardian switch range refer to pages 10 & 11.

HIGH PRESSURE PISTON ACTUATED - P1300 & P1400			The switching differentials listed below were obtained with a low differential microswitch. The fitting of medium differential or dual microswitches may increase the deadband by a factor of two.		
ADJUSTMENT RANGE (BAR)	ADJUSTMENT RANGE (PSI)	MAX WORKING PRESS. (BAR)	SWITCHING DIFFERENTIAL (BAR)	PISTON CODE	SPRING CODE
440 - 640	6400 - 9300	700	<32	1	B
290 - 490	4200 - 7100	700	<25	1	G
160 - 360	2300 - 5300	700	<16	1	R
115 - 160	1700 - 2300	700	<8	3	B
80 - 125	1200 - 1800	700	<6.5	3	G
45 - 90	650 - 1250	700	4.5 - 9.0	3	R
30 - 75	450 - 1050	700	3.0 - 7.5	3	0
15 - 40	220 - 520	700	1.5 - 4.0	4	0
5 - 25	70 - 370	700	<2.0	4	1
1.5 - 17.5	20 - 250	700	<1.25	6	2

Manufacturer catalogue page 18



SPECIFICATION

Wetted parts : 316 Stainless steel
Seal : Nitrile or Viton, PTFE or EPDM
Pressure Limitations : Please refer to details opposite. All switches can be subjected to a full vacuum.

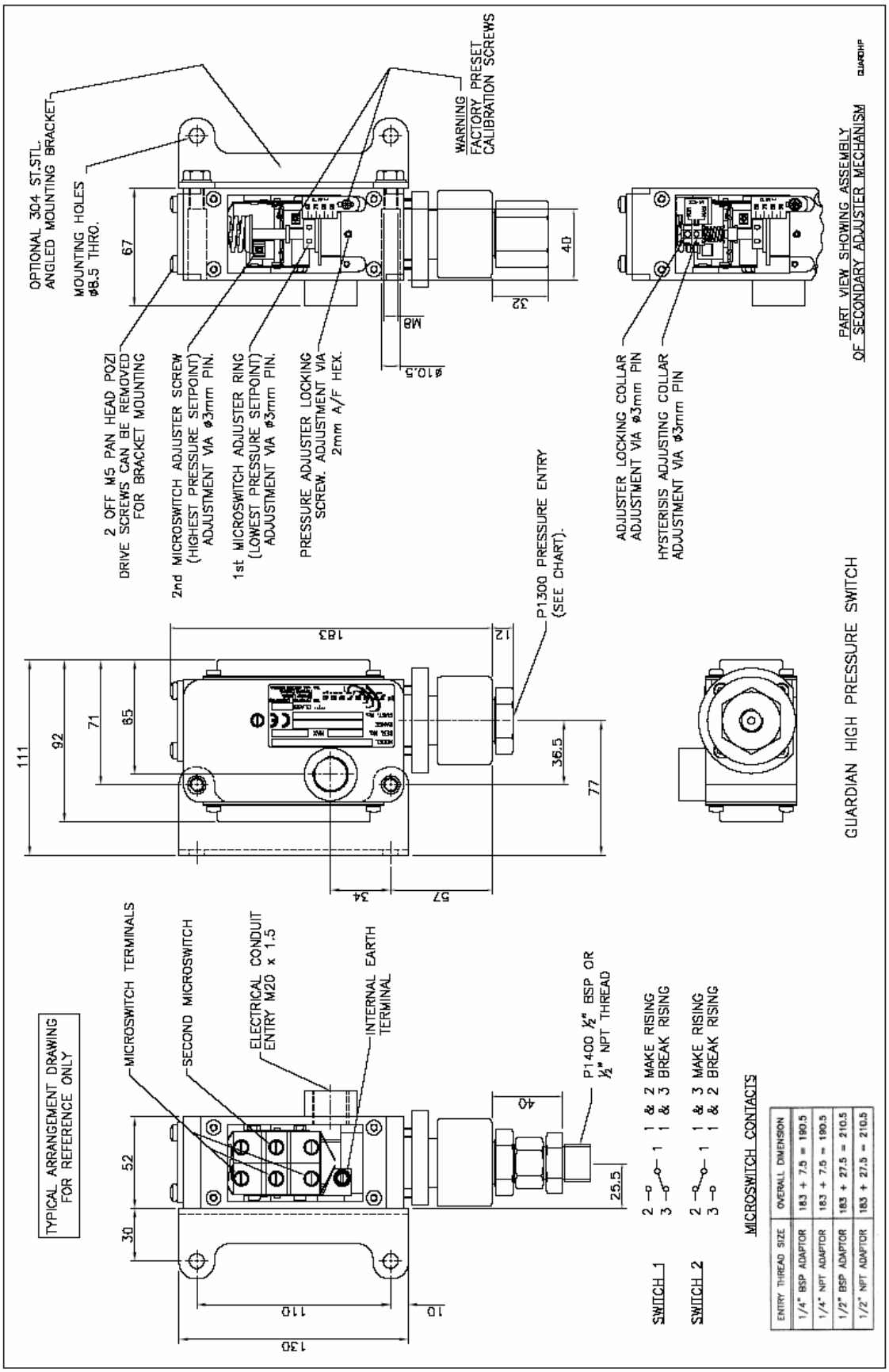
Process connections : 1/4" or 1/2" BSP.P or NPT female (bottom) or 1/2" BSP.P or NPT male (bottom).

For detailed drawing showing options refer to Fig.3 page 22

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)
40	90	440 - 640	45	90	4.5 - 31.5	25 - 140
30	90	290 - 490	40	90	4.5 - 31.5	25 - 140
25	80	160 - 360	35	85	4.5 - 31.5	25 - 140
11	25	115 - 160	11	25	1.1 - 7.9	5 - 27
8	20	80 - 125	11	21	1.1 - 7.9	5 - 27
6	21	45 - 90	8	21	1.1 - 7.9	5 - 27
5.8	18.3	30 - 75	7.5	23.5	1.1 - 7.9	5 - 27
3.5	12.5	15 - 40	3.5	12.5	0.7 - 5.0	4 - 22
3	9	5 - 25	3	12	0.7 - 5.0	4 - 22
1	4.5	1.5 - 17.5	1.5	6.5	0.4 - 2.6	2 -10

Manufacturer catalogue page 19

FIG. 3 TYPE P1300 & P1400 GUARDIAN HIGH PRESSURE SWITCH



Manufacturer catalogue page 22

GUARDIAN INDUSTRIAL & ATEX EExia SWITCHES

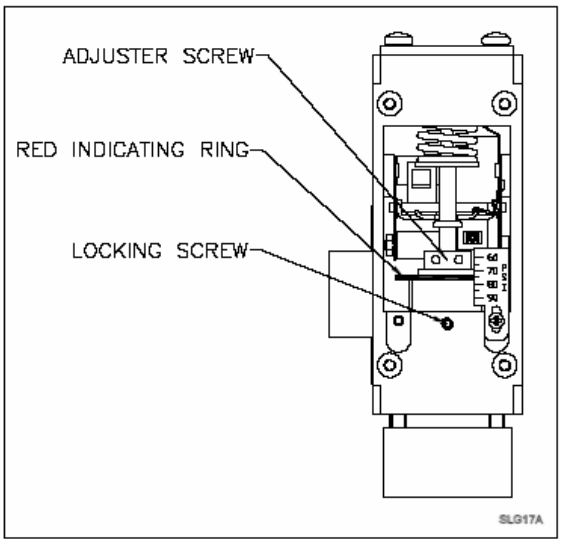
INTRODUCTION

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 gasketted 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.

Manufacturer catalogue page 10

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.

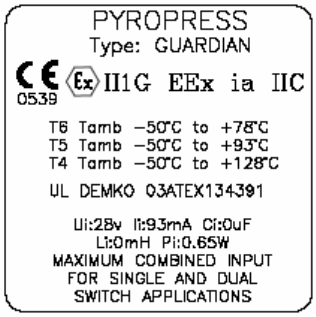
Environmental Protection : Switches have been tested and certified by an external test house to IP66 in accordance with BS EN 60529 : 1992. In addition further internal tests confirm that the switchcase meets the requirements of IP67.

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 Ⓔx II1G EExia IIC CAT 1 (Zone 0) areas.

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



Manufacturer catalogue page 11