LOW & MEDIUM PRESSURE

ANC4B 316 stainless steel or black anodised aluminium switchcase.

IP66/IP67 certified housing.

SIL2 - IEC61508 proven reliability.

Calibrated adjustment scale.

Differential pressure settings from 2 mBar to 12 Bar.

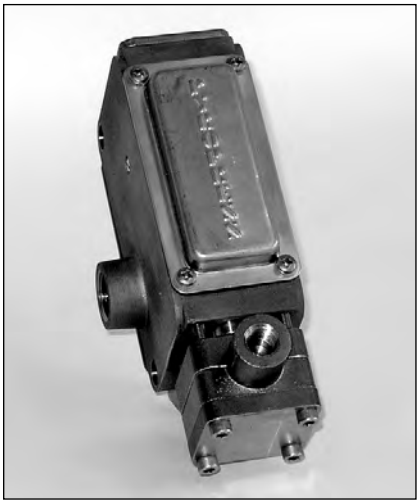
Single or dual microswitch option. Adjustable deadband option.

Wetted parts NACE MR-01-75 compliant.

Manual reset pushbutton option.

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

DP1500 GUARDIAN INDUSTRIAL & ATEX CERTIFIED Exia DIFFERENTIAL PRESSURE SWITCH (LOW PRESSURE & VACUUM OPTION)



The standard ranges cover differential pressure applications for settings from 2 mBar to 12 Bar. Dual microswitch and adjustable deadband options are available as detailed on the opposite page. The ranges for high differential pressure versions are shown on pages 34 and 35. For general specification and introduction to the Guardian switch range refer to pages 10 & 11.

STANDARD VITON DIAPHRAGM		Dual microswitches may increase the deadband by a factor of two. △ 3.5 Bar option available.				
ADJUSTMENT RANGE (BAR) *MBAR	ADJUSTMENT RANGE (PSI) *"WG	MAX WORKING PRESS. (BAR) ONE SIDED EQUAL		DEADBAND (BAR) *MBAR	DIAPHRAGM CODE	SPRING CODE
6 - 12	90 - 170	14	28	<1.2	01SB	3
5 - 7	75 - 100	14	28	<0.7	01SB	B
3 - 5	45 - 75	14	28	<0.5	01SB	G
2 - 4	30 - 60	14	28	<0.4	01SB	R
0.2 - 2.4	5 - 35	14	28	<0.25	01SB	1
0.1 - 1.1	2 - 16	7	10	<0.15	02SB	2
*30 - 330	*12 - 132	7	10	<*35	03SB	1
*5 - 55	*2 - 20	0.35	0.5 △	<*6	08SB	2
*2 - 42	*1 - 16	0.35	0.5 △	<*3	08SB	1

PART NUMBER BREAKDOWN

DP15 = DIFFERENTIAL PRESSURE **P15** = PRESSURE **V15** = VACUUM PREFIX WITH '**S**' FOR STAINLESS STEEL SWITCHCASE	**DIAPHRAGM** **A** = NITRILE **B** = VITON	**SPRING CODE** SEE RANGE SHEET	**DIAPHRAGM CODE** SEE RANGE SHEET	**MOUNTING DETAILS** **X** = 01SB CASE MOUNTING **N** = 02SB & 03SB BRACKET **X** = 08SB BRACKET

(S) D P 1 5 0 1 / A 1 N 0 1 S B 1 / S S X

MICROSWITCH OPTIONS
01 = SINGLE SWITCH
02 = DUAL SWITCHES
03 = USE 01
04 = USE 02
05 = SINGLE FOR Exia
06 = DUAL FOR Exia

ADJUSTABLE DEADBAND
07 = SINGLE SWITCH - STANDARD
08 = SINGLE SWITCH - USE FOR Exia

09 = MANUAL AND AUTO (RESET RISING)
0A = MANUAL AND AUTO (RESET FALLING)

N = STANDARD ADJUSTER
A = SECONDARY ADJUSTER (FOR DUAL SETTING AND ADJUSTABLE DIFFERENTIAL MECHANISM)

0C = MANUAL (RESET RISING)
0D = MANUAL (RESET FALLING)
0E = DUAL HIGH CURRENT DC
0K = DPDT MICROSWITCH
0M = SINGLE HIGH DC CURRENT

PROCESS CONNECTION FOR DIAPHRAGM CODES 01SB AND 03SB
1 = 1/4" BSP.P FEMALE (DP)
2 = 1/4" NPT FEMALE (DP)
3 = 1/4" BSP.P FEMALE (P)
4 = 1/4" NPT FEMALE (P)
5 = 1/4" BSP.P FEMALE (V)
6 = 1/4" NPT FEMALE (V)

FOR 08SB
1 = 1/4" OD COMPRESSION FITTING
9 = OTHER SIZES VIA ADAPTORS

PLEASE REFER TO MICROSWITCH RATINGS ON PAGE 11.

SPECIFICATION

Temperature limitations
Diaphragm code : 01SB as page 11
Diaphragm code : 03SB & 08SB
Viton : -10 to + 150˚C
Nitrile : -25 to +95˚C
Alternatives are available

Wetted parts : 316 Stainless steel
Process connections :
1/4" BSP.P or NPT female
except on diaphragm code 08SB which has 1/4" OD compression fittings. Other options available.

Dimensional drawings : 01SB diaphragm code - Fig. 10 page 27;
03SB diaphragm code - Fig. 11 page 30; 08SB diaphragm code - Fig. 12 page 31.

ADJUSTABLE DEADBAND SWITCHING LIMITS					**DUAL MICROSWITCH** ADJUSTMENT LIMITS	
MINIMUM DEADBAND AT BOTTOM OF RANGE (BAR) *MBAR	MAXIMUM DEADBAND AT BOTTOM OF RANGE (BAR) *MBAR	**ADJUSTMENT RANGE (BAR) (FALLING SET POINTS ONLY) SWITCH 1**	MINIMUM DEADBAND AT TOP OF RANGE (BAR) *MBAR	MAXIMUM DEADBAND AT TOP OF RANGE (BAR) *MBAR	**SWITCH 2** RELATIVE TO SWITCH 1 **MIN** - (BAR) - **MAX** (SECONDARY ADJUSTER)	
0.65	3.5	6 - 12	0.8	3.8	0.45	1.45
1.45	2.5	5 - 7	0.6	2.8	0.35	1.35
0.35	2	3 - 5	0.5	2.1	0.3	1.25
0.25	1.5	2 - 4	0.4	1.8	0.25	1.25
0.15	0.55	0.2 - 0.4	0.2	0.8	0.2	1.2
*30	*120	0.1 - 1.1	*40	*180	0.1	0.55
*30	*120	30 - 330	*40	*180	0.05	0.30
*3	*12	5 - 55	*3	*17	0.01	0.15
*3	*12	2 - 42	*3	*17	0.005	0.030

FIG. 11 TYPE DP1500 GUARDIAN DIFFERENTIAL PRESSURE SWITCH (DIAPHRAGM CODE 03SB)

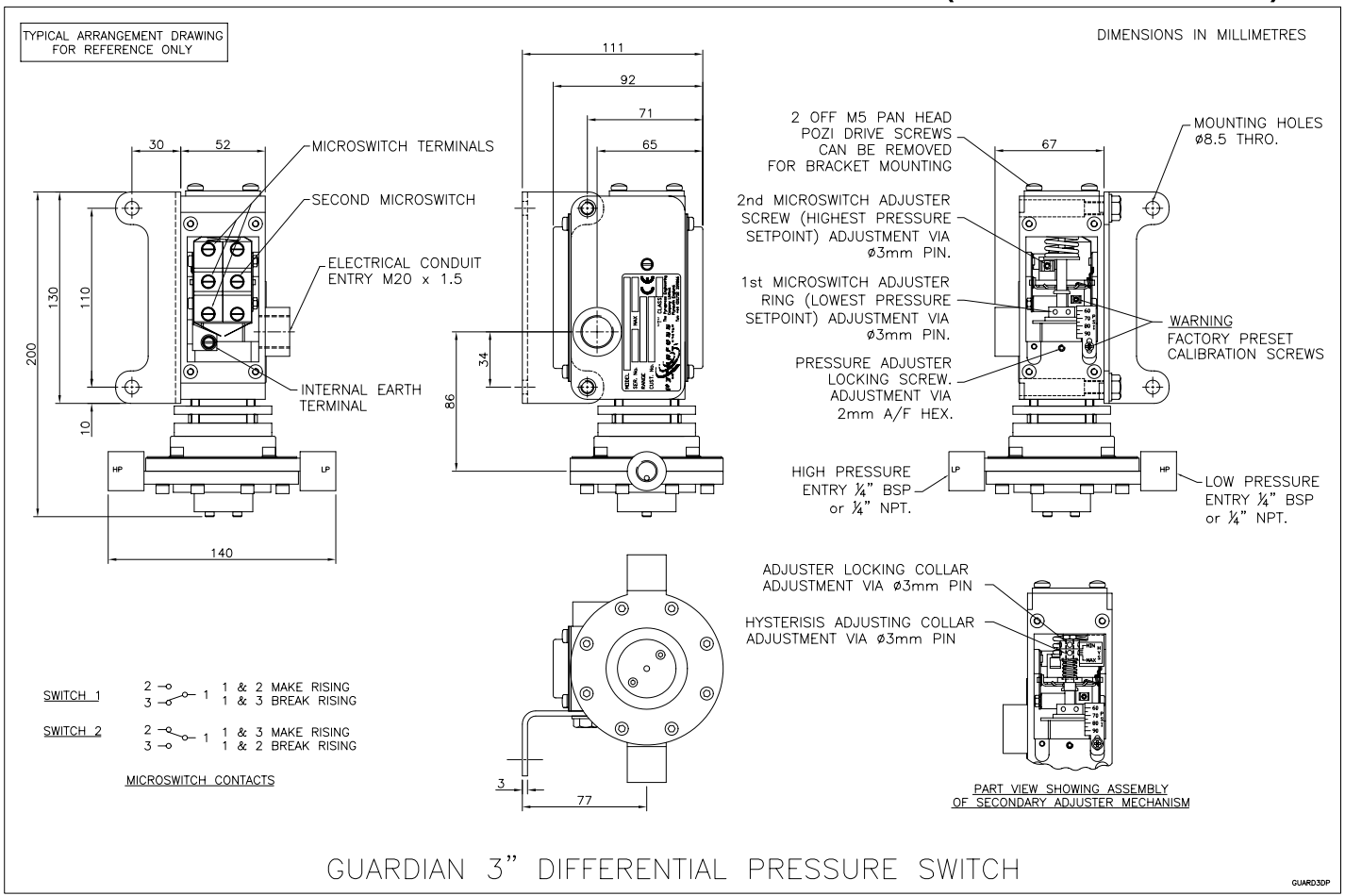
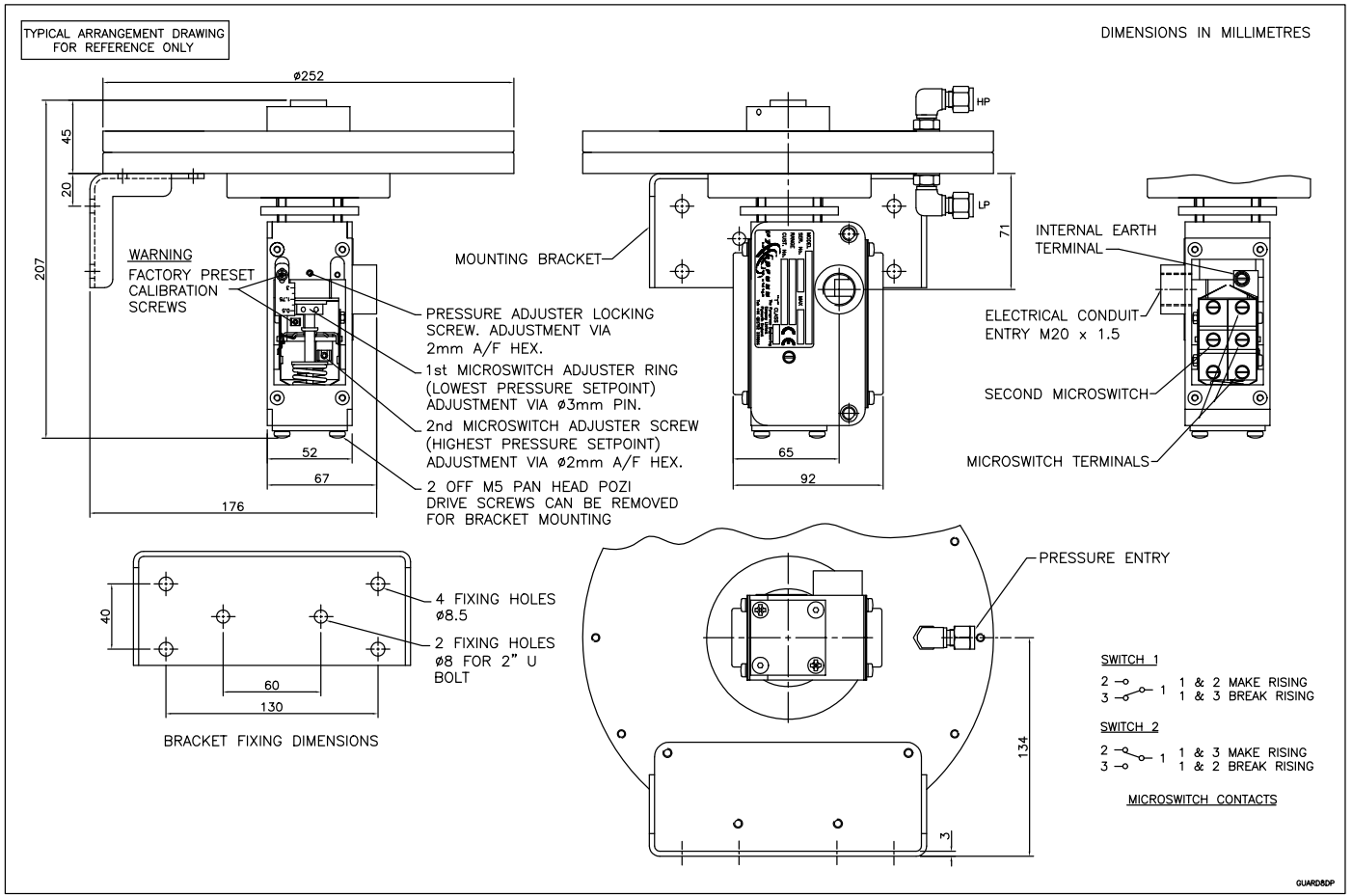


FIG. 12 TYPE DP1500 GUARDIAN DIFFERENTIAL PRESSURE SWITCH (DIAPHRAGM CODE 08SB)



GUARDIAN INDUSTRIAL & ATEX Exia SWITCHES

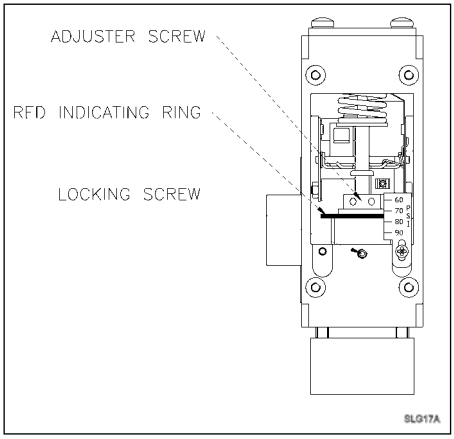
INTRODUCTION

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 50 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.

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

Standard microswitch	: 6 Amps @ 480 V.AC
	: 10 Amps @ 250 V.AC & 125 V.AC
	: 5 Amps @ 30 V.DC & 0.5 Amps @ 125 V.DC
Adjustable deadband and high Current DC switching	: 10 Amps @ 250 V.AC or DC

Electrical Connections : Screwed terminals direct onto microswitch, suitable for cable up to 2.5 mm^2. (Manual reset microswitch is supplied with 6BA solder tags).

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

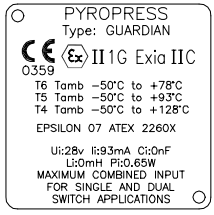
Environmental Protection : Switches have been tested and certified by an external test house to IP66 in accordance with BS EN 60529 : 1992. In addition further internal tests confirm that the switchcase meets the requirements of IP67.

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.
Process : Diaphragm actuated unless otherwise stated -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). **Ambient :** -10 to +80 Deg.C.
Storage : -60 to +80˚C. (For temp, level and flow refer to specific pages).

Certification: All switches are CE certified and marked in accordance with the following EU directives. Industrial : 2006/95/EC (Low Voltage Directive).
Exia : 94/9/EC ATEX coded CE Ex II1G Exia IIC. CAT 1 (Zone 0) areas
Special conditions for safe use. (Category 1, Zone 0) Aluminium may only be used when the ignition hazardous assessment shows that there is not risk of ignition from incendive, impact or abrasion sparks.

Accuracy: 1% @ 20˚C.



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