

FLOW

ANC4B 316 stainless steel or black anodised aluminium switchcase.

IP66/IP67 certified housing.

Pipe sizes from 0.5" to 10" (15 to 250mm).

Single or dual microswitch option.

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

F1100 GUARDIAN INDUSTRIAL & ATEX Exia CERTIFIED LIQUID FLOW SWITCH



This design comprises orifice plate, differential pressure sensitive element and switching mechanism in a compact assembly which enables easy installation between pipe flanges. Each size can be provided with one of seven standard orifice ratios which enable wide range of flows to be covered. It is recommended that straight pipe equivalent to 10 x pipe diameters should be allowed either side of flow switch to reduce head loss.

SPECIFICATION

Flange casting : Gunmetal - std
316 stainless steel, Monel or Tufnol
(tufnol option on industrial version only)

Temperature parameters
Nitrile : -40 to +90°C
Viton : -20 to +100°C

Orifice plate : 316 Stainless steel - std or nylon 66 (for Tufnol plates)

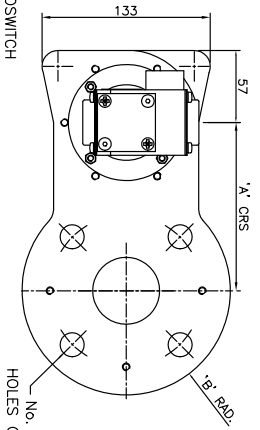
Pressure parameters
Metallic flanges : 10 bar / 12 bar test
Tufnol flanges : 12 bar / 18 bar test

Diaphragm : Nitrile - std or Viton

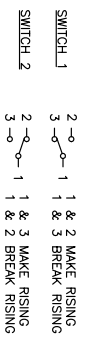
SWITCHCASE PREFIX WITH 'S' - STAINLESS STEEL CASE. IF ALUMINIUM CASE REQUIRED LEAVE BLANK		FLOW INDICATOR 1 = NO INDICATOR 2 = WITH INDICATOR	
(S) F 1 1 0 1 / 0 1 0 0 1 0 / 1 1 X			
MICROSWITCH OPTIONS 01 = SINGLE SWITCH 02 = DUAL SWITCHES 03 = USE 01 04 = USE 02 05 = SINGLE FOR Exia 06 = DUAL FOR Exia		NB / PLATE SIZE CODES 010005 = 1/2" NB PLATES 010007 = 3/4" NB PLATES 010010 = 1" NB PLATES 015015 = 1 1/2" NB PLATES 020020 = 2" NB PLATES 020025 = 2 1/2" NB PLATES 030025 = 2 1/2" NB PLATES 030030 = 3" NB PLATES 040040 = 4" NB PLATES	
		FLANGE MATERIAL 1 = GUNMETAL - STANDARD 2 = STAINLESS STEEL 3 = MONEL 4 = TUFNOL EPOXIDE	
		060060 = 6" NB PLATES 080080 = 8" NB PLATES 100100 = 10" NB PLATES7	

FIG. 17 TYPE F1000 GUARDIAN FLOW SWITCH

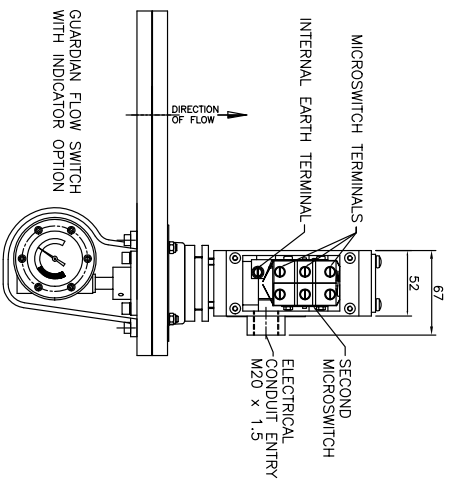
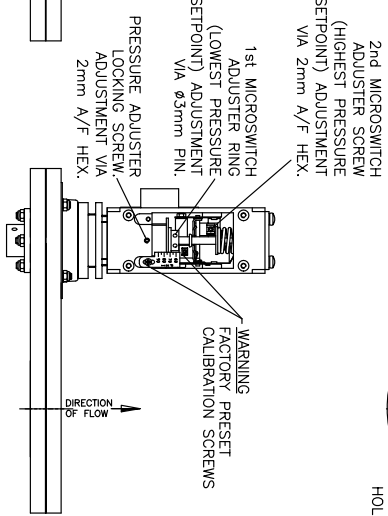
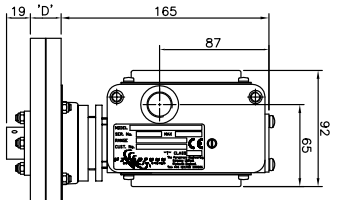
TYPICAL ARRANGEMENT DRAWING FOR REFERENCE ONLY



DIMENSIONS IN MILLIMETRES



MICROSWITCH CONTACTS



GUARDIAN FLOW SWITCH

GUARDIAN FLOW SWITCH WITH INDICATOR OPTION

FLANGE DIMENSIONS AND DRILLINGS TO BS EN 1092-1												NON METALLIC					
SIZE	15	20	25	32	40	50	65	80	100	125	150	200	250	15	25	40	50
A	108	108	108	117	117	133	133	152	159	191	191	219	254	108	108	133.3	133.3
B	57	57	57	67	70	83	83	102	106	140	140	168	203	62	62	86	86
C	65	75	85	100	110	125	145	160	180	210	240	295	355	CUSTOMER REQUEST			
D	24	24	24	24	24	24	24	24	24	24	24	24	24	38	38	38	38
FLANGE HOLES	4 x 14	4 x 14	4 x 14	4 x 14	4 x 18	4 x 18	4 x 18	8 x 18	8 x 18	8 x 18	8 x 18	8 x 22	12 x 26	CUSTOMER REQUEST			

GUARDIAN INDUSTRIAL & ATEX Exia SWITCHES

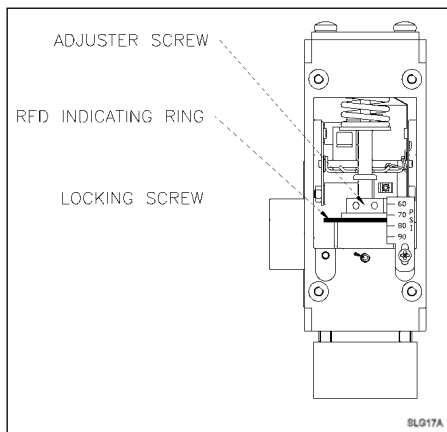
INTRODUCTION

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 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.

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 : 10 Amps @ 250 V.AC or DC
Current DC switching

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.

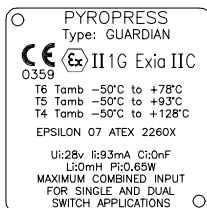
Temperature Limitations: Pressure, Vacuum and Differential Pressure.

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 incensive, impact or abrasion sparks.

Accuracy: 1% @ 20°C.



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