Pyropress

GUARDIAN FLUSH DIAPHRAGM

P1100 GUARDIAN INDUSTRIAL & ATEX Exia CERTIFIED FLANGE MOUNTED PRESSURE SWITCH

The range incorporates a flush diaphragm for settings of between 0.1 and 34 bar (2 to 500 PSI). Dual microswitch and adjustable deadband options are available.

FLUSH DIAPHRAGM

FEATURES

- 316 stainless steel or black anodised aluminium switchcase.
- IP66/IP67 certified housing.
- SIL2 - IEC61508 proven reliability.
- Internal adjustment scale.
- Pressure Settings from 100 mBar to 34 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

SPECIFICATION

Wetted parts : 316 St. Steel

Diaphragm : Viton or Nitrile

Pressure Limitations : Please refer to range table. All switches can be subjected to a full vacuum.

Process connections : See part no. breakdown overleaf.

FLUSH DIAPHRAGM FLANGE MOUNTED

The fitting of dual microswitches may increase the deadband by a factor of two.

ADJUSTMENT RANGE (BAR)	ADJUSTMENT RANGE (PSI)	MAX WORKING PRESS. (BAR)	DEADBAND (BAR)	DIAPHRAGM CODE	SPRING CODE
24 - 34	350 - 500	40	<3.4	15	B
14 - 24	200 - 350	40	<2.4	15	G
8.0 - 18	120 - 260	40	<1.8	15	R
4.0 - 13	60 - 185	40	<1.3	15	0
0.5 - 6.0	10 - 90	40	<0.6	15	1
0.1 - 1.7	2 -24	12	<0.2	32	1

PART NUMBER BREAKDOWN

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

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

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

0C* = MANUAL RISING
0D* = MANUAL FALLING
0E* = DUAL HIGH CURRENT DC SWITCHING
0M* = SINGLE HIGH CURRENT DC SWITCHING

*Change **0** to **E** for Exia certification

SPRING CODE SEE RANGE TABLE

DIAPHRAGM CODE SEE RANGE TABLE

F = FLUSH DIAPHRAGM FLANGE MOUNTED

FLANGE MATERIAL
S = 316 ST. STEEL

(S) P 1 1 0 1 / V 0 1 0 N 1 5 / F S 2 X

SWITCHCASE
S = STAINLESS STEEL

IF ALUMINIUM CASE REQUIRED LEAVE BLANK

DIAPHRAGM
V = VITON **STANDARD**

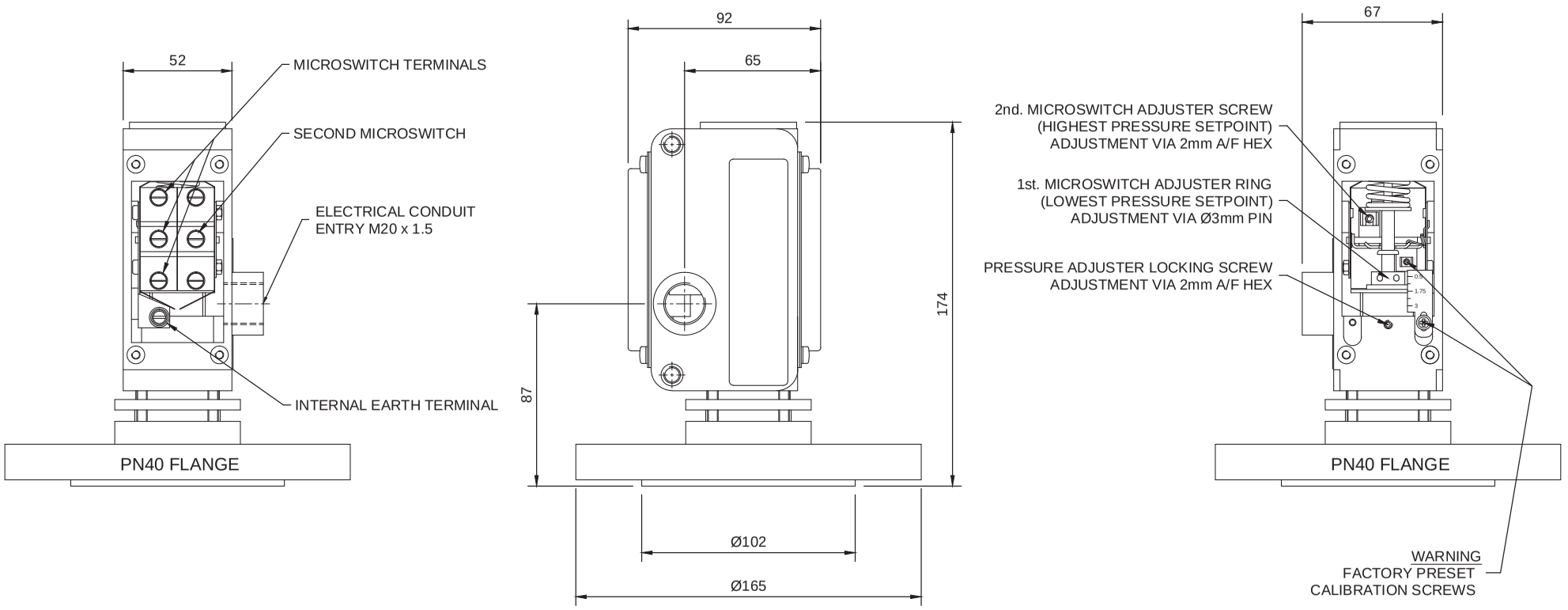
N = NITRILE

10 = STD

N = STANDARD ADJUSTER
A = SECONDARY ADJUSTER (FOR DUAL SETTINGS OR ADJ. DEADBAND)
F = FIXED ADJUSTER - REFER TO SALES

BS EN1092-1 FLANGE
(REPLACES BS4504)
2 = DN50 PN40 FLANGE
3 = 2" ANSI FLANGE 150 #
4 = 2" ANSI FLANGE 300 #
DEPTH OF FLANGE INCREASED TO ALLOW FOR HIGHER PRESSURE & TEMPERATURE RATING

Electrical connections
M20 x 1.5 ISO female standard
Suffix "F" for M25 x 1.5 ISO female or "C" for 1/2" NPT female


52
MICROSWITCH TERMINALS
SECOND MICROSWITCH
ELECTRICAL CONDUIT
ENTRY M20 x 1.5
INTERNAL EARTH TERMINAL
PN40 FLANGE
92
65
174
87
Ø102
Ø165
67
2nd. MICROSWITCH ADJUSTER SCREW
(HIGHEST PRESSURE SETPOINT)
ADJUSTMENT VIA 2mm A/F HEX
1st. MICROSWITCH ADJUSTER RING
(LOWEST PRESSURE SETPOINT)
ADJUSTMENT VIA Ø3mm PIN
PRESSURE ADJUSTER LOCKING SCREW
ADJUSTMENT VIA 2mm A/F HEX
PN40 FLANGE
WARNING
FACTORY PRESET
CALIBRATION SCREWS
HYSTERISIS ADJUSTING COLLAR
ADJUSTMENT VIA Ø3mm PIN
ADJUSTER LOCKING COLLAR
ADJUSTMENT VIA Ø3mm PIN
PART VIEW SHOWING ASSEMBLY
OF SECONDARY ADJUSTER MECHANISM
TYPICAL ARRANGEMENT DRAWING
FOR REFERENCE ONLY
GUARDFLU

GUARDIAN INDUSTRIAL & ATEX SWITCHES

INTRODUCTION

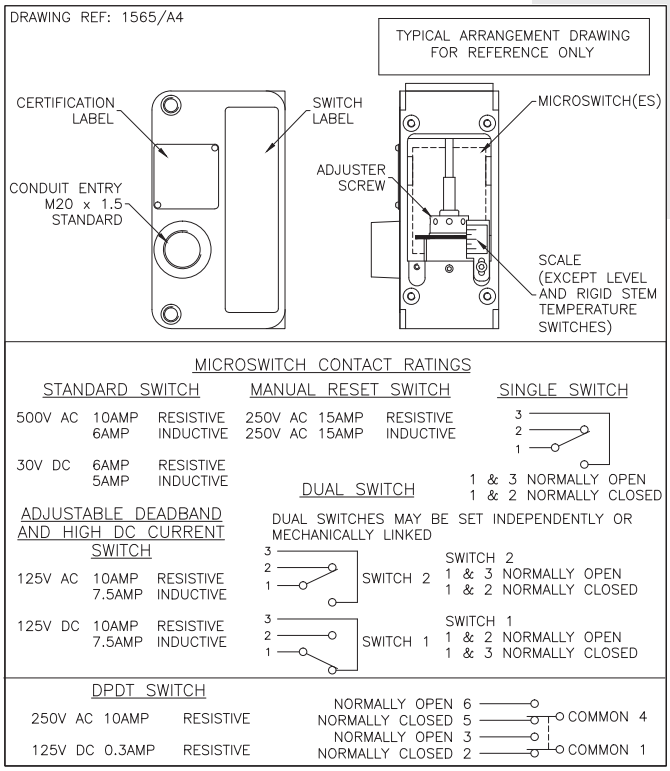
The Guardian pressure, differential pressure, temperature, level and flow switches are a part of our extensive range of specialist process sensors. They utilise the expertise gained from over 50 years experience of designing and manufacturing control devices for industrial, marine and hazardous area 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: 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 & 0.05 Amps @ 125 V.DC
Adjustable deadband and high	: 1.5 Amps @ 250 V.AC & DC
Current DC switching	: 7.5 Amps @ 125 V.AC & 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 12 or 13 Vibration Test 1 or 2 (refer to sales for exact specifications) and shock tested to BS EN 60068-2-27 : 1987.

Temperature Limitations: Pressure, Vacuum and Differential Pressure.

Process: Diaphragm actuated (unless otherwise stated) -30 to +110˚C (Nitrile) or -20 to +150˚C (Viton). Piston actuated -30 to +120˚C (Nitrile), or -20 to +150˚C (Viton) or -50 to +150˚C (PTFE) -30 to 125˚C (EPDM)

Ambient: -25 to +80 Deg.C.

Storage: -25 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 : 2014/35/EU (Low Voltage Directive).

Exia: ATEX 2014/34/EU 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.

ABOUT PYROPRESS

Our products are designed to work in demanding and hazardous environments which require fast and cost effective solutions in instrumentation and control.
Pyropress control sensors provide safe and reliable electrical switching of alarm or control circuits in response to changes in temperature, pressure, differential pressure,vacuum, fluid, flow and level conditions.

QUALITY

To support the design of state of the art products the company has invested heavily in the latest CNC technology.

We are able to produce our own components to a high degree of a accuracy assuring a reliable and consistent quality product.