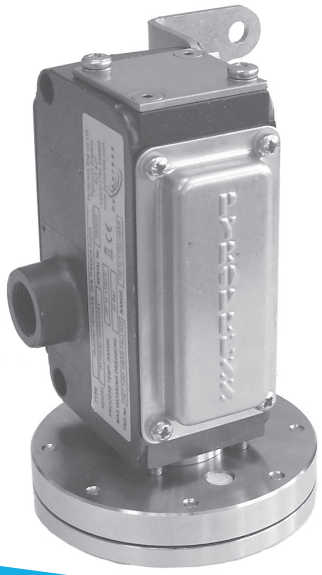
# GUARDIAN LOW PRESSURE

## P1100 GUARDIAN ATEX Exia CERTIFIED & INDUSTRIAL LOW PRESSURE SWITCH

This range of switches employs a non-reinforced elastomer sensing element for settings between 8 and 250 mBar. A special feature of the Guardian switch is the wide selection of microswitches that can be fitted eg. single, dual, adjustable dead band, high current DC switching options etc. Reliable and proven design concepts from our established range of switches have also been incorporated. This provides a very competitively priced, lightweight and durable sensor.



LOW PRESSURE

## FEATURES

- 316 stainless steel or black anodised aluminium switchcase.
- IP66/IP67 certified housing.
- Internal adjustment scale.
- Settings from 8 to 250 mBar.
- Single or dual microswitch option. Adjustable deadband option.
- SIL2 - IEC 61508 proven reliability.
- ATEX intrinsically safe version
  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** : Nitrile or Viton

**Process connection** : 1/4” BSP.P or NPT female

**Process temperature limitations** :
Nitrile: -25 to +95˚C
Viton: -10 to +150˚C

| ADJUSTMENT RANGE (mBAR) | ADJUSTMENT RANGE "WG | MAX WORKING PRESSURE (BAR) | DEADBAND (MBAR) | DIAPHRAGM CODE | SPRING CODE |
|---|---|---|---|---|---|
| 50 - 250 | 20 - 100 | 7.0 | 10 - 30 | S3 | 1 |
| 8 - 128 | 5 - 50 | 5.0 | 5 - 15 | S4 | 1 |

## PART NUMBER BREAKDOWN

| P11 : STANDARD | DIAPHRAGM MATERIAL | SPRING CODE | DIAPHRAGM CODE | MOUNTING BRACKET |
|---|---|---|---|---|
| | **8** = NITRILE<br>**9** = VITON - STD | PLEASE REFER TO RANGE TABLE | PLEASE REFER TO RANGE TABLE | |

**P 1 1 0 1 / 8 1 N S 3 1 / N X**

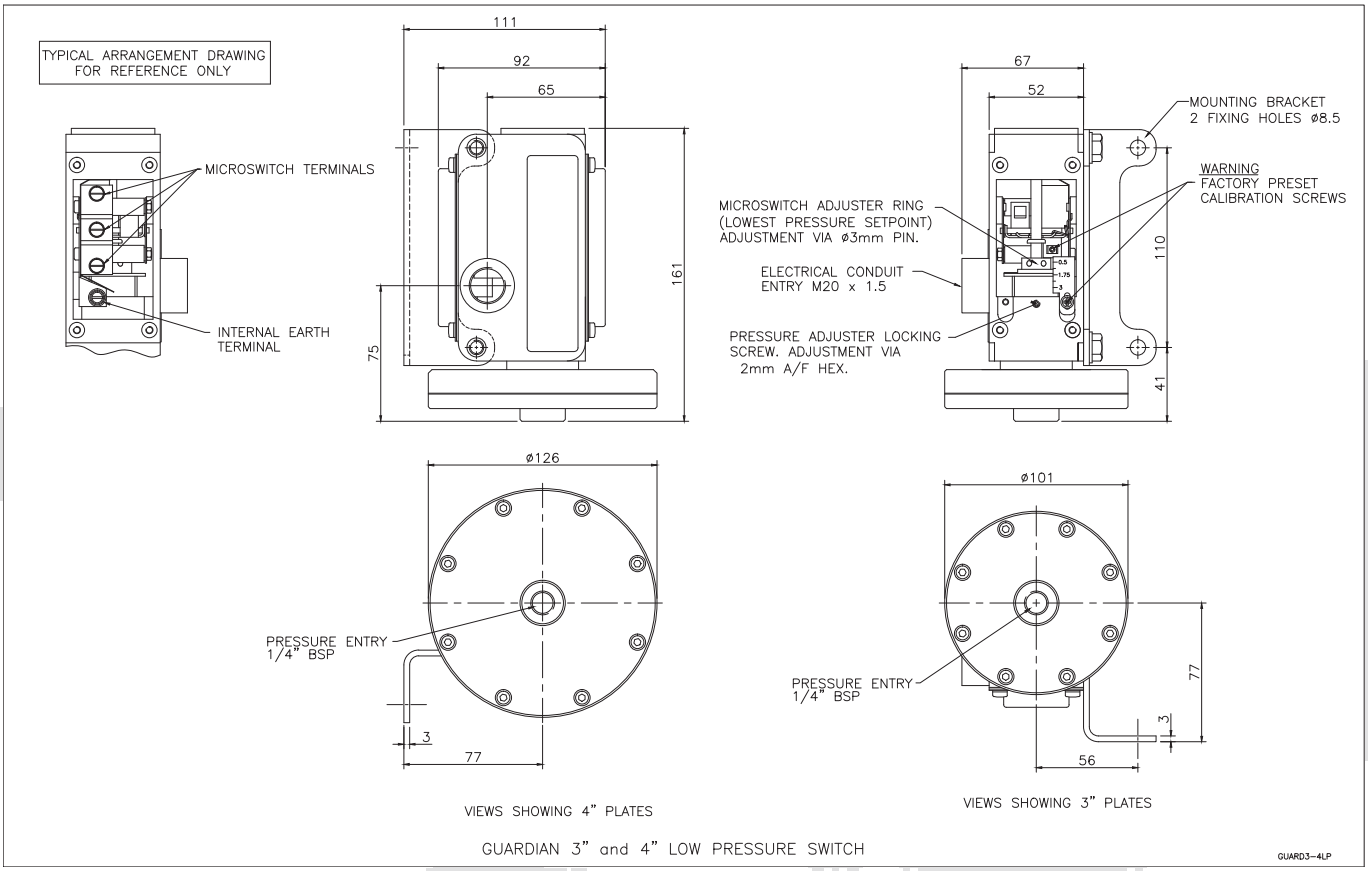
| MICROSWITCH OPTIONS | ADJUSTER | PROCESS CONNECTION TYPE | ELECTRICAL CONNECTION |
|---|---|---|---|
| **01** = SINGLE SWITCH<br>**02** = DUAL SWITCHES<br>**03** = USE 01<br>**04** = USE 02<br>**05** = SINGLE FOR ATEX Exia<br>**06** = DUAL FOR ATEX Exia | **N** = STANDARD ADJUSTER<br>**A** = SECONDARY ADJUSTER FOR DUAL SETTING OR ADJUSTABLE DEADBAND | **1** = 1/4" BSP.P FEMALE<br>**2** = 1/4" NPT FEMALE | **X** = M20 STANDARD<br>**C** = 1/2" NPT FEMALE<br>**F** = M25 FEMALE |

**ADJUSTABLE DEADBAND**
**07** = SINGLE SWITCH - STANDARD
**08** = SINGLE SWITCH - FOR ATEX Exia

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

**0E*** = DUAL HIGH CURRENT DC
**0K*** = DPDT MICROSWITCH
**0M*** = SINGLE HIGH CURRENT DC
*Change **0** to **E** for Exia approval

FOR STAINLESS STEEL SWITCHCASE PREFIX PART NUMBER WITH "S"



# GUARDIAN INDUSTRIAL & ATEX SWITCHES

## INTRODUCTION

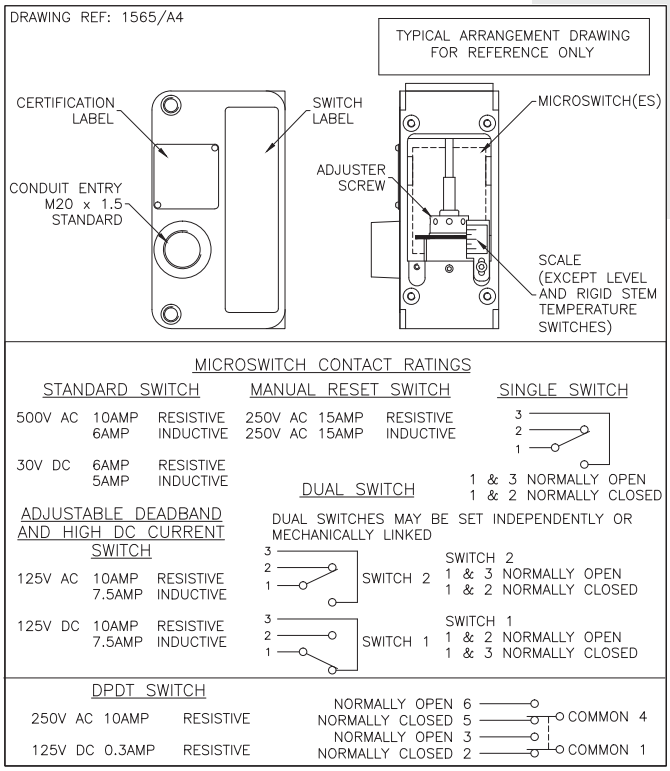
The Guardian pressure, differential pressure, temperature, level and flow switches are a part of our extensive range of specialist process sensors. They utilise the expertise gained from over 50 years experience of designing and manufacturing control devices for industrial, marine and hazardous area 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.