## PERSEUS

## REED LEVEL

## LF60 PERSEUS ATEX/ IECEx Exia \& INDUSTRIAL VERTICAL REED LEVEL SWITCH

This range of magnet operated reed switches are equipped with hermetically sealed reed contacts. The float is fitted with an annular magnet which moves freely between two collars to open or close the reed contacts. As standard the wetted parts are in 316 stainless steel however they can be manufactured from different materials to suit a vast array of applications.

## FEATURES



## REED LEVEL

316 stainless steel or black anodised aluminium switchcase.

## Single or dual float option

ATEX/IECEx Intrinsically Safe II 1D Ex ia IIIC T $135^{\circ} \mathrm{C}$ Da Tamb -50 to $+70^{\circ} \mathrm{C}$

## SPECIFICATIONS

Housing: 316 Stainless steel or black anodised aluminium
Wetted parts: Thread, tube, float and crimps: 316 stainless steel
Float diameter: 28mm
Process connection: 1" BSP.P or NPT with swivel adaptor for positioning
Electrical connection: DIN EN 175301-803-A plug and socket suitable for unarmoured cable, up to 1.5 mm 2 . Cable OD between 4.5 and 11 mm (PG11)

M20 x 1.5 ISO female: 3 terminals suitable for cables upto 1.5 mm 2 .
M12 x 1 Circular socket: 3 contacts, A-coded plug to IEC61076-2-101.
Sealing: 316 stainless steel nitrile bonded seal
Switching level: Specified by customer +/- 5 mm
Switching - SPST (standard) or SPDT. Hermetically sealed reed switch with rhodium contacts. When ordering SPST please state if contacts are to open or close at switching level.

Max. working pressure: 30 Bar (0.82SG)

Max. working temperature: $100^{\circ} \mathrm{C}$
Max. voltage: 240 VAC/30 VDC*
Max. Amps: 0.5 resistive*
Max. power: 10W*

NOTE : DIFFERENCE BETWEEN 'L' AND LOWEST SWITCHINGPOINT IS 40 MM +/- 5MM AS STANDARD. OPTION OF 20MM +/- 5MM IS AVAILABLE FOR VERY LOW SENSING IN TANKS AND SUMPS.
*derated for Exia applications



## PERSEUS ATEX \& IECEx Exd, Exia \&

## INDUSTRIAL SWITCHES

## INTRODUCTION

The Perseus pressure, vacuum, differential pressure, temperature, and level switches are designed for use in environments where explosive gases and dust can be present (e.g. Gas fields, Oil rigs and Chemical plants etc.) and have been ATEX and IECEx certified as detailed overleaf (SIL2 - IEC 61508 proven reliability).

These switches are manufactured from a high quality casting which offers robust construction and protection to IP66 \& IP67 for use within heavily polluted industrial environments. A special feature of the instruments is the separation of the flameproof and adjustment compartments allowing for safe on-site adjustment of the set point with power on and the switch in operation.

Perseus Exd switches must be installed in accordance with BS EN 60079-14

## CALIBRATION

The design features a simple form of adjustment against a calibrated scale. This enables a user to order switches set at a predetermined point or stock a mid range setting and adjust switches to suit the particular application. The set point can be safely adjusted with the switch electrically live. Adjustment is made by removing the access cover and rotating the set point adjuster using a suitable tommy bar or allen key. The setting is read from the centre of the set point adjuster against the scale. Rotation to the left will increase the set point and to the right decrease it.



Perseus Stainless steel switchcase with dual electrical connection option

## TECHNICAL SPECIFICATION

Switchcase \& covers: 316 Stainless steel or black anodised aluminium case and 316 stainless steel adjustment cover.
Microswitch: $1 \times$ SPCO/SPDT or $2 \times$ SPCO/SPDT gold flashed silver contacts. Single switch is available with adjustable deadband option. Dual switches are either mechanically linked to provide DPDT switching action (reset of switches could be up to $3 \%$ apart) or independently adjustable. Microswitches are environmentally sealed as standard, hermetically sealed can be supplied as an option. Dual microswitches may increase deadband by a factor of two.
$\begin{array}{ll}\text { Microswitch rating: } & 5 \mathrm{Amps} @ 250 \mathrm{VAC} \text { resistive, } 2 \mathrm{Amps} @ 250 \mathrm{VAC} \text { inductive } \\ \text { Electrical Connections: } & 5 \mathrm{Amps} @ 30 \mathrm{VDC} \text { resistive, } 3 \mathrm{Amps} @ 30 \mathrm{VDC} \text { inductive } \\ \text { Terminals suitable for cable } 0.5-2.5 \mathrm{~mm}^{2} .\left(\text { Max } 1.5 \mathrm{~mm}^{2} \text { for dual microswitch version) }\right.\end{array}$
Electrical Conduit Entry: One or two M20 x 1.5 ISO. $1 / 2$ " NPT or M25 via adaptors
Environmental Protection: IP66 \& IP67 in accordance with BS EN 60529: 1992 \& IEC 60529 : 2001.
Vibration and shock parameters: Switches were subjected Lloyds Register Test Specification 1, section 13 BS EN 60068-2-6 : 1996 (Test Fc vibration) and BS EN 60068-2-27: 1995 (Test Ea shock).

Temperature Limitations: Pressure, Vacuum and Differential Pressure.
Process: Diaphragm actuated (unless otherwise stated) -30 to $+100^{\circ} \mathrm{C}$ (Nitrile) or -20 to +150 Deg.C (Viton).
Piston actuated -30 to $100^{\circ} \mathrm{C}$ (Nitrile), -20 to $+150^{\circ} \mathrm{C}$ (Viton), -50 to $+150^{\circ} \mathrm{C}$ (PTFE) or -35 to $+100^{\circ} \mathrm{C}$ (EPDM).
Ambient: -40 to $+85^{\circ} \mathrm{C}$.
Storage: -40 to +85 Deg.C (For temperature, level and flow switches please refer to specific pages).
ATEX/IECEx certified Exia Intrinsically Safe-Gas \& dust
II 1G Ex ia IIC T6 ...T2 Ga Tamb - 50 to $+78^{\circ} \mathrm{C} \ldots+93^{\circ} \mathrm{C}$
II 1 D Exia IIIC $\mathrm{T} 135^{\circ} \mathrm{C}$ Da Ta -50 to $+70^{\circ} \mathrm{C}$
Special conditions for safe use. 1) For Ga installations - The equipment may be constructed using aluminium for the housing and internal parts and may only be used when the ignition hazardous assessment shows there is no risk of ignition from incendive impact or abrasion sparks.

Accuracy: $+/-1 \%$ at $20^{\circ} \mathrm{C}$.

Continuous development may result in changes to specification without prior notice

## ABOUT PYROPRESS <br> QUALITY

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, flow and level conditions. 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 accuracy assuring a reliable and consistent quality product.

