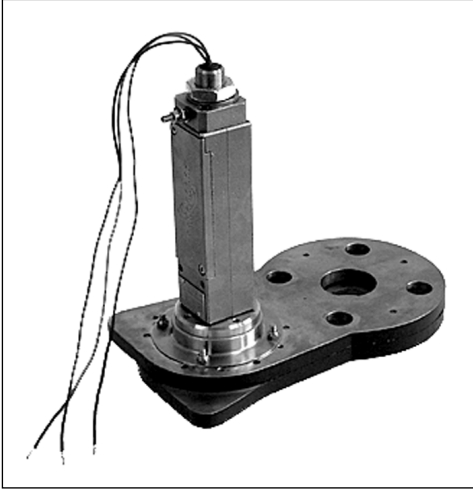


**F510 ARGUS ATEX Exd,  
Exia CERTIFIED &  
INDUSTRIAL FLOW SWITCH**

**FLOW**



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316 stainless steel or PPS engineering polymer switchcase to IP67 standards.

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Pipe sizes 15 - 250mm.

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Easy installation between pipe flanges.

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Single or dual microswitch option.

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**ATEX Flameproof Option**

CE Ⓜ II2G Exd IIC

T6 Tamb -50 to +71°C

T5 Tamb -50 to +86°C

T4 Tamb -50 to +96°C

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**ATEX I.S. Option**

CE Ⓜ II1G Ex ia IIC

T6 Tamb -50 to +78°C

T5 Tamb -50 to +93°C

T4 Tamb -50 to +128°C

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(For resistor certification refer to page 67)

As will be apparent from the illustrations the complete flow switch comprising orifice plate, differential pressure sensitive element and switching mechanism are combined in a single compact assembly which enables easy installation between pipe flanges, models being available for pipe sizes 15 to 250mm diameter.

Each instrument can be provided with one of seven standard orifice ratios which enables a wide range of flow rates to be accommodated.

When using fluids other than fresh water these values will of course alter. It should also be noted that the head loss values are those occurring immediately across the orifice and that up to 50% of this head loss can be recovered by providing at least ten diameters of straight plain pipe either side of flow switch.

Each instrument is tested before despatch and switch set point marked on adjustment scale. If specially ordered this scale can be calibrated to indicate the adjustable range of flow rate in litres, hour or other units of measurement as required.

The accuracy of such calibration will be affected by many external factors such as fluid temperature change, pipe layout etc, but experience has shown this to be within +/-5% for a given set of conditions.

These sensors incorporate a spring loaded pressure sensitive flexible diaphragm, which when deflected by pressure drop across the orifice plate, actuates directly by push rod a snap action S.P.D.T. microswitch at the flow setting selected on the adjustment scale.

Flange casting: Gunmetal, standard, stainless steel or Tufnol Expoxide (Exd & industrial only) material can be provided. Orifice plate: 316 stainless steel or nylon 66. Diaphragm: Nitrile (standard) or Viton.

Maximum working pressure : 12 bar. Maximum working temperature : 100°C

For detailed drawing showing options refer to page 88

For part number breakdown please refer to our sales office



# ARGUS ATEX Exd, Exia & INDUSTRIAL SWITCHES

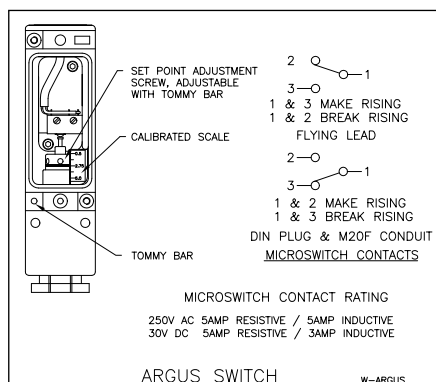
## INTRODUCTION

The Argus pressure, differential pressure, temperature, level and flow switches are designed for use in environments where explosive gases and extremes of both high and low ambient temperature can be present (e.g. Gas fields, Oil rigs and Chemical plants etc.) They have been ATEX certified for CAT 1 CE Ex II1G Exia IIC T6,T5 & T4 and CAT 2 CE Ex II2G Exd IIC T6,T5 & T4.

These switches are manufactured from either PPS (engineering polymer) or high quality investment cast 316 stainless steel both offer a robust construction and protection to IP67 for use within heavily polluted industrial and marine environments. These instruments can be adjusted with the power on and the switch in operation.

## CALIBRATION

The design features a simple form of calibration adjustment against a scale block. This allows users to either order units with a specific setting, or stock a mid range setting and then adjust to suit the application. This can be set safely with the switch supply live. On removal of the adjustment cover the adjusting screw can be turned with the small Tommy bar supplied. The setting is read from the centre of the red indicating ring against the calibrated scale plate. Rotation to the left will increase the set point and to the right decrease the set point. The adjustment mechanism incorporates a friction device to ensure set point will not change under vibration conditions.



## TECHNICAL SPECIFICATION

**Switchcase and covers** : 316 Stainless steel or PPS (Polyphenylene Sulphide) + stainless steel fibres engineering polymer switchcase.

**Environmental Protection** : Switches have been tested and certified by an external test house to IP67 in accordance with BS EN 60529 : 1992.

**Vibration and shock parameters** : Switches have been tested and certified by an external test house to BS EN 60068-2-6 : 1995 (test Fc vibration) and BS EN 60068-2-27 : 1987 (test Ea shock).

**Temperature Limitations** : Pressure, Vacuum and Differential Pressure

**Ambient** : See Exd, Exia or industrial specification on the opposite page.

**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).

**Storage** unless otherwise stated : -60 to +86°C

(For temperature, level and flow switches please refer to specific pages)

**Microswitch** : 1 or 2 SPDT (dual switches mechanically linked to give DPDT)

**Microswitch rating** : 5 Amps @ 250 VAC resistive and inductive

5 Amps @ 30VDC resistive, 3 Amps @ 30 VDC inductive

INDUSTRIAL AND Exia DIN PLUG AND SOCKET OR M20 x 1.5 ISO FEMALE

**Ambient temp** : -40 to +86°C (+125°C special – refer to sales office)

**Electrical Connection** : DIN 43650 plug and socket suitable for unarmoured cable upto 1.5mm<sup>2</sup>. Cable OD between 6 and 9mm (PG11) or M20 x 1.5 ISO female.

Exd & Exia FLYING LEAD CONNECTION

**Ambient temp** : -50 to +86°C (128°C on Exia – refer to sales office)

**Electrical Connection** :

**Exd** – 1 metre of 3 or 6 core 0.75mm<sup>2</sup> silicon insulated flying lead via stainless steel ½” NPT or M20 x 1.5 ISO male threaded conduit gland (part no code R & S) or 1 metre of 6.0mm dia 3 core x 0.75mm<sup>2</sup> silicon insulated cable (part no code A). Longer lead lengths can be specified and a range of Exe certified junction boxes can be supplied fitted and wired direct to the switch. The standard Exe box has an ambient temperature range of -40 to +55°C. Higher temperature can be catered for.

**Exia** - 1 metre of 6.0mm dia 3 core x 0.75mm<sup>2</sup> silicon insulated cable via stainless steel ½” NPT or M20 x 1.5 ISO male threaded conduit gland (part no code R & S) or supplied with no thread (part no code A)

**Certification** : All switches are CE certified and marked in accordance with the following EU directives

**Exd Flameproof** : 94/9/EC ATEX coded CE Ex II2G Exd IIC T6 Ta -50 to +71°C, T5 Ta +86°C, T4 Ta +96°C. (Switches to be installed in accordance with EN60079-14) Special conditions for safe use. The permanently attached cable associated with the apparatus shall be terminated in accordance with EN60079-14. Appropriate overload protection must be provided during installation. (to be ignored if junction box is fitted)

**Exia Intrinsically Safe** (without resistors) 94/9/EC ATEX coded CE Ex II1G Exia IIC T6 Ta -50°C to +78°C, T5 Ta +93°C, T4 Ta +128°C

**Exia Intrinsically Safe** (with resistors) 94/9/EC ATEX coded CE Ex II1G Exia IIC T5 Ta -50°C to +72°C, T4 Ta +122°C

Special conditions for safe use. (Category 1, Zone 0) Aluminium may only be used when the ignition hazard assessment shows that there is no risk of ignition from incensive, impact or abrasion sparks.

**Industrial** : 2006/95/EC (Low voltage directive)

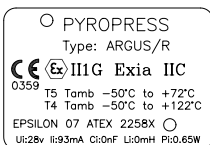
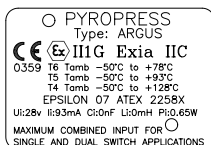
**Accuracy** : +/-1% at 20°C



Exd

Exia

Exia



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