C15 SERIES

# INLINE FLOW SWITCHES

Magnetically actuated flow switches for clean liquids




## FEATURES

- One-piece brass body
- All position mounting
- Diesel-suited model available
- Dry reed switch contacts
- Detects very low flows
- Low head loss design
- Fully serviceable
- Weatherproof

**100 bar**
1450 psi static or dynamic pressure

**30 L/min**
Maximum recommended flow rate

**90 °C**
Maximum liquid temperature (100 °C for short periods)

**50 W/VA**
Dry reed switch 250 VAC / 200 VDC

## OUTLINE

The C15 Series inline flow switches are versatile, magnetically actuated, normally off flow switches that switch on in response to flow. They are ideal for a multitude of clean liquid applications, including pressure boosting and the control of pumps or fans via a relay, contactor or PLC.

The C15 flow switches are supplied with dry reed switch contacts for relay or PLC control. The C15 Series flow switches can be used in many clean liquids, including fresh water, sea water and diesel fuel.

## INSTALLATION

The C15 Series flow switches can be positioned in any orientation in pipework. In vertical piping, flow can be either upward or downward through the switch with very little difference in flow sensitivity.

The C15 flow switches are suitable for use with hot or cold liquids up to 90 °C. Systems can be steam sterilised at 100 °C for short periods without damaging the switch.

## CONSTRUCTION

The C15 Series flow switch consists of a sealed electrical switching module that saddles a one-piece metal body. The self-contained electrical modules fitted to the C15 flow switches are easily removed without disturbing pipework, and can be reversed or rotated independently of the switch body. Within the metal body of the flow switch a free-fitting, magnetically suspended piston actuates the switch as soon as flow starts. The C15 can tolerate static or dynamic pressures to 100 bar (1450 psi) with a 4 to 1 safety factor.

## SWITCH POINT DATA

Switching point and sensitivity to flow depend on the orientation of the switch, liquid velocity, viscosity and piston clearance. To give users as wide a choice as possible, a non-magnetic piston retainer is supplied with the C15 flow switches. With the switch mounted vertically and with flow passing upward through the switch, the non-magnetic piston retainer reduces the switch-on flow rate by a factor of 2. That is, it makes the switch approximately twice as sensitive to flow.

| INSTALLATION | SWITCHING POINT ON A SLOWLY INCREASING FLOW | SWITCHING POINT ON A SLOWLY DECREASING FLOW |
|---|---|---|
| Standard switch (as supplied) installed horizontally or vertically, with the magnetic piston retainer fitted | **0.35** litres per minute | **0.30** litres per minute |
| Switch installed vertically with flow passing upwards through the switch body, and with the non-magnetic piston retainer fitted | **0.15** litres per minute | **0.10** litres per minute |

**NOTE** The data shown in the tables above refers to water at ambient temperature as the test medium. Increasing fluid viscosity will decrease the flow rate required to actuate the switch. Decreasing the fluid viscosity will proportionally increase the switch-on flow rate.

**PLEASE NOTE**

Maximum recommended flow rate through the C15 flow switches is 30 litres per minute.

## HAZARDOUS AREAS

The C15-B and C15-B-D are simple apparatus under AS/NZS 60079.11 and may be used in a hazardous area only as part of an intrinsically safe circuit, connected through suitably certified associated apparatus. They are not Ex certified in their own right. The full conditions of use are given in the installation sheet.

## GENERAL LAYOUT

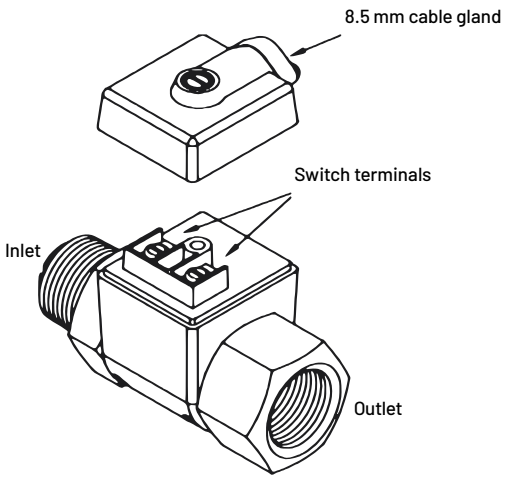



**FIG. 1** C15 Series general layout

## ELECTRICAL DATA

| ELECTRICAL MODULE | MODULE TYPE | CONTACT CONFIGURATION | SWITCHED POWER MAXIMUM | SWITCHED VOLTAGE MAXIMUM | SWITCHED CURRENT RESISTIVE AC (RMS) | INDUCTIVE LOADS (POWER FACTOR 0.4) | TYPICAL APPLICATION |
|---|---|---|---|---|---|---|---|
| B | Dry contact reed switch | S.P.S.T. normally open | 50 W/VA | 250 VAC 200 VDC | 1.5 A maximum | Not suitable | PLC, telemetry and relay logic circuits |

All C15 Series flow switches are single pole, single throw, normally open switches that switch on in response to flow. The model C15-B is suitable for PLC use, data logging, telemetry systems, relay logic circuits, or any light duty control application in either AC or DC circuits.

**NOTE** The C15-B modules do not require de-rating at elevated temperatures.

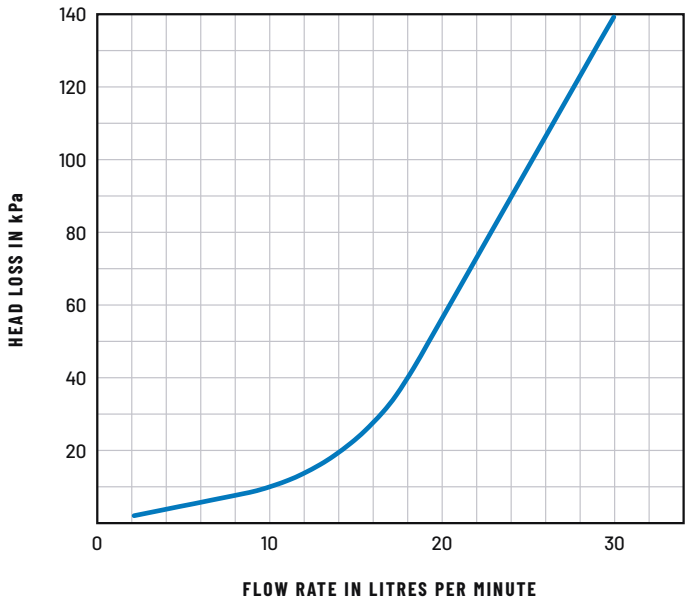
## MODELS

| MODEL CODE | DESCRIPTION |
|---|---|
| **C15-B** | Dry reed switch, S.P.S.T. N.O., 50 W/VA, 250 VAC / 200 VDC, 1.5 A max. Suitable for PLC, telemetry and logic circuits. |
| **C15-B-D** | Diesel-suited dry reed switch, S.P.S.T. N.O., 50 W/VA, 250 VAC / 200 VDC, 1.5 A max. Suitable for PLC, telemetry and logic circuits. |

## ENVIRONMENT

| | |
|---|---|
| Maximum liquid temperature | **90 °C**<br>100 °C for short periods |
| Minimum liquid temperature | **–20 °C** |
| Maximum liquid pressure | **100 bar (1450 psi)** |
| Ingress protection rating | **IP56** |

## HEAD LOSS VERSUS FLOW RATE



## DIMENSIONS

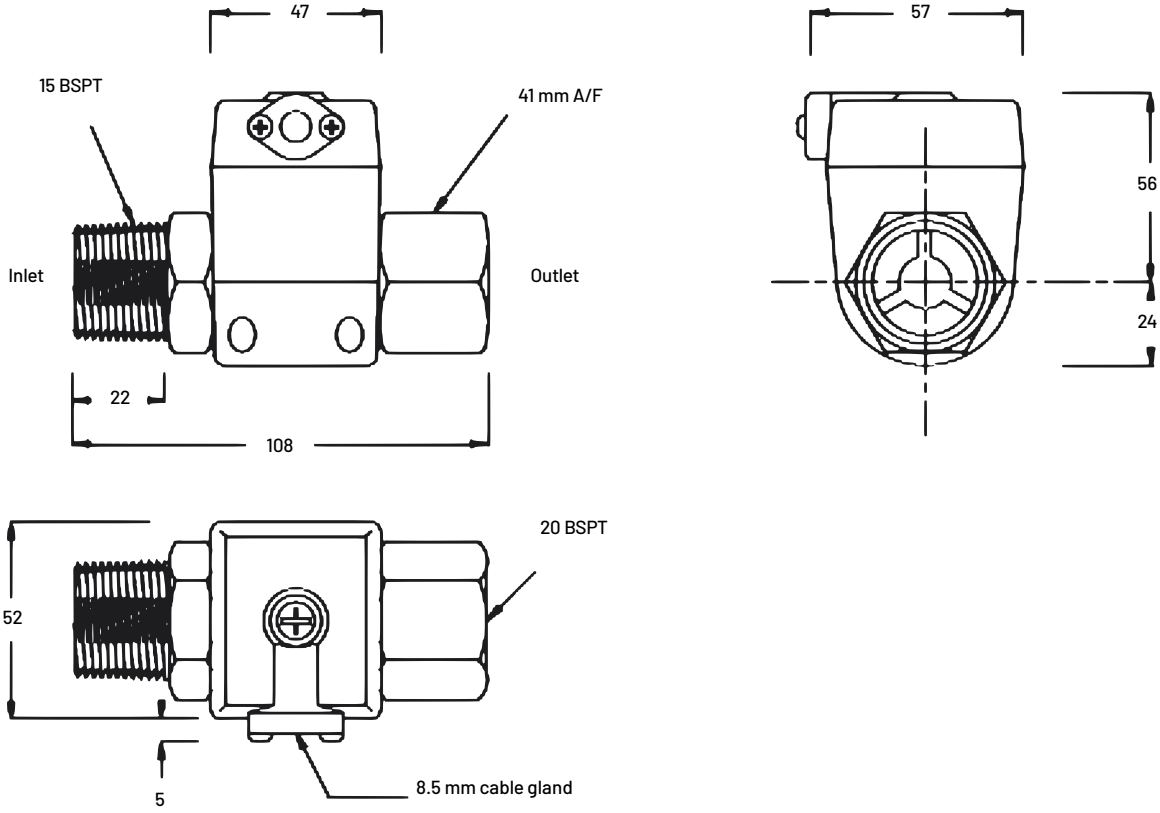



**FIG. 2** Overall dimensions in millimetres

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