UB25 SERIES

INLINE FLOW SWITCHES

Magnetically actuated piston flow switch for 25NB (1") pipework



FEATURES

- Suits 25NB (1") pipes
- Versatile all position mounting
- 200 bar (2900 psi) pressure rating
- Switches at very low flows
- IP67 weatherproof housing
- Solid machined 316 stainless metal body
- High flow through rating
- Handles liquids up to 90 °C

200 bar
2900 psi maximum operating pressure

1.5 L/min
Switching point on a slowly rising flow

90 °C
Maximum liquid temperature

IP67
Weatherproof electrical housing

OUTLINE

The UB25 Series inline flow switches are magnetically actuated piston style sensors that switch in response to very low fluid flows. They are ideal for all types of pressure boosting pump control and for the control of commercial or domestic hot and cold water systems. They find application in monitoring industrial safety showers and in many applications where extreme reliability is paramount. The UB25 Series flow switches are also ideal for constant pressure pump control.

CONSTRUCTION

The body of the UB25 Series flow switches is machined from solid stainless steel. The piston is glass reinforced polypropylene (nylon on Dieseline -D models). The piston return mechanism and the electrical switching action within the switch are achieved using high power magnets operating through the solid body of the switch.

The electrical housing is hose-proof & weatherproof, and is supplied with a 20 mm cable gland, for conduit or cable entry. The switch has a 25 mm 1" BSPT male inlet and 1" BSPT female outlet. Three electrical modules are available to suit the UB25 flow switch. Details of these options are set out in the Electrical Data table on page 3.

APPLICATIONS

- Hot and cold water pressure boosting
- Gravity hot water system control
- Hot water circulation actuation
- Safety shower alarm sentinel
- Wash down pump control
- Solar hot water control
- Mains pressure boosting

OPERATING PRINCIPLE

The metal body of the UB25 Series flow switches houses a free sliding piston. Any flow, either pulsed or continuous, causes the piston to be pushed back within the switch body to a point where liquid can pass around it and out of the switch. When pushed back by flow, the piston actuates a magnetically linked switch.

When flow stops, the piston is pushed back to the off position by magnetic repulsion. There are no springs in the wet area of the switch, and the magnetically isolated piston provides an exceptionally reliable mechanism. The UB25 flow switches can be mounted in any orientation including upside down, in either horizontal or vertical pipework.

ORDERING

Build your part number from the codes below – for example **UB25-B-D**.

UB25	–	B	–	D

SERIES

UB25 Series inline flow switch

SWITCH MODULE

- **B** S.P.S.T. N.O. reed switch
- **C** S.P.D.T. break before make reed switch
- **R** S.P.S.T. N.O. solid state relay

MODEL

- **Blank** Standard
- **D** Dieseline model

DIMENSIONS

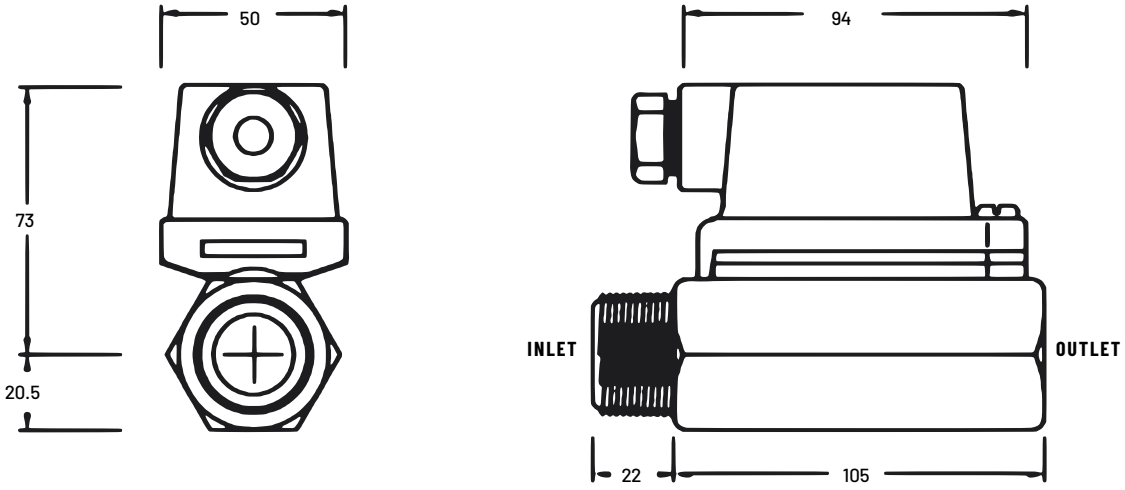


FIG. 1 UB25 flow switch, 25 mm 1" B.S.P. M to F thread. Dimensions in millimetres

ELECTRICAL DATA

MODEL	MODULE TYPE	CONTACT CONFIGURATION	SWITCHED POWER MAXIMUM	SWITCHED VOLTAGE MAXIMUM	SWITCHED CURRENT RESISTIVE AC (RMS) MAXIMUM	INDUCTIVE LOADS (POWER FACTOR 0.4)	TYPICAL APPLICATION
UB25-B	Dry reed switch	S.P.S.T. N.O.	50 W	250 VAC 200 VDC	1.5 A	Not suitable	PLC and general control circuits
UB25-C	Dry reed switch	S.P.D.T. break before make	20 W	140 VAC 150 VDC	1 A	Not suitable	PLC control and safety showers
UB25-R	Solid state relay	S.P.S.T. N.O.	740 W	12 to 240 VAC	4 A continuous (spike to 15 A)	4 A at 240 VAC	AC control circuits and AC motor control

OPERATING PARAMETERS

The UB25 Series flow switches are supplied standard fitted with a magnetic piston retainer that allows the switch to be oriented in any required position in pipework. In vertical pipework flow can be either upward or downward through the switch.

In addition to the standard magnetic piston retainer, a non-magnetic piston retainer is also supplied with each switch. When the non-magnetic piston retainer is fitted to the switch, the switch must be oriented vertically with flow passing upward through its body. When set up this way the flow rate required to actuate the switch will be approximately 6.5 times lower than it is with the magnetic piston retainer fitted. The non-magnetic piston retainer is commonly used to enhance the sensitivity of the switch in gravity head applications such as boosting water pressure in gravity fed hot water systems.

The table below sets out the main operating limitations of the UB25 Series flow switches.

PARAMETER	AS SUPPLIED (STANDARD, WITH MAGNETIC PISTON RETAINER FITTED)	WITH NON-MAGNETIC PISTON RETAINER FITTED
Switching point on a slowly rising flow ±15%	1.5 L/min	0.23 L/min
Switching point on a slowly falling flow ±15%	1.2 L/min	0.18 L/min
Minimum gravity head required to actuate the switch	1.5 metres	
Maximum recommended continuous flow (water)	100 L/min	
Maximum recommended operating pressure, static or dynamic	**200 bar** 2900 psi	
Minimum burst pressure	**400 bar** 5800 psi	
Maximum liquid temperature	**90 °C**	
Minimum liquid temperature	**–20 °C**	
Ingress protection rating (weatherproof rating)	**IP67**	

HEAD LOSS DATA

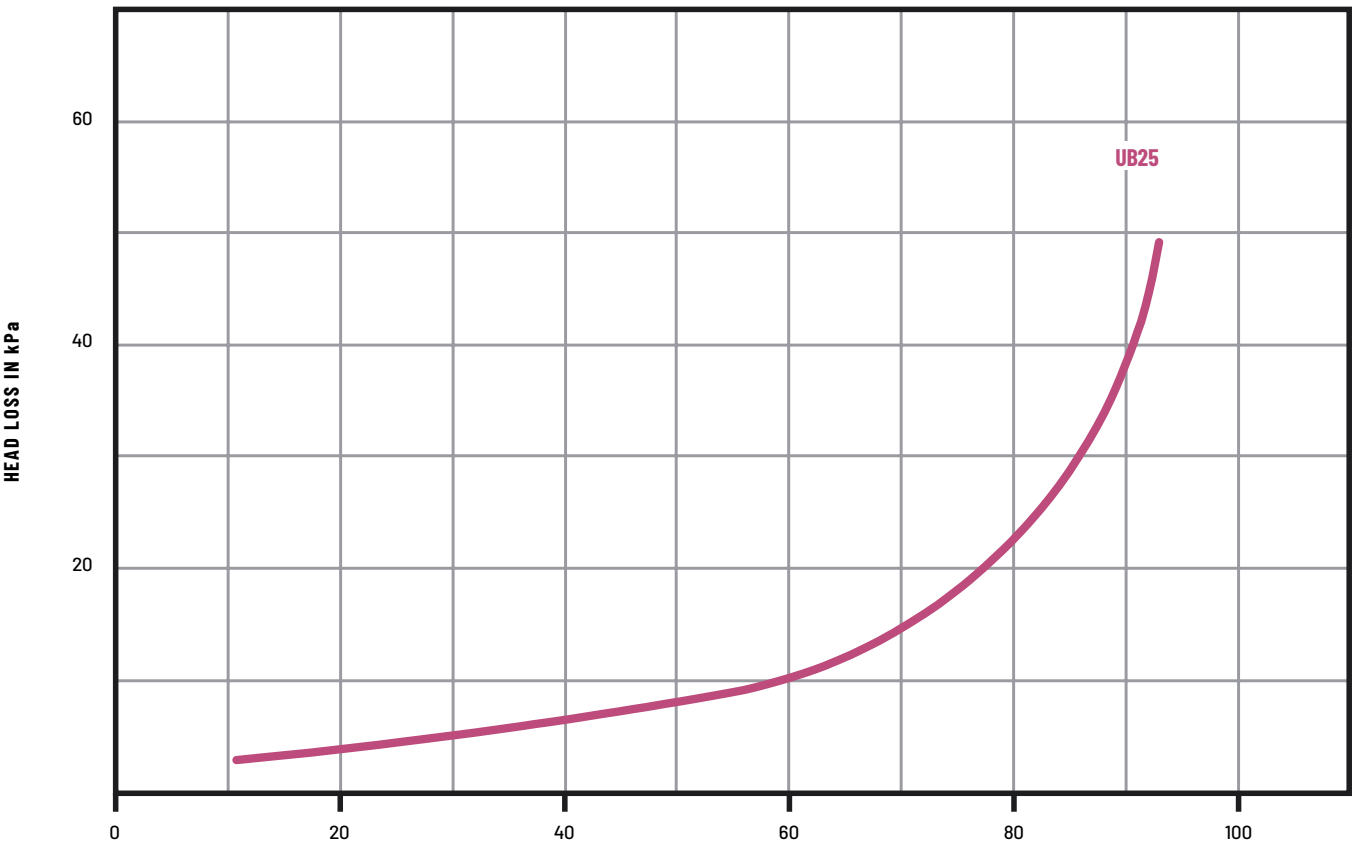


FIG. 2 Head loss through the UB25 flow switch

HAZARDOUS AREAS

The UB25-B and UB25-C (including -D models) 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.

The UB25-R and UB25-R-D are not certified for use in hazardous areas and must not be installed in any area classified as hazardous under AS/NZS 60079.10 (Zone 0, 1, 2, 20, 21 or 22).

Kelco Engineering Pty Ltd

ABN 20 002 834 844

HEAD OFFICE & FACTORY
9/9 Powells Road
Brookvale NSW 2100, Australia

POSTAL ADDRESS
PO Box 7485, Warringah Mall
Brookvale NSW 2100, Australia

SALES ENQUIRIES
sales@kelco.com.au
www.kelco.com.au

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