How to Choose the Right Flow Switch

PVL supplies a comprehensive selection of switches that can be used to monitor the flow of various media, which fall into several different types. Paddle flow switches are used for large line sizes, while piston types are designed for low flow rates in gases and liquids.

Paddle Flow Switches

PVL has a large collection of paddle flow switches, all of which are made from robust materials.

The UR1-G Paddle Type Flow Switch is made by Honsberg and uses the principle of a spring-supported paddle and the magnetic triggering of a reed switch. The compact design ensures low pressure loss and it is predominantly used to monitor the flow of water, although versions that work well with oils, gases and aggressive media are available on request.

This product is made from brass or stainless steel. There is an ATEX option, which means the device can operate in explosive environments.

Piston Flow Switches

PVL's piston flow switches come in many shapes and sizes and there are significant variations in terms of price. The basic principle involves a piston, encapsulating a permanent magnet, which is positioned in the flow path. When displaced by the pressure differential from fluid flow, this piston actuates a reed switch. A spring allows the piston to return as flow decreases. The reed switch can be used to operate remote alarms or indicators.

At the lower end of the PVL range, the 615 & 622 DIY Flow Switch costs under £50, and is supplied complete with compression fittings. It is WRAS-approved and is ideal for domestic applications such as showers and water pumps.

The TZ1...GK Type Flowmeter is dirt resistant, offers good repeatability and is easy to adjust. This product is at the other end of the price spectrum and costs around £780. This is a highly accurate, magnet-operated flow meter with a large analog display. It is mainly used to monitor the flow of water, but a version can be used with oils and more aggressive media.

Variable Area Flow Switches

Variable area flow switches are based on the principle of flow raising a float in a tapered tube, increasing the area for passage of the fluid flow. The float will reach a stable position when the force exerted by the flowing fluid plus the buoyancy equals the gravitational force. A change in flow rate upsets the equilibrium and the float will move up or down until it reaches a new position of equilibrium.

Variable area flow switches have numerous applications and are commonly used in biogas plants, welding equipment and flow display of spindles. They provide good repeatability, are highly accurate and can be used with liquids and gases.

The UK-020 Variable Area Flow Meter is calibrated for use with carbon dioxide, argon and helium. It features a conical measuring tube, making it easy for users to obtain accurate readouts. Made from brass or stainless steel, this device has been built to last.
An alternative is the **GK-010 Meter**. It can handle pressures up to 16 bar and features PVC or cast iron connections. The GK-010 Meter has a large, easily visible scale and a set point indicator.

### Flow Switches for Oil

Spillages of oil can not only cause environmental damage, but they can also lead to fines and potentially costly downtime. This is why devices that can monitor the flow of oil are so valuable. Many of PVL's flow switches can be used with oil.

The GHM Group’s **FW4V Flow Switch** has a compact design and is viscosity stabilised. With bidirectional flow switching, this product has a temperature range of -20 to 90°C.

The **HD1K/ HD2K Piston Type Flow Switch** is also made by the GHM Group. The device has high switching power and can withstand temperatures up to 120°C. As well as oil, it works with water and a version is available that can handle aggressive media and gases. Most importantly, this product comes with a premium ATEX option, which delivers accurate results in explosive environments.

### High Temperature Flow Switches

There is growing demand for devices that can cope with extreme heat. The **TX Flow Indicator** with Switch is suitable for use in temperatures up to 350°C & can withstand up to 40bar system pressure. It is insensitive to dirt and is highly reproducible. The product is best used with water, but a version is available that also monitors the flow of oil.

**MR Flow Switch** is perhaps a more suitable option for applications not requiring such a high temperature threshold. With a compact design and high switching power, this mechanical flow switch has a temperature range between -20 and 120°C. It can be used with water, gases, oil and aggressive media and has a female thread.

### High Pressure Flow Switches

The **FW1-GM Flow Switch** is a good option, as not only does it boast pressure resistance of PN 100 (PN 800 available on request), it has been designed to be as economical as possible. The device is also insensitive to dirt and has a temperature range between -20 and 90°C.

The **RVM008 Piston Type Flow Switch** is also adept at providing accurate flow readings in high pressure environments where the flow rates are low. It has a temperature range between -20 and 100°C, although a version stretches this to 160°C.

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**For Further Information:**
Telephone: +44 (0) 1892 664499  
Fax: +44 (0) 1892 663690  
Email: sales@pvl.co.uk  
www.pvl.co.uk