

Performance in. Water out.

Honeywell's MICRO SWITCH™ V15W Series of watertight basic switches deliver reliable performance across industries.

Introduction

The need for reliable, watertight basic switches is nearly impossible to measure. It spans industries and countless applications where concerns of spillage or water could occur, potentially interfering with product performance.

As a result, watertight basic switches are an important component in design engineers' and operations managers' specification 'toolbox.'

Watertight switches can be found in off-road vehicles such as ATVs, golf carts, lawn mowers, and snowmobiles; construction and agricultural machinery like mini excavators and light tractors; industrial equipment such as factory floor wash-down machines; medical apparatuses such as hospital beds, dental chairs and foot pedals; and many more applications.

Riding lawn mowers prove a classic example. If a switch fails due to moisture, the mower may not shut down as designed when the operator leaves the seat.

Another example lies in an industry where water is both a friend and an enemy: the marine industry. Marine systems such as transmissions, propellers, throttles, surface drives, and the like, must operate reliably despite getting wet, and often in harsh environmental conditions. Every part used in these systems must be water-ready. For example, a throttle system needs a long-life, watertight switch that controls the position of the throttle arms during all phases of motor control. It must offer a sealed design to withstand the wettest, harshest conditions and ample electrical capacity to provide trouble- and worry-free boating. Reliability is not an option; it is an absolute must.

"Watertight basic switches work well because they are space-efficient switches with excellent water seal and dust ingress performance," says Tom Werner, Honeywell Sensing and Control product marketing manager, Basics Switch line. "Plus, our switches feature a reliable, snap-action design that is backed by nearly 80 years of experience. It's simply a proven technology."



Snap-action technology utilizes a plunger and spring. Pent up energy increases in the spring as the plunger is depressed. When the plunger cannot hold the energy anymore, it is released through the movement of the spring. The technology was first developed in 1932, has been perfected and enhanced through the years, and remains a best-seller when it comes to switch technology. Its simplicity in design allows great flexibility and reliability.

Choosing a watertight switch

Just as the applications requiring watertight switches run the gamut, the options in this switch technology also varies. When looking for the right watertight switch for an application, design engineers should thoroughly understand the environments and parameters the switch will need to operate. For example, there are multiple IP watertight seal ratings available. It's important to determine just how 'wet' the operating conditions will — or potentially will — be in an application environment.

Switches also come in varying sizes from standard, to miniature, to subminiature, to ultra subminiature. This flexibility allows for affordable, standard choices that will meet most application needs. Some switches also offer a variety of actuators, terminations, circuitry configurations, electrical ratings, contact materials, and operating characteristics. All are important features and choices that make watertight basic switches flexible for multiple applications.

Construction of the switch is also vital to ensure durability and quality standards. You want a product designed for repeatability and enhanced product life, no matter the application. The materials used in its construction make a difference in switch longevity.

The switch manufacturer is another important factor to take into account. Look for a company with a reputable track record with a quality, reliable product line. Experience and a long-standing, proven product line means you get a supplier that will stand behind the product.

For example, Honeywell's MICRO SWITCH™ Watertight Basic Snap-Action Switches are part of a strong legacy of basic switch products. They provide the reliability, value, quality, and the flexibility to adapt to various environments and applications, and utilize technology and experience that has been demonstrated time and again. In fact, Honeywell switches are industry leaders in quality and engineering support.



**MICRO SWITCH™ V15W
Watertight Basic Switches**

Specifically, Honeywell's watertight ZW and ZD Series subminiature basic switches are fully configurable and include a wide variety of actuators, terminals, and electrical and operating characteristics. They offer repeatable, reliable and consistent performance within a broad range of conditions, meeting UL/ENEC standards and offering an IP67 watertight seal rating. Able to operate within a variety of difficult environmental conditions, the watertight switches are available in three options for protection: sealed plunger, dust-tight (with epoxy seal on terminals) and pre-leaded.



**MICRO SWITCH™ ZD & ZW
Watertight Basic Switches**

The MICRO SWITCH™ ZD Series feature single pole double throw (SPDT) circuitry. Used for simple or precision on/off application needs, the ZD Series combine small size and light weight with ample electrical capacity, low cost and long life. Potential applications include automotive, truck, and boat wire harnesses; throttle controls; indicator lights; sub-assemblies for convertible roofs; electrical parking brakes; lock modules for tailgate/trunk; tank and hood latch detection; and applications where a pre-wired, sealed on/off switch is required.

The MICRO SWITCH™ ZW watertight switch features SPDT or single pole single throw (SPST) circuitry. It is built with PBT polyester housing material, proven to withstand many of the harshest of environments. Potential applications include appliances, timing devices, office equipment, test instruments, communications equipment, valves, and more.

More information on Honeywell's MICRO SWITCH™ ZD Series of ultra-subminiature switches or the MICRO SWITCH™ ZW Series of subminiature switches can be found at <http://sensing.honeywell.com>.