

# Basic Switches

## Definitions of Terms

**Actuator** – Mechanism of the switch or switch enclosure which operates the contacts.

**Auxiliary Actuator** – A mechanism, sold separately, to provide basic switches with easier means of operation and adjustment and adapt switches to different operating motions by supplying supplemental overtravel.

**Basic Switch** – A self-contained switching unit. It can be used alone, gang-mounted, built into assemblies or enclosed in metal housings.

**Bifurcated Contacts** – A movable contact, generally gold plated, which is forked to provide two contact mating surfaces in a parallel, for more reliable contact.

**Break** – To open an electrical circuit.

**Break Distance** – The minimum open gap distance between stationary and movable objects.

**Characteristics** – This term is used by MICRO SWITCH in a restricted sense and refers only to switch operating characteristics such as pretravel, operating force, etc.

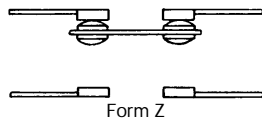
**Circuit** – The contact arrangement with switch actuator and contacts in their normal position.

**Dead break** – Exists in all mechanical switches. Definition: When the switch plunger is being depressed, dead break is non-contact immediately before the plunger reaches the operating point. When the switch plunger is being released, dead break is non-contact immediately before the plunger reaches the release point. Dead break is expressed in distance of plunger travel during which the non-contact occurs. Manufacturing specifications for most BZ/BA basic switches allow a maximum dead break of 0.00005 in. (0,001 mm) measured at the switch plunger. Switches are evaluated while moving the plunger with the switch installed in a 10 VDC, 0.100 ampere circuit. This specification does not apply to switches that have been in service or have not received proper handling or storage. For applications sensitive to dead break, call Freeport for information on applicable electrical and mechanical conditions.

**Dead make** – When the switch plunger is being depressed, dead make is non-contact immediately after the plunger reaches the release point. Dead make is expressed as the distance of plunger travel during which the non-contact occurs.

**Non contact** is a failure of open contacts to close (that is, the switch resistance exceeds the specified value) within the specified range of plunger positions. If a plunger position is specified with respect to time, a non-contact is a contact miss.

**Double Break Contacts** – (Twin break). This breaks the circuit in two places. Referred to as form Z circuitry also.



**Double-Pole Double-Throw (DPDT)** – Switches which make and break two separate circuits. This circuit provides a normally open and normally closed contact for each pole.

**Enclosed Switch** – A basic switch unit (contact block) enclosed in a durable metal housing. The enclosure protects the switching unit, provides mounting means, and fitting for conduit connection.

**Environment-Proof Switch** – A switch which is completely sealed to ensure constant operating characteristics. Sealing normally includes an "O" ring on actuator shaft and fused glass-to-metal terminal seals or complete potting and an elastomer plunger-case seal.

**Explosion-Proof Switch** – A UL listed switch capable of withstanding an internal explosion of a specified gas without igniting surrounding gases.

**Hermetically Sealed Switch** – A switch completely sealed to provide constant operating characteristics. All junctures made with metal-to-metal or glass-to-metal fusion.

**Magnetic Blow-Out Switch** – Contains a small permanent magnet which provides a means of switching high d-c loads. The magnet deflects arc to quench it.

**Maintained Contact Switch** – Designed for applications requiring sustained contact after plunger has been released, but with provision for resetting.

**Make** – To close or establish an electrical circuit.

**Momentary Switch** – A switch with contacts that return from operated condition to normal condition when actuating force is removed. Unless otherwise stated, all switches in this catalog are momentary.

**Mounting Dimensions** – All dimensions on the mounting dimension drawings in this catalog are subject to change without notice. Request current drawings from the nearest MICRO SWITCH Sales Office or write to Freeport.

**Normally Closed Contacts (N.C.)** – Provide a normally closed circuit when actuator is in free position.

**Normally Open Contacts (N.O.)** – Provide a normally open circuit when actuator is in free position.

**Precision Snap-Acting Switch** – An electromechanical switch having predetermined and accurately controlled characteristics, and having a spring loaded quick make and break contact action.

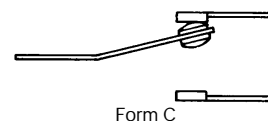
**Projection Contacts** – A design in which one or more truncated projections are arranged on the stationary contacts. When closed on the smooth, spherical surface of the opposing contact this configuration tends to break thru oxides and other film contaminants to avoid the particulate contaminants. Used with silver contacts, this design can be a useful substitute for the more expensive gold or gold alloy contact material.

**Pulse Switch** – Provides a single pulse of current for each cycle of operation.

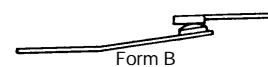
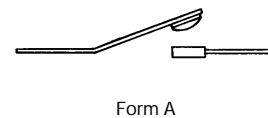
**Quick Connect Terminal** – A plug-in type terminal designed for quick switch wiring.

**Repeatability** – Ability of a switch to repeat its characteristics precisely from one operation to the next operation.

**Single-Pole Double-Throw (SPDT)** – Switch which may either make or break a circuit, depending on how it is wired. Also referred to as form C circuitry.



**Single-Pole Single-Throw (SPST)** – Switch with only one moving and one stationary contact. Available either normally open (N.O.) also referred to as form A circuitry; or normally closed (N.C.) also referred to as form B circuitry.



**Terminal Enclosure** – A housing that fits over switch terminals to protect against electrical shock and accidental shorting, and facilitate wiring.

**Two Circuit Switch** – In one position, moving contacts complete one circuit, in the other position, contacts complete another separate circuit.