

IP Ratings

The **IP (International Protection, also interpreted as Ingress Protection)** Rating System provides a means of classifying the degrees of protection from dust, water and impact offered by various electrical equipment and enclosures.

As defined in International Standards, it classifies the degrees of protection provided against the intrusion of solid objects (including body parts like hands and fingers), dust, accidental contact and liquids (such as water or moisture) in enclosures.

The standard aims to provide users with more detailed information than vague marketing terms such as “waterproof”.

The digits indicate conformity with all of the conditions summarised on the following page.

IP

“Ingress Protection”

6

**First Digit:
Solids Protection**

8

**Second Digit:
Liquids Protection**

IP68

**No Ingress of Dust – Complete Protection Against Contact
Suitable for Continuous Immersion Beyond 1M**

First Digit: Solids

Level	Object Size (Protected Against)	Effective Against...
0	Not Protected	No protection against contact and ingress of objects
1	>50mm	Any large surface of the body, such as the back of the hand, but no protection against deliberate contact with a body part
2	>12.5mm	Fingers or similar objects
3	>2.5mm	Tools, thick wires etc.
4	>1mm	Most wires, screws, etc.
5	Dust Protected	Ingress of dust is not entirely prevented, but it must not enter in sufficient quantities. Complete protection against contact
6	Dust Tight	No ingress of dust with complete protection against contact

Second Digit: Liquids

Level	Object Size (Protected Against)	Effective Against...
0	Not Protected	No protection against contact and ingress of objects
1	Dripping Water	Dripping water (vertically falling drops) shall have no harmful effect
2	Dripping Water (When tilted up to 15°)	Vertically dripping water shall have no harmful effect when the enclosure is tilted at an angle up to 15° from normal position
3	Spraying Water	Water falling as a spray at any angle up to 60° from vertical shall have no harmful effect
4	Splashing Water	Water splashing against the enclosure from any direction shall have no harmful effect
5	Water Jets	Water projected by a nozzle (6.3mm) against an enclosure from any direction shall have no harmful effects
6	Powerful Water Jets	Water projected in powerful jets (12.5mm nozzle) against an enclosure from any direction shall have no harmful effects
7	Immersion (Up to 1M)	Ingress of water in harmful quantity shall not be possible when the enclosure is immersed in water under defined conditions of pressure and time (up to 1M of submersion)
8	Immersion (Beyond 1M)	Suitable for continuous immersion in water under conditions specified by the manufacturer. Normally referred to as hermetically sealed.