

IP Ratings (Ingress Protection):

An IP (Ingress Protection) Rating is a two-digit number established by the International Electrotechnical Commission which is used to denote the degree of protection against external environmental conditions incorporated in a piece of electronic equipment or to an enclosure for electronic equipment.

The protection class after EN60529 are indicated by short symbols that consist of the two code letters IP and a code numeral for the amount of the protection.

Example: IP65 (NEMA 4)

The two digits represent different forms of environmental influence:

- The first digit represents protection against ingress of solid objects
- The second digit represents protection against ingress of liquids

The larger the value of each digit, the greater the protection. As an example, a product rated IP54 would be better protected against environmental factors than another similar product rated as IP42.

IP ratings:

| | First digit: Ingress of solid objects | Second digit: Ingress of liquids |
|----------|--|--|
| 0 | No protection | No protection |
| 1 | Protected against solid objects over 50mm e.g. hands, large tools. | Protected against vertically falling drops of water or condensation. |
| 2 | Protected against solid objects over 12.5mm e.g. hands, large tools. | Protected against falling drops of water, if the case is disposed up to 15 from vertical. |
| 3 | Protected against solid objects over 2.5mm e.g. wire, small tools. | Protected against sprays of water from any direction, even if the case is disposed up to 60 from vertical. |
| 4 | Protected against solid objects over 1.0mm e.g. wires. | Protected against splash water from any direction. |
| 5 | Limited protection against dust ingress. (no harmful deposit) | Protected against low pressure water jets from any direction. Limited ingress permitted. |
| 6 | Totally protected against dust ingress. | Protected against high pressure water jets from any direction. Limited ingress permitted. |
| 7 | N/A | Protected against short periods of immersion in water. |
| 8 | N/A | Protected against long, durable periods of immersion in water. |