

Ingress Protection (IP)

Ingress protection for Low Voltage Enclosures is defined by the European Standard IEC 529 as a code comprising 2 letters (IP) and 2 digits.

The first digit (between 0 and 6) indicates the degree of protection provided with respect to the equipment contained in the enclosure.

The second digit (between 0 and 9) indicates the degree of protection with respect to the harmful effects of liquid penetration.

Since the definitions are different, there is no exact equivalence between European IP Ingress Protection ratings, and North American NEMA ratings.

1st digit

IP	Description
0	No protection
1	Protection against solid objects greater than 50mm
2	Protection against solid objects greater than 12.5mm
3	Protection against solid objects greater than 2.5mm
4	Protection against solid objects greater than 1.0mm
5	Protection against penetration of dust
6	Dust-tight

2nd digit

IP	Description
0	No protection
1	Protection against dripping water
2	Protection against dripping water when tilted up to 15°
3	Protection against spraying water
4	Protection against splashing water
5	Protection against water jets
6	Protection against heavy seas
7	Protection against the effects of immersion
8	Protection against submersion
9K	Protection against high pressure, high temperature liquid (80°C) or steam

Example: an enclosure rated **IP54** is protected against penetration of dust, and against splashing water.