

Technical Guide – IP Ratings

On some product descriptions, you may see an IP rating. This rating, in accordance with IEC standard EN60529, classifies and rates the degree of protection provided against the intrusion of solid objects (like tools, dust or fingers) and water ingress in respect of electrical equipment enclosures.

The rating usually consists of a two digit number where the first number represents the solid particle ingress protection level and the second digit represents moisture ingress protection level. Whilst some product descriptions such as ‘waterproof’, ‘weather resistant’, ‘splashproof’ etc can be subjective, the IP rating gives a clear indication of resistance to particles and moisture. If either of the digits are unavailable, it is replaced by an ‘x’.

For example, a loudspeaker to be used outdoors in an exposed location would need to be at least IP64. One in a clean room which needs to be hosed down should be at least IP66.

There is sometimes a 3rd digit included in the IP rating - this relates to protection against impact and is rarely used. Values range from 1 (resists impact of weights up to 150g falling from 15cm) to 9 (resists impact of weights up to 5kg falling from 40cm).

1st Digit	Solid Particle Protection
0	No protection
1	Protection from a large part of the body such as a hand (but no protection from deliberate access); from solid objects greater than 50mm in diameter
2	Protection against fingers or other objects no greater than 80mm in length & 12.5mm diameter
3	Protection from entry by tools, wires, etc., with a diameter or thickness greater than 2.5mm
4	Protection from entry by solid objects with a diameter or thickness greater than 1.0mm
5	Limited ingress of dust permitted
6	Dust tight.

2nd Digit	Liquid Ingress Protection
0	No protection
1	Protection from vertically dripping water
2	Protection from vertically dripping water when the enclosure is tilted up to 15 degrees
3	Protected against sprays of water to 60 degrees from the vertical
4	Protected from water splashed from all directions – limited ingress permitted
5	Protected from low pressure jets of water from all directions - limited ingress permitted
6	Protected from strong jets of water from all directions - limited ingress permitted
7	Protected against the effects of immersion between 150mm and 1m
8	Protected against continuous submersion at a specified depth