IP Rating Protection Guide

An IP Rating classifies the degree of protection provided against intrusion. Intrusion can be caused by elements such as dust, water and accidental contact.

The IP Rating of a product is worked out from 2 variables; solid protection and liquid protection.

» **Solid particle protection** - This is the first number in the rating code, IP**1**X (highlighted number is relevant for solid protection) and classifies the protection against solid objects. The solid particle protection has 6 possible variants, ranging from 1 - 6. The higher the solid IP rating number, the more protection the product has against smaller solid objects (e.g. a rating of 1 would have protection against human contact, whereas a rating of 6 would have protection against contact with dust as well as human contact). The second number in the rating IP1**X** (highlighted number) is the liquid particle protection. This number doesn't effect the solid particle protection.

» **Liquid particle protection** - This is the second number in the rating code, IPX**0** (highlighted number is relevant for liquid protection) and classifies the protection against liquids. The liquid particle protection has 9 possible variants, ranging from 0 - 8. The higher the liquid IP rating number, the more protection the product has against larger amounts of water (e.g. a rating of 0 would have no protection against water, whereas a rating of 8 would have protection against being immersed under water for a long period of time). The first number in the rating IP**X**0 (highlighted number) is the solid particle protection. This number doesn't effect the liquid particle protection.

The IP rating of your product is application driven, therefore when purchasing a product you should strongly consider where your product will be used and what specifications you have.

» **Solid particle protection example** - If your product is going to be used in a factory application you will need the highest protection against solids, therefore your product would need a rating of IP**6**X (highlighted number is relevant for solid protection). This rating gives your product the highest protection against solids, meaning your product will be prevented from intrusion during use.

» **Liquid particle protection example** - If your product is going to be used in an underwater enviroment you will need the highest protection against liquids, therefore your product would need a rating of IPX**8** (highlighted number is relevant for liquid protection). This rating gives your product the highest protection against liquids, meaning your product will be prevent from intrusion during use.

Solid Particle Protection - Protection against solid objects
The solid particle protection has a colour key of red. Ranging from 1 - 6, 1 is the lightest colour and 6 is the darkest colour. The darker the key, the more protection the product has against solid particles.

IP10
1 - Protected against solid objects over 50mm (e.g. accidentally touched by hands)
0 - No protection

IP20
2 - Protected against solids objects over 12mm (e.g. touched by fingers)
0 - No protection

IP30
3 - Protected against solids objects over 2.5mm (e.g. tools and wires)
0 - No protection

IP40
4 - Protected against solids objects over 1mm (e.g. tools, wires and small wires)
0 - No protection

IP50
5 - Protected against dust - limited ingress (no harmful deposit)
0 - No protection

IP60
6 - Totally protected against dust
0 - No protection

Liquid Particle Protection - Protection against liquids
The liquid particle protection has a colour key of blue. Ranging from 1 - 8, 1 is the lightest colour and 8 is the darkest colour. The darker the key, the more protection the product has against liquid particles.

IP61
6 - Totally protected against dust
1 - Protected against vertically falling drops of water

IP62
6 - Totally protected against dust
2 - Protected against direct sprays up to 15° from the vertical

IP63
6 - Totally protected against dust
3 - Protected against direct sprays up to 60° from the vertical

IP64
6 - Totally protected against dust
4 - Protected against sprays from all directions - limited ingress permitted

IP65
6 - Totally protected against dust
5 - Protected against low pressure jets if water from all directions - limited ingress permitted

IP66
6 - Totally protected against dust
6 - Protected against strong jets of water e.g. for use on ship decks - limited ingress permitted

IP67
6 - Totally protected against dust
7 - Protected against the effects of temporary immersion between 15cm and 1m. Duration of test 30 minutes

IP68
6 - Totally protected against dust
8 - Protected against long periods of immersion under pressure