

GUIDE TO IP RATINGS

PROTECTION OF PERSONS AND THE PROTECTION OF EQUIPMENT

An IP rating is used when specifying the protection of enclosures and covers for electrical or electronic equipment, from dust, solid objects and fluids.

The first number refers to the protection against dust and solid objects, and the second number refers to the protection against fluids and moisture.

Protection against solid objects and dust		Protection against fluids	
First digit	Definition	Second digit	Definition
X	Protection unspecified (not stated)	X	Protection unspecified (not stated)
0	Non protected	0	Non protected
1	Protection of the back of the hand against accidental access to hazardous parts, and protection of equipment against objects larger than 50mm.	1	Protection against drops of water falling vertically
2	Protection of fingers against access to hazardous parts and protection of equipment against objects larger than 12.5mm.	2	Protection against drops of water falling vertically when the object is tilted up to 15 degrees from the vertical.
3	Protection of persons holding tools or wires (larger than 2.5mm diameter) and protection of equipment against objects larger than 2.5mm.	3	Protection against spraying water up to 60 degrees from the vertical.
4	Protection of persons holding small tools or wires (larger than 1mm diameter) and protection of equipment against objects larger than 1mm.	4	Protection against splashing and spraying water from all practical directions with limited ingress permitted.
5	Protection against entry of dust in sufficient quantity to interfere with the satisfactory operation of the equipment.	5	Protection against low pressure jets of water from all practical directions with limited ingress permitted.
6	Complete protection against the entry of dust.	6	Protection against heavy seas or a strong jet of water from all practical directions: e.g. for use on ships decks.
		7	Protection against the effects of immersion between 15cm and 1m depth.
		8	Protection against long periods of immersion under pressure. (Tests subject to agreement).

