

IP Ratings

What are IP ratings?

IP (Ingress Protection) ratings are standards for electrical enclosures issued by the International Electro-technical Commission (IEC). The IEC is a worldwide organization for standardization comprising all national electro-technical committees (IEC National Committees).

The objective of the standard is to classify degrees of protection of electrical equipment in terms of

- a) protection of the user against access to potentially harmful parts inside the enclosure,
- b) protection of the electronics inside against foreign objects, and
- c) protection of the electronics inside against water.

A Lifeguard's IP Rating is expressed as a two-digit number (Example: IP-66). The first number designates protection from solids, while the second number designates protection from liquids. Please refer to the table below for specific IP rating information. If a device is truly ruggedized for use in an industrial environment, then an IP rating will be specified. If a distribution board is being used in an environment where dust and moisture are prevalent, then the IP rating must be considered. If the IP rating is not specified, then you can assume it will not be resistant to dust and moisture.

It is important that manufacturers have their equipment certified by an outside laboratory to verify the product's IP rating. UL and CENELEC are two such laboratories, but many different laboratories exist that provide this service. The important thing is that the product is certified by an outside organization. If IP ratings are specified on a product's data sheet, then an approval certification number should also be included (Example: EN 60 529 or Approved to IEC 529).

IP Ratings Table:

SOLIDS (1st number)		LIQUIDS (2nd number)	
0	No protection	0	No protection
1	Protected against objects > 50mm (hands)	1	Protection against dripping water or condensation
2	Protected against objects > 12mm (fingers)	2	Protection against water spray 15 degree from vertical
3	Protected against objects > 2.5mm (tools/wires)	3	Protection against water spray 60 degree from vertical
4	Protected against objects > 1mm (small tools)	4	Protection against water spray from all directions
5	Protected against dust, limited ingress	5	Protection against low pressure jets of water
6	Totally protected against dust	6	Protected against high pressure water jets and heavy seas
7	N/A	7	Protection against the effects of immersion (6 inches to 3.3 feet)
8	N/A	8	Protected against immersion