

## Ingress Protection - IP ratings

Ingress Protection (IP), as stated by IEC Standard 60529, describes the degree of protection an enclosure provides.

- The **first digit** of the IP designation describes the degree of protection against access to hazardous parts and ingress of solid objects.
- The **second digit** designates the Ingress Protection against water. Please refer to the appropriate sections of IEC 60529 for complete information regarding applications, features, and design tests.
- The **third digit** describes the degree of protection against mechanical impacts.

1st	Protection against foreign objects	2nd	Protection against moisture	3rd	Protection against mechanical impacts
0	Not protected	0	Not protected	0	Not protected
1	Protected against objects greater than 50 mm	1	Protected against dripping water	1	Impact 0.225 joule
2	Protected against objects greater than 12 mm	2	Protected against dripping water when tilted up to 15 N	2	Impact 0.375 joule
3	Protected against objects greater than 2.5 mm	3	Protected against spraying water	3	Impact 0.60 joule
4	Protected against objects greater than 1.0 mm	4	Protected against splashing water	n/a	-----
5	Dust protected	5	Protected against water jets	5	Impact 2.00 joule
6	Dust tight	6	Protected against heavy seas	n/a	-----
n/a	-----	7	Protection against the effects of immersion	7	Impact 6.00 joule
n/a	-----	8	Protection against submersion	n/a	-----
n/a	-----	n/a	-----	9	Impact 20.00 joule

*Example marking:* **IP 68** would indicate a dust-tight (first digit 6) piece of equipment that is protected against submersion in water (second digit 8).