

## Ingress Protection (IP) Rating

Developed by the European Committee for Electro Technical Standardization, Ingress Protection ratings specify the environmental protection the enclosure provides. IP Ratings consist of two to three numbers (the third is usually omitted). Each number represents protection against different circumstances. The first number represents protection against solid objects, the second for liquids, and the third against mechanical impacts (omitted).



| Number | Solid Protection                            |
|--------|---|
| 0      | No special protection                       |
| 1      | Protected against solid objects over 50 mm  |
| 2      | Protected against solid objects over 12 mm  |
| 3      | Protected against solid objects over 2.5 mm |
| 4      | Protected against solid objects over 1 mm   |
| 5      | Protected against dust*                     |
| 6      | Totally protected against dust              |

\*Limited ingress permitted

| Number | Liquid Protection   |
|--------|---|
| 0      | No protection   |
| 1      | Protected against vertically falling drops of water                     |
| 2      | Protected against direct sprays of water up to 15° from normal position |
| 3      | Protected against direct sprays of water up to 60° from normal position |
| 4      | Protected against direct sprays of water from all directions*           |
| 5      | Protected against low pressure jets of water from all directions*       |
| 6      | Protected against temporary flooding of water from all directions*      |
| 7      | Protected against the effect of immersion between 15 cm and 1 m         |
| 8      | Protects against long periods of immersion under pressure               |

\*Limited ingress permitted

| Number | Impact Protection (omitted)  |
|--------|--|
| 0      | No protection  |
| 1      | Protection against impact of 0.225 joule ( e.g. 150 g falling from 15 cm ) |
| 2      | Protection against impact of 0.375 joule ( e.g. 250 g falling from 15 cm ) |
| 3      | Protection against impact of 0.5 joule ( e.g. 250 g falling from 20 cm )   |
| 4      | Protection against impact of 2.0 joule ( e.g. 500 g falling from 40 cm )   |
| 5      | Protection against impact of 6.0 joule ( e.g. 1.5 kg falling from 40 cm )  |
| 6      | Protection against impact of 20.0 joule ( e.g. 5 kg falling from 40 cm )   |