

Definition of the protection category acc. to EN 60529 (DIN 0470) and DIN 40050

The protection category is mentioned as a short mark which consists of two unvarying letters IP and ratios for the protection level, for example IP 54.

Protection Classes for protection against foreign bodies

| First figure | Designation | Scope of protection – explanation |
|--------------|---|---|
| 0 | No protection | |
| 1 | Protection against large foreign bodies > 50 mm ϕ | Protection against accidental, large-surface contact with active or internal moving parts, e.g. with the hand, but no protection against deliberate access to these parts. Protection against penetration of solid foreign bodies with a diameter larger than 50 mm. |
| 2 | Protection against medium-sized foreign bodies > 12.5 mm ϕ | Protection against contact by the fingers with active or internal moving parts. Protection against penetration of solid foreign bodies with a diameter larger than 12 mm. |
| 3 | Protection against small foreign bodies > 2.5 mm ϕ | Protection against contact with active or internal moving parts with tools, wires, etc. of a thickness greater than 2.5 mm. Protection against penetration of solid foreign bodies with a diameter larger than 2.5 mm. |
| 4 | Protection against granula foreign bodies > 1.0 mm ϕ | Protection against contact with active or internal moving parts with tools, wires, etc. of a thickness greater than 1 mm. |
| 5 | Protection against accumulation of dust | Complete protection against contact with live or internal moving parts, protection against harmful dust accumulations. The penetration of dust is not completely prevented, but the dust may not penetrate in such quantities that the mode of operation is restricted. |
| 6 | Protection against ingress of dust | Complete protection against contact with live or internal moving parts. Protection against the ingress of dust. |

Protection Classes for water protection

| Second figure | Designation | Scope of protection – explanation |
|---------------|--|--|
| 0 | No protection | |
| 1 | Protection against dripping water falling vertically | Water drops which fall vertically must not have any harmful effect. |
| 2 | Protection against dripping water falling at an angle | Water drops which fall at any angle from 15° to the vertical, may not have any harmful effect. |
| 3 | Protection against sprayed water | Water which falls at any angle up to 60° to the vertical, must not have any harmful effect |
| 4 | Protection against splashed water | Water which splashes from all directions onto the equipment must not have any harmful effect. |
| 5 | Protection against water jet | A water jet from a nozzle, which is directed from any direction against the equipment, must not have any harmful effect. |
| 6 | Protection against flooding | In the event of temporary flooding, e.g. in heavy seas, water may not penetrate into the equipment in harmful quantities. |
| 7 | Protection against immersion | Water may not penetrate in harmful quantities when the equipment is immersed in water under the prescribed pressure and time conditions. |
| 8 | Protection against submersion | Water may not penetrate in harmful quantities if the equipment is submerged under water. |
| 9K | Protection against high pressure/cleaning with high pressure cleaner | Water under high pressure and from any direction may not cause damage to the housing. |

Example: Identifying letters IP **65**

