

Degrees of Protection

For reasons of safety, connectors must be protected against environmental influences, e.g. dust, foreign bodies, touch, humidity and water. In case of industrial connectors, this protection must be provided for by the housing and its locking as well as the insulation on cable outlet.

The degrees of protection are indicated by an abbreviation consisting of two constant characteristic letters IP (International Protection) and two following digits for the protection degree. The first digit indicates the protection degree against touch and foreign bodies. The second digit indicates the protection against damaging ingress of water.

The designation is effected as follows:



All data are only valid in locked condition.

Awarding degrees of protection is subject to a standardised testing procedure.

Digit 1	
0	Unprotected
1	Protected against access to dangerous parts by hand pressure. Protected against solid foreign bodies Ø50mm.
2	Protected against access to dangerous parts by fingers. Protected against solid foreign bodies Ø12.5mm.
3	Protected against access to dangerous parts by a tool. Protected solid foreign bodies Ø2.5mm.
4	Protected against access to dangerous parts by a wire. Protected against solid foreign bodies Ø1mm.
5	Protected against access to dangerous parts by a wire. Protected against dust.
	Penetration of dust is not completely prevented but dust must not penetrate in such quantity affecting the faultless operation of device or the safety.
6	Protected against access to dangerous parts by wire. Dustproof.
	No dust penetration.

Digit 2

0	Unprotected	
1	Protected against dripping water	
2	Protected against dripping water when housing is inclined up to 15°	
3	Protected against spraying water	Water being vertically sprayed at 60° from both sides must have no damaging effects.
4	Protected against sprinkling water	Water being sprinkled against the housing from each direction must have no damaging effects.
5	Protected against water-jet	
6	Protected against a strong water-jet	
7	Protected against effects due to temporary immersion in water.	Water must not penetrate in such quantity causing damaging effects when housing is immersed in water at 1 m for 30 minutes.
8	Protected against effects due to permanent immersion in water.	Water must not penetrate in such quantity causing damaging effects when housing permanently immersed in water under conditions to be agreed upon between manufacturer and user. However, conditions must be more difficult than with digit 7.
9K	Protected against water by high-pressure steam-jet cleaning	