

IEC IP RATING CHART

IEC 60529

IP First Character	Degree of Protection against access to Hazardous Parts	
	Brief Description	Definition
0	Non-Protected	–
1	Protected against access to hazardous parts with the back of a hand	The access probe, sphere of 50 mm Ø, shall have adequate clearance from hazardous parts
2	Protected against access to hazardous parts with a finger	The jointed test finger of 12 mm Ø, 80 mm length, shall have adequate clearance from hazardous parts
3	Protected against access to hazardous parts with a tool	The access probe of 2.5 mm Ø shall not penetrate
4	Protected against access to hazardous parts with a wire	The access probe of 1.0 mm Ø shall not penetrate
5	Protected against access to hazardous parts with a wire	The access probe of 1.0 mm Ø shall not penetrate
6	Protected against access to hazardous parts with a wire	The access probe of 1.0 mm Ø shall not penetrate

IP First Character	Degree of Protection against Solid Foreign Objects	
	Brief Description	Definition
0	Non-Protected	–
1	Protection against solid foreign object of 50 mm Ø and greater	The object probe, sphere of 50 mm Ø, shall not fully penetrate
2	Protection against solid foreign object of 12.5 mm Ø and greater	The object probe, sphere of 12.5 mm Ø, shall not fully penetrate
3	Protection against solid foreign object of 2.5 mm Ø and greater	The object probe, sphere of 2.5 mm Ø, shall not fully penetrate
4	Protection against solid foreign object of 1.0 mm Ø and greater	The object probe, sphere of 1.0 mm Ø, shall not fully penetrate
5	Dust-Protected	Ingress of dust is not totally prevented, but dust shall not penetrate in a quantity to interfere with satisfactory operation of the apparatus
6	Dust-Tight	No ingress of dust

IP Second Character	Degree of Protection against Water	
	Brief Description	Definition
0	Non-Protected	–
1	Protected against vertically falling water drops	Vertically falling drops shall have no harmful effects
2	Protected against vertically falling water drops when enclosure tilted up to 15°	Vertically falling drops shall have no harmful effects when the enclosure is tilted at any angle up to 15° on either side of the vertical
3	Protected against Spraying water	Water sprayed at an angle up to 60° on either side of the vertical shall have no harmful effects
4	Protected against Splashing water	Water splashed against the enclosure from any direction shall have no harmful effects
5	Protected against Water Jets	Water projected in jets against the enclosure from any direction shall have no harmful effects
6	Protected against Powerful Water Jets	Water projected in powerful jets against the enclosure from any direction shall have no harmful effects
7	Protected against the effects of Temporary Immersion in water	Ingress of water in quantities causing harmful effects shall not be possible when the enclosure is temporarily immersed in water under standardized conditions of pressure and time
8	Protected against the effects of Continuous Immersion in water	Ingress of water in quantities causing harmful effects shall not be possible when the enclosure is continuously immersed in water under conditions which shall be agreed between manufacturer and user which are more severe than for number 7.

Example (not using optional letters):

IP **3** **4**
Code Letters *1st Character* *2nd Character*

An Enclosure with this Designation (**IP34**):

- 3** - Protects persons, handling tools having a diameter of 2.5 mm and greater, against access to hazardous parts
- Protects the equipment inside the enclosure against ingress of solid foreign objects have a diameter of 2.5 mm and greater
- 4** - Protects the equipment inside the enclosure against harmful effects due to water splashed against the enclosure from any direction