

THE IP DEGREES OF INGRESS PROTECTION

In the latest standard SFS - EN 60529 4:1992 concerning the IP degrees of enclosure protection of electrical equipment there are some changes particularly with regard to the testing and identification of protection against liquids. Up to the degree 6 the protection is understood to cover also the lower protection degrees. In degrees higher than 6 each degree is to be tested separately and marked accordingly, e.g. IP67 / IP66.

FIRST NUMBER Protection against solid objects		SECOND NUMBER Protection against liquids		THIRD NUMBER Protection against mechanical impacts.	
IP	TEST	IP	TEST	IP	TEST
0	no protection	0	no protection	0	no protection
1	Protected against solid objects up to 50 mm e.g. accidental touch by hands.	1	Protected against vertically falling drops of water.	1	impact 0.225 joule
2	Protected against solid objects over 12 mm e.g. fingers.	2	Protected against direct sprays of water up to 15° from the vertical.	2	impact 0.375 joule
3	Protected against solid objects over 2.5 mm (tools+small wires.)	3	Protected against sprays to 60° from the vertical.	3	impact 0.5 joule
4	Protected against solid objects over 1 mm. (tools+small wires.)	4	Protected against water sprayed from all directions –limited ingress permitted	5	impact 2.0 joule
5	Protected against dust – limited ingress permitted (no harmful deposits.)	5	Protected against low pressure jets of water from all directions – limited ingress permitted	6	impact 6.0 joule
6	Totally protected against dust.	6	Protected against strong jets of water e.g. for use on ship decks – limited ingress permitted	7	Protected against the effects of immersion between 15 cm and 1 m.
		7	Protected against the effects of immersion between 15 cm and 1 m.	8	Protected against long periods of immersion under pressure
				9	impact 20.0 joule

DURO-BOX Enclosures are rated for impact above 7 Joules.