

International Protection (IP) - EN 60529

FIRST NUMERAL protection against solid bodies	0	no protection	SECOND NUMERAL protection against liquids	0	no protection
	1	object equal to or greater than 50 mm		1	vertically dripping water
	2	object equal to or greater than 12,5 mm		2	75° to 105° angled dripping water
	3	object equal to or greater than 2,5 mm		3	spraying water
	4	object equal to or greater than 1,0 mm		4	splashing water
	5	dust-protected		5	water jets
	6	dust-tight		6	heavy seas, powerful water jets
			7	effects of immersion	
			8	indefinite immersion	

IP details - EN 60529

		International Protection (IP) CEI EN 60529/1997																	
		PENETRATION OF WATER		protected against vertical falling water drops		protected against vertical falling water drops when device is tilted up to 15°		water sprayed at an angle up to 60° on either side of vertical shall have no harmful effects		water sprayed from any directions shall have no harmful effects		water projected in jets from any direction shall have no harmful effects		water projected in powerful jets from any direction shall have no harmful effects		protected against temporary immersion		protected against continuous immersion	
PROTECTION AGAINST HUMAN ACCESS TO HAZARDOUS PARTS		PROTECTION OF EQUIPMENT AGAINST PENETRATION OF FOREIGN SOLID OBJECTS		IP x0	IP x1	IP x2	IP x3	IP x4	IP x5	IP x6	IP x7	IP x8							
non protected		non protected		IP 0x	IP 00														
protected against access to hazardous parts with	the back of the hand	protected against solid foreign	object larger in diameter than 50 mm	IP 1x	IP 10	IP 11	IP 12												
	a finger		object larger in diameter than 12,5 mm	IP 2x	IP 20	IP 21	IP 22	IP 23											
	a tool larger in diameter than 25 mm		object larger in diameter than 2,5 mm	IP 3x	IP 30	IP 31	IP 32	IP 33	IP 34										
	a wire larger in diameter than 1,0 mm		object larger in diameter than 1 mm	IP 4x	IP 40	IP 41	IP 42	IP 43	IP 44										
	a wire larger in diameter than 1,0 mm		prevent penetration of dust sufficient to cause damage inside the equipment	IP 5x	IP 50					IP 54	IP 55								
	a wire larger in diameter than 1,0 mm		dust proof	IP 6x	IP 60							IP 65	IP 66	IP 67	IP 68				

International Protection (IP) codes - NEMA enclosure types

enclosure type	intended use	equivalent IP rating
1	indoor use, limiter amounts of falling dirt	20
3	outdoor use, rain, sleet, windblown dust, external formation of ice	55
3R	outdoor use, rain, sleet, external formation of ice	54
3S	outdoor use, rain, sleet, windblown dust, external mechanism operable when ice laden	55
4	indoor or outdoor use, windblown dust and rain, splashing water, hose directed water, external formation of ice	56
4X	indoor or outdoor use, windblown dust and rain, splashing water, hose directed water, corrosion, external formation of ice	56
5	indoor use, setting airborne dust, falling dirt, non-corrosive liquids	53
6	indoor or outdoor use, hose directed water, temporary submersion, external formation of ice	67
6P	indoor or outdoor use, hose directed water, prolonged submersion, external formation of ice	68
7 **	indoor use, Class I, Division 1, Groups A, B, C and D hazardous locations, air-break equipment	
8 **	indoor or outdoor use, Class I, Division 1, Groups A, B, C and D hazardous locations, oil-immersed equipment	
9 **	indoor use, Class II, Division 1, Groups E, F and G hazardous locations, air-break equipment	
10 **	mining applications	
12	indoore use, circulating dust, falling dirt, dripping noncorrosive liquids	54
12K	indoore use, circulating dust, falling dirt, dripping noncorrosive liquids, provided with knockouts	54
13	indoor use, lint, dust, spraying of water, oil and noncorrosive coolant	54

* NEMA Enclosure Type can be converted to IP code rating, but IP codes cannot be converted to NEMA Enclosure Type (ref. NEMA 250)

** Enclosure Type for U.S. only(ref. NEMA 250)