

## Ingress protection

### IEC 60529 IP Rating & NEMA 250 / UL50E Enclosures

IP suitability ratings are a system for classifying the degree of protection provided by enclosures of electrical equipment.


#### Protection against Solid Bodies

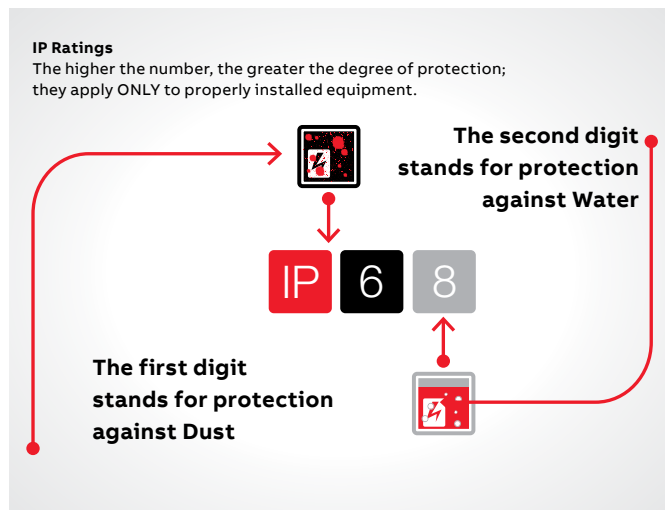
Degree of protection for persons against access to hazardous parts inside the enclosure and/or against the ingress of solid foreign objects.

#### Protection against Water

Degree of protection of equipment inside enclosures against damage from the ingress of water.

	<b>0</b>	No protection
	<b>1</b>	Objects greater than 50 mm, accidental touch by hands
	<b>2</b>	Objects greater than 12 mm, accidental touch by fingers
	<b>3</b>	Objects greater than 2.5 mm, e.g. tools/wires
	<b>4</b>	Objects greater than 1 mm, e.g. tools/wires/small wires
	<b>5</b>	Protected against dust - limited ingress (no harmful deposits)
	<b>6</b>	Totally protected against dust (Dust-tight)

	<b>0</b>	No protection
	<b>1</b>	Protected against vertically falling drops of water
	<b>2</b>	Protected against direct sprays of water 15° from vertical
	<b>3</b>	Protected against sprays of water to 60° from vertical
	<b>4</b>	Protected against water sprayed from all directions - limited ingress permitted
	<b>5</b>	Protected against low pressure jets of water from all directions - limited ingress permitted
	<b>6</b>	Protected against strong pressure jets of water, heavy seas - limited ingress permitted
	<b>7</b>	Protection against the effects of immersion between 15cm - 1 m
	<b>8</b>	Protection against long periods of immersion under a quoted pressure, e.g. 2 bar at 24 hours
	<b>9</b>	IP69 Automotive standard DIN40050 and signifies resistance to high pressure jets of water (up to 80bar) from any angle



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**Conversion of NEMA & UL50E enclosure type ratings to IEC 60529 enclosure Classification Designations (IP)**  
 (Cannot be used to convert Classification Designations to NEMA & UL type ratings)

IP 1st Character	1		2		3, 3X, 3S, 3SX		3R, 3RX		4, 4X		5		6		6P		12, 12K, 13		IP 2nd Character
IP0_																			IP0_0
IP1_																			IP0_1
IP2_																			IP0_2
IP3_																			IP0_3
IP4_																			IP0_4
IP5_																			IP0_5
IP6_																			IP0_6
																			IP0_7
																			IP0_8
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	

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**NEMA 250 / UL50E to IEC 60529**

