

## NEMA/IEC Enclosure Ratings

### Conversion of NEMA type classifications to IEC classification designation (IP ratings)

Note: NEMA standards meet or exceed IEC standards; therefore, the conversion does not work in the opposite direction.

NEMA enclosure type no.	NEMA definition	IEC enclosure class
<b>1</b>	General-purpose. Protects against dust, light, and indirect splashing but is not dust-tight; primarily prevents contact with live parts; used indoors and under normal atmospheric conditions.	<b>IP10</b>
<b>2</b>	Drip-tight. Similar to Type 1 but with addition of drip shields; used where condensation may be severe (as in cooling rooms and laundries).	<b>IP11</b>
<b>3 and 3S</b>	Weather-resistant. Protects against weather hazards such as rain and sleet; used outdoors on ship docks, in construction work, and in tunnels and subways.	<b>IP54</b>
<b>3R</b>	Intended for outdoor use. Provides a degree of protection against falling rain and ice formation. Meets rod entry, rain, external icing, and rust-resistance design tests.	<b>IP14</b>
<b>4 and 4X</b>	Watertight (weatherproof). Must exclude at least 65 GPM of water from 1-in. nozzle delivered from a distance not less than 10 ft for 5 min. Used outdoors on ship docks, in dairies, and in breweries.	<b>IP56</b>
<b>5</b>	Dust-tight. Provided with gaskets or equivalent to exclude dust; used in steel mills and cement plants.	<b>IP52</b>
<b>6 and 6P</b>	Submersible. Design depends on specified conditions of pressure and time; submersible in water; used in quarries, mines, and manholes.	<b>IP67</b>
<b>7</b>	Hazardous. For indoor use in Class I, Groups A, B, C, and D environments as defined in the NEC.	—
<b>8</b>	Hazardous. For indoor and outdoor use in locations classified as Class I, Groups A, B, C, and D as defined in the NEC.	—
<b>9</b>	Hazardous. For indoor and outdoor use in locations classified as Class II, Groups E, F, or G as defined in the NEC.	—
<b>10</b>	MSHA. Meets the requirements of the Mine Safety and Health Administration, 30 CFR Part 18 (1978).	—
<b>11</b>	General-purpose. Protects against the corrosive effects of liquids and gases. Meets drip and corrosion-resistance tests.	—
<b>12 and 12K</b>	General-purpose. Intended for indoor use, provides some protection against dust, falling dirt, and dripping noncorrosive liquids. Meets drip, dust, and rust resistance tests.	<b>IP52</b>
<b>13</b>	General-purpose. Primarily used to provide protection against dust, spraying of water, oil, and noncorrosive coolants. Meets oil exclusion and rust resistance design tests.	<b>IP54</b>