

## NEMA and IP Rating Equivalency

| NEMA Rating | IP Equivalent | NEMA Definition  | IP Definition   |  |
|-------------|---------------|--|---|--|
| 1           | IP10          | Enclosures constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment and to provide a degree of protection against falling dirt   | 1 = Protected against solid foreign objects of 50mm in diameter and greater | 0 = Not Protected  |
| 2           | IP11          | Enclosures constructed for indoor used to provide a degree of protection to personnel against incidental contact with the enclosed equipment, to provide a degree of protection against falling dirt, and to provide a degree of protection against dripping and light splashing of liquids  | 1 = Protected against solid foreign objects of 50mm in diameter and greater | 1 = Protected against vertically falling water drops   |
| 3           | IP54          | Enclosures constructed for either indoor or outdoor used to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow, and windblown dust; and that will undamaged by external formation of ice on the enclosure   | 5 = Protected against dust - Limited to ingress (no harmful deposit)        | 4 = Protected against water sprayed from all directions - Limited to ingress permitted.                    |
| 3R          | IP14          | Enclosures constructed for either indoor or outdoor used to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, and snow; and that will be undamaged by external formation of ice on the enclosure  | 1 = Protected against vertically falling water drops                        | 4 = Protected against water sprayed from all directions - Limited to ingress permitted.                    |
| 3S          | IP54          | Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow, and windblown dust; and in which the external mechanism(s) remain operable when ice laden.   | 5 = Protected against dust - Limited to ingress (no harmful deposit)        | 4 = Protected against water sprayed from all directions - Limited to ingress permitted.                    |
| 4           | IP 56         | Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, and hose-directed water, and corrosion; and that will be undamaged by the external formation of ice on the enclosure                    | 5 = Protected against dust - Limited to ingress (no harmful deposit)        | 6 = Protected against strong jets of water from all directions - Limited to ingress permitted.             |
| 4X          | IP56          | Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, hose-directed water, and corrosion; and that will be undamaged by thee external formation of ice on the enclosure                       | 5 = Protected against dust - Limited to ingress (no harmful deposit)        | 6 = Protected against strong jets of water from all directions - Limited to ingress permitted.             |
| 5           | IP52          | Enclosures constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt; against settling airborne dust, lint, fibers, and flyings; and to provide a degree of protection against dripping and light splashing of liquids.   | 5 = Protected against dust - Limited to ingress (no harmful deposit)        | 2 = Protected against direct sprays of water up to 15° from the vertical.                                  |
| 6           | IP67          | Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt; against hose-directed water and the entry of water during occasional temporary submersion at a limited depth; and that will be undamaged by the external formation of ice on the enclosure. | 6 = Totally protected against dust  | 7 = Protected against the effects of temporary immersion between 15cm and 1m. Duration of test 30 minutes. |
| 6P          | IP67          | Enclosures constructed for either indoor or outdoor use to provide a degree of protection to the personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt; against hose-directed water and the entry of water during prolonged submersion at a limited depth; and that will be undamaged by the external formation of ice on the enclosure         | 6 = Totally protected against dust  | 7 = Protected against the effects of temporary immersion between 15cm and 1m. Duration of test 30 minutes. |

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| 12 and 12K | IP52 | Enclosures constructed (without knockouts) for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt; against circulating dust, lint, fibers, and flying; and against dripping and light splashing of liquids                     | 5 = Protected against dust - Limited to ingress (no harmful deposit) | 2 = Protected against direct sprays of water up to 15° from the vertical.              |
| 13         | IP54 | Enclosures constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt; against circulating dust, lint, fibers, and flyings; and against the spraying, splashing, and seepage of water, oil, and noncorrosive coolants. | 5 = Protected against dust - Limited to ingress (no harmful deposit) | 4 = Protected against water sprayed from all directions - Limited to ingress permitted |