

Deciphering The NEMA Enclosure Ratings

NEMA 1 – General Purpose: Suitable for use in general-purpose applications indoors where the atmospheric conditions are normal. It protects against precipitative dust, but is not dust tight. The main reason for such an enclosure is to prevent the users from touching the equipment.

NEMA 2 – Drip Tight (Indoor): A general-purpose industrial enclosure that has had drip shields added.

NEMA 3, 3R, and 3S – Dust, Rain Proof/Sleet Resistant: This enclosure protects against wind-blown dust and weather hazards such as rain, sleet, or snow. Such an enclosure might be found outdoors, underground in subways or tunnels, or indoors with dripping water.

NEMA 4 – Water Tight: Dairies, breweries, and similar industries might subject their industrial enclosures to large amounts of spray.

NEMA Type 4X – Corrosion Resistant: These industrial enclosures are found in the food processing industries, refineries, and in other industries where corrosion is a concern.

NEMA 5 – Dust Tight: These industrial enclosures are intended for indoor use to provide protection against dust and falling dirt.

NEMA 6 and 6P – Submersible: For such applications as quarries, mines, and manholes. The final choice depends on submersed-time and submersed-pressure parameters.

NEMA 7 – Hazardous Locations: Indoors in locations classified Class I, Groups A to D, as defined in the National Electrical Code (NEC).

NEMA 8 – Hazardous Locations: For use indoors or outdoors in locations classified as Class I, Groups A to D, as defined in the NEC.

NEMA 9 – Hazardous Locations: Indoors in NEC classified locations Class II, Groups E to G.

NEMA 10 – Mine Use: These industrial enclosures meet the applicable requirements of the Federal Mine Safety and Health Administration.

NEMA 11 – Oil Immersion: These industrial enclosures are intended for indoor use primarily to provide, by oil immersion, protection against corrosive liquids and gases.

NEMA 12 and 12K – Drip Resistant: For indoor use to provide a degree of protection against dust, falling dirt, and non-corrosive liquids.

NEMA 13 – Industrial Use (Oil Tight): For use in those applications involving machine tools and other industrial processing machines in locations where oil, coolants, water, filings, dust, or lint might enter, seep or otherwise infiltrate the industrial enclosure via mounting holes, unused conduit, or other weak points.

EMI/RFI protection: Many types of industrial machinery such as large motors, induction furnaces, electrical welding, and others generate large levels of electrical interference's which can play havoc on electronic circuits. Likewise, some industrial electronic instrumentation generates unacceptable levels of electrical interference as a normal result of its operation industrial enclosures designed for use in these situations must be able to either protect delicate electronic circuits inside the industrial enclosures from electrical and radio-frequency interference's generated outside the industrial enclosures or protect external electronic circuitry from interference's generated within the industrial enclosure.