

DEFINITIONS OF MOST COMMON NEMA[★] ENCLOSURES

Type 1 - General Purpose - Indoor:

This enclosure is intended for use indoors, primarily to prevent accidental contact of personnel with the enclosed equipment, in areas where unusual service conditions do not exist. In addition, they provide protection against falling dirt.

Type 4 - Watertight and Dusttight - Indoor and Outdoor:

This type is for use indoors or outdoors to protect the enclosed equipment against splashing and seepage of water, or falling or hose - directed water, and severe external condensation.

Type 4X - Watertight, Dusttight and Corrosion - Resistant - Indoor and Outdoor:

This type has the same provisions as type 4 and, in addition, is corrosion - resistant.

Type 7 - Class I, Group A, B, C or D - Indoor Hazardous Location Air-Break Equipment:

Type 7 enclosures are intended for use indoors, in the atmospheres and locations defined as Class I and Group A, B, C, or D in the National Electrical Code. Enclosures must be designed as specified in Underwriters' Laboratories, Inc. Industrial Control Equipment for use in Hazardous Locations Publication, UL 698, and shall be marked to show the Class and Group letter designations. Class I locations are those in which flammable gases or vapors may be present in explosive or ignitable amounts. The group letters A, B, C, and D designate the content of the hazardous atmosphere under Class I as follows (See the National Electrical Code as covered in Technical Bulletin TP - 8 for complete definitions):

Group A
Atmospheres containing acetylene.

Group B
Atmospheres containing hydrogen or gases or vapors of equivalent hazards such as manufactured gas, etc.

Group C
Atmospheres containing alkyd alcohol, diethyl ether vapors, ethylene, or cyclopropane, etc.

Group D
Atmospheres containing gasoline, hexane, naphtha, benzene, butane, propane, most alcohols, acetone vapors, natural gas, etc.

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Type 9 - Class II, Group E, F and G - Indoor Hazardous Locations Air-Break Equipment:

Type 9 enclosures are intended for use indoors in the atmospheres defined as Class II and Group E, F or G in the National Electrical Code. These enclosures shall be designed in accordance with the requirements of Underwriters' Laboratories, Inc. Publication, UL 698, and shall be marked to show the Class and Group letter designations. Class II locations are those in which combustible dust may be present in explosive or ignitable amounts. The group letters E, F, and G designate the content of the hazardous atmosphere roughly as follows (For complete definition, see the National Electrical Code and Technical Bulletin JT - 8):

Group E
Atmospheres containing metal dusts, including aluminum, magnesium, and their commercial alloys, and other metals of similarly hazardous characteristics.

Group F
Atmospheres containing carbon black, charcoal, coal or coke dust.

Group G
Atmospheres containing flour, starch, grain dust, or combustible plastics or chemical dust.

★NEMA – National Electrical Manufacturers' Association