

Product Data Sheet

NEMA Horizontal A.C. Motors *Totally Enclosed Fan Cooled* *Hazardous Location*



- **1/2 to 600 Horsepower**
- **Frame size 56-5811, 2 - 8 pole, 4160 volt maximum**
- **UL listed & CSA certified**
- **Single & Dual Label, Division 1**
- **Standard, Energy & Premium Efficient**
- **Allguard Motor Quality System**



Product Overview

U.S. Electrical Motors' totally enclosed **Explosionproof** motors are designed for use on pumps, blowers and conveyors located in hazardous classified areas.

They are available from 1/2 through 600 horsepower and are designed to withstand an explosion of a specified vapor or gas inside the motor casing. Also, they prevent ignition outside the motor by containing sparks, flashing, and explosions. This product is available with a limited, UL approved array of features such as severe duty and corrosion-resistant Corro-Duty® construction.

Certain applications require specific classes and groups for locations where fire and explosion hazards may exist. U.S. Motors offers standard, energy and premium efficient designs that meet:

Petroleum/ Chemical Applications

Single Label [explosionproof]

Division 1, Class I Group D

1.15 SF, Class F Insulation, Class B Rise

Farming & Mining Applications

Dual Label [dust ignition-proof]

Division 1, Class I Group D

Division 1, Class II Groups E, F & G

1.0 SF, Class F Insulation, Class B Rise

A detailed description of each Class and Group is included on the next page of this data sheet.

Mechanical Features

The totally enclosed **Explosionproof** motor is built standard with Class F insulation. A UL listed metal breather drain is available on all motors and is strategically located to allow condensation release. Regreaseable provisions are included on frame sizes 250

and larger. The cast iron construction with a steel fan guard on standard, steel frame on Group E and cast iron on Corro-Duty designs protect the motor in the toughest environments. In addition, the explosionproof motor may be field convertible at a UL listed service shop to F-2 mounting for all frame sizes 180 and larger.

All U.S. Motors' standard explosionproof motors allow for continuous duty ambient of 40 degrees C. Thermostats are included for temperature code T2C through T5, allowing for immediate shutdown for an overtemperature condition.

Electrical Features

The **Explosionproof** motor meets a Class B temperature rise at rated HP in both single and dual label applications. Several **Explosionproof** Corro-Duty® stock designs operate at both 50 and 60 Hertz power, allowing greater flexibility. Efficiency ratings in both premium and standard efficiency are available.

For a more comprehensive description of our **Explosionproof** motor offering, please consult the U.S. Motors' Horizontal Stock Motor Products catalog. The catalog also includes a complete listing and description of possible modifications and accessories to the explosionproof line. Order the PB200 catalog by calling 800-665-4850.

U.S. Motors' explosionproof products and components meet all requirement standards, and are UL listed & CSA certified under the following file numbers:



E10336



LR13009

Hazardous Location Specifications

Class I - Flammable Gases or Vapors

Gases/vapors are grouped by severity of explosion pressure expected and extent of flame propagation between parts. For Class I applications, U.S. Motors offers explosionproof product for Groups C & D:

- Group C: Ethyl-ether, ethylene, and cycle propane
- Group D: Gasoline, hexane, naptha, benzine, butane, propane, alcohol, lacquer solvent vapors, and natural gas

Class II - Combustible Dusts

Dusts are grouped by combustibility, penetrability between parts, ability to contribute to creation of an ignition source (abrasiveness, electrical conductiveness), blanketing effect, ignition temperatures. For Class II applications, U.S. Motors offers explosionproof product for Groups E, F & G:

- Group E: Metals
- Group F: Carbon black, coal, or coke dust
- Group G: Flour, starch, or grain dust

Class III - Easily Ignitable Fibers

Fibers easily ignitable but not apt to be suspended in air to produce ignitable mixtures, such as rayon, nylon, cotton, saw dust and wood chips.

U.S. Motors' Explosionproof Product Offering

		Class & Group				
Frame Size	Frame Size	I,C	I, D	II, E	II,F	II,G
		56		X	X	X
	143T		X	X	X	X
	145T		X	X	X	X
	182T		X		X	X
	184T		X		X	X
	213T		X		X	X
	215T		X		X	X
	254T	X	X	X	X	X
	256T	X	X	X	X	X
	284T	X	X	X	X	X
	286T	X	X	X	X	X
	324T	X	X	X	X	X
	326T	X	X	X	X	X
	364T	X	X	X	X	X
	365T	X	X	X	X	X
	404T	X	X	X	X	X
	405T	X	X	X	X	X
	444T		X		X	X
	445T		X		X	X
	447T		X		X	X
	449T		X		X	X
	5008		X	X	X	X
	5807		X	X	X	X
	5809		X	X	X	X
	5801		X	X	X	X

“T” Code Indicates Operating Temperature

All explosionproof motors specify a temperature code which defines the maximum allowable frame temperature under normal and abnormal operating conditions.

U.S. Motors offers designs to cover all the temperature codes listed. The most common codes are T2B, T3B and T3C. The maximum surface temperature of the motor and their associated (T) codes are as follows:

Maximum Temperature		T-Code
Degrees Celsius (°C)	Degrees Fahrenheit (°F)	
❖ 280	536	T2A ^a
❖ 260	500	T2B ^a
◆ 230	446	T2C ^a
◆ 215	419	T2D ^a
◆ 200	392	T3
◆ 180	356	T3A
◆ 165	329	T3B
◆ 160	320	T3C
◆ 135	275	T4
◆ 120	245	T4A
◆ 100	212	T5

❖ Class I Group D only, requires caution statement

◆ Requires thermostats

^a Not applicable to motors for use in Class II locations.

NEMA Ratings Available

Horsepower	➤	1/2 to 600 (TITAN available through 600hp)
Frame Size	➤	56 through 5811
Speed	➤	2 - 8 pole, 3600 - 900 rpm
Volts	➤	up to 4160 volts
Frequency	➤	50 or 60 hertz



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