

**Motors Designed For Use In The Automotive Industry**

Automotive Duty 56 frame and U Frame motors (pages 233-240) are designed to meet automotive industry specifications from General Motors (GM-7EQ, GM-7EH), Ford (EM1) and Chrysler (NPEM-100). Actual qualifications for individual ratings are indicated in the footnotes on the price pages.

Automotive Duty T Frame motors (pages 233-240) are designed to meet or exceed Ford EM1-1996 specification(see footnotes on the price pages).

**UL Recognized Component Listing**

Low voltage (< 600 V) motors in frames 48-449T and 182U-445U listed in this catalog (excludes REW, SREW, SEW, SSEW, MD and SE models) carry UL Recognized Component Listing (contact Lincoln for file number).

Web: [www.ul.com](http://www.ul.com)

**NAFTA**

A NAFTA (North American Free Trade Agreement) Certificate of Origin can be supplied on request.

**Canadian Standards Association (CSA)**

Low voltage (< 600 V) motors in frames 48-449T and 182U-445U listed in this catalog have Canadian Standards Association approval (contact Lincoln for file number).

Web: [www.csa-international.org](http://www.csa-international.org)


**CE (Conformité Européene)**

Lincoln offers a variety of CE-compliant motors. Copies of Lincoln's Declaration of Conformity for the Low Voltage Directive and Manufacturer's Declaration for the Machinery Directive are available on request.

**Motors for Hazardous Locations**

NEMA defines an explosion-proof motor as follows: "a totally-enclosed machine designed and constructed to withstand an explosion of a specified gas or vapor which may occur within it and to prevent ignition of specified gas or vapor surrounding the machine by sparks, flashes or explosions of the specified gas or vapor which may occur within the machine casing".

Typical applications include petroleum and chemical plants or pipelines, gasoline pumps and natural gas compressors.

A **dust-ignition-proof** motor is "a totally enclosed machine whose enclosure is designed and constructed in a manner which will exclude ignitable amounts of dust or amounts which might affect performance or rating, and which will not permit arcs, sparks, or heat otherwise generated or liberated inside of the enclosure to cause ignition of exterior accumulations or atmospheric suspensions of a specific dust on or in the vicinity of the enclosure. Successful operation of this type of machine requires avoidance of overheating from such causes as excessive overloads, stalling, or accumulation of excessive quantities of dust on the machine".

Typical applications include grain elevators, coal handling equipment, feed and cereal mills, sugar refineries and chemical plants. Both types of motors are submitted to Underwriters Laboratories (UL) for approval.

The following is a brief description of the hazardous locations of both gaseous and dusty atmospheres as classified by the National Fire Protection Association's (NFPA) National Electrical Code (NEC) and printed from the 1996 Handbook. Consult the National Electrical Code for more information on explosion proof regulations.

**Class 1 Group Classifications:**

Class C - Atmospheres containing ethyl ether, ethylene, or gases or vapors of equivalent hazard.

Class D - Atmospheres such as acetone, ammonia, benzene, butane, cyclopropane, ethanol, gasoline, hexane, methanol, methane, natural gas, naphtha, propane, or gases or vapors of equivalent hazard.

**Class 2 Group Classifications:**

Group F - atmospheres containing carbonaceous dusts, including carbon black, charcoal, coal or coke dusts that have more than 8% total entrapped volatiles, or dusts that have been sensitized by other materials so that they present an explosion hazard.

Group G - atmospheres containing combustible dusts not included in Group E or F, including flour, grain, wood, plastic, and chemicals.

Lincoln Explosion-Proof motors are UL listed in the following NEC locations (indicated by ✓ mark):

Because these motors are suitable for Division 1 locations, they are also suitable for Division 2 locations of the same Class and Group.

**BAKING INDUSTRY SANITATION STANDARDS COMMITTEE**

WASHGUARD II, stainless steel washdown duty motors, NEMA frames 56, 143T, 145T, 182T and 184T are certified to Standard No. 29 for Electric Motors and Accessory Equipment, authorization number 769. The WBMQ Series of gear reducers are BISSC certified to Standard No. 29 for Electric Motors and Accessory Equipment, authorization number 941.

**SAUDI ARABIAN STANDARDS ORGANIZATION**

SCCP Ref. No.: R-100157

**The CE Mark**

**CE** is an acronym for the French phrase "*Conformite Europeene*" and is similar to the UL or CSA marks of North America. However, unlike UL or CSA which require independent laboratory testing, the CE mark can be applied by the motor manufacturer through "self certifying" that its products are designed to the appropriate standards. The European Union has issued 24 directives related to the **CE** mark. Three Directives apply to electric motors.

**Low Voltage Directive** (2006/95/EC) This directive applies to electrical equipment operating in the voltage range of 50-1000 volts AC or 75-1500 volts DC. Virtually all LEESON motors (except low voltage DC) are included in this directive.

Based on our testing to the applicable electrical and mechanical standards EN60034 and IEC 34, LEESON certifies conformity to this directive. All three phase 50 Hz stock motors comply with the nameplate designations, lead markings and connection diagrams required. A "Declaration of Conformity" accompanies these motors and a CE label is applied.

**Machinery Directive** (89/3392/EEC) This directive applies to machinery that may contain certain motors. This is an issue with equipment manufacturers and requires the use of a motor meeting the Low Voltage Directive and requires a "Declaration of Incorporation" document which means that only the motor complies with the requirements of the Low Voltage Directive. A CE label is applied to the motor but it remains the responsibility of the equipment manufacturer to obtain certification for the finished product.

**Electromagnetic Compatibility (EMC) Directive** (2004/108/EC) This directive addresses the final product and is again a concern for the equipment manufacturer. Since this Directive addresses electromagnetic interference (EMI) concerns, it does not affect three phase AC motors because they do not produce EMI. DC motors, however, do produce EMI. How much of the "noise" is emitted outside the machine depends on a host of factors. LEESON's Engineering Department can assist OEM's in applying DC motors in machinery destined for Europe and requiring certification to the EMC Directive.

