

Stainless Motors, Inc.

design innovation • stainless performance

Hazardous Location Motor Installation & Operating Manual

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Instructions

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Stainless Motors would like to thank you for your business. We appreciate the opportunity to keep servicing your toughest washdown duty power transmission challenges.

Operating and Maintenance Instructions For Stainless Electric Motors

INSTALLATION

Only qualified, trained personnel should install the motor/gearmotor. Electrical rotating equipment can result in property damage, serious injury or death when improperly installed. Equipment should be installed in accordance with the National Electric Code, local codes and with NEMA MG2.

MOUNTING

Foot mounted motors should be mounted to a rigid foundation to prevent excessive vibration. Flange mounted motors should be properly seated and aligned. Periodically verify that all mounting bolts are firmly tightened. Motor feet must lay flat on the mounting surface within .015" or shims must be added under the feet to close the gap.

NOTE: If improper direction of rotation is detrimental to the load, check rotation prior to connecting the motor to the load.

ENVIRONMENT

Stainless motors are suitable for extreme washdown environments such as those in food processing or pharmaceutical manufacturing. They are not intended for submersion service. Outdoor installations in direct, intense sunlight should be carefully reviewed as a precaution to motor overheating.

INSTALLATION OF MOTORS

Stainless Motors, Inc. Hazardous Location motors are approved for use in the following locations:

Class I, Groups C&D

Class II, Groups F&G

See page 12 for information on Classes & Groups.

It is the responsibility of the installer to ensure the motor's approval meets the requirements of the hazardous location.

In addition to the Class and Group, all Hazardous Location motors carry a “Temp Code” which indicates the maximum external surface temperature that may be attained under normal or abnormal conditions. Verify that the Temp Code of the motor is within the requirements of the actual location. See page 11 for information on Temp Codes.

Motors must be connected in accordance with the connection diagram lased on the motor casing. Wiring and connection diagrams are also provided on pages 6-9.

All Stainless Motors, Inc. Hazardous Location motors are provided with over-temperature limiting thermostats which **must** be connected to the control circuit. Failure to utilize the thermostats as part of the control circuit is a major safety violation, voids the warranty, voids the U.L. label, and places plant property and personnel in danger. Connect the thermostats properly!

All Stainless Motors, Inc. Hazardous Location motors are approved for use on PWM type variable frequency inverters. Refer to the motor nameplate for the maximum turn-down and over speed capability for a specific motor. In general, these motors carry a 4:1 constant torque turndown rating, a 10:1 variable torque turndown rating, and a 50% over-speed rating.

The motor *must* be grounded in accordance with the National Electrical Code and any local codes.

Do not bypass or render inoperative safeguard or protective devices.

The motor must match the line voltage, line frequency and be suitably sized for the equipment load.

Shaft key must be secured before starting motor.

WIRING INSTRUCTIONS

Connect the motor in accordance with the connection diagram lased on the motor casing. For wiring diagrams refer to pages 8-11.

When the motor is connected to the load and started, it should start quickly and run smoothly. If not, immediately disconnect the motor from the power source and investigate the cause. Verify line voltage (all three legs in a three-phase motor), motor connection matched to line voltage, excessive load, etc.

After start-up, it is recommended that the motor current be checked and compared against the nameplate rating.

MAINTENANCE

Motors

Stainless Motors, Inc. Hazardous Location motors are fitted with double sealed “lubed for life” ball bearings and are not user serviceable. Other than external cleanliness, there is no user maintenance allowable for these motors. Any mechanical work **MUST** be done by a U.L. certified Hazardous Location Motor repair facility. We strongly recommend that any motor thought to require mechanical repair be returned to Stainless Motors, Inc. Please call our customer service department for an RGA number before returning a motor for repair. Upon receipt of the motor, we will provide an evaluation and cost to repair. Re-paired motors are returned in functionally “as new” condition.

STAINLESS MOTORS, INC. LIMITED WARRANTY

Stainless Motors, Inc. manufactured products are manufactured and sold to industrial distributors, OEMs and significant industrial end-users and are not intended for household, family or personal use. All product specifications, applications or other information provided in Stainless Motors, Inc. sales literature are subject to change without notice, and should be confirmed prior to order placement.

All motors, gearmotors, and gear reducers are warranted against defects in Stainless Motors, Inc. workmanship and materials. The warranty period is one year from the date of shipment from Stainless Motors, Inc. All warranty claims must be received by Stainless Motors, Inc. prior to the expiration of the warranty period.

If a Stainless Motors, Inc. manufactured product is thought to be defective, Stainless Motors, Inc. must be contacted with a full description of the apparent problem with the product. If it is deemed necessary, a Returned Goods Authorization number will be given. The product shall be shipped, freight prepaid, to Stainless Motors, Inc. for evaluation and repair. Stainless Motors, Inc. is not responsible for the removal, shipping, re-installation of the product upon its return to the customer, or any incidental or consequential damages resulting from the defect, removal, re-installation, shipment or otherwise.

Performance problems can be due to a variety of causes not covered by this warranty such as improper maintenance, faulty installation, non-Stainless Motors, Inc. additions or modifications, etc. If the problem is determined not to be due to defects in materials or workmanship, then the customer will be responsible for the cost of any necessary repairs or testing.

In situations where the customer is unable to ship the product back to the Stainless Motors, Inc. factory, Stainless Motors, Inc. at its sole discretion, may authorize the evaluation and possible repair be accomplished at a U.L. certified Hazardous Location Motor repair facility.

This limited warranty and service policy represents Stainless Motors, Inc. sole and exclusive warranty obligation with respect to Stainless Motors, Inc. produced products. Stainless Motors, Inc. responsibility to a customer or any other person shall not exceed Stainless Motors, Inc. sales price of the product. Stainless Motors, Inc. disclaims all other express and implied warranties, including the implied warranties of fitness for a particular purpose and merchantability.

Wiring Diagrams for Hazardous Location Motors

Note: Please contact Stainless Motors, Inc. if you are unsure of which wiring diagram to refer to.

(505) 867-0224

2Y MOTOR

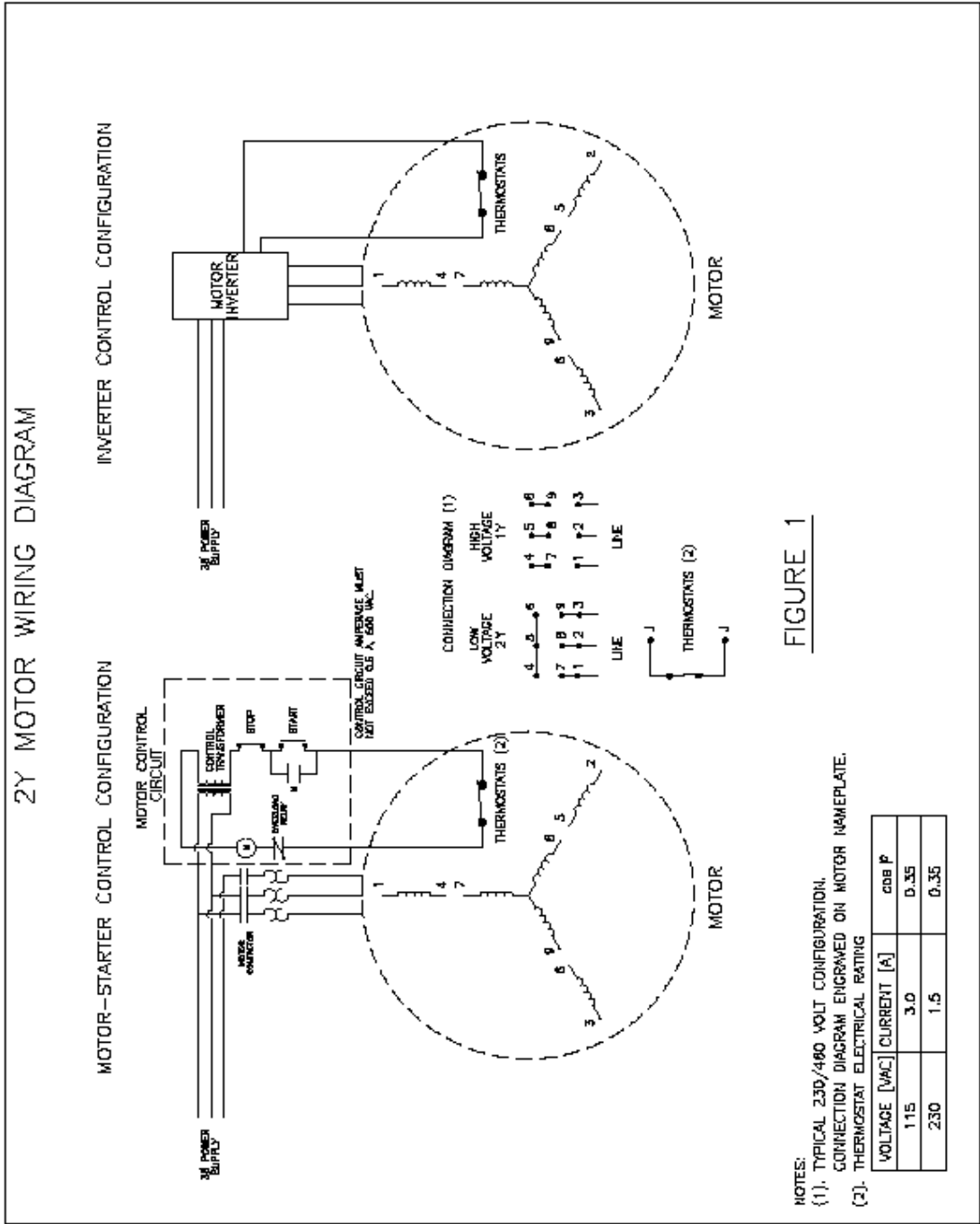
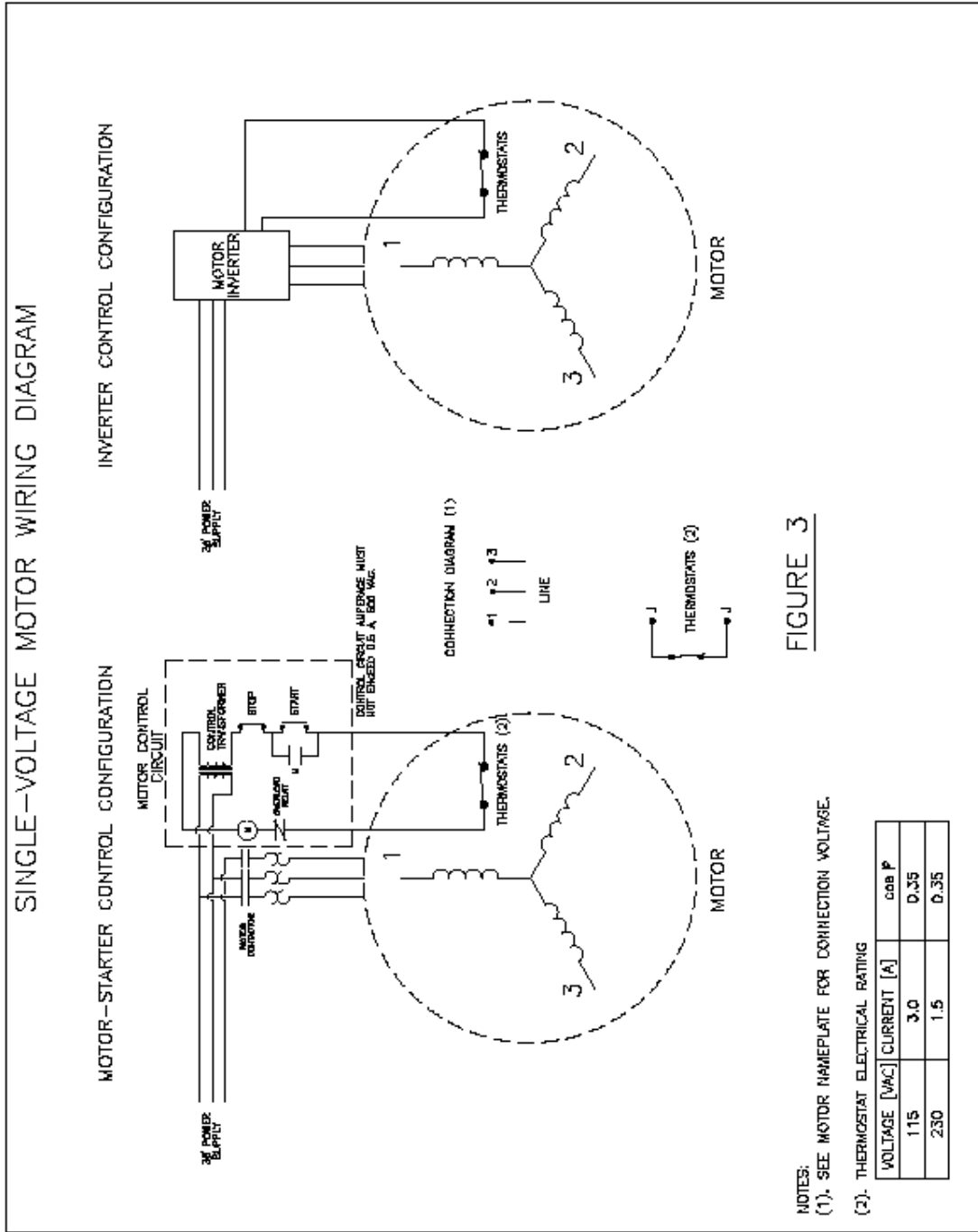


FIGURE 1

SINGLE—VOLTAGE MOTOR



CLASSES & GROUPS

Class I locations are those in which flammable gases or vapors are or may be present in the air in quantities sufficient to produce explosive or ignitable mixtures.

Group C locations are atmospheres containing elements such as Ethyl-Ether vapors, Ethylene, or Cyclo-Propane.

Group D locations are atmospheres containing elements such as Gasoline, Hexane, Naphtha, Benzene, Butane, Propane, Alcohol, Acetone, Benzol, Lacquer solvent vapors or Natural Gas.

Class II locations are those that are hazardous because of the presence of combustible dust.

Group F locations are atmospheres containing combustible dusts such as Carbon Black, Coal, or Coke dust.

Group G locations are atmospheres containing combustible dusts such as Flour, Starch, or Grain dust.

TEMPERATURE CODES

Class I Temperature. The temperature marking specified in 500.8 (B) shall not exceed the ignition temperature of the specific gas or vapor to be encountered.

Class II Temperature. The temperature marking specified in 500.8 (B) shall be less than the ignition temperature of the specific dust to be encountered. For organic dusts that may dehydrate or carbonize, the temperature marking shall not exceed the lower of either the ignition temperature or 165°C (329°F).

Table 500.8 (B) Classification of Maximum Surface Temperature

Maximum Temperature		Temperature Class (T Code)
C°	F°	
450	842	T1
300	572	T2
280	536	T2A
260	500	T2B
230	446	T2C
215	419	T2D
200	392	T3
180	356	T3A
165	329	T3B
160	320	T3C
135	275	T4
120	248	T4A
100	212	T5
85	185	T6

Source: National Electrical Code

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