SECTION 23 05 12 - BEARING PROTECTION RING FOR MOTORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes general requirements for single-phase and polyphase, general-purpose, horizontal, small and medium, squirrel-cage induction motors for use on ac power systems up to 600 V.

1.3 The mechanical contractor is to provide motor protection ring. The mechanical contractor to install motor protection ring. Coordinate all requirements with electrical contractor.

1.4 COORDINATION

A. Coordinate features of bearing ring with the following:

1. Motor controllers
2. Variable frequency motor controllers.
3. Torque, speed, and horsepower requirements of the load.
4. Ambient and environmental conditions of installation location.

1.5 DESCRIPTION OF BEARING PROTECTION RING

A. VFD induced shaft voltages may also discharge through the bearing in attached equipment included gear boxes, pillow block bearings, break motor bearings, encoders, etc. Applying AEGIS SGR Bearing Protection Ring applied to the motor shaft will discharge induced electrical voltages to ground and prevent voltages from seeking a discharge path through the attached equipment.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

A. Provide shaft grounding ring (AEGIA SGR on the AC motor to discharge shaft currents to the ground whenever variable frequency PWM drives are installed to control AC motors.

B. Bearing ring to be circumferential conductive micro-fiber and maintenance free

C. Provide vibration baseline readings before and after installation

D. Installation to be preformed by factory authorized personnel only.

E. For outdoor installations, a cover should be installed to prevent rust on the shaft. Use Ted Pella fast drying silver paint on motor shaft to help retard rust.

F. For wash down duty application, high pressure water should not be directed onto the conductive micro fibers. Install o-ring or slinger to AEGIS SGR.

G. For severe duty environments, install an o-ring or slinger against the AEGIS SGR to prevent ingress of excess grease or particles.

H. Verify RPM/ surface rates with AEGIS engineering.

I. Maximum temperature rating 300F/150C – Verify application specific temperatures with AEGIS engineering.

J. Minimum temperature rating -40 degrees F/C – Verify application specific temperatures with AEGIS engineering.

K. Humidity rating - 0-90% - Verify application specific acceptable humidity with AEGIS engineering

L. Shaft preparation - Motor shaft must be clean and bear metal to ensure electrical contact of motor shaft to conductive micro fibers.

M. Shaft - Shaft motor manufacturer standard shaft finish is suitable for AEGIS shaft grounding ring application. A nominal 130 micron finish or better.

N. Corrosion Protection - Apply a Fast Drying Silver paint such as Ted Pella #16040-30, on shaft surface to prevent corrosion.

O. Thread Locking Compound - Do not use Loctite or any other non-conductive material to secure the screws.

P. Excessive Vibration - Installation bolts should be tightened and lock washers used. In some critical applications it may also be desirable to use a thread locker. In this case you must use a conductive silver epoxy such as Chemtronics Conductive Silver Epoxy CW2400.

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION