# Section 16460

# **Motor Controllers**

## **Part One: General**

# 1.1 General Requirements

#### 1.1.1 Provisions

The provisions of Section 16000, General Requirements for Electrical Work apply to the work of this section.

#### 1.1.2

The work of this section includes locally installed, enclosed combination magnetic motor starters and manual motor starters.

# 1.2 Applicable Codes and Standards

#### 1.2.1 Products

Products shall comply with the following codes and standards and shall be UL-listed and labeled:

NEMA ICS-2	Industrial Control Devices, Controllers and Assemblies.
NEMA ICS-6	Enclosures for Industrial Controls and Systems
UL 508	Industrial Control Equipment.

## 1.3 Submittals Required

#### 1.3.1 Data Sheets

Manufacturer's product data sheets.

# 1.3.1 Drawings

Dimensioned Outline Drawings.

## 1.3.1 Diagrams

Control wiring diagrams.

## 1.4 Manufacturers

Subject to compliance with the specification requirements:

- Square D
- Cutler Hammer
- General Electric
- Siemens

## **Part Two: Products**

#### **2.1 Manual Motor Starters**

#### 2.3.1 Single Phase Fractional HP Manual Motor Starters

Single phase fractional HP manual motor starters shall be toggle operated, enclosed, one or two pole switches as required by the installation.

#### 2.3.2 Enclosure

The enclosure shall be NEMA 1 for indoor locations and NEMA 4 for outdoor, wet and damp locations. A handle guard shall be provided to allow the toggle operator to be padlocked in the OFF position.

#### 2.3.3 Overloads

Starters shall be provided with trip free melting alloy thermal overloads.

### **Part Three: Execution**

## 3.1 General

#### 3.1.1 Installation

Equipment shall be installed in accordance with Section 16050, Installation and Testing of Electrical Equipment.

#### 3.1.2 Overload Heater Elements

The Contractor shall verify motor nameplate amperes and motor service factors and shall provide all overload heater elements and fuses. Overload heater elements shall be sized in accordance with motor nameplate characteristics.

### **3.1.3 Auxiliary Contacts**

The Contractor shall verify and provide the proper number of auxiliary contacts required by equipment provided by others, for control and interlocking of equipment specified in other Divisions of this Specification. Coordinate these requirements with Division 15 Controls Contractor.

# **End of Section 16460**