

# NEMA Starters & Contactors

## Non-Reversing Starters, Class 14

### Overview

**NEMA Sizes 00 – 4 Starters include the following Standard Features:**

- Rugged Industrial Design
- Half Sizes for Cost and Space Savings
- Dual Voltage, Dual Frequency Coils
- Solid State Overload Protection as Standard
- Wide Range of Accessories
- Easy Coil Access
- Overload Test Feature
- Straight Thru Wiring
- Gravity Dropout
- Large Silver Cadmium Contacts
- UL listed file #E14900 (class 14, 22, 30, 40 & 43)
- CSA certified file #LR 6535 (class 14, 22, 30, 40 & 43)



### NEMA Sizes 5 & 6 Starters Additional Features

- Solid State Overload (3RB type) Standard
- Latest technology in arc quenching to extend contactor life
- Wide variety of enclosures in all starter configurations

### NEMA Sizes 7 & 8 Starters Additional Features

- New Compact Design
- Can be mounted in any position
- Same coil voltage is AC or DC

## Combination Starters, Class 17 and 18

### Overview

### Class 17 & 18 Combination Starter Features

Combination starters include the following features:

- Solid State Overload Protection as Standard
- Easy to Install
- Wide Range of Enclosure Types Available
- Heavy Duty Quarter Turns
- 100kA Short Circuit Current Rating when Protected with Class R Fuses to 600V or MCP to 480V
- Visible Blade Disconnect
- Industrial Type Disconnect Handle
- UL listed file #E185287 (class 17, 18, 25, 26 & 32)
- CSA certified file #LR 6535 (class 17, 18, 25, 26 & 32)



### Enclosure Types

Combination starters are available in NEMA 1, 12/3/3R/4 (painted), 4/4X (stainless) and 4X fiberglass enclosures. Enclosures protect personnel from contact with live parts and depending upon the construction, protect the control in varying degrees from physical damage and harmful atmospheres. All enclosures are supplied with corrosion resistant finishes.

## Non-Reversing Contactors, Class 40

### Overview

#### **NEMA Sizes 00 – 4 Contactors include the following Standard Features:**

- Rugged Industrial Design
- Half Sizes for Cost and Space Savings
- Dual Voltage, Dual Frequency Coils
- Wide Range of Accessories
- Easy Coil Access
- Straight Thru Wiring
- Gravity Dropout
- Large Silver Cadmium Contacts
- UL listed file #E14900 (class 14, 22, 30, 40 & 43)
- CSA certified file #LR 6535 (class 14, 22, 30, 40 & 43)

#### **NEMA Sizes 5 & 6 Contactors Additional Features**

- Latest technology in arc quenching to extend contactor life
- Wide variety of enclosures in all starter configurations

#### **NEMA Sizes 7 & 8 Contactors Additional Features**

- New Compact Design
- Can be mounted in any position
- Same coil voltage is AC or DC



## Reversing Starters, Class 22

### Overview

#### **NEMA Sizes 00 – 4 Reversing Starters include the following Standard Features:**

- Rugged Industrial Design
- Half Sizes for Cost and Space Savings
- Dual Voltage, Dual Frequency Coils
- Solid State Overload Protection
- Wide Range of Accessories
- Easy Coil Access
- Overload Test Feature
- Straight Thru Wiring
- Gravity Dropout
- Large Silver Cadmium Contacts
- UL listed file #E14900 (class 14, 22, 30, 40 & 43)
- CSA certified file #LR 6535 (class 14, 22, 30, 40 & 43)



#### **NEMA Sizes 5 & 6 Reversing Starters Additional Features**

- Solid State Overload (3RB type) Standard
- Latest technology in arc quenching to extend contactor life
- Wide variety of enclosures in all starter configurations

#### **NEMA Sizes 7 & 8 Reversing Starters Additional Features**

- New Compact Design
- Can be mounted in any position
- Same coil voltage is AC or DC

# Combination Reversing Starters, Class 25 and 26

## Overview

### Class 25 & 26 Combination Reversing Starter Features

Combination starters include the following features:

- Solid State Overload Protection as Standard
- Easy to Install
- Wide Range of Enclosure Types Available
- Heavy Duty Quarter Turns
- 100kA Short Circuit Current Rating when Protected with Class R Fuses to 600V or MCP to 480V
- Visible Blade Disconnect
- Industrial Type Disconnect Handle
- UL listed file #E185287 (class 17, 18, 25, 26 & 32)
- CSA certified file #LR 6535 (class 17, 18, 25, 26 & 32)



## Enclosure Types

Combination starters are available in NEMA 1, 12/3/3R/4 (painted), 4/4X (stainless) and 4X fiberglass enclosures. Enclosures protect personnel from contact with live parts and depending upon the construction, protect the control in varying degrees from physical damage and harmful atmospheres. All enclosures are supplied with corrosion resistant finishes.

# Reversing Contactors, Class 43

## Overview

**NEMA Sizes 00 – 4 Reversing Contactors include the following Standard Features:**

- Rugged Industrial Design
- Half Sizes for Cost and Space Savings
- Dual Voltage, Dual Frequency Coils
- Wide Range of Accessories
- Easy Coil Access
- Straight Thru Wiring
- Gravity Dropout
- Large Silver Cadmium Contacts
- UL listed file #E14900 (class 14, 22, 30, 40 & 43)
- CSA certified file #LR 6535 (class 14, 22, 30, 40 & 43)



### **NEMA Sizes 5 & 6 Reversing Contactors Additional Features**

- Latest technology in arc quenching to extend contactor life
- Wide variety of enclosures in all starter configurations

### **NEMA Sizes 7 & 8 Reversing Contactors Additional Features**

- New Compact Design
- Can be mounted in any position
- Same coil voltage is AC or DC



## Two Speed Starters, Class 30

### Overview

#### Features of Two Speed Starters, Class 30

- Rugged Industrial Design
- Dual Voltage, Dual Frequency Coils
- Compact Design
- Snap-On Front Removable Auxiliary Contacts
- Electrical and Mechanical Interlocks
- Half Sizes — Space and Cost Savings
- Industrial Type Disconnect Operating Handle
- Visible Blade Disconnect Thru Size 4
- Adjustable Motor Circuit Protector
- 100,000 Amp Fault Protection with MCP or Class R Fuses
- Pilot Device Locations identified on All Enclosures
- UL Listed File #E14900
- CSA Certified File #LR6535



#### Important Note

Class 30 Two Speed Starters with Bimetal Overload Relays are now obsolete.

**Class 30 Two Speed Starters with solid state overload relays** are recommended in place of these starters.

## Combination Two Speed Starters, Class 32

### Overview

#### Class 32 Combination Two Speed Starter Features

Two Speed Combination starters include the following features:

- Manufactured with Cold Forming "TOX" Process
- Solid State Overloads Standard on Sizes 5–8
- Easy to Install
- Wide Range of Enclosure Types Available
- Heavy Duty Quarter Turns
- 100kA Short Circuit Current Rating when Protected with Class R Fuses to 600V or MCP to 480V
- Visible Blade Disconnect
- Industrial Type Disconnect Handle
- UL listed file #E185287 (class 17, 18, 25, 26 & 32)
- CSA certified file #LR 6535 (class 17, 18, 25, 26 & 32)



### Enclosure Types

Combination starters are available in NEMA 1, 12/3/3R/4 (painted), 4/4X (stainless) and 4X fiberglass enclosures. Enclosures protect personnel from contact with live parts and depending upon the construction, protect the control in varying degrees from physical damage and harmful atmospheres. All enclosures are supplied with corrosion resistant finishes.

### Important Note

Class 32 Combination Two Speed Starters with Bimetal Overload Relays are now obsolete.

**Class 32 Combination Two Speed Starters with solid state overload relays** are recommended in place of these starters.

## Reduced Voltage Type, Class 88

### Overview

#### Reduced Voltage Starter, Class 88

The reduced voltage starter pump controllers are designed for the same applications and environments the Class 87 full voltage starter pump controllers serve. However, these controllers provide added protection for your equipment by stepping up the motor speed and thus reducing starting torque. The reduced voltage starter pump also complies with electrical current restrictions of utility companies.

Siemens manufactures three most used reduced voltage pump controllers:

- Auto Transformer
- Part-Winding
- Wye-Delta



## Auto Transformer, Class 36 and 37

### Overview

#### Auto Transformer

This type of starter is suitable for a general induction motor and is commonly used for the following applications:

- Crushers
- Fans
- Conveyors
- Compressors
- Mixers



## Wye-Delta Open Transition, Class 36 and 37

### Overview

#### Wye-Delta Open Transition

This type of starter requires a motor with an externally connected stator and is commonly used for the following applications:

- Central Air Conditioning Equipment
- Compressors
- Conveyors



## Part-Winding, Class 36 and 37

### Overview

#### Part-Winding

This type of starter requires a motor with two separate windings and is commonly used for the following applications:

- Low-inertia Fans & Blowers
- Low-inertia Pumps
- Refrigeration
- Compressors



## Vacuum Contactors, Class 40

### Overview

The Class 40 NEMA Contactor offering also includes Vacuum Contactors in NEMA Sizes 4, 5 & 6. These Vacuum Contactors provide a significant increase in Electrical Life over standard Air-break contactors. To ease maintenance, these contactors also include contact tip wear indicators that are visible on the front cover of the unit.



## Enclosure Kits

### Overview

Siemens offers NEMA 1, 3, 3R, 4, 4X and 12 Enclosure Kits for field installation of Contactors & Starters. Enclosures are available for:

- Non-Reversing Starters & Contactors Class 14, 40
- Reversing Starters & Contactors Class 22, 43
- Two-Speed Two-Winding Starters Class 30
- Two-Speed One-Winding Starters Class 30
- Lighting & Heating Contactors Class LE and CLM
- Combination Starters Class 17, 18



## Field Modification Kits

### Overview

Siemens offers a variety of Kits for Field Modification of NEMA Control.

- Pilot Devices are available for all NEMA Enclosure types
  - Pushbuttons
  - Selector Switches
  - Pilot Lights
- Auxiliary Contact modules for Contactors & Starters
- Control Power Transformer Kits
- Through-the-door Reset Operators for Overload Relays
- Conduit Hubs



## Heaters and Replacement Parts

### Overview

Contact your local Chess representative for assistance



## Factory Modifications

### Overview

Siemens offers a wide variety of Factory Modifications for NEMA Control.

- Pilot Devices are available for all NEMA Enclosure types
  - Pushbuttons
  - Selector Switches
  - Pilot Lights
- Auxiliary Contact modules for Contactors & Starters
- Control Power Transformer Kits
- Coil options
- Overload Relay options
- Enclosure options
- Control Relays
- Meters
- Terminal Blocks
- Identification Plates
- Fuse Clips

