



**SIEMENS**

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Product Guide

# NEMA Pump Controls

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Class 82 full voltage pump controller with fusible disconnect switch and standard features

## Class 82 NEMA slim line full voltage pump panels

### Class 82: Product description and application

The Class 82 slim line NEMA pump panel was designed specifically for the agricultural market. It is well suited for irrigation and similar pumping applications and is built to withstand the harsh elements of the outdoors. Typical applications include:

- Crop Irrigation
- Sprinklers, misters and soakers
- Watering for livestock and other dairy applications
- Ground dewatering for excavation and construction sites

### Unique and top selling points:

- Its size and weight is less than that of the competition making it easiest to install.
- Simplicity and its compact lightweight design makes it very cost competitive.

- The contactor is NEMA rated to provide reliable motor control and protection expected in the most demanding applications.
- The SSOLR has a conformally coated circuit board which gives superior protection against high humidity, condensation and corrosive environments.
- The SSOLR provides true phase loss protection tripping within three seconds.
- The enclosure is fabricated with galvanized steel for superior corrosion resistance.

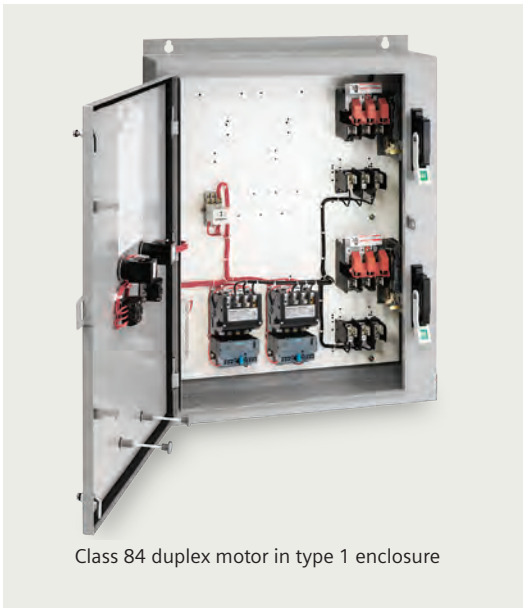
### Competitive selling:

- Know the competitive product you're quoting against.
- Lead with Class 82 versus Class 87 where applicable.
- Show the customer how the unique and top selling points benefits him.

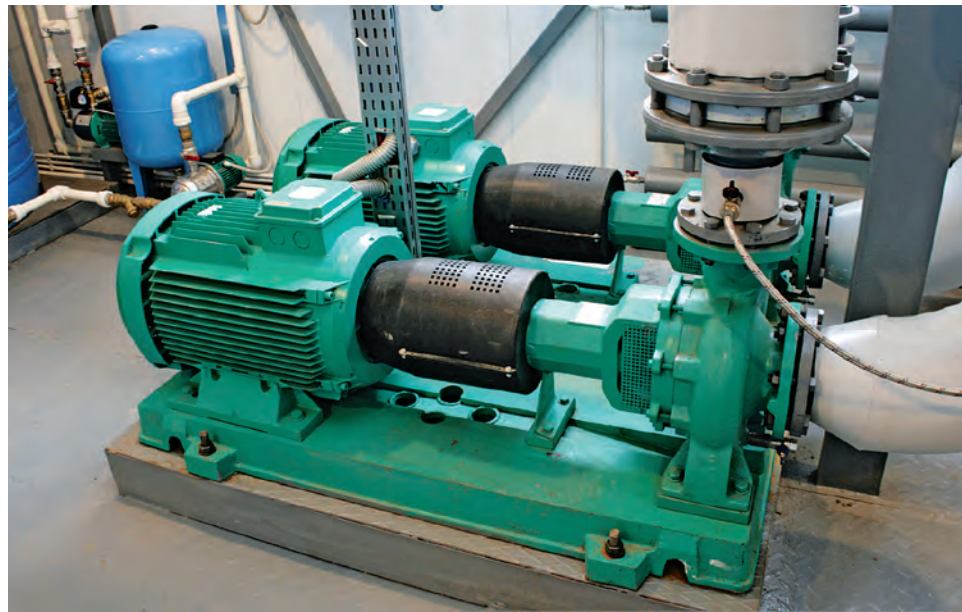
- Show the customer how the Class 82 with the advanced ESP200 OLR has a cost advantage over the competitive pump panel even with only a thermal OLR.

Primary competitors for pump panels include:

- Eaton (Cutler-Hammer)
- General Electric
- Rockwell Automation (Allen-Bradley)
- Schneider Electric (Square D)



Class 84 duplex motor in type 1 enclosure



## Class 83 and Class 84 NEMA duplex motor controllers

### Product description and application

The Siemens duplex motor controllers are specifically designed for industrial and commercial applications that require duplex controls such as dual pumps or blowers. They are built to withstand demanding environments found both indoors and outdoors. Duplex motor controllers consists of two motor starters in a common enclosure. Class 83 is a non-combination duplex motor controller. Class 84 is a combination duplex motor controller with two separate disconnects or circuit breakers.

The Siemens duplex motor controllers are designed to perform one or both of two distinct functions: duplexing and alternation. The duplexing function provides capacity for system peaking or above normal demand without having both motors running at all times. It also provides standby capacity for use when one of the motors is disabled. The alternation function reverses the lead and lag mode for the two motors in a duplex system. Upon alternation the first motor becomes the lag motor and the second motor assumes the lead function. The alternation is usually programmed to occur at any time both motors come to rest. The alternation function equalizes wear on the two machines and extends the life of seals and bearings.

### Features and benefits

- Heavy-duty NEMA starter sizes 0 – 4 including Siemens exclusive half-size starters to provide reliable motor control and protection expected in the most demanding applications. Combination controllers are available with a disconnect switch or circuit breaker
- The ESP200 solid-state overload relay has a protective coating on the circuit board which gives it superior protection against high humidity, condensation and corrosive environments
- Combination controllers are available with a disconnect switch or circuit breaker
- Alternator controls included as standard
- Line side shield on disconnect switch to help guard personnel from contact with live parts
- Comprehensive offering of enclosure types including Type 1, 3/3R, 12, 4 painted and 4X stainless steel to meet your application requirements
- Door is removable for ease of installation and maintenance
- Factory and field modifications for custom applications
- UL listed



Class 87 full voltage pump controller with fusible disconnect switch and standard features

## Class 87 NEMA full starter pump control panels

### Product description and application

The Siemens full voltage starter pump controllers are specifically designed for the agricultural, petrochemical and other industries requiring pump control. They are built to withstand the harsh elements of the outdoors and are well suited for the most demanding environments.

Typical applications include:

- Crop Irrigation
- Oil Fields
- Waste Water Treatment
- Sprinklers

### Features and benefits

- Heavy-duty NEMA starter sizes 1- 6 including Siemens exclusive half-size starters to provide reliable motor control and protection expected in the most demanding applications
- The ESP200 solid-state overload relay has a protective coating on the circuit board which gives it superior protection against high humidity, condensation and corrosive environments
- Heavy-duty disconnect switch with visible blades for safety and double break switch action to reduce arcing and increase lifetime (also available with circuit breaker)

- Line side shield on disconnect switch to help guard personnel from contact with live parts
- Type 3/3R enclosure fabricated with galvanized steel versus conventional cold rolled steel for superior corrosion resistance
- Rugged 3SU 30 mm H-O-A switch and Start push button, which are standard features, rated NEMA Type 3, 4, 12, and 13 are oil and dust tight and provide superior resistance to outdoor environmental elements
- Pre-punched opening with cover plate for convenient field installation of a conduit hub should top entry be required
- Full gasketed door to ensure a dust tight and water tight seal
- Mounting flanges at top and bottom of enclosure for easy mounting on poles or flat surfaces using keyhole slots
- Auxiliary control panel for field mounting additional controls or for use as a wire way for large power conductors
- Heavy-duty quarter-turns for fast entry and proper sealing of enclosure
- Door is removable for ease of installation and maintenance
- Factory and field modifications for custom applications
- UL rated as Service Entrance Equipment permitting equipment to be pole mounted and installed directly off of utility power lines
- UL listed



Class 87 pump panel with Vacuum Contactor



## Class 87 NEMA vacuum starter pump control panels

### Product description and application

The Siemens vacuum starter pump controllers are designed for the harshest environments. Typical environments include chemical, petrochemical, waste water treatment and mining. Contaminations present in these severe environments are detrimental to conventional air-break contacts decreasing their life expectancy and reliability. The Siemens vacuum starter pump controllers are well suited for these environments because the contacts are contained in hermetically sealed contact tubes. This prevents contaminants in the atmosphere from affecting the operation of the contacts. Additionally, neither arcs nor arcing gases are produced which dramatically increases the electrical endurance of the contacts.

### Features and benefits

- Heavy-duty NEMA vacuum starter sizes 4 - 6 to provide reliable motor control and protection expected in the most demanding applications
- Hermetically sealed contacts preventing environment from adversely affecting their operation
- No arcs nor arcing gases are produced minimizing erosion and thus increasing the electrical endurance of the contacts
- Available with a fusible disconnect switch or circuit breaker
- Type 3/3R enclosure which is fully gasketed to ensure a dust tight and water tight seal
- Rugged 30 mm H-O-A switch and Start push button, which are standard features, meet Type 3, 4, 12, and 13 specifications and are oil and dust tight for durability
- Door is removable for ease of installation and maintenance
- Factory and field modifications for custom applications
- UL rated as Service Entrance Equipment permitting equipment to be pole mounted and installed directly off of utility power lines
- UL listed



Class 87 full voltage pump controller with fusible disconnect switch and standard features

## Siemens exclusive – Class 87 NEMA full voltage starter pump control panels with 958L overload relay

### Product description and application

The Class 87 with 958L overload relay is designed specifically for the oil market and the cyclical loads experienced with these types of pumping applications. Unmatched in the industry, this product provides superior protection on all standard motors, oil well pump motors, multi-torque connections, and ultra-high slip motors. Rotors can be damaged in 8 to 15 seconds during motor stall conditions if electrical power is not removed. The 958L overload relay removes power in time to prevent damage during motor stall. Therefore, die cast or fabricated rotors will be protected from damage saving you both time and money.

### Features and benefits

- Heavy-duty NEMA starter sizes 2 – 4 including Siemens exclusive half-size starters to provide reliable motor control and protection expected in the most demanding applications
- The ESP200 958L solid-state overload relay has a protective coating on the circuit board which gives it superior protection against high humidity, condensation and corrosive environments
- Heavy-duty disconnect switch with visible blades for safety and double break switch action to reduce arcing and increase lifetime (also available with circuit breaker)
- Line side shield on disconnect switch to help guard personnel from contact with live parts
- Type 3/3R enclosure fabricated with galvanized steel versus conventional cold rolled steel for superior corrosion resistance
- Rugged 30 mm H-O-A switch and Start push button, which are standard features, meet Type 3, 4, 12, and 13 specifications and are oil and dust tight for durability
- Pre-punched opening with cover plate for convenient field installation of a conduit hub should top entry be required
- Full gasketed door to ensure a dust tight and water tight seal
- Mounting flanges at top and bottom of enclosure for easy mounting on poles or flat surfaces using keyhole slots
- Auxiliary control panel for field mounting additional controls or for use as a wire way for large power conductors
- Heavy-duty quarter-turns for fast entry and proper sealing of enclosure
- Door is removable for ease of installation and maintenance
- Factory and field modifications for custom applications
- UL rated as Service Entrance Equipment permitting equipment to be pole mounted and installed directly off of utility power lines
- UL listed



Class 88 auto transformer type pump controller



## Class 88 NEMA reduced voltage pump control panels

### Product description and application

The Siemens 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.

When energized, full-voltage starters can cause excessive pressure surges in centrifugal pumping systems. These pressure surges induce stress in the piping which causes "water hammering." Even worse than the noise produced from the water hammering is the equipment damage that pressure surges may cause. This damage can include, among other things, ruptured pipes, loosened or broken pipe supports and damaged valves. The Siemens NEMA reduced voltage pump controllers are designed to reduce damage to your equipment. This is accomplished by stepping up the motor speed and thus reducing starting torque. A second reason for using reduced voltage controllers is to comply with electrical current restrictions of utility companies.

Siemens manufactures the three commonly used NEMA reduced voltage pump controllers. This consists of the auto transformer, wye-delta and part-winding starters. Each type of starter is designed for specific application requirements. In addition to reducing starting torque, they also reduce inrush current and provide smoother acceleration of the pump.

### Features and benefits common to all class starters

- Heavy-duty NEMA starter sizes 1 – 6 including Siemens exclusive half-size starters to provide reliable motor control and protection expected in the most demanding applications
- The ESP200 solid-state overload relay has a protective coating on the circuit board which gives it superior protection against high humidity, condensation and corrosive environments
- Adjustable starting time
- CPT supplied as standard
- Available with a fusible disconnect switch or circuit breaker
- Type 3/3R enclosure which is fully gasketed to ensure a dust tight and water tight seal
- Rugged 30 mm H-O-A switch and Start push button, which are standard features, meet Type 3, 4, 12, and 13 specifications and are oil and dust tight for durability
- Door is removable for ease of installation and maintenance
- Factory and field modifications for custom applications
- UL rated as Service Entrance Equipment permitting equipment to be pole mounted and installed directly off of utility power lines
- UL listed

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