Product Guide

enclosed NEMA STARTERS

SIEMENS

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The Right Choice for Applications that Demand the Best.

Siemens NEMA Combination and Non-Combination Starters for Industrial and Construction Applications

Rugged, reliable, flexible and safe performance. In an increasingly competitive marketplace, all of these factors are essential to success, particularly when it comes to assuring reliable motor protection and control. Whether you're a consulting engineer, a contractor, or a plant manager, protecting the performance of your motors is a critical priority. And one of the best ways to do so is with world-class Siemens enclosed starters.

Our enclosed NEMA starters are engineered for rugged performance, manufactured to be dependable, designed to improve safety, prewired to save on installation costs and can be easily modified in the field. All starters are UL and CSA listed.

A Comprehensive Starter Selection

Siemens manufactures a broad range of starters designed to meet all of your most demanding applications. Included in our line of NEMA starters are full and reduced voltage starters, reversing and non-reversing starters as well as two-speed starters. Starter sizes range from 00 to 8 including Siemens exclusive motor-matched half-sizes which saves you money and space.

Non-Reversing
Non-Combination: Class 14
Combination: Class 17, 18

Reversing
Non-Combination: Class 22
Combination: Class 25, 26

Two-Speed
Non-Combination: Class 30
Combination: Class 32

Siemens Exclusive Half-Size Starters

Half-Size starters feature all the rugged performance characteristics of our NEMA rated starter sizes, but are fractionally sized to more closely match your exact motor rating. As a result, significant economic savings are made possible without sacrificing the reliability you expect from a heavy duty starter. Exclusive "half-sizes" save potentially hundreds, even thousands of dollars per project. Every half-size starter saves you money—up to 31% as illustrated in the table. All "half-sizes" comply to applicable NEMA and UL standards.

Savings with "Half-Size" Class 14 Starters in Type 1 Enclosures

Motor Size		Starter Size	Half Size	List Price $	"Half-Size" Savings Over Next Full Size
230V	460V				
7½	10	1	—	**351.**	—
10	15	—	1¾	**466.**	31%
15	25	2	—	**659.**	—
20	30	—	2½	**867.**	20%
30	50	3	—	**1075.**	—
40	75	—	3½	**2076.**	13%
50	100	4	—	**2384.**	—

Motor Overload Protection

ESP100 Solid-State Overload
The ESP 100 solid-state overload relays offer superior protection. In addition to overload protection, they trip in three seconds or less in the event of a phase loss — fast enough to prevent motor damage. The ESP 100 is available with trip class 10, 20 and 30 to fit a wide variety of applications.

Ambient Compensated Bimetal Overload
For a more economical solution without compromising reliability, Siemens also offers ambient compensated bi-metal overload relays. These relays are designed to compensate for the ambient air temperature surrounding the overload. This helps to prevent the occurrences of nuisance tripping. Additionally, they are automatic or manual reset selectable.

3RB21 Solid-State Overload
In addition to overload protection, the 3RB21 overloads include selectable trip class, phase imbalance and ground fault detection.

3UF7 SIMOCODE Solid-State Overload
SIMOCODE offers advanced motor protection and functionality including communication capabilities.

Short-Circuit Protection (Combination Starters)

Disconnect Switch
With its rugged construction, the disconnect switch provides high fault withstanding of up to 100,000 Amp when fused with Class J or R fuses.

Circuit Breaker
The circuit breaker employs adjustable magnetic trip settings to allow broader application ranges and a higher degree of motor short circuit protection. It provides high fault withstanding of up to 100,000 Amp.

A Comprehensive Line of Enclosures to Meet Your Application Requirements

Type 1 Painted Enclosures

- For Indoor Use
- General Purpose

Type 3/3R/4/12 Painted Enclosures

- For indoor or outdoor use
- Rain proof
- Dust tight
- Watertight

Type 4/4X Stainless Steel Enclosures

- For indoor or outdoor use
- Rain proof
- Dust tight
- Watertight
- Corrosion resistant
- 304 stainless steel standard (316 optional)

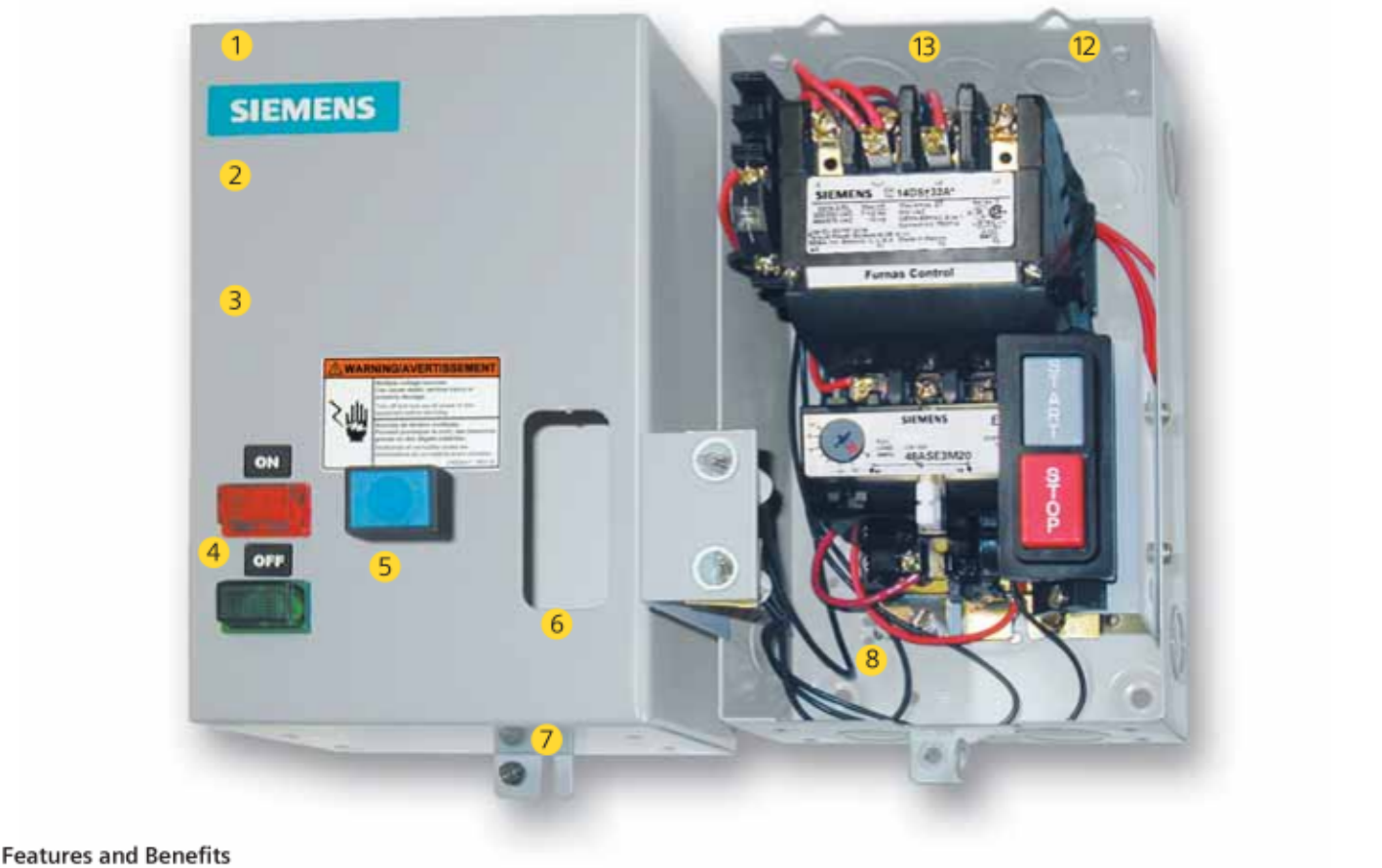
Type 4/4X Fiberglass Enclosures

- For indoor or outdoor use
- Rain proof
- Dust tight
- Watertight
- Corrosion resistant

Type 3/4/7/9 Bolted Enclosures

- For indoor or outdoor use
- Rain proof
- Dust tight
- Watertight
- Hazardous gas and vapor atmosphere
- Hazardous dust atmosphere
- Hazardous fibers and flyings atmosphere

Class 14 Non-combination starter with lift-off cover in Type 1 enclosure



Features and Benefits

1. Compact enclosure to minimize required mounting space (four enclosure sizes to accommodate starters with and without CPT and other optional panel mounted devices)
2. Powder coat painted and corrosion resistance tested per UL to give superior appearance and protection
3. Inside cover – wiring diagrams include modifications and field kit part numbers for easy troubleshooting and field modifications
4. Each pilot light field kit includes red, green and amber colored lens along with a variety of legends for maximum flexibility
5. External reset button provides means to reset the overload relay without opening the enclosure
6. Convenient knockouts for up to one pilot device and two pilot lights for quick easy modifications
7. Self-aligned lift-off cover with captive threaded fastener and padlock provision for easy access and while avoiding unauthorized entry
8. Predrilled holes for easy mounting of standard options
9. Three point raised mounting for easy installation on uneven surfaces
10. Pilot devices and lights offered as factory installed for convenience and as field kits for flexibility (all size enclosures with lift-off covers utilize the same pilot devices and lights to reduce inventory)
11. Heavy-duty NEMA starter to prove reliable motor control and protection expected in the most demanding applications
12. Both case and cover are fabricated with TOX process resulting in joints more consistently reliable than from conventional spot welding
13. Up to twelve combination conduit knockouts for maximum installation and wiring flexibility

Features and Benefits

1. Powder coat painted and corrosion resistance tested per UL to give superior appearance and protection
2. NEMA 3/3R/4/12 enclosure (not shown) is fabricated with galvannealed steel versus conventional cold rolled steel for superior corrosion resistance
3. Disconnect handle accepts 3 – 3/8" padlocks in off position for safe maintenance
4. Disconnect door interlock with defeater permits authorized access while preventing unauthorized access when unit is energized
5. Door hasp allows unit to be padlocked to prevent unauthorized access and tampering
6. Rugged 30 mm pilot controls meet Type 3, 4, 12, & 13 specifications and are oil and dust tight for durability
7. Convenient knockouts for up to four pilot controls for quick easy modifications
8. Multiple conduit knockouts on top and bottom for ease of installation and wiring flexibility
9. Heavy-duty quarter-turns for fast entry and proper sealing of enclosure
10. Door is easily removable for ease of installation and maintenance
11. NEMA 3/3R/4/12 enclosure (not shown) is fully gasketed to ensure a dust tight and water tight seal
12. Three point raised mounting for easy installation on uneven surfaces
13. Predrilled holes for easy mounting of standard options
14. Heavy-duty disconnect switch with visible blades for safety and double break switch action to reduce arcing and increase lifetime
15. Line side shield to help guard personnel from contact with live parts

Class 17 Combination starter with fusible disconnect switch in Type 1 enclosure

Class 36 & 37 Electromechanical Reduced Voltage Starters

Siemens manufactures the three commonly used electromechanical reduced voltage starters. Each one is designed for specific application requirements and consists of auto transformer, wye-delta and part-winding starters.

The reduced voltage starter:

- Reduces inrush current
- Provides smoother acceleration of the load
- Reduces starting torque
- Reduces stresses on mechanical linkages

Combination and non-combination reduced voltage starter sizes range from 0 to 6 including Siemens exclusive motor-matched half-sizes. Enclosure types include 1, 3R/12, 4 painted and 4/4X stainless steel. All starters are UL and CSA listed.

Auto Transformer Starter

- Maximum torque per amp
- Three coil auto transformer for balanced starting currents
- 50, 65 and 80% voltage taps
- Closed circuit transition
- Adjustable starting time
- ESP100 overload as standard
- CPT supplied as standard
- Wide range of factory modifications

Wye-Delta Starter

- Lowest starting torque
- Closed or open circuit transition
- Adjustable starting time
- ESP100 overload as standard
- CPT supplied as standard
- Wide range of factory modifications

Part-Winding Starter

- Simplest design – most economical
- Adjustable starting time
- ESP100 overload as standard
- CPT supplied as standard
- Wide range of factory modifications

Note – For reduced voltage electronic soft starters, please refer to catalog or contact your local Siemens sales office.

Refer to the additional brochures listed below for information on other NEMA and general purpose control products. Order on-line via the Siemens Literature Fulfillment System or contact your local Siemens sales office.

- Open NEMA Starters Publication No. NEBR-OPNST-0605
- Manual Motor Controls Publication No. NEBR-MANMC-0605
- Pump Controls Publication No. NEBR-PUMPC-0605
- Lighting & Heating Contactors Publication No. NEBR-LAHCO-0605
- Control Power Transformers Publication No. NEBR-CPTRA-0605

Note – The last four digits of the publication number indicate month and year of last revision and may change upon each revision.

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