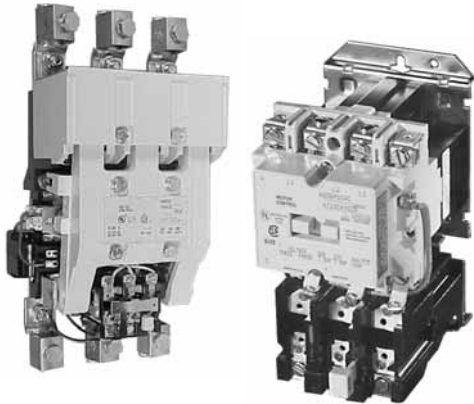


Starters—Non-Reversing and Reversing



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Starters—Non-Reversing and Reversing

Product Description

**NEMA Sizes 00–4; Three-Phase, 1-1/2–100 hp**

These Starters from Eaton’s Electrical Sector use Class A201 contactors as described on **Page V5-T2-101**. Contactor features are enhanced through the ability to provide positive motor protection in the form of several types of overload relays. See **Pages V5-T2-128 to V5-T2-140**.

**Type B Overload Relay, Manual Reset Only**

Supplied as standard on Class A200 and A900 starters (two-speed). The bi-metallic overload relay offers ambient compensation and trip-to-test feature (relay contact status check) as standard. In addition, an isolated normally-open contact is available in kit form for customer mounting. Type B overload relays are manual reset only.

**Type A Overload Relay, Manual or Automatic Reset**

This is an optional overload relay, offering the capability of field conversion to automatic reset. It is available as an ambient compensated or non-compensated type.

**Non-Reversing Starters**

Non-reversing starters are supplied as open devices. All starters are supplied with a normally-open holding circuit interlock.

**Reversing Starters**

For reversing applications (Class A210), a starter and a contactor electrically and mechanically interlocked are supplied on a common baseplate. Reversing starters are used to start, stop and reverse AC squirrel cage motors and for primary control of reversing wound-rotor motors.

For plugging or inching, when operations exceed five times per minute, decreased horsepower ratings in accordance with NEMA Standard ICS 2-321 are recommended.

**Two-Speed Starters, A900s**

For across-the-line starting of two-speed constant hp, constant torque and variable torque squirrel cage motors, two-speed starters (Class A900) are available. These starters consist of two starters, one for each motor speed, mechanically and electrically interlocked and wired for manual speed selection by means of pushbuttons. Auxiliary relays may be added to provide automatic acceleration or deceleration.

Starters for two-speed, two independent winding motors consist of two-, three- or four-pole starters electrically and mechanically interlocked.

Starters for two-speed, single reconnectable winding motors consist of one three-pole and one five-pole starter mechanically and electrically interlocked.

**NEMA Sizes 5–9; Three-Phase 75 to 1600 hp**

Non-reversing (Class A200), and reversing (Classes A210, A250) full voltage starters are used for across-the-line starting of squirrel cage induction motors. They are used with motors rated above 50 hp at 230V, and above 100 hp at 460 through 600V.

Sizes 5 and 6 starters use Class A201 contactors as described on **Page V5-T2-101**. In addition to standard motor starters, special application devices are available: Sizes 5 and 6 starters with integrally rectified AC to DC coils for applications where low voltage problems are prevalent are available.

**Front Removable Parts—**

All operating parts can be removed quickly and easily from the front. Straight-through wiring and conveniently located connection points for external wires and cables minimize installation time.

**Type B Block Type Thermal Overload Relay—**

Dependable overload protection is assured by these snap-action, manual reset relays. Automatic reset Type A relays are available as an option.

**Types of Starters****Class A200, Sizes 5 and 6—**

Non-reversing starters contain an AC magnetically-operated Size 5 or Size 6 line contactor and block Type B three-pole overload relay, along with three current transformers. A control relay whose contacts handle the coil current of the starter is provided with Size 6 starters.

**Class A200, Sizes 7, 8**

**and 9—**Non-reversing starters contain a DC operated line contactor, DC power supply, block Type B three-pole overload relay with three current transformers and a control relay.

**Class A960/A970/A980**

**Multi-Speed Starters:** Refer to **Page V5-T2-111**.

**Application Description**

Magnetic starters are used for full-voltage, across-the-line starting and stopping of squirrel cage motors. They can be operated locally or remotely by manual or automatic pilot devices.

**Features and Benefits****Sizes 00–4**

- **Straight-Through Wiring, Up-Front, Out-Front Terminals** for ease in installation
- **Unique Accessory Mounting Cavities** reduce panel space requirements
- **Snap-in Accessories** for application flexibility
- **Vertical and Horizontal Interlocking** capability increases application flexibility
- **Ambient Compensated Overload Relays** available as standard, offering superior motor protection in variable motor/controller environments
- **Isolated Normally Open Relay Contact** available in kit mounting form on Type B Overload Relay

**Sizes 5–9**

- **Rectified AC/DC Coils** available to reduce premature drop-out or “kiss” problems due to inherent low voltage conditions
- **Clapper Design** armature assembly pivots on needle bearings resulting in quick, smooth opening and closing of the magnet
- **Stainless Steel Kick-Out Spring** assures quick, positive drop-out time
- **Front Removable Parts** all current carrying parts front removable for easy inspection and maintenance

**Standards and Certifications**

Class A200 starters are UL listed and recognized and also carry CSA certification.

**Instructional Leaflets**

16958	Sizes 00–1, 3-Pole Motor Controller
16956	Sizes 00–1, 2-Pole, Single-Phase Motor Controller
16959	Size 2, 3-Pole Motor Controller
16957	Size 2, 2-Pole, Single-Phase Motor Controller
15465C	Sizes 3 and 4J Motor Controller
17000C	Size 4, Model K Motor Controller
17054C	Size 5 Motor Controller
17055C	Size 6 Motor Controller

**Product Selection**

**Non-Reversing, Sizes 00–9**

**When Ordering Specify**

Order by catalog number from the tables to the right, plus suffix for coil voltages, verifying usage of appropriate sizes.

**Heaters**

Enter heaters as separate item by listing catalog number from the tables on **Pages V5-T2-139** and **V5-T2-140**, as required per starter.

Size 3 Starter



**Non-Reversing Starters**

Size	Amperes	Max. UL Horsepower		Three-Phase 208V	240V	480V	600V	Open Catalog Number ①
		Single-Phase 115V	230V					
<b>Two-Poles ② — Sizes 00–2</b>								
00	9	1/3	—	1-1/2	1-1/2	2	2	<b>A200MABR</b>
0	18	1	—	3	3	5	5	<b>A200M0BR</b>
1	27	2	—	7-1/2	7-1/2	10	10	<b>A200M1BR</b>
1-1/2	36	3	—	—	—	—	—	<b>A200MDBR</b>
2	45	7-12	—	10	15	25	25	<b>A200M2BR</b>
<b>Three Poles — Sizes 00–6</b>								
00	9	1/3	—	1-1/2	1-1/2	2	2	<b>A200MAC_</b>
0	18	1	—	3	3	5	5	<b>A200M0C_</b>
1	27	2	—	7-1/2	7-1/2	10	10	<b>A200M1C_</b>
2	45	7-12	—	10	15	25	25	<b>A200M2C_</b>
3	90	—	—	25	30	50	50	<b>A200M3C_</b>
4	135	—	—	40	50	100	100	<b>A200M4C_</b>
5	270	—	—	75	100	200	200	<b>A200M5C_</b>
6	540	—	—	150	200	400	400	<b>A200M6C_</b>
<b>Three Poles — Sizes 7–9</b>								
7 ③	810	—	—	200	300	600	600	<b>A200M7C_</b>
8 ③	1215	—	—	400	450	900	900	<b>A200M8C_</b>
9 ③	2250	—	—	—	800	1600	—	<b>A200M9C_ ④</b>

**Coil Suffix**

Coil Volts and Hz	Code Suffix
<b>Sizes 00–6</b>	
120/60 or 110/50	<b>AC</b>
200–208/60	<b>B</b>
240/60	<b>W</b>
480/60	<b>X</b>
600/60	<b>E</b>
<b>Sizes 7, 8 and 9 ④</b>	
110–120/50 or 60	<b>J</b>
220–240/50 or 60	<b>W</b>
440–480/50 or 60	<b>X</b>
600/60	<b>E</b>

**Notes**

- ① For ambient compensated overload relay with auto-reset, add Suffix **D**.
- ② Single-phase with one single-pole overload relay.
- ③ Sizes 7–9 use rectifier with DC coil.
- ④ For Size 9, only available coil voltage is 120V.