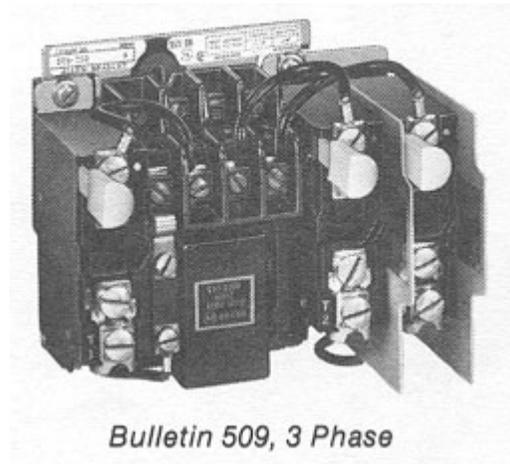
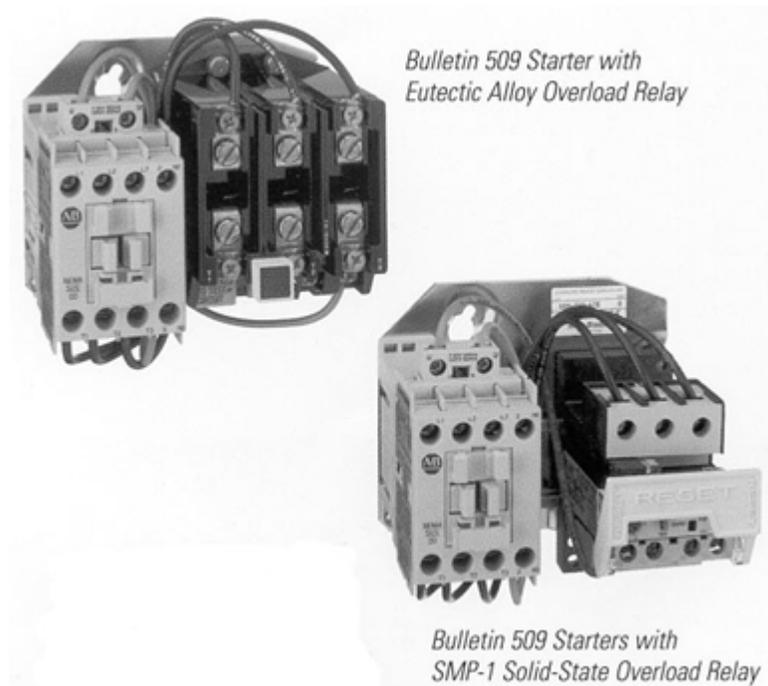


Repair Parts for 509 Three Phase Full Voltage NEMA Starters Size 00 (all series)

The 509 Three phase starter consists of three switching poles, a fourth pole to be used as a control circuit hold-in contact and overload protection is provided for all three phases.



Series 'A' Construction pictured above



Series 'B', 'D', 'E', '1', '2' Constructions shown above

Repair Parts for Series 'A' Devices

Repair Parts are no longer available for Series A devices, the complete 509-TO* Non-Reversing Starter will need to be replaced.

509 Three Phase Full Voltage NEMA Starters - Size 00 (all series)

Note: Repair Parts for 592 E1 Plus and 592 E3 Plus Overload Relays have been discontinued but are included for historical reference purposes.

Repair Parts for Series 'B' Devices

| Part Description | Replacement Part Number |
|----------------------------|-------------------------|
| Contactors | Not Available |
| Contacts for Contactors | Not Available |
| Power Wiring Kit | Not Available |
| Main Panel Mounting Plate | 599-NAT |
| Eutectic Overload Relay | 592-JOV16 |
| Solid State Overload Relay | See page 3 |
| Operating Coil | Not Available |

Repair Parts for Series 'C' Devices

There was no 509 Three phase, size 00, series 'C' construction. The series letter was advanced from Series B to Series D.

Repair Parts for Series 'D', 'E', '1', '2' Devices

| Part Description | Replacement Part Number |
|----------------------------|-------------------------|
| Contactors | 500-TO**930 |
| Contacts for Contactors | Not Available |
| Power Wiring Kit | 105-PW23 |
| Main Panel Mounting Plate | 599-NAT |
| Eutectic Overload Relay | 592-JOV16 |
| Solid-State Overload Relay | See page 3 |
| Operating Coil | See coil table |

** = Coil Voltage Suffix Code

Operating Coils for Series 'D', 'E', '1', '2', 'E' Devices

| Catalog Number Coil Suffix Code | AC Volts | Hz | Coil Repair Part Number |
|------------------------------------|----------|----|-------------------------|
| J | 24 | 60 | TA013 |
| K | 24 | 50 | TA407 |
| D | 115-120 | 60 | TA473 |
| | 110 | 50 | |
| S | 110-115 | 50 | TA473 |
| H | 200-208 | 60 | TA049 |
| P | 220-230 | 50 | TA474 |
| A | 230-240 | 60 | TA474 |
| T | 230-240 | 50 | TA442 |
| F | 277 | 60 | TA480 |
| N | 380 | 50 | TA071 |
| KN | 380-400 | 50 | TA071 |
| I | 415 | 50 | TA457 |
| U | 415 | 60 | TA069 |
| Q | 440-460 | 50 | TA475 |
| B | 480 | 60 | TA475 |
| M | 500 | 50 | TA479 |
| R | 550 | 50 | TA476 |
| C | 575-600 | 60 | TA476 |

509 Three Phase Full Voltage NEMA Starters - Size 00 (all series)

E100 Solid-State Overload Relay - For Series 'B' or Later**E100 Overload Relay with Automatic/Manual Reset, Field Selectable Trip Class 10, 15, 20, or 30, Phase Loss Protection**

Order the replacement overload relay catalog number from the table below. For example, the E100 Class 10 overload relay for a 505-TOD-A1A it would be ordered as catalog number 592-1EFAT.

To mount the E100 overload relay, the overload relay panel adapter will need to be replaced. Order part number 193-1EPB. The 193-1EPB panel adapter is compatible will all of the E100 overload listed in the table below.

| Size | Full Load Current Adjustment Range (A) | Class 10 Cat. No. Suffix Code | Class 10 Overload Cat. No. | Class 20 Cat. No. Suffix Code | Class 20 Overload Cat. No. | Class 30 Cat. No. Suffix Code | Class 30 Overload Cat. No. |
|---|--|-------------------------------|----------------------------|-------------------------------|----------------------------|-------------------------------|----------------------------|
| E100 Overload Relay Manual Reset, Phase Loss Protection, Class 10, 20, or 30 | | | | | | | |
| 00 | 0.1 to 0.32 | -A1A | 592-1EFAT | -A2A | 592-1EFAT | -A3A | 592-1EFAT |
| 00 | 0.32 to 1.0 | -A1C | 592-1EFBT | -A2C | 592-1EFBT | -A3C | 592-1EFBT |
| 00 | 1.0 to 2.9 | -A1D | 592-1EFCT | -A2D | 592-1EFCT | -A3D | 592-1EFCT |
| 00 | 1.6 to 5.0 | -A1E | 592-1EFCT | -A2E | 592-1EFCT | -A3E | 592-1EFCT |
| 00 | 3.7 to 12 | -A1F | 592-1EFDT | -A2F | 592-1EFDT | -A3F | 592-1EFDT |
| E100 Overload Relay Automatic/Manual Reset, Phase Loss Protection, Class 10, 20, or 30 | | | | | | | |
| 00 | 0.1 to 0.32 | -A4A | 592-1EFAT | -A5A | 592-1EFAT | -A6A | 592-1EFAT |
| 00 | 0.32 to 1.0 | -A4C | 592-1EFBT | -A5C | 592-1EFBT | -A6C | 592-1EFBT |
| 00 | 1.0 to 2.9 | -A4D | 592-1EFCT | -A5D | 592-1EFCT | -A6D | 592-1EFCT |
| 00 | 1.6 to 5.0 | -A4E | 592-1EFCT | -A5E | 592-1EFCT | -A6E | 592-1EFCT |
| 00 | 3.7 to 12 | -A4F | 592-1EFDT | -A5F | 592-1EFDT | -A6F | 592-1EFDT |

E100 Overload Relay with Automatic/Manual Reset, Field Selectable Trip Class 10, 15, 20, or 30, Phase Loss, Jam Protection, and Ground Fault Protection.

To mount the E100 overload relay, the overload relay panel adapter will need to be replaced. Order part number 193-1EPB. The 193-1EPB panel adapter is compatible will all of the E100 overload listed in the table below.

Add catalog number 193-1EGJ to the E100 catalog number if Ground Fault or Jam Protection is required.

| E100 Overload Relay with Automatic/Manual Reset, Field Selectable Trip Class 10, 15, 20, or 30, Phase Loss, Jam Protection, and Ground Fault Protection | | | | |
|--|--|-------------------------|----------------------------|------------------------------------|
| Starter Size | Full Load Current Adjustment Range (A) | Catalog No. Suffix Code | Overload Relay Catalog No. | E1 Plus Ground Fault or Jam Module |
| 00 | 0.1 to 0.32 | -B1A | 592-1EFAT | 193-1EGJ |
| 00 | 0.32 to 1.0 | -B1C | 592-1EFBT | 193-1EGJ |
| 00 | 1.0 to 2.9 | -B1D | 592-1EFCT | 193-1EGJ |
| 00 | 1.6 to 5.0 | -B1E | 592-1EFCT | 193-1EGJ |
| 00 | 3.7 to 12 | -B1F | 592-1EFDT | 193-1EGJ |
| E300 DeviceNet Overload Relay with Automatic/Manual Reset, Field Selectable Trip Class 10, 15, 20, or 30, Phase Loss, Jam Protection, with DeviceNet Communication Capability | | | | |
| 00 | 0.7 to 2.5 | -C1D | 193-ESM-IG-30A-E3T | Included as standard |
| 00 | 2 to 10 | -C1F | + 193-ECM-DNT + | Included as standard |
| 00 | 7 to 37 | -C1H | 193-EIO-63-24D ① | Included as standard |

509 Three Phase Full Voltage NEMA Starters Size 00 (all series)

Solid-State Overload Relay - For Series 'B' or Later

E1 Plus Overload Relay with Automatic/Manual Reset, Field Selectable Trip Class 10, 15, 20, or 30, Phase Loss Protection

Order the replacement overload relay catalog number from the table below. For example, the E1 Plus Class 10 overload relay for a 509-TOD-A1A would be ordered as catalog number 592-EEAT.

To mount the E1 Plus overload relay, the overload relay panel adapter will need to be replaced. Order part number 193-EPB. The 193-EPB panel adapter is compatible with all of the E1 Plus overload listed in the table below.

To mount the E3 Plus overload relay, in place of the SMP-3, the overload relay panel adapter will need to be replaced. Order part number 193-ECPM1.

| Size | Full Load Current Adjustment Range (A) | Class 10 Cat. No. Suffix Code | Class 10 Overload Cat. No. | Class 20 Cat. No. Suffix Code | Class 20 Overload Cat. No. | Class 30 Cat. No. Suffix Code | Class 30 Overload Cat. No. |
|--|--|-------------------------------|----------------------------|-------------------------------|----------------------------|-------------------------------|----------------------------|
| E1 Plus Overload Relay Manual Reset, Phase Loss Protection, Class 10, 20, or 30 | | | | | | | |
| 00 | 0.1 to 0.32 | -A1A | 592-EEAT | -A2A | 592-EEAT | -A3A | 592-EEAT |
| 00 | 0.32 to 1.0 | -A1C | 592-EEAT | -A2C | 592-EEAT | -A3C | 592-EEAT |
| 00 | 1.0 to 2.9 | -A1D | 592-EECT | -A2D | 592-EECT | -A3D | 592-EECT |
| 00 | 1.6 to 5.0 | -A1E | 592-EECT | -A2E | 592-EECT | -A3E | 592-EECT |
| 00 | 3.7 to 12 | -A1F | 592-EEDT | -A2F | 592-EEDT | -A3F | 592-EEDT |
| E1 Plus Overload Relay Automatic/Manual Reset, Phase Loss Protection, Class 10, 20, or 30 | | | | | | | |
| 00 | 0.1 to 0.32 | -A4A | 592-EEAT | -A5A | 592-EEAT | -A6A | 592-EEAT |
| 00 | 0.32 to 1.0 | -A4C | 592-EEAT | -A5C | 592-EEAT | -A6C | 592-EEAT |
| 00 | 1.0 to 2.9 | -A4D | 592-EECT | -A5D | 592-EECT | -A6D | 592-EECT |
| 00 | 1.6 to 5.0 | -A4E | 592-EECT | -A5E | 592-EECT | -A6E | 592-EECT |
| 00 | 3.7 to 12 | -A4F | 592-EEDT | -A5F | 592-EEDT | -A6F | 592-EEDT |

E1 Plus Overload Relay with Automatic/Manual Reset, Field Selectable Trip Class 10, 15, 20, or 30, Phase Loss, Jam Protection, and Ground Fault Protection.

To mount the E1 Plus overload relay, the overload relay panel adapter will need to be replaced. Order part number 193-EPB. The 193-EPB panel adapter is compatible with all of the E1 Plus overload listed in the table below.

To mount the E3 Plus overload relay, in place of the SMP-3, the overload relay panel adapter will need to be replaced. Order part number 193-ECPM1.

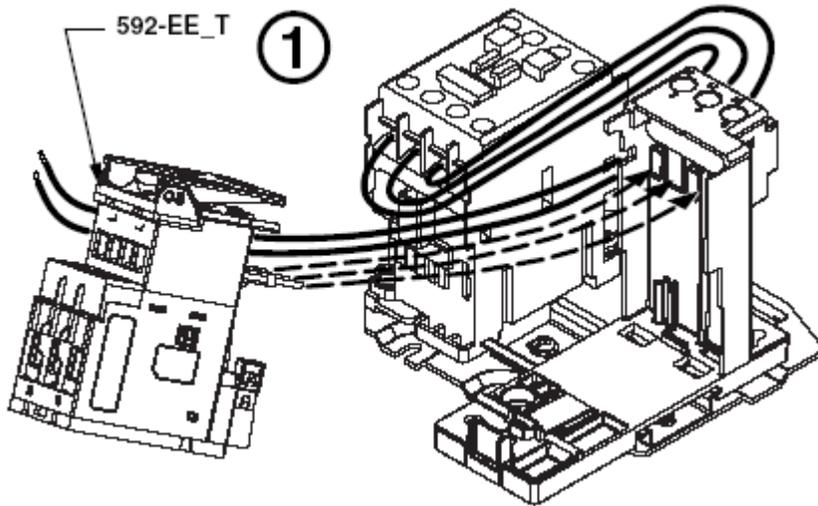
Add catalog numbers 193-EGM or 193-EJM to the E1 Plus catalog number if Ground Fault or Jam Protection is required.

The E3 Plus overloads include Ground Fault and Jam Protection, as standard, but must be configured via a DeviceNet network or a hand held programming terminal with a continuous power source of 24V DC from a DeviceNet network or a power supply.

To mount the E3 Plus overload relay, in place of the SMP-3, the overload relay panel adapter will need to be replaced. Order part number 193-ECPM1.

| E1 Plus Overload Relay with Automatic/Manual Reset, Field Selectable Trip Class 10, 15, 20, or 30, Phase Loss, Jam Protection, and Ground Fault Protection | | | | |
|---|--|-------------------------|--|------------------------------------|
| Starter Size | Full Load Current Adjustment Range (A) | Catalog No. Suffix Code | Overload Relay Catalog No. | E1 Plus Ground Fault or Jam Module |
| 00 | 0.1 to 0.32 | -B1A | 592-EEAT | 193-EGM or 193-EJM |
| 00 | 0.32 to 1.0 | -B1C | 592-EEAT | 193-EGM or 193-EJM |
| 00 | 1.0 to 2.9 | -B1D | 592-EECT | 193-EGM or 193-EJM |
| 00 | 1.6 to 5.0 | -B1E | 592-EECT | 193-EGM or 193-EJM |
| 00 | 3.7 to 12 | -B1F | 592-EEDT | 193-EGM or 193-EJM |
| E3 Plus DeviceNet Overload Relay with Automatic/Manual Reset, Field Selectable Trip Class 10, 15, 20, or 30, Phase Loss, Jam Protection, with DeviceNet Communication Capability | | | | |
| 00 | 0.7 to 2.5 | -C1D | 592-EC2PT (0.4-2.0A) or 592-EC2AT (1-5A) | Included as standard |
| 00 | 2 to 10 | -C1F | 592-EC2AT (1-5A) or 592-EC2BT (3-15A) | Included as standard |
| 00 | 7 to 37 | -C1H | 592-EC2BT (3-15A) | Included as standard |

Solid-State Overload Relay - For Series 'B' or Later (E100 overload shown below with 193-1EPB Panel Adapter)



E100 Overload Relay with Automatic/Manual Reset, Field Selectable Trip Class 10, 15, 20, or 30, Phase Loss, Jam Protection, and Ground Fault Protection

Add catalog number 193-1EGJ to the E100 catalog number if Ground Fault or Jam Protection is required.

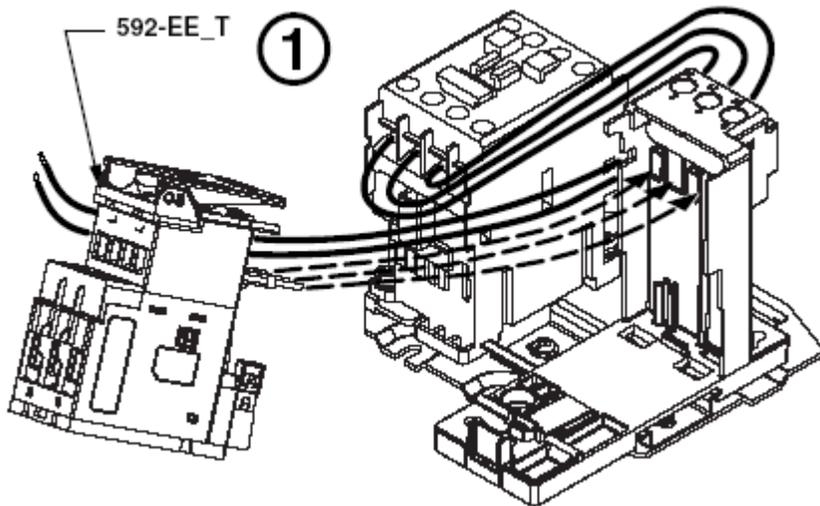
To mount the E100 overload relay, the overload relay panel adapter will need to be replaced. The 193-1EPB panel adapter is compatible with all of the E100 overloads listed in the table below.

| E1 Plus Overload Relay with Automatic/Manual Reset, Field Selectable Trip Class 10, 15, 20, or 30, Phase Loss, Jam Protection, and Ground Fault Protection | | | | |
|--|---|--------------------------------|-----------------------------------|---|
| Starter Size | Full Load Current Adjustment Range (A) | Catalog No. Suffix Code | Overload Relay Catalog No. | E1 Plus Ground Fault or Jam Module |
| 00 | 0.1 to 0.32 | -B1A | 592-1EFAT | 193-1EGJ |
| 00 | 0.32 to 1.0 | -B1C | 592-1EFBT | 193-1EGJ |
| 00 | 1.0 to 2.9 | -B1D | 592-1EFCT | 193-1EGJ |
| 00 | 1.6 to 5.0 | -B1E | 592-1EFCT | 193-1EGJ |
| 00 | 3.7 to 12 | -B1F | 592-1EFDT | 193-1EGJ |
| E300 DeviceNet Overload Relay with Automatic/Manual Reset, Field Selectable Trip Class 10, 15, 20, or 30, Phase Loss, Jam Protection, with DeviceNet Communication Capability | | | | |
| 00 | 0.7 to 2.5 | -C1D | 193-ESM-IG-30A-E3T | Included as standard |
| 00 | 2 to 10 | -C1F | + 193-ECM-DNT + | Included as standard |
| 00 | 7 to 37 | -C1H | 193-EIO-63-24D ① | Included as standard |

① Other IO control modules can be used depending upon the control voltage used.

509 Three Phase Full Voltage NEMA Starters - Size 00 (all series)

Solid-State Overload Relay - For Series 'B' or Later (E1 Plus overload shown below)

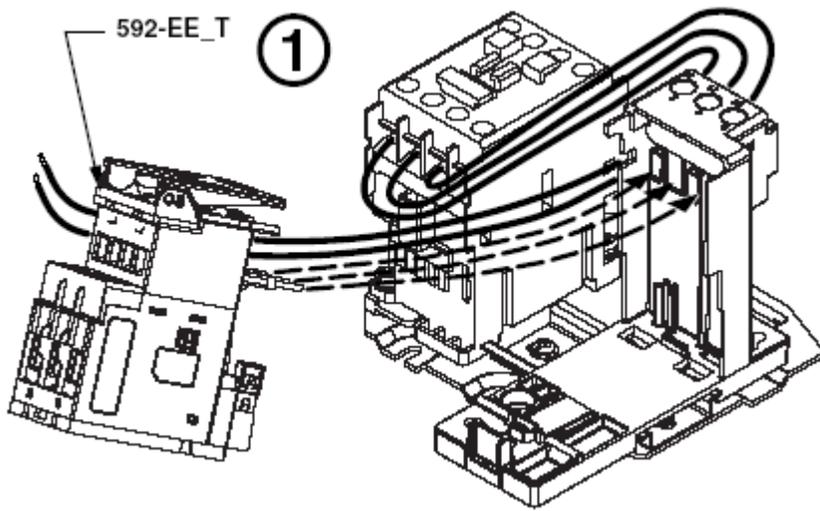


E1 Plus Overload Relay with Automatic/Manual Reset, Field Selectable Trip Class 10, 15, 20, or 30, Phase Loss Protection

Order the replacement overload relay catalog number from the table below. For example, the E1 Plus Class 10 overload relay for a 509-TOD-A1A would be ordered as catalog number 592-EEAT. If the Overload Panel Adapter needs to be replaced, order part number 193-EPB. The 193-EPB panel adapter is compatible with all of the E1 Plus overload listed in the table below.

| Size | Full Load Current Adjustment Range (A) | Class 10 Cat. No. Suffix Code | Class 10 Overload Cat. No. | Class 20 Cat. No. Suffix Code | Class 20 Overload Cat. No. | Class 30 Cat. No. Suffix Code | Class 30 Overload Cat. No. |
|--|--|-------------------------------|----------------------------|-------------------------------|----------------------------|-------------------------------|----------------------------|
| E1 Plus Overload Relay Manual Reset, Phase Loss Protection, Class 10, 20, or 30 | | | | | | | |
| 00 | 0.1 to 0.32 | -A1A | 592-EEAT | -A2A | 592-EEAT | -A3A | 592-EEAT |
| 00 | 0.32 to 1.0 | -A1C | 592-EEAT | -A2C | 592-EEAT | -A3C | 592-EEAT |
| 00 | 1.0 to 2.9 | -A1D | 592-EECT | -A2D | 592-EECT | -A3D | 592-EECT |
| 00 | 1.6 to 5.0 | -A1E | 592-EECT | -A2E | 592-EECT | -A3E | 592-EECT |
| 00 | 3.7 to 12 | -A1F | 592-EEDT | -A2F | 592-EEDT | -A3F | 592-EEDT |
| E1 Plus Overload Relay Automatic/Manual Reset, Phase Loss Protection, Class 10, 20, or 30 | | | | | | | |
| 00 | 0.1 to 0.32 | -A4A | 592-EEAT | -A5A | 592-EEAT | -A6A | 592-EEAT |
| 00 | 0.32 to 1.0 | -A4C | 592-EEAT | -A5C | 592-EEAT | -A6C | 592-EEAT |
| 00 | 1.0 to 2.9 | -A4D | 592-EECT | -A5D | 592-EECT | -A6D | 592-EECT |
| 00 | 1.6 to 5.0 | -A4E | 592-EECT | -A5E | 592-EECT | -A6E | 592-EECT |
| 00 | 3.7 to 12 | -A4F | 592-EEDT | -A5F | 592-EEDT | -A6F | 592-EEDT |

509 Three Phase Full Voltage NEMA Starters - Size 00 (all series)

Solid-State Overload Relay - For Series 'B' or Later
(E1 Plus overload shown below)**E1 Plus Overload Relay with Automatic/Manual Reset, Field Selectable Trip Class 10, 15, 20, or 30, Phase Loss, Jam Protection, and Ground Fault Protection**

Add catalog numbers 193-EGM or 193-EJM to the E1 Plus catalog number if Ground Fault or Jam Protection is required.

If the Overload Panel Adapter needs to be replaced, order part number 193-EPB. The 193-EPB panel adapter is compatible with all of the E1 Plus overload listed in the table below.

The E3/E3 Plus Overloads will mount directly to the 500 size 00, series 'D' contactor. No panel adapter is required.

The E3 Plus overloads include Ground Fault and Jam Protection, as standard, but must be configured via a DeviceNet network or a hand held programming terminal with a continuous power source of 24V DC from a DeviceNet network or a power supply.

| E1 Plus Overload Relay with Automatic/Manual Reset, Field Selectable Trip Class 10, 15, 20, or 30, Phase Loss, Jam Protection, and Ground Fault Protection | | | | |
|---|---|--------------------------------|--|---|
| Starter Size | Full Load Current Adjustment Range (A) | Catalog No. Suffix Code | Overload Relay Catalog No. | E1 Plus Ground Fault or Jam Module |
| 00 | 0.1 to 0.32 | -B1A | 592-EEAT | 193-EGM or 193-EJM |
| 00 | 0.32 to 1.0 | -B1C | 592-EEAT | 193-EGM or 193-EJM |
| 00 | 1.0 to 2.9 | -B1D | 592-EECT | 193-EGM or 193-EJM |
| 00 | 1.6 to 5.0 | -B1E | 592-EECT | 193-EGM or 193-EJM |
| 00 | 3.7 to 12 | -B1F | 592-EEDT | 193-EGM or 193-EJM |
| E3 Plus DeviceNet Overload Relay with Automatic/Manual Reset, Field Selectable Trip Class 10, 15, 20, or 30, Phase Loss, Jam Protection, with DeviceNet Communication Capability | | | | |
| 00 | 0.7 to 2.5 | -C1D | 592-EC2PT (0.4-2.0A) or 592-EC2AT (1-5A) | Included as standard |
| 00 | 2 to 10 | -C1F | 592-EC2AT (1-5A) or 592-EC2BT (3-15A) | Included as standard |
| 00 | 7 to 37 | -C1H | 592-EC2BT (3-15A) | Included as standard |