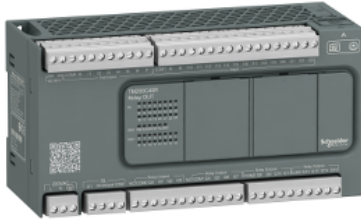


Product datasheet

Specifications



controller M200 40 IO relay



TM200C40R

Main

| | |
|-----------------------------|---|
| Range of product | Easy Modicon M200 |
| Product or component type | Logic controller |
| [Us] rated supply voltage | 100...240 V AC |
| Discrete I/O number | 40 |
| Discrete input number | I2...I5: 4 fast input I0, I1, I6, I7: 4 high speed input I8...I23: 16 regular input |
| Discrete output number | 16 relay |
| Discrete input voltage | 24 V |
| Discrete input voltage type | DC |
| Discrete input current | 7 mA for input |
| Discrete input logic | Sink or source (positive/negative) type 1 conforming to EN/IEC 61131-2 |
| Discrete output voltage | 24 V DC 220 V AC |
| Discrete output current | 2 A |
| Discrete output type | Relay normally open |
| Power consumption in VA | 59...69 VA at 100...240 V AC (with max I/O) |

Complementary

| | |
|--|---|
| Maximum number of I/O expansion module | 4 with 128 discrete output(s) for transistor output 4 with 80 discrete output(s) for relay output |
| Supply voltage limits | 85...264 V |
| Network frequency | 50/60 Hz |
| Inrush current | 50 A |
| Voltage state 1 guaranteed | ≥ 15 V for input |
| Voltage state 0 guaranteed | ≤ 5 V for input |
| Input impedance | 3.3 kOhm for discrete input |
| Response time | 5 μ s turn-off, I0, I1, I6, I7 terminal(s) for high speed input 5 μ s turn-on, I0, I1, I6, I7 terminal(s) for high speed input 100 μ s turn-off, I2...I5 terminal(s) for fast input 35 μ s turn-on, I2...I5 terminal(s) for fast input 100 μ s turn-off, I8...I13 terminal(s) for regular input 35 μ s turn-on, I8...I13 terminal(s) for regular input 10 ms turn-off, Q0...Q15 terminal(s) for relay output 10 ms turn-on, Q0...Q15 terminal(s) for relay output 125 μ s turn-off, I14...I23 terminal(s) for regular input |

55 µs turn-on, I14...I23 terminal(s) for regular input

| | |
|---|---|
| Configurable filtering time | 0 ms for input 3 ms for input 12 ms for input |
| Output voltage limits | 30 V DC 250 V AC |
| Maximum current per output common | 4 A at COM 2 4 A at COM 0 4 A at COM 1 4 A at COM 3 |
| Electrical durability | 100000 cycles AC-12, 240 V, 480 VA, resistive 100000 cycles DC-12, 24 V, 48 W, resistive |
| Switching frequency | 0.1 Hz with maximum load |
| Mechanical durability | 20000000 cycles for relay output |
| Minimum load | 10 mA at 5 V DC for relay output |
| Memory capacity | 512 byte internal flash for backup of programs |
| Data storage equipment | 32 GB micro SD card (optional) |
| Battery type | BR2032 Li-CFx (Lithium-Carbon Monofluoride), battery life: 5 year(s) |
| Backup time | 3 years at 25 °C (by interruption of power supply) |
| Execution time for 1 KInstruction | 0.3 ms for event and periodic task |
| Execution time per instruction | 0.2 µs Boolean |
| Exct time for event task | 60 µs response time |
| Clock drift | <= 90 s/month at 25 °C |
| Regulation loop | Adjustable PID regulator up to 14 simultaneous loops |
| Control signal type | Quadrature (x1, x2, x4) at 100 kHz for fast input (HSC mode) Pulse/direction at 100 kHz for fast input (HSC mode) Single phase at 100 kHz for fast input (HSC mode) CW/CCW at 100 kHz for fast input (HSC mode) |
| Counting input number | 4 fast input (HSC mode) at 100 kHz 32 bits |
| Integrated connection type | USB port with mini B USB 2.0 connector Non isolated serial link serial 1 with terminal block connector and RS485 interface Non isolated serial link serial 2 with terminal block connector and RS232/RS485 interface Isolated serial link serial 2 with terminal block connector and RS485 interface |
| Transmission rate | 1.2...115.2 kbit/s (115.2 kbit/s by default) for bus length of 15 m for RS485 1.2...115.2 kbit/s (115.2 kbit/s by default) for bus length of 3 m for RS232 12 Mbit/s for USB |
| Communication port protocol | USB port: USB - SoMachine-Network Non isolated serial link: Modbus master/slave - RTU/ASCII or SoMachine-Network |
| Local signalling | 1 LED (green) for PWR 1 LED (green) for RUN 1 LED (red) for module error (ERR) 1 LED (green) for SD card access (SD) 1 LED (red) for BAT 1 LED (green) for SL1 1 LED per channel (green) for I/O state |
| Electrical connection | Mini B USB 2.0 connector for a programming terminal removable screw terminal block for inputs removable screw terminal block for outputs removable screw terminal block, 4 terminal(s) for connecting the serial link1 removable screw terminal block, 3 terminal(s) for connecting the 100-240 V AC power supply |
| Maximum cable distance between devices | Unshielded cable: <50 m for input Shielded cable: <10 m for fast input Shielded cable: <10 m for high speed input Unshielded cable: <150 m for output |
| Insulation | Non-insulated between inputs Between output and internal logic at 1780 V AC Between output groups at 1780 V AC Between supply and internal logic at 1780 V AC Between input and internal logic at 500 V AC Between fast input and internal logic at 500 V AC Between input groups at 500 V AC |
| Sensor power supply | 24 V DC at 300 mA supplied by the controller |

| | |
|-------------------------|---|
| Marking | CE |
| Mounting support | Top hat type TH35-15 rail conforming to IEC 60715 Top hat type TH35-7.5 plate or panel with fixing kit conforming to IEC 60715 |
| Height | 90 mm |
| Depth | 70 mm |
| Width | 175 mm |
| Net weight | 0.504 kg |

Environment

| | |
|--|---|
| IP degree of protection | IP20 with protective cover in place |
| Product certifications | IACS E10 cULus RCM CSA |
| Standards | EN/IEC 61010-2-201 EN/IEC 61131-2 |
| Electromagnetic compatibility | Electrostatic discharge immunity test - test level: 8 kV (air discharge) conforming to EN/IEC 61000-4-2 Electrostatic discharge immunity test - test level: 6 kV (contact discharge) conforming to EN/IEC 61000-4-2 Susceptibility to electromagnetic fields - test level: 10 V/m (80 MHz...3 GHz) conforming to EN/IEC 61000-4-3 Magnetic field at power frequency - test level: 30 A/m conforming to EN/IEC 61000-4-8 Electrical fast transient/burst immunity test - test level: 2 kV (power lines) conforming to EN/IEC 61000-4-4 Electrical fast transient/burst immunity test - test level: 2 kV (relay output) conforming to EN/IEC 61000-4-4 Electrical fast transient/burst immunity test - test level: 1 kV (I/O) conforming to EN/IEC 61000-4-4 Electrical fast transient/burst immunity test - test level: 1 kV (serial link) conforming to EN/IEC 61000-4-4 1.2/50 µs shock waves immunity test - test level: 1 kV (power lines (DC)) conforming to EN/IEC 61000-4-5 1.2/50 µs shock waves immunity test - test level: 2 kV (power lines (AC)) conforming to EN/IEC 61000-4-5 1.2/50 µs shock waves immunity test - test level: 2 kV (relay output) conforming to EN/IEC 61000-4-5 1.2/50 µs shock waves immunity test - test level: 1 kV (I/O) conforming to EN/IEC 61000-4-5 1.2/50 µs shock waves immunity test - test level: 1 kV (shielded cable) conforming to EN/IEC 61000-4-5 1.2/50 µs shock waves immunity test - test level: 0.5 kV (power lines (DC)) conforming to EN/IEC 61000-4-5 1.2/50 µs shock waves immunity test - test level: 1 kV (power lines (AC)) conforming to EN/IEC 61000-4-5 Conducted RF disturbances - test level: 10 V (0.15...80 MHz) conforming to EN/IEC 61000-4-6 Conducted emission - test level: 79 dBµV/m QP/66 dBµV/m AV (power lines (AC)) conforming to EN/IEC 55011 Conducted emission - test level: 73 dBµV/m QP/60 dBµV/m AV (power lines (AC)) conforming to EN/IEC 55011 Radiated emission - test level: 40 dBµV/m QP class A (10 m) conforming to EN/IEC 55011 Radiated emission - test level: 47 dBµV/m QP class A (10 m) conforming to EN/IEC 55011 |
| Shock resistance | 15 gn for 11 ms 30 gn for 6 ms |
| Immunity to microbreaks | 10 ms |
| Vibration resistance | 3.5 mm at 5...8.4 Hz on symmetrical rail 1 gn at 8.4...150 Hz on symmetrical rail 3.5 mm at 5...8.7 Hz on panel mounting 2 gn at 8.7...150 Hz on panel mounting |
| Relative humidity | 10...95 %, without condensation (in operation) 10...95 %, without condensation (in storage) |
| Ambient air temperature for operation | 0...55 °C (horizontal installation) |
| Ambient air temperature for storage | -25...70 °C |
| Pollution degree | <= 2 |
| Operating altitude | 0...2000 m |
| Storage altitude | 0...3000 m |

Packing Units

| | |
|-------------------------------------|-----|
| Unit Type of Package 1 | PCE |
| Number of Units in Package 1 | 1 |

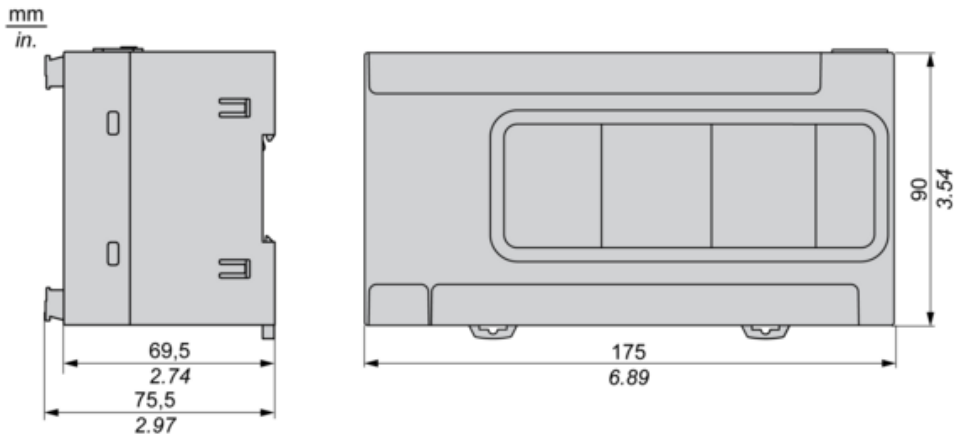
| | |
|------------------------------|-----------|
| Package 1 Height | 9.388 cm |
| Package 1 Width | 13.744 cm |
| Package 1 Length | 18.809 cm |
| Package 1 Weight | 767.5 g |
| Unit Type of Package 2 | S03 |
| Number of Units in Package 2 | 12 |
| Package 2 Height | 30 cm |
| Package 2 Width | 30 cm |
| Package 2 Length | 40 cm |
| Package 2 Weight | 9716 g |
| Unit Type of Package 3 | P12 |
| Number of Units in Package 3 | 288 |
| Package 3 Height | 95 cm |
| Package 3 Width | 80 cm |
| Package 3 Length | 120 cm |
| Package 3 Weight | 242184 g |

Offer Sustainability

| | |
|----------------------------|---|
| Sustainable offer status | Green Premium product |
| REACH Regulation | REACH Declaration |
| EU RoHS Directive | Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration |
| Mercury free | Yes |
| China RoHS Regulation | China RoHS declaration |
| RoHS exemption information | Yes |
| Environmental Disclosure | Product Environmental Profile |
| Circularity Profile | End of Life Information |
| WEEE | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |

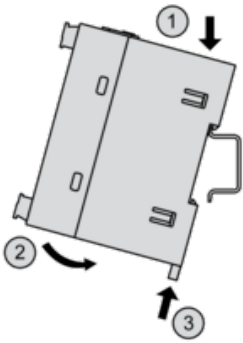
Dimensions Drawings

Dimensions

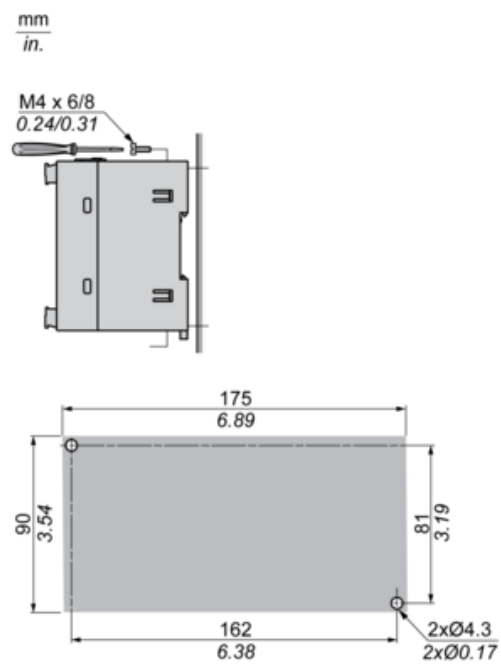


Mounting and Clearance

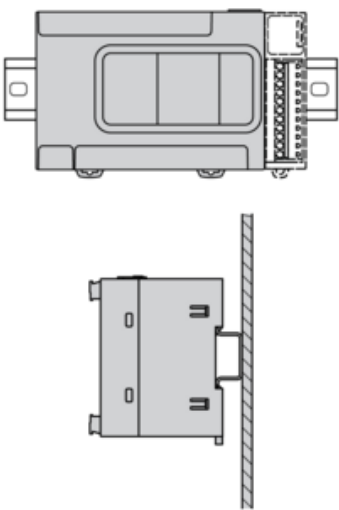
Mounting on a Rail

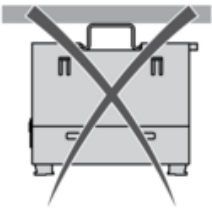
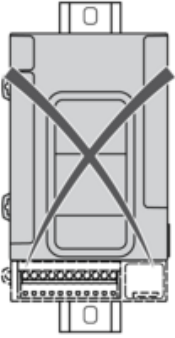
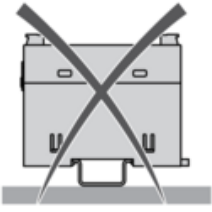


Direct Mounting on a Panel Surface



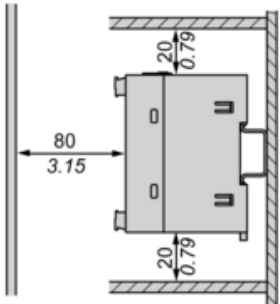
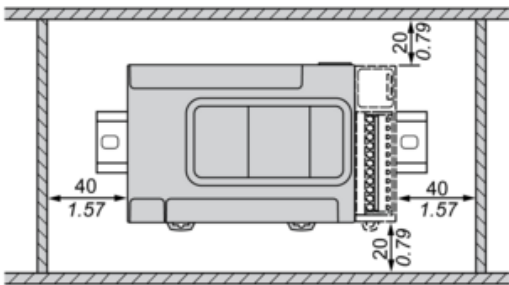
Mounting Position



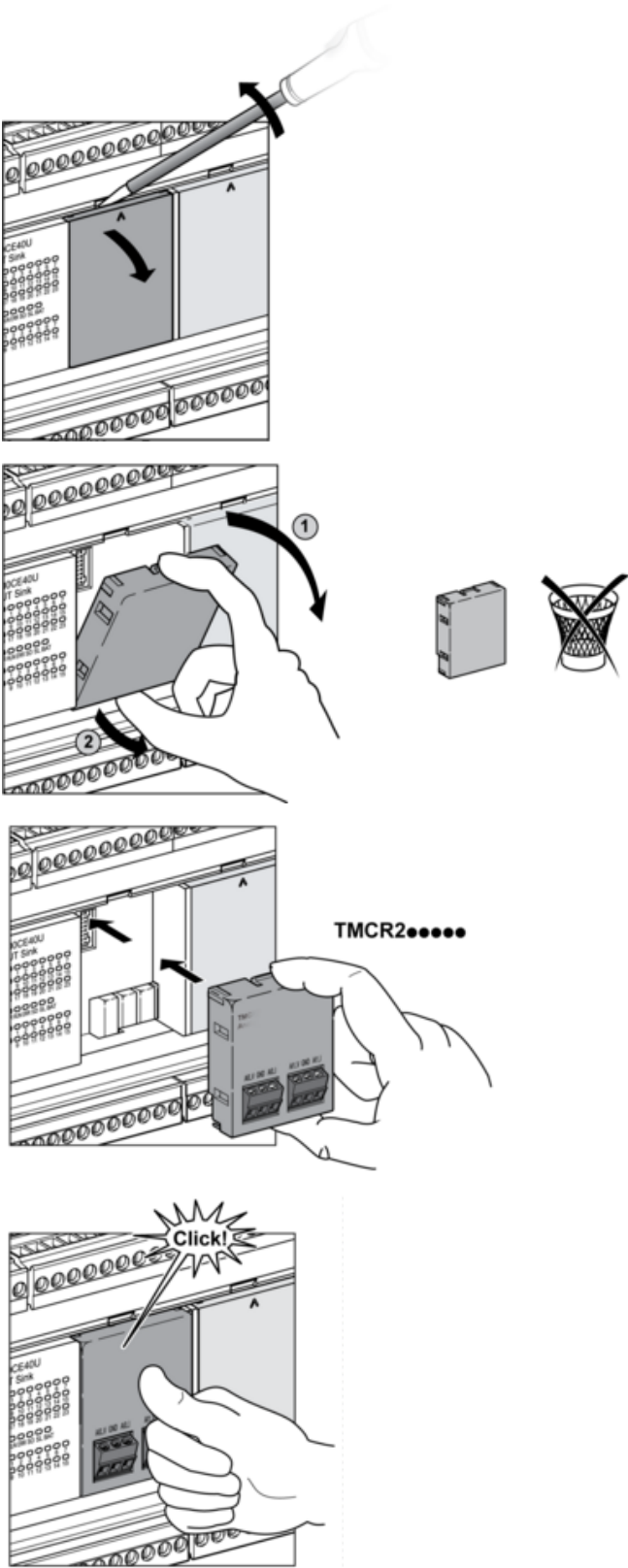


Clearance

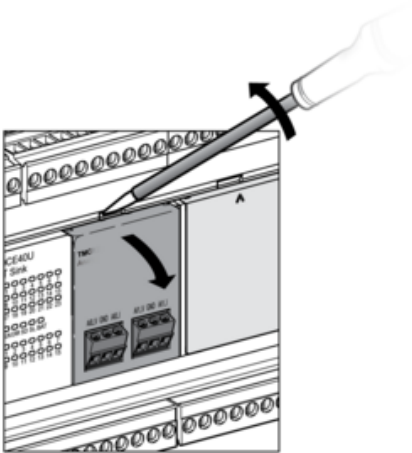
mm
in.

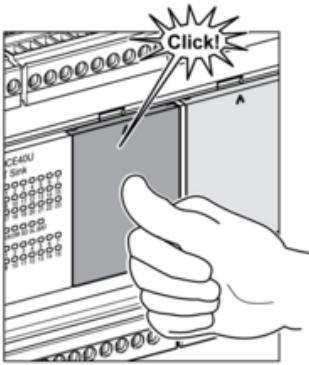
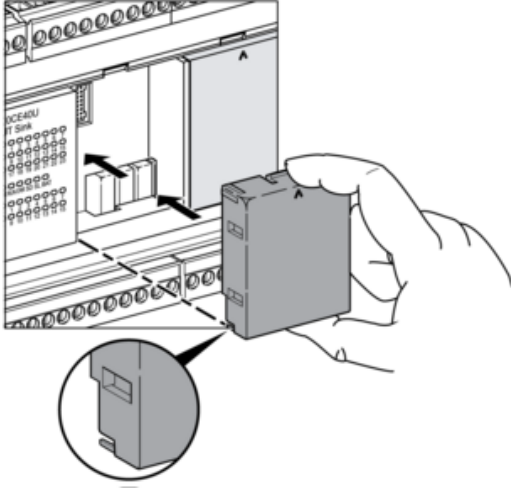
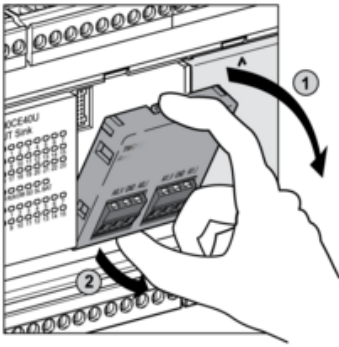


TMCR2...Installation



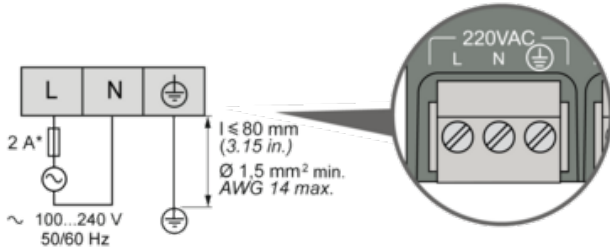
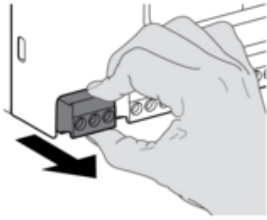
TMCR2... De-Installation





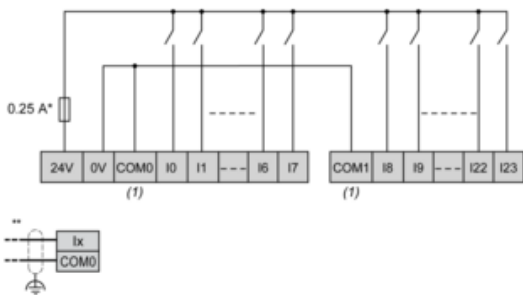
Wiring Diagram / Connections Schema

AC Power Supply



(*) Type T fuse

Digital Inputs Positive Logic (Sink)

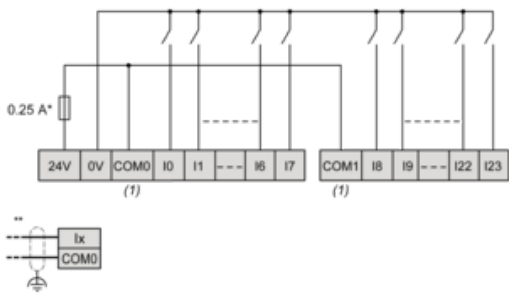


(*) Type T fuse

(**) Fast inputs

(1) The COM0 and COM1 terminals are **not** connected internally.

Digital Inputs Negative Logic (Source)

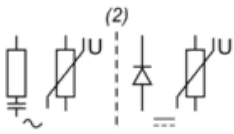
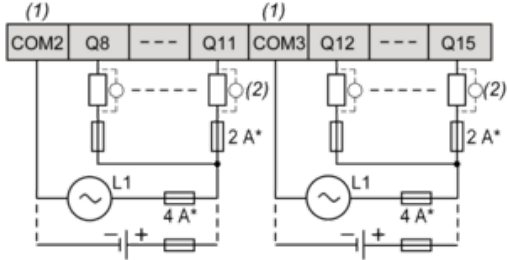
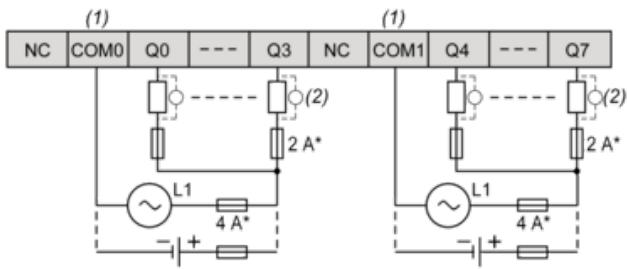


(*) Type T fuse

(**) Fast inputs

(1) The COM0 and COM1 terminals are **not** connected internally.

Relay Outputs - Negative Logic (Sink)

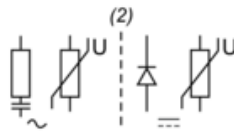
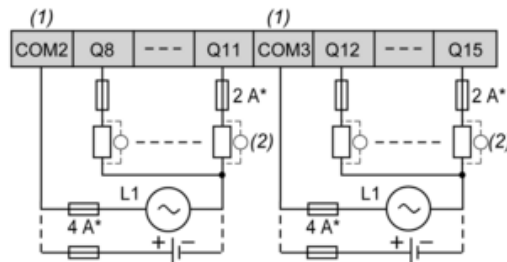
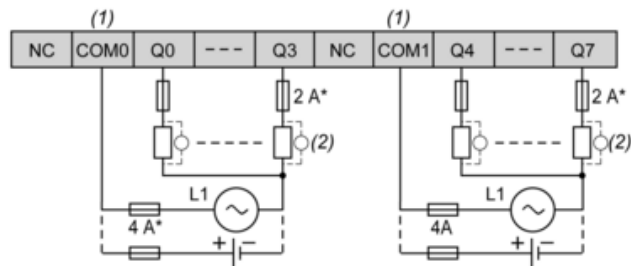


(*) Type T fuse

(1) The COM0 and COM1 terminals are **not** connected internally.

(2) A free wheeling diode or an RC snubber

Relay Outputs - Positive Logic (Source)

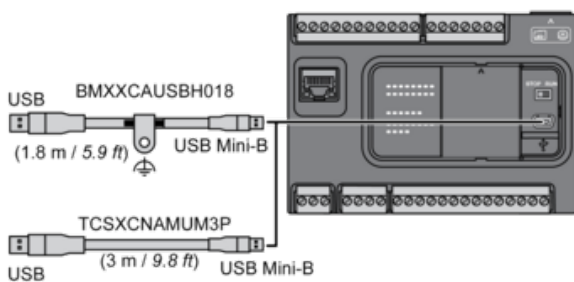


(*) Type T fuse

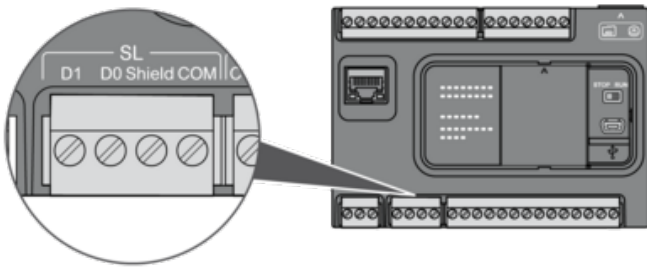
(1) The COM0 and COM1 terminals are **not** connected internally.

(2) A free wheeling diode or an RC snubber

USB Mini-B Connection



SL1 Connection



D1 : D1 (A+)

D0 : D0 (B-)

Shield : Shield

COM : O V Com

Recommended replacement(s)