



### Main

|                           |                                       |
|---------------------------|---------------------------------------|
| Range of Product          | Modicon M221                          |
| Product or Component Type | Logic controller                      |
| [Us] rated supply voltage | 100...240 V AC                        |
| Discrete input number     | 24, discrete input IEC 61131-2 Type 1 |
| Analogue input number     | 2 0...10 V                            |
| Discrete output type      | Relay normally open                   |
| Discrete output number    | 16 relay                              |
| Discrete output voltage   | 5...125 V DC<br>5...250 V AC          |
| Discrete output current   | 2 A                                   |

### Complementary

|                                        |                                                                                                                                                                                                                                                         |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Discrete I/O number                    | 40                                                                                                                                                                                                                                                      |
| Maximum number of I/O expansion module | 7 relay output                                                                                                                                                                                                                                          |
| Supply voltage limits                  | 85...264 V                                                                                                                                                                                                                                              |
| Network Frequency                      | 50/60 Hz                                                                                                                                                                                                                                                |
| Inrush current                         | 40 A                                                                                                                                                                                                                                                    |
| Maximum power consumption in VA        | 70 VA 100...240 V with max number of I/O expansion module<br>41 VA 100...240 V without I/O expansion module                                                                                                                                             |
| Power supply output current            | 0.52 A 5 V expansion bus<br>0.24 A 24 V expansion bus                                                                                                                                                                                                   |
| Discrete input logic                   | Sink or source (positive/negative)                                                                                                                                                                                                                      |
| Discrete input voltage                 | 24 V                                                                                                                                                                                                                                                    |
| Discrete input voltage type            | DC                                                                                                                                                                                                                                                      |
| Analogue input resolution              | 10 bits                                                                                                                                                                                                                                                 |
| LSB value                              | 10 mV                                                                                                                                                                                                                                                   |
| Conversion time                        | 1 ms per channel + 1 controller cycle time analog input                                                                                                                                                                                                 |
| Permitted overload on inputs           | +/- 30 V DC 5 min maximum)analog input<br>+/- 13 V DC permanent)analog input                                                                                                                                                                            |
| Voltage state 1 guaranteed             | >= 15 V input                                                                                                                                                                                                                                           |
| Voltage state 0 guaranteed             | <= 5 V input                                                                                                                                                                                                                                            |
| Discrete input current                 | 7 mA discrete input<br>5 mA fast input                                                                                                                                                                                                                  |
| Input impedance                        | 3.4 kOhm discrete input<br>100 kOhm analog input<br>4.9 kOhm fast input                                                                                                                                                                                 |
| Response time                          | 35 µs turn-off, I2...I5 input<br>10 ms turn-on output<br>10 ms turn-off output<br>5 µs turn-on, I0, I1, I6, I7 fast input<br>35 µs turn-on, other terminals input<br>5 µs turn-off, I0, I1, I6, I7 fast input<br>100 µs turn-off, other terminals input |
| Configurable filtering time            | 0 ms input<br>3 ms input<br>12 ms input                                                                                                                                                                                                                 |
| Output voltage limits                  | 125 V DC<br>277 V AC                                                                                                                                                                                                                                    |
| Maximum current per output common      | 7 A                                                                                                                                                                                                                                                     |
| Absolute accuracy error                | +/- 1 % of full scale analog input                                                                                                                                                                                                                      |

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This information is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electrical durability             | 100000 Cycles AC-12, 120 V, 240 VA, resistive<br>100000 Cycles AC-12, 240 V, 480 VA, resistive<br>300000 Cycles AC-12, 120 V, 80 VA, resistive<br>300000 Cycles AC-12, 240 V, 160 VA, resistive<br>100000 Cycles AC-15, cos phi = 0.35, 120 V, 60 VA, inductive<br>100000 Cycles AC-15, cos phi = 0.35, 240 V, 120 VA, inductive<br>300000 Cycles AC-15, cos phi = 0.35, 120 V, 18 VA, inductive<br>300000 Cycles AC-15, cos phi = 0.35, 240 V, 36 VA, inductive<br>100000 Cycles AC-14, cos phi = 0.7, 120 V, 120 VA, inductive<br>100000 Cycles AC-14, cos phi = 0.7, 240 V, 240 VA, inductive<br>300000 Cycles AC-14, cos phi = 0.7, 120 V, 36 VA, inductive<br>300000 Cycles AC-14, cos phi = 0.7, 240 V, 72 VA, inductive<br>100000 Cycles DC-12, 24 V, 48 W, resistive<br>300000 Cycles DC-12, 24 V, 16 W, resistive<br>100000 Cycles DC-13, 24 V, 24 W, inductive (L/R = 7 ms)<br>300000 cycles DC-13, 24 V, 7.2 W, inductive (L/R = 7 ms) |
| Switching frequency               | 20 switching operations/minute with maximum load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Mechanical durability             | 20000000 cycles relay output                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Minimum load                      | 1 mA 5 V DC relay output                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Protection type                   | Without protection 5 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Reset time                        | 1 s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Memory capacity                   | 256 kB user application and data RAM 10000 instructions<br>256 kB internal variables RAM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Data backed up                    | 256 kB built-in flash memory backup of application and data                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Data storage equipment            | 2 GB SD card optional)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Battery type                      | BR2032 lithium non-rechargeable 4 year(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Backup time                       | 1 year 77 °F (25 °C) by interruption of power supply)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Execution time for 1 KInstruction | 0.3 ms event and periodic task                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Execution time per instruction    | 0.2 µs Boolean                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Exct time for event task          | 60 µs response time                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Maximum size of object areas      | 8000 %MW memory words<br>255 %TM timers<br>512 %KW constant words<br>255 %C counters<br>512 %M memory bits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Realtime clock                    | With                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Clock drift                       | <= 30 s/month 77 °F (25 °C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Regulation loop                   | Adjustable PID regulator up to 14 simultaneous loops                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Counting input number             | 4 fast input (HSC mode) 100 kHz 32 bits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Counter function                  | Single phase<br>A/B<br>Pulse/direction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Integrated connection type        | USB port mini B USB 2.0<br>Non isolated serial link serial 1 RJ45 RS232/RS485<br>Ethernet RJ45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Supply                            | Serial)serial link supply 5 V, <200 mA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Transmission rate                 | 1.2...115.2 kbit/s (115.2 kbit/s by default) 49.21 ft (15 m) RS485<br>1.2...115.2 kbit/s (115.2 kbit/s by default) 9.84 ft (3 m) RS232<br>480 Mbit/s USB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Communication port protocol       | USB port USB - SoMachine-Network<br>Non isolated serial link Modbus master/slave - RTU/ASCII or SoMachine-Network<br>Ethernet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Port Ethernet                     | 10BASE-T/100BASE-TX 1 328.08 ft (100 m) copper cable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Communication Service             | DHCP client<br>Modbus TCP client<br>Ethernet/IP adapter<br>Modbus TCP server<br>Modbus TCP slave device                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Local signalling                  | For PWR 1 LED (green)<br>For RUN 1 LED (green)<br>For module error (ERR) 1 LED (red)<br>For SD card access (SD) 1 LED (green)<br>For BAT 1 LED (red)<br>For I/O state 1 LED per channel (green)<br>For SL 1 LED (green)<br>For ACT Ethernet network activity (green)<br>For Link (Link Status) Ethernet network link (yellow)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electrical connection                  | Removable screw terminal block for inputs<br>Removable screw terminal block for outputs<br>Terminal block, 3 for connecting the 24 V DC power supply<br>Connector, 4 for analogue inputs<br>Mini B USB 2.0 connector for a programming terminal                                                                                                                                                                                                                                                                                                                                           |
| Maximum cable distance between devices | Shielded cable <32.81 ft (10 m) fast input<br>Unshielded cable <98.43 ft (30 m) output<br>Unshielded cable <98.43 ft (30 m) digital input<br>Unshielded cable <3.28 ft (1 m) analog input                                                                                                                                                                                                                                                                                                                                                                                                 |
| Insulation                             | Between input and internal logic 500 V AC<br>Non-insulated between analogue input and internal logic<br>Non-insulated between analogue inputs<br>Between supply and ground 1500 V AC<br>Between sensor power supply and ground 500 V AC<br>Between input and ground 500 V AC<br>Between output and ground 1500 V AC<br>Between supply and internal logic 2300 V AC<br>Between sensor power supply and internal logic 500 V AC<br>Between output and internal logic 2300 V AC<br>Between Ethernet terminal and internal logic 500 V AC<br>Between supply and sensor power supply 2300 V AC |
| Marking                                | CE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Sensor power supply                    | 24 V DC 250 mA supplied by the controller                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Mounting support                       | Top hat type TH35-15 rail IEC 60715<br>Top hat type TH35-7.5 rail IEC 60715<br>Plate or panel with fixing kit                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Height                                 | 3.54 in (90 mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Depth                                  | 2.76 in (70 mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Width                                  | 6.30 in (160 mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Net Weight                             | 1.01 lb(US) (0.456 kg)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

## Environment

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standards                             | EN/IEC 60664-1<br>EN/IEC 61131-2<br>EN/IEC 61010-2-201                                                                                                                                                                                                                                                                                                                                                                                      |
| Product Certifications                | DNV-GL<br>EAC<br>ABS<br>CULus<br>LR<br>RCM<br>CSA<br>IACS E10                                                                                                                                                                                                                                                                                                                                                                               |
| Environmental characteristic          | Ordinary and hazardous location                                                                                                                                                                                                                                                                                                                                                                                                             |
| Resistance to electrostatic discharge | 8 kV in air EN/IEC 61000-4-2<br>4 kV on contact EN/IEC 61000-4-2                                                                                                                                                                                                                                                                                                                                                                            |
| Resistance to electromagnetic fields  | 9.14 V/m (10 V/m) 80 MHz...1 GHz EN/IEC 61000-4-3<br>2.74 V/m (3 V/m) 1.4 GHz...2 GHz EN/IEC 61000-4-3<br>0.91 V/m (1 V/m) 2...2.7 GHz EN/IEC 61000-4-3                                                                                                                                                                                                                                                                                     |
| Resistance to magnetic fields         | 98.43 A/m (30 A/m) 50/60 Hz EN/IEC 61000-4-8                                                                                                                                                                                                                                                                                                                                                                                                |
| Resistance to fast transients         | 2 kV EN/IEC 61000-4-4 power lines)<br>2 kV EN/IEC 61000-4-4 relay output)<br>1 kV EN/IEC 61000-4-4 I/O)<br>1 kV EN/IEC 61000-4-4 Ethernet line)<br>1 kV EN/IEC 61000-4-4 serial link)                                                                                                                                                                                                                                                       |
| Surge withstand                       | 2 kV power lines (AC) common mode EN/IEC 61000-4-5<br>2 kV relay output common mode EN/IEC 61000-4-5<br>1 kV I/O common mode EN/IEC 61000-4-5<br>1 kV shielded cable common mode EN/IEC 61000-4-5<br>0.5 kV power lines (DC) differential mode EN/IEC 61000-4-5<br>1 kV power lines (AC) differential mode EN/IEC 61000-4-5<br>1 kV relay output differential mode EN/IEC 61000-4-5<br>0.5 kV power lines (DC) common mode EN/IEC 61000-4-5 |
| Resistance to conducted disturbances  | 10 V 0.15...80 MHz EN/IEC 61000-4-6<br>3 V 0.1...80 MHz Marine specification (LR, ABS, DNV, GL)<br>10 V spot frequency (2, 3, 4, 6.2, 8.2, 12.6, 16.5, 18.8, 22, 25 MHz) Marine specification (LR, ABS, DNV, GL)                                                                                                                                                                                                                            |

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electromagnetic emission              | Conducted emissions 79 dB $\mu$ V/m QP/66 dB $\mu$ V/m AV power lines (AC))0.15...0.5 MHz EN/IEC 55011<br>Conducted emissions 73 dB $\mu$ V/m QP/60 dB $\mu$ V/m AV power lines (AC))0.5...300 MHz EN/IEC 55011<br>Conducted emissions 120...69 dB $\mu$ V/m QP power lines)10...150 kHz EN/IEC 55011<br>Conducted emissions 63 dB $\mu$ V/m QP power lines)1.5...30 MHz EN/IEC 55011<br>Radiated emissions 40 dB $\mu$ V/m QP class A 10 m)30...230 MHz EN/IEC 55011<br>Conducted emissions 79...63 dB $\mu$ V/m QP power lines)150...1500 kHz EN/IEC 55011<br>Radiated emissions 47 dB $\mu$ V/m QP class A 10 m)200...1000 MHz EN/IEC 55011 |
| Immunity to microbreaks               | 10 ms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Ambient air temperature for operation | 14...131 °F (-10...55 °C) horizontal installation)<br>14...95 °F (-10...35 °C) vertical installation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Ambient Air Temperature for Storage   | -13...158 °F (-25...70 °C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Relative humidity                     | 10...95 %, without condensation in operation)<br>10...95 %, without condensation in storage)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| IP degree of protection               | IP20 with protective cover in place                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Pollution degree                      | <= 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Operating altitude                    | 0...6561.68 ft (0...2000 m)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Storage altitude                      | 0.00...9842.52 ft (0...3000 m)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Vibration resistance                  | 3.5 mm 5...8.4 Hz symmetrical rail<br>3.5 mm 5...8.4 Hz panel mounting<br>1 gn 8.4...150 Hz symmetrical rail<br>1 gn 8.4...150 Hz panel mounting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Shock resistance                      | 98 m/s <sup>2</sup> 11 ms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## Ordering and shipping details

|                       |                              |
|-----------------------|------------------------------|
| Category              | 22533-M2XX PLC & ACCESSORIES |
| Discount Schedule     | MSX                          |
| GTIN                  | 3606480648793                |
| Nbr. of units in pkg. | 1                            |
| Package weight(Lbs)   | 29.28 oz (830.0 g)           |
| Returnability         | Yes                          |
| Country of origin     | TW                           |

## Packing Units

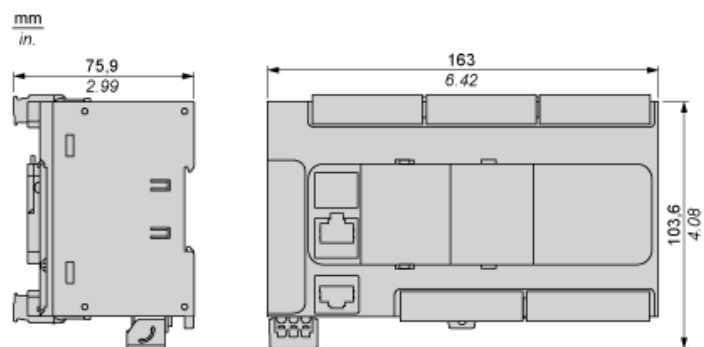
|                              |                         |
|------------------------------|-------------------------|
| Unit Type of Package 1       | PCE                     |
| Package 1 Height             | 4.37 in (11.09 cm)      |
| Package 1 width              | 5.58 in (14.183 cm)     |
| Package 1 Length             | 8.30 in (21.085 cm)     |
| Unit Type of Package 2       | CAR                     |
| Number of Units in Package 2 | 12                      |
| Package 2 Weight             | 24.34 lb(US) (11.04 kg) |
| Package 2 Height             | 11.50 in (29.2 cm)      |
| Package 2 width              | 15.67 in (39.8 cm)      |
| Package 2 Length             | 22.80 in (57.9 cm)      |

## Offer Sustainability

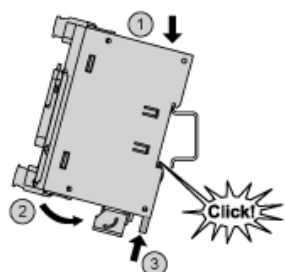
|                            |                                                                                                                                                                                                                                                                                             |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sustainable offer status   | Green Premium product                                                                                                                                                                                                                                                                       |
| California proposition 65  | WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> |
| REACH Regulation           |  <a href="#">REACH Declaration</a>                                                                                                                                                                       |
| EU RoHS Directive          | Pro-active compliance (Product out of EU RoHS legal scope)  <a href="#">EU RoHS Declaration</a>                                                                                                        |
| Mercury free               | Yes                                                                                                                                                                                                                                                                                         |
| RoHS exemption information |  <a href="#">Yes</a>                                                                                                                                                                                     |

|                          |                                                                                                                              |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------|
| China RoHS Regulation    | <a href="#">China RoHS Declaration</a>                                                                                       |
| Environmental Disclosure | <a href="#">Product Environmental Profile</a>                                                                                |
| Circularity Profile      | <a href="#">End Of Life Information</a>                                                                                      |
| WEEE                     | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins. |
| PVC free                 | Yes                                                                                                                          |

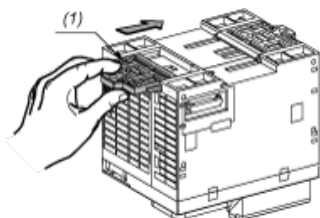
## Dimensions



## Mounting on a Rail

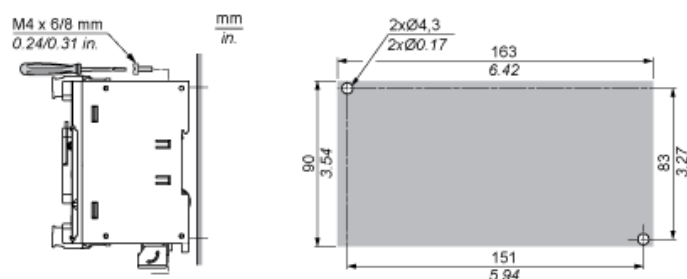


## Direct Mounting on a Panel Surface



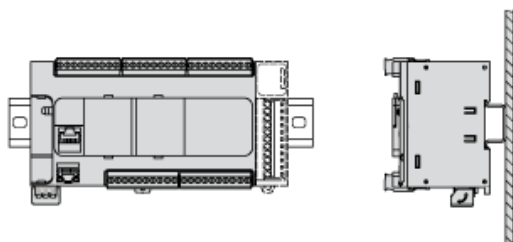
- (1) Install a mounting strip

## Mounting Hole Layout

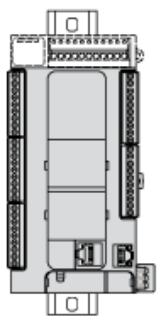


## Mounting

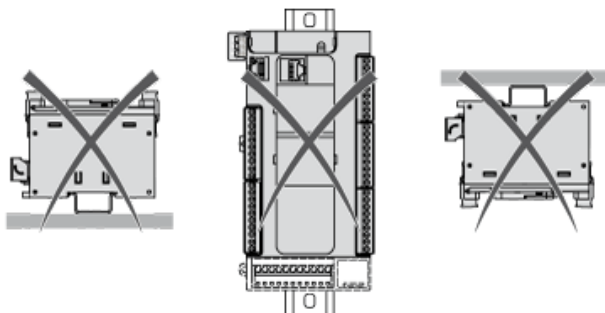
### Correct Mounting Position



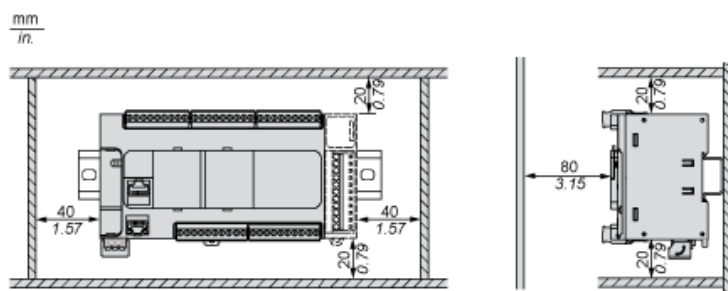
## Acceptable Mounting Position



## Incorrect Mounting Position

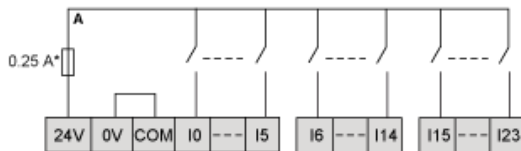


## Clearance



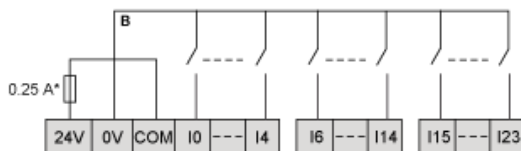
## Digital Inputs

### Wiring Diagram (Positive Logic)



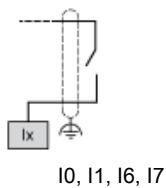
(\*) Type T fuse

### Wiring Diagram (Negative Logic)



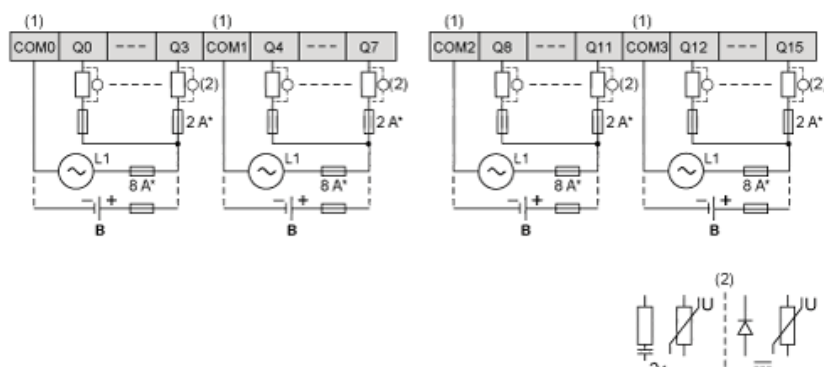
(\*) Type T fuse

### Connection of the Fast Inputs



## Relay Outputs

### Negative Logic (Sink)



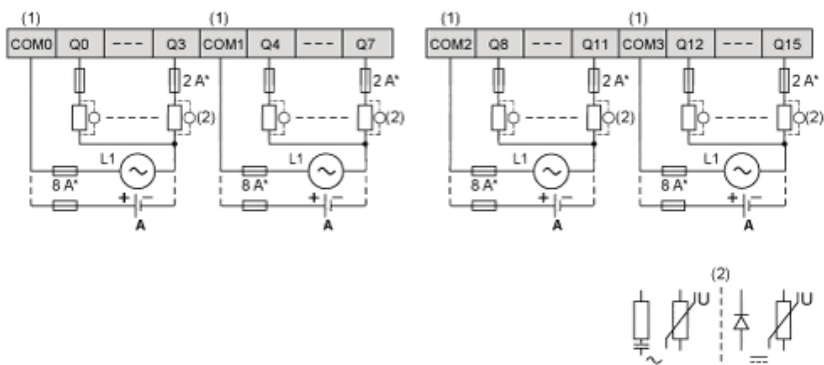
(\*) Type T fuse

(1) The COM0, COM1, COM2 and COM3 terminals are not connected internally.

(2) To improve the life time of the contacts, and to protect from potential inductive load damage, you must connect a free wheeling diode in parallel to each inductive DC load or an RC snubber in parallel of each inductive AC load

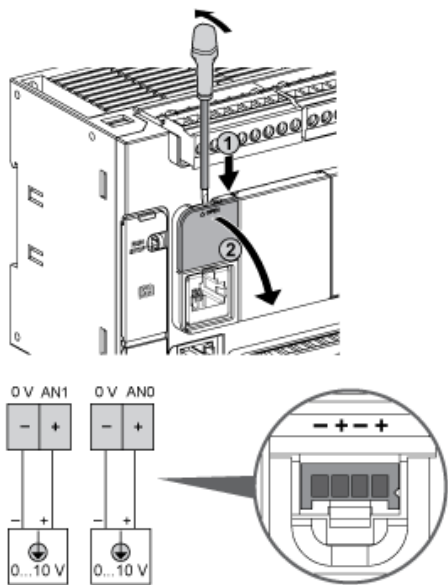
B Sink wiring (negative logic)

Positive Logic (Source)



- (\*) Type T fuse  
(1) The COM0, COM1, COM2 and COM3 terminals are not connected internally.  
(2) To improve the life time of the contacts, and to protect from potential inductive load damage, you must connect a free wheeling diode in parallel to each inductive DC load or an RC snubber in parallel of each inductive AC load  
A Source wiring (positive logic)

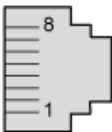
Analog Inputs



The (-) poles are connected internally.

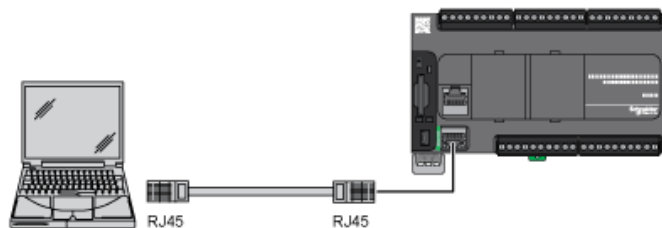
| Pin | Wire Color |
|-----|------------|
| 0 V | Black      |
| AN1 | Red        |
| 0 V | Black      |
| AN0 | Red        |

Ethernet Connection

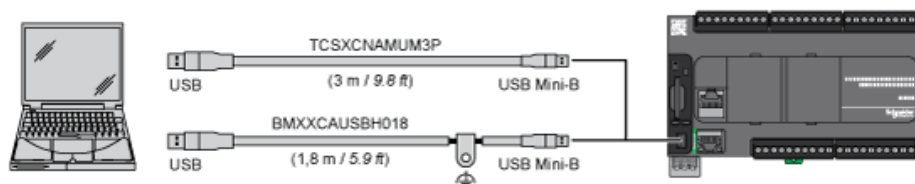


| Pin N° | Signal |
|--------|--------|
| 1      | TD+    |
| 2      | TD-    |
| 3      | RD+    |
| 4      | -      |

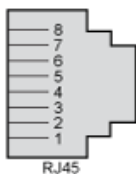
| Pin N° | Signal |
|--------|--------|
| 5      | -      |
| 6      | RD-    |
| 7      | -      |
| 8      | -      |



## USB Mini-B Connection



## SL1 Connection

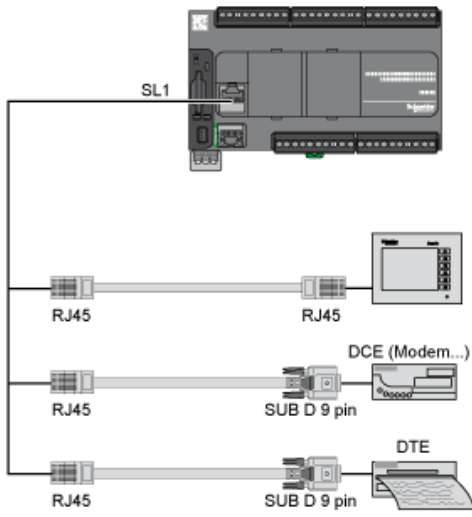


### SL1

| N ° | RS 232 | RS 485 |
|-----|--------|--------|
| 1   | RxD    | N.C.   |
| 2   | TxD    | N.C.   |
| 3   | RTS    | N.C.   |
| 4   | N.C.   | D1     |
| 5   | N.C.   | D0     |
| 6   | CTS    | N.C.   |
| 7   | N.C.*  | 5 Vdc  |
| 8   | Common | Common |

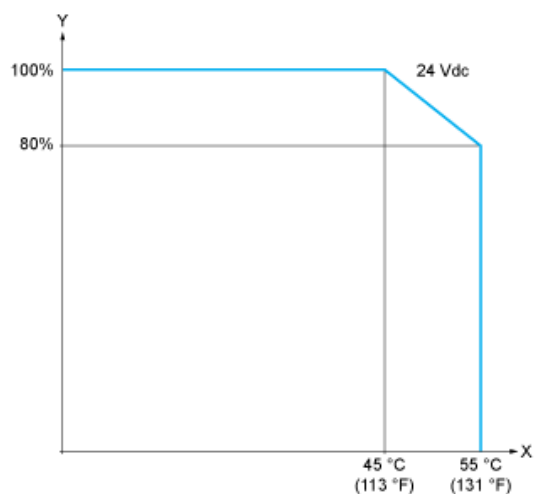
N.C.: not connected

\* : 5 Vdc delivered by the controller. Do not connect.



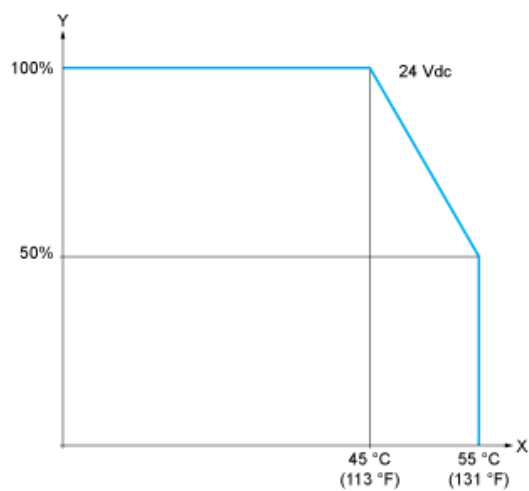
## Derating Curves

### Embedded Digital Inputs (No Cartridge)



X : Ambient temperature  
Y : Input simultaneous ON ratio

### Embedded Digital Inputs (with Cartridge)



X : Ambient temperature  
Y : Input simultaneous ON ratio