



Main

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|---------------------------|---|
| Range of Product | Modicon M241 |
| Product or Component Type | Logic controller |
| [Us] rated supply voltage | 24 V DC |
| Discrete input number | 14, discrete input 8 fast input IEC 61131-2 Type 1 |
| Discrete output type | Transistor |
| Discrete output number | 10 transistor 4 fast output |
| Discrete output voltage | 24 V DC transistor output |
| Discrete output current | 0.5 A transistor output (Q0...Q9) 0.1 A fast output (PTO mode) (Q0...Q3) |

Complementary

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|--|---|
| Discrete I/O number | 24 |
| Maximum number of I/O expansion module | 7 (local I/O-Architecture) 14 (remote I/O-Architecture) |
| Supply voltage limits | 20.4...28.8 V |
| Inrush current | 50 A |
| Power consumption in W | 32.6...40.4 W (with max number of I/O expansion module) |
| Discrete input logic | Sink or source |
| Discrete input voltage | 24 V |
| Discrete input voltage type | DC |
| Voltage state 1 guaranteed | >= 15 V input |
| Voltage state 0 guaranteed | <= 5 V input |
| Discrete input current | 5 mA input 10.7 mA fast input |
| Input impedance | 4.7 kOhm input 2.81 kOhm fast input |
| Response time | 50 µs turn-on, I0...I13 input 50 µs turn-off, I0...I13 input <= 2 µs turn-on, I0...I7 fast input <= 2 µs turn-off, I0...I7 fast input <= 34 µs turn-on, Q0...Q9 output <= 250 µs turn-off, Q0...Q9 output <= 2 µs turn-on, Q0...Q3 fast output <= 2 µs turn-off, Q0...Q3 fast output |
| Configurable filtering time | 1 µs fast input 12 ms fast input 0 ms input 1 ms input 4 ms input 12 ms input |
| Discrete output logic | Positive logic (source) |
| Output voltage limits | 30 V DC |
| Maximum current per output common | 2 A Q0...Q3 fast output 2 A Q4...Q7 output 1 A Q8...Q9 output |
| Maximum output frequency | 20 KHz fast output (PWM mode) 100 KHz fast output (PLS mode) 1 kHz output |
| Accuracy | +/- 0.1 % 0.02...0.1 kHz fast output +/- 1 % 0.1...1 kHz fast output |
| Maximum leakage current | 5 µA output |

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation 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.

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| Maximum voltage drop | <1 V |
| Maximum tungsten load | <2.4 W |
| Protection type | Short-circuit protection Short-circuit and overload protection with automatic reset Reverse polarity protection fast output |
| Reset time | 10 Ms automatic reset output 12 s automatic reset fast output |
| Memory capacity | 8 MB program 64 MB system memory RAM |
| Data backed up | 128 MB built-in flash memory backup of user programs |
| Data storage equipment | <= 16 GB SD card optional) |
| Battery type | BR2032 lithium non-rechargeable 4 year(s) |
| Backup time | 2 years 77 °F (25 °C) |
| Execution time for 1 KInstruction | 0.3 Ms event and periodic task 0.7 ms other instruction |
| Application structure | 8 external event tasks 4 cyclic master tasks 3 cyclic master tasks + 1 freewheeling task 8 event tasks |
| Realtime clock | With |
| Clock drift | <= 60 s/month 77 °F (25 °C) |
| Positioning functions | PTO 4 100 kHz) PTO 4 transistor output 1 kHz) |
| Counting input number | 4 fast input (HSC mode) 200 kHz 14 standard input 1 kHz |
| Control signal type | A/B 100 kHz fast input (HSC mode) Pulse/Direction 200 kHz fast input (HSC mode) Single phase 200 kHz fast input (HSC mode) |
| Integrated connection type | Non isolated serial link serial 1 RJ45 RS232/RS485 Non isolated serial link serial 2 removable screw terminal block RS485 USB port mini B USB 2.0 Ethernet RJ45 CANopen J1939 male SUB-D 9 |
| Supply | Serial 1)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 1.2...115.2 kbit/s (115.2 kbit/s by default) 9.84 ft (3 m) RS232 480 Mbit/s 9.84 ft (3 m) USB 10/100 Mbit/s Ethernet 1000 kbit/s 65.62 ft (20 m) CANopen 800 kbit/s 131.23 ft (40 m) CANopen 500 kbit/s 328.08 ft (100 m) CANopen 250 kbit/s 820.21 ft (250 m) CANopen 125 kbit/s 1640.42 ft (500 m) CANopen 50 kbit/s 3280.84 ft (1000 m) CANopen 20 kbit/s 8202.10 ft (2500 m) CANopen |
| Communication port protocol | Non isolated serial link Modbus master/slave |
| Port Ethernet | 10BASE-T/100BASE-TX - 1 copper cable |
| Ethernet services | SNMP client/server Modbus TCP slave device Modbus TCP server Modbus TCP client IEC VAR ACCESS FTP client/server SQL client DHCP client Ethernet/IP adapter Send and receive email from the controller based on TCP/UDP library Web server (WebVisu & XWeb system) OPC UA server DNS client |

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| Local signalling | <p>For PWR 1 LED (green) For RUN 1 LED (green) For module error (ERR) 1 LED (red) For I/O error (I/O) 1 LED (red) For SD card access (SD) 1 LED (green) For BAT 1 LED (red) For SL1 1 LED (green) For SL2 1 LED (green) For bus fault on TM4 (TM4) 1 LED (red) For I/O state 1 LED per channel (green) For Ethernet port activity 1 LED (green) For CANopen run 1 LED (green) For CANopen error 1 LED (green)</p> |
| Electrical connection | <p>Removable screw terminal block for inputs and outputs pitch 5.08 mm) Removable screw terminal block for connecting the 24 V DC power supply pitch 5.08 mm)</p> |
| Maximum cable distance between devices | <p>Unshielded cable <164.04 ft (50 m) input Shielded cable <32.81 ft (10 m) fast input Unshielded cable <164.04 ft (50 m) output Shielded cable <9.84 ft (3 m) fast output</p> |
| Insulation | <p>Between supply and internal logic 500 V AC Non-insulated between supply and ground Between input and internal logic 500 V AC Non-insulated between inputs Between fast input and internal logic 500 V AC Between output and internal logic 500 V AC Non-insulated between outputs Between fast output and internal logic 500 V AC</p> |
| Marking | CE |
| Surge withstand | <p>1 KV power lines (DC) common mode EN/IEC 61000-4-5 1 KV shielded cable common mode EN/IEC 61000-4-5 0.5 KV power lines (DC) differential mode EN/IEC 61000-4-5 1 KV relay output differential mode EN/IEC 61000-4-5 1 KV input common mode EN/IEC 61000-4-5 1 kV transistor output common mode EN/IEC 61000-4-5</p> |
| Web services | Web server |
| Maximum number of connections | <p>16 Ethernet/IP device 8 Modbus server</p> |
| CANopen feature profile | <p>DS 301 V4.02 DR 303-1</p> |
| Number of slave | 63 CANopen |
| Mounting support | <p>Top hat type TH35-15 rail IEC 60715 Top hat type TH35-7.5 rail IEC 60715 Plate or panel with fixing kit</p> |
| Height | 3.54 in (90 mm) |
| Depth | 3.74 in (95 mm) |
| Width | 5.91 in (150 mm) |
| Net Weight | 1.17 lb(US) (0.53 kg) |

Environment

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|---------------------------------------|---|
| Standards | <p>ANSI/ISA 12-12-01 CSA C22.2 No 142 CSA C22.2 No 213 EN/IEC 61131-2:2007 Marine specification (LR, ABS, DNV, GL) UL 1604 UL 508</p> |
| Product Certifications | <p>IACS E10 RCM CULus CSA</p> |
| Resistance to electrostatic discharge | <p>8 KV in air EN/IEC 61000-4-2 4 kV on contact EN/IEC 61000-4-2</p> |
| Resistance to electromagnetic fields | <p>9.14 V/M (10 V/m) 80 MHz...1 GHz EN/IEC 61000-4-3 2.74 V/M (3 V/m) 1.4 GHz...2 GHz EN/IEC 61000-4-3 0.91 V/m (1 V/m) 2 GHz...3 GHz EN/IEC 61000-4-3</p> |
| Resistance to fast transients | <p>2 KV EN/IEC 61000-4-4 power lines) 1 KV EN/IEC 61000-4-4 Ethernet line) 1 KV EN/IEC 61000-4-4 serial link) 1 KV EN/IEC 61000-4-4 input) 1 kV EN/IEC 61000-4-4 transistor output)</p> |

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| Resistance to conducted disturbances | 10 V 0.15...80 MHz EN/IEC 61000-4-6 3 V 0.1...80 MHz Marine specification (LR, ABS, DNV, GL) 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 120...69 dB μ V/m QP power lines)10...150 kHz EN/IEC 55011 Conducted emissions 63 dB μ V/m QP power lines)1.5...30 MHz EN/IEC 55011 Radiated emissions 40 dB μ V/m QP class A30...230 MHz EN/IEC 55011 Conducted emissions 79...63 dB μ V/m QP power lines)150...1500 kHz EN/IEC 55011 Radiated emissions 47 dB μ V/m QP class A230...1000 MHz EN/IEC 55011 |
| Immunity to microbreaks | 10 ms |
| Ambient air temperature for operation | 14...122 °F (-10...50 °C) vertical installation) 14...131 °F (-10...55 °C) horizontal installation) |
| Ambient Air Temperature for Storage | -13...158 °F (-25...70 °C) |
| Relative humidity | 10...95 %, without condensation in operation) 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 3 gn 8.4...150 Hz symmetrical rail 3.5 mm 5...8.4 Hz panel mounting 3 gn 8.4...150 Hz panel mounting |
| Shock resistance | 15 gn 11 ms |




Ordering and shipping details

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|-----------------------|--------------------------------|
| Category | 22533 - M2XX PLC & ACCESSORIES |
| Discount Schedule | MSX |
| GTIN | 3606480611117 |
| Nbr. of units in pkg. | 1 |
| Package weight(Lbs) | 23.32 oz (661 g) |
| Returnability | Yes |
| Country of origin | ID |

Packing Units

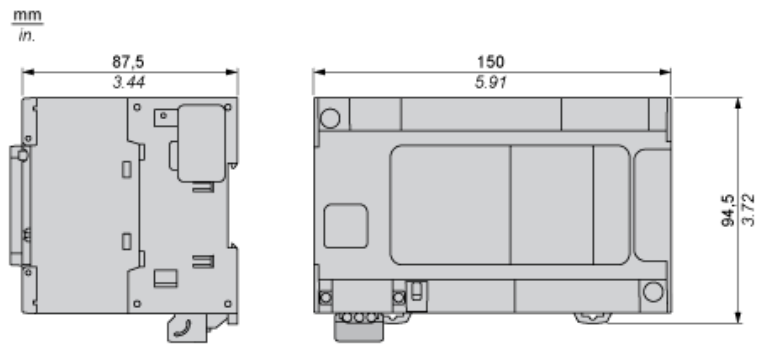
| | |
|------------------------------|------------------------|
| Unit Type of Package 1 | PCE |
| Package 1 Height | 4.45 in (11.3 cm) |
| Package 1 width | 5.16 in (13.115 cm) |
| Package 1 Length | 7.37 in (18.729 cm) |
| Unit Type of Package 2 | S03 |
| Number of Units in Package 2 | 8 |
| Package 2 Weight | 13.58 lb(US) (6.16 kg) |
| Package 2 Height | 11.81 in (30 cm) |
| Package 2 width | 11.81 in (30 cm) |
| Package 2 Length | 15.75 in (40 cm) |

Offer Sustainability

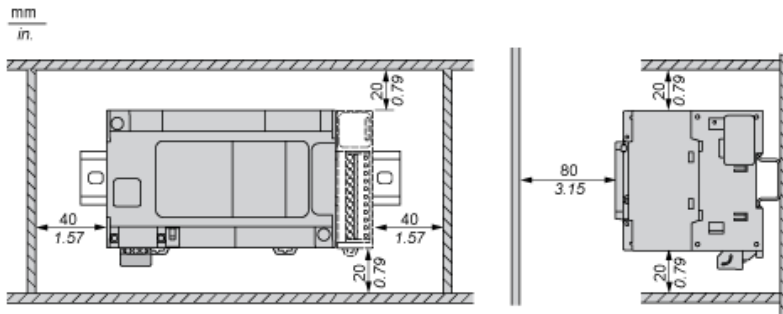
| | |
|----------------------------|---|
| Sustainable offer status | Green Premium product |
| California proposition 65 | WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive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

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|--------------------------|--|
| China RoHS Regulation | China RoHS Declaration |
| 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. |
| PVC free | Yes |

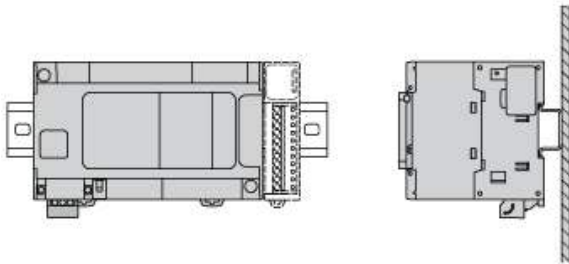
Dimensions



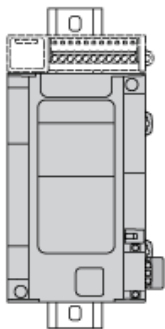
Clearance



Mounting Position

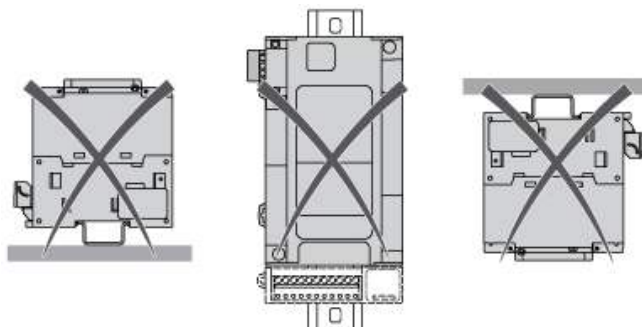


Acceptable Mounting



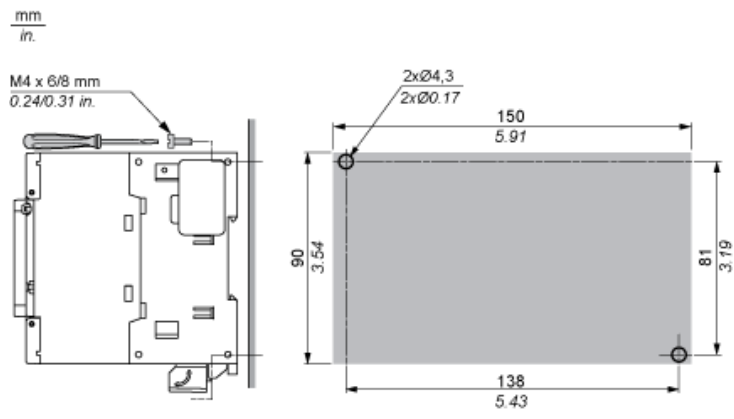
NOTE: Expansion modules must be mounted above the logic controller.

Incorrect Mounting



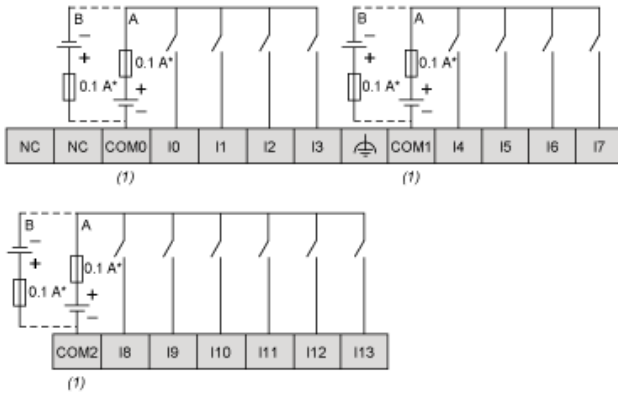
Direct Mounting On a Panel Surface

Mounting Hole Layout



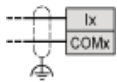
Digital Inputs

Wiring Diagram



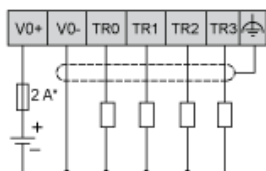
- (*) : Type T fuse
- (1) : The COM0, COM1 and COM2 terminals are not connected internally
- (A) : Sink wiring (positive logic)
- (B) : Source wiring (negative logic)

Fast Input Wiring (I0...I7)



Fast Transistor Outputs

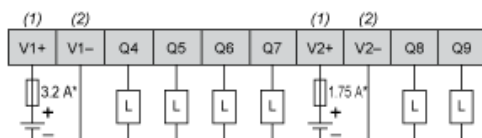
Wiring Diagram



- (*) : 2 A fast-blow fuse

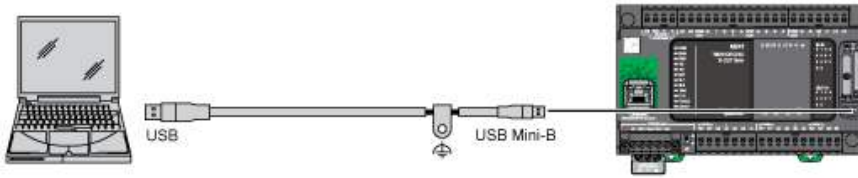
Transistor Outputs

Wiring Diagram

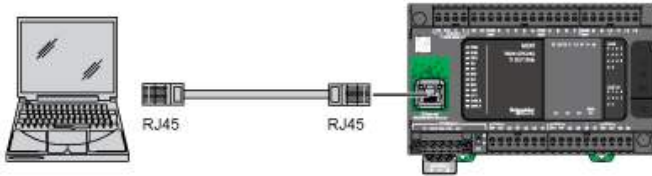


- (*) : Type T fuse
- (1) : The V1+ and V2+ terminals are not connected internally.
- (2) : The V1- and V2- terminals are not connected internally.

USB Mini-B Connection

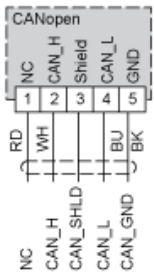


Ethernet Connection to a PC



CANopen Connection

Wiring Diagram



| Pin | Signal | Description | Marking | Color of Cable |
|-----|----------|--------------------------------|---------|----------------|
| 1 | Not used | Reserved | NC | red |
| 2 | CAN_H | CAN_H bus line (dominant high) | CAN_H | white |
| 3 | CAN_SHLD | Optional CAN shield | Shield | - |
| 4 | CAN_L | CAN_L bus line (dominant low) | CAN_L | blue |
| 5 | CAN_GND | CAN Ground | GND | black |