



Main

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|---------------------------|------------------|
| Range of product | Modicon M251 |
| Product or component type | Logic controller |
| [Us] rated supply voltage | 24 V DC |

Complementary

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|-----------------------------------|---|
| Number of I/O expansion module | 7 with local I/O architecture 14 with 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 |
| 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 | <= 32 GB SD card optional |
| Battery type | BR2032 lithium non-rechargeable, battery life: 4 yr |
| Backup time | 2 years at 77 °F (25 °C) |
| Execution time for 1 KInstruction | 0.3 ms event and periodic task 0.7 ms other instruction |
| Execution time per instruction | 0.022 µs |
| Application structure | 8 event tasks 4 cyclic master tasks 3 cyclic master tasks + 1 freewheeling task 8 external event tasks |
| Realtime clock | With |
| Clock drift | <= 60 s/month at 77 °F (25 °C) |
| Integrated connection type | USB port with mini B USB 2.0 connector Non isolated serial link "serial" with RJ45 connector; physical interface: RS232/RS485 Dual-port "Ethernet" with RJ45 connector CANopen J1939 with SUB-D 9 connector |
| Supply | 5 V at 200 mA serial link supply with "serial" marking |
| Transmission rate | 1.2...115.2 kbit/s (115.2 kbit/s by default) for bus length of 15 m - communication protocol: RS485 1.2...115.2 kbit/s (115.2 kbit/s by default) for bus length of 9.84 ft (3 m) - communication protocol: RS232 480 Mbit/s for bus length of 9.84 ft (3 m) - communication protocol: USB |
| Communication port protocol | USB port - USB protocol ; transmission frame: SoMachine-Network Non isolated serial link - Modbus protocol ; transmission frame: RTU/ASCII or SoMachine-Network with master/slave method |
| Port Ethernet | "Ethernet" marking 10BASE-T/100BASE-TX - 2 port copper cable |
| Web services | Web server |
| Communication service | DHCP client Downloading Ethernet/IP slave device IEC VAR ACCESS Modbus TCP client Modbus TCP server Modbus TCP slave device |

The information provided in this documentation contains general descriptions and/or technical characteristics 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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| | Monitoring NGVL Programming Updating firmware SMS notifications SNMP client/server FTP client/server SQL client Send and receive email from the controller based on TCP/UDP library Web server (WebVisu & XWeb system) OPC UA server DNS client |
| Maximum number of connections | 8 Modbus server 8 Modbus client 16 Ethernet/IP target 4 FTP server 10 web server 8 SoMachine protocol |
| CANopen feature profile | DR 303-1 DS 301 V4.02 |
| Number of slave | <= 63 CANopen |
| Local signalling | 1 LED red module error (ERR) 1 LED green PWR 1 LED green RUN 1 LED green SD card access (SD) 1 LED red BAT 1 LED green SL 1 LED red I/O error (I/O) 1 LED red bus fault on TM4 (TM4) 1 LED green Ethernet port activity 1 LED green CANopen run 1 LED green CANopen error |
| Electrical connection | Removable screw terminal block power supply with pitch 5.08 mm adjustment |
| Insulation | Non-insulated between supply and internal logic Between supply and ground at 500 V AC |
| Marking | CE |
| Surge withstand | 1 kV (shielded cable) with common mode protection conforming to EN/IEC 61000-4-5 1 kV (power lines) with common mode protection conforming to EN/IEC 61000-4-5 0.5 kV (power lines) with differential mode protection conforming to EN/IEC 61000-4-5 |
| Mounting support | Top hat type TH35-15 rail conforming to IEC 60715 Top hat type TH35-7.5 rail conforming to IEC 60715 Plate or panel with fixing kit |
| Height | 3.54 in (90 mm) |
| Depth | 3.74 in (95 mm) |
| Width | 2.13 in (54 mm) |
| Product weight | 0.49 lb(US) (0.22 kg) |

Environment

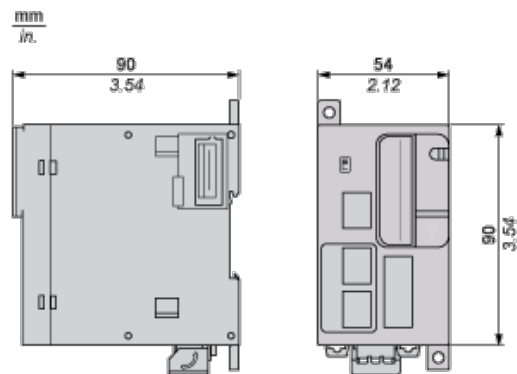
| | |
|---------------------------------------|--|
| standards | UL 508 CSA C22.2 No 142 ANSI/ISA 12-12-01 UL 1604 CSA C22.2 No 213 EN/IEC 61131-2 : 2007 Marine specification (LR, ABS, DNV, GL) |
| product certifications | CSA CULus |
| resistance to electrostatic discharge | 4 kV (on contact) conforming to EN/IEC 61000-4-2 8 kV (in air) conforming to EN/IEC 61000-4-2 |
| resistance to electromagnetic fields | 9.14 V/yd (10 V/m) (80 MHz...1 GHz) conforming to EN/IEC 61000-4-3 2.74 V/yd (3 V/m) (1.4 GHz...2 GHz) conforming to EN/IEC 61000-4-3 0.91 V/yd (1 V/m) (2 GHz...3 GHz) conforming to EN/IEC 61000-4-3 |
| resistance to fast transients | 2 kV (power lines) conforming to EN/IEC 61000-4-4 1 kV (Ethernet line) conforming to EN/IEC 61000-4-4 1 kV (serial link) conforming to EN/IEC 61000-4-4 |
| resistance to conducted disturbances | 10 V (0.15...80 MHz) conforming to EN/IEC 61000-4-6 3 V (0.1...80 MHz) conforming to 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)) conforming to |

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| electromagnetic emission | Conducted emissions - test level: 120...69 dB μ V/m QP (power lines) at 10...150 kHz conforming to EN/IEC 55011 Conducted emissions - test level: 63 dB μ V/m QP (power lines) at 1.5...30 MHz conforming to EN/IEC 55011 Radiated emissions - test level: 40 dB μ V/m QP class A (10 m) at 30...230 MHz conforming to EN/IEC 55011 Conducted emissions - test level: 79...63 dB μ V/m QP (power lines) at 150...1500 kHz conforming to EN/IEC 55011 Radiated emissions - test level: 47 dB μ V/m QP class A (10 m) at 230...1000 MHz conforming to EN/IEC 55011 |
| immunity to microbreaks | 10 ms |
| ambient air temperature for operation | 14...131 °F (-10...55 °C) horizontal installation -10...35 °C vertical 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...9842.52 ft (0...3000 m) |
| vibration resistance | 3.5 mm at 5...8.4 Hz on symmetrical rail 3 gn at 8.4...150 Hz on symmetrical rail 3.5 mm at 5...8.4 Hz on panel mounting 3 gn at 8.4...150 Hz on panel mounting |
| shock resistance | 15 gn during 11 ms |

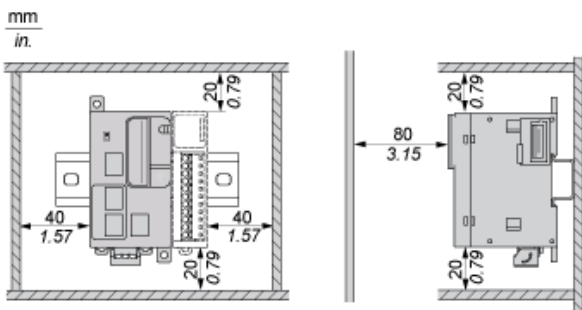
Offer Sustainability

| | |
|--|--|
| Green Premium product | Green Premium product |
| Compliant - since 1350 - Schneider Electric declaration of conformity | Compliant - since 1350 - Schneider Electric declaration of conformity |
| Reference not containing SVHC above the threshold | Reference not containing SVHC above the threshold |
| Available | Available |
| Available | Available |
| WARNING: This product can expose you to chemicals including: | 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. | 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 | For more information go to www.p65warnings.ca.gov |

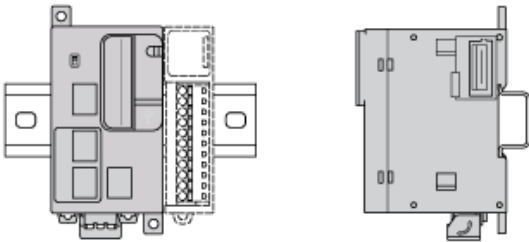
Dimensions



Clearance

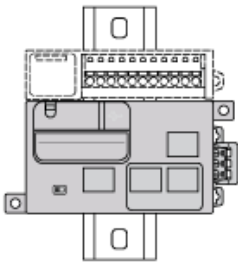


Mounting Position



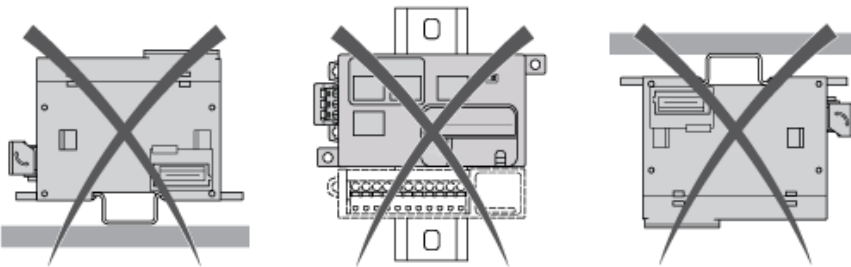
NOTE: Keep adequate spacing for proper ventilation and to maintain an ambient temperature between -10°C (14°F) and 55°C (131°F).

Acceptable Mounting

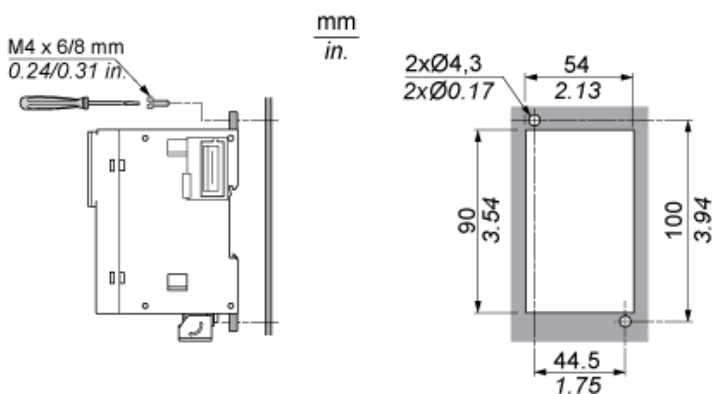


NOTE: Expansion modules must be mounted above the controller.

Incorrect Mounting



Direct Mounting on a Panel Surface



USB Connection to a PC

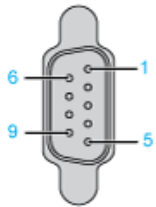


Ethernet Connection to a PC



CANopen

Wiring



| Pin | Signal | Description |
|-----|------------|---------------------------------------|
| 1 | – | Reserved |
| 2 | CAN_L | CAN_L bus line |
| 3 | CAN_GND | CAN ground |
| 4 | – | Reserved |
| 5 | (CAN_SHLD) | Optional CAN shield |
| 6 | GND | Ground |
| 7 | CAN_H | CAN_H bus line |
| 8 | – | Reserved |
| 9 | (CAN_V+) | Optional CAN external positive supply |