



## Main

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

## Complementary

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)
Memory capacity	8 MB for program 64 MB for system memory RAM
Data backed up	128 MB built-in flash memory for backup of user programs
Data storage equipment	<= 16 GB SD card (optional)
Battery type	BR2032 lithium non-rechargeable, battery life: 4 year(s)
Backup time	2 years at 25 °C
Execution time for 1 KInstruction	0.3 Ms for event and periodic task 0.7 ms for other instruction
Application structure	3 cyclic master tasks + 1 freewheeling task 8 event tasks 4 cyclic master tasks 8 external event tasks
Realtime clock	With
Clock drift	<= 60 s/month at 25 °C
Integrated connection type	USB port with mini B USB 2.0 connector Non isolated serial link serial with RJ45 connector and RS232/RS485 interface Dual-port Ethernet with RJ45 connector CANopen J1939 with SUB-D 9 connector
Supply	(serial)serial link supply: 5 V, <200 mA
Transmission rate	1.2...115.2 kbit/s (115.2 kbit/s by default) for bus length of 15 m for RS485 1.2...115.2 kbit/s (115.2 kbit/s by default) for bus length of 3 m for RS232 480 Mbit/s for bus length of 3 m for USB
Communication port protocol	USB port: USB - SoMachine-Network Non isolated serial link: Modbus master/slave - RTU/ASCII or SoMachine-Network
Port Ethernet	Ethernet marking 10BASE-T/100BASE-TX - 2 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 Monitoring NGVL Programming Updating firmware SMS notifications FTP client/server SNMP 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 (green) for PWR 1 LED (green) for RUN 1 LED (red) for module error (ERR) 1 LED (red) for I/O error (I/O) 1 LED (green) for SD card access (SD) 1 LED (red) for BAT 1 LED (green) for Ethernet port activity 1 LED (green) for SL 1 LED (red) for bus fault on TM4 (TM4) 1 LED (green) for CANopen run 1 LED (green) for CANopen error
Electrical connection	Removable screw terminal blockpower supply (pitch 5.08 mm)
Insulation	Non-insulated between supply and internal logic Between supply and ground at 500 V AC
Marking	CE
Surge withstand	1 kV shielded cable common mode conforming to EN/IEC 61000-4-5 1 kV power lines common mode conforming to EN/IEC 61000-4-5 0.5 kV power lines differential mode 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	90 mm
Depth	95 mm
Width	54 mm
Net weight	0.22 kg

## Environment

Standards	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
Product certifications	CULus CSA
Resistance to electrostatic discharge	8 kV in air conforming to EN/IEC 61000-4-2 4 kV on contact conforming to EN/IEC 61000-4-2
Resistance to electromagnetic fields	10 V/M 80 MHz...1 GHz conforming to EN/IEC 61000-4-3 3 V/M 1.4 GHz...2 GHz conforming to EN/IEC 61000-4-3 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 Marine specification (LR, ABS, DNV, GL)
Electromagnetic emission	Conducted emissions - test level: 120...69 dB $\mu$ V/m QP ( power lines) at 10...150 kHz conforming to EN/IEC 55011 Conducted emissions - test level: 63 dB $\mu$ V/m QP ( power lines) at 1.5...30 MHz conforming to EN/IEC 55011 Radiated emissions - test level: 40 dB $\mu$ V/m QP class A ( 10 m) at 30...230 MHz conforming to EN/IEC 55011 Conducted emissions - test level: 79...63 dB $\mu$ V/m QP ( power lines) at 150...1500 kHz conforming to EN/IEC 55011 Radiated emissions - test level: 47 dB $\mu$ 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	-10...35 °C (vertical installation) -10...55 °C (horizontal installation)
Ambient air temperature for storage	-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...2000 m
Storage altitude	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 for 11 ms

## Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	10.632 cm
Package 1 Width	11.868 cm
Package 1 Length	16.721 cm
Package 1 Weight	380.0 g
Unit Type of Package 2	S03
Number of Units in Package 2	10
Package 2 Height	30 cm
Package 2 Width	30 cm
Package 2 Length	40 cm
Package 2 Weight	4.461 kg
Unit Type of Package 3	P06
Number of Units in Package 3	80

Package 3 Height	75.0 cm
Package 3 Width	40.0 cm
Package 3 Length	80.0 cm
Package 3 Weight	43 kg

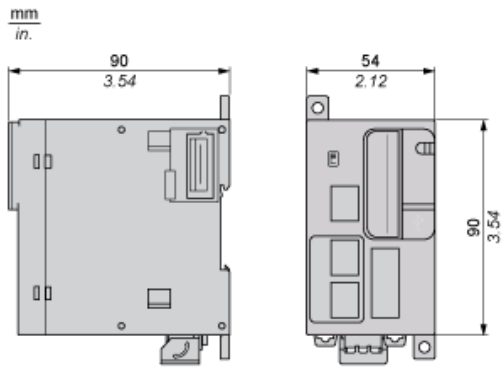
### Offer Sustainability

Sustainable offer status	Green Premium product
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
China RoHS Regulation	<a href="#">China RoHS Declaration</a>
RoHS exemption information	<a href="#">Yes</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

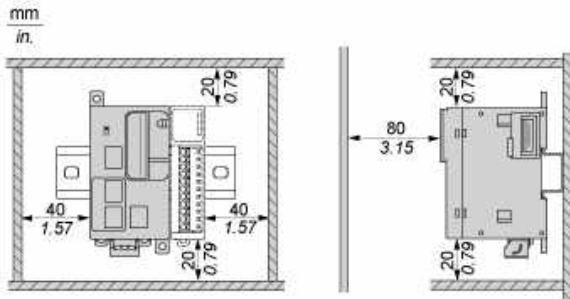
### Contractual warranty

Warranty	18 Monate
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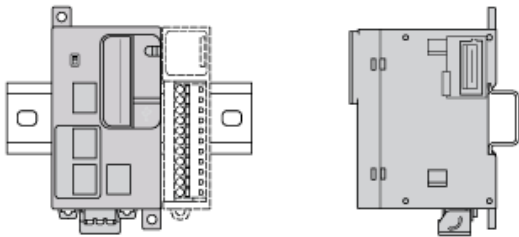
Dimensions



Clearance

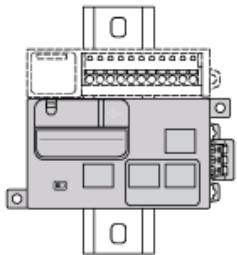


Mounting Position



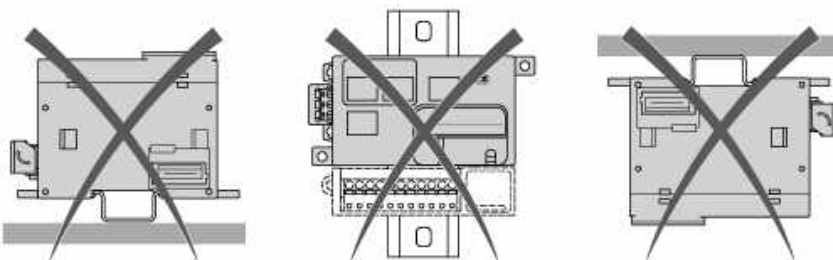
NOTE: Keep adequate spacing for proper ventilation and to maintain an ambient temperature between -10°C (14°F) and 55°C (131°F).

Acceptable Mounting



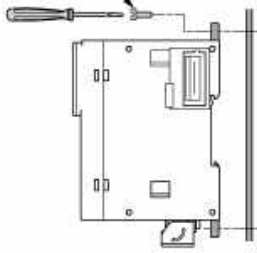
NOTE: Expansion modules must be mounted above the controller.

Incorrect Mounting

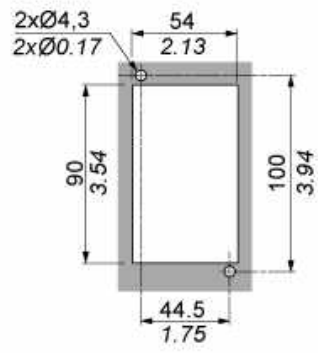


Direct Mounting on a Panel Surface

M4 x 6/8 mm  
0.24/0.31 in.



mm  
in.



USB Connection to a PC

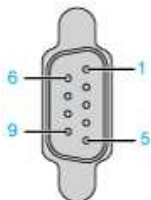


Ethernet Connection to a PC



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