Product data sheet
Characteristics

TM251MESC
controller M251 Ethernet CAN

Product availability : Stock - Normally stocked in distribution facility

Green Premium™

Price* : 519.00 USD

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 14 remote
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	<= 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
Execution time per instruction	0.022 µs
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 77 °F (25 °C)
Integrated connection type	USB port mini B USB 2.0 Non isolated serial link serial RJ45 RS232/RS485 Dual-port Ethernet RJ45 CANopen J1939 SUB-D 9

* Price is “List Price” and may be subject to a trade discount – check with your local distributor or retailer for actual price.

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 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
Communication port protocol	USB port USB - SoMachine-Network Non isolated serial link Modbus master/slave - RTU/ASCII or SoMachine-Network
Port Ethernet	Ethernet 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	PWR 1 LED green) RUN 1 LED green) Module error (ERR) 1 LED red) I/O error (I/O) 1 LED red) SD card access (SD) 1 LED green) BAT 1 LED red) Ethernet port activity 1 LED green) SL 1 LED green) Bus fault on TM4 (TM4) 1 LED red) CANopen run 1 LED green) CANopen error 1 LED green)
Electrical connection	removable screw terminal block power supply pitch 5.08 mm)
Insulation	Non-insulated between supply and internal logic Between supply and ground 500 V AC
Marking	CE
Surge withstand	1 kV shielded cable common mode EN/IEC 61000-4-5 1 kV power lines common mode EN/IEC 61000-4-5 0.5 kV power lines differential mode EN/IEC 61000-4-5
Mounting support	Top hat type TH35-15 rail IEC 60715 Top hat type TH35-7.5 rail IEC 60715 plate or panel with fixing kit
Maximum Height	3.54 in (90 mm)
Maximum Depth	3.74 in (95 mm)
Maximum Width	2.13 in (54 mm)
Net Weight	0.49 lb(US) (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 EN/IEC 61000-4-2 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 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
Resistance to fast transients	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)
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 dBµV/m QP power lines)10…150 kHz EN/IEC 55011 Conducted emissions 63 dBµV/m QP power lines)1.5…30 MHz EN/IEC 55011 Radiated emissions 40 dBµV/m QP class A 10 m)30…230 MHz EN/IEC 55011 Conducted emissions 79...63 dBµV/m QP power lines)150…1500 kHz EN/IEC 55011 Radiated emissions 47 dBµV/m QP class A 10 m)230…1000 MHz EN/IEC 55011
Immunity to microbreaks	10 ms
Ambient air temperature for operation	14…95 °F (-10…35 °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

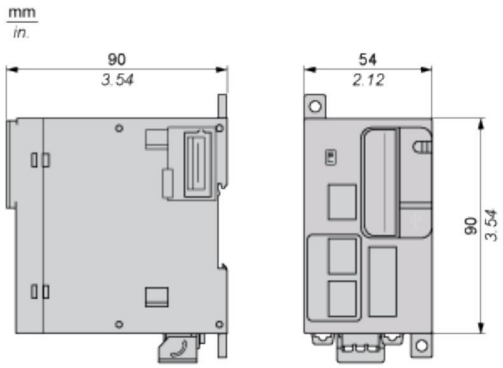
Ordering and shipping details

Category	22533 - M2XX PLC & ACCESSORIES
Discount Schedule	MSX
GTIN	00785901280576
Returnability	Yes
Country of origin	ID

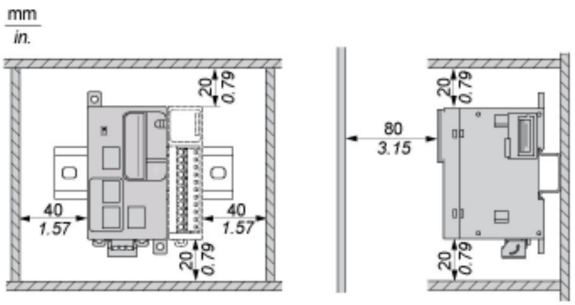
Offer Sustainability

Sustainable offer status	Green Premium product
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration
Mercury free	Yes
RoHS exemption information	Yes
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

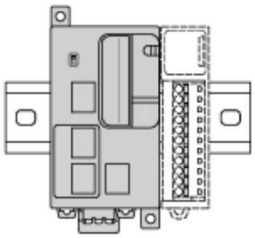
Dimensions

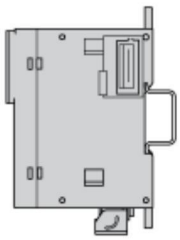


Clearance



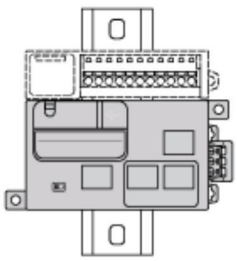
Mounting Position





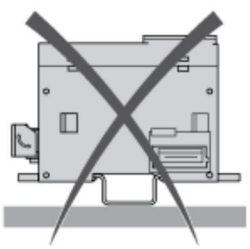
NOTE: Keep adequate spacing for proper ventilation and to maintain an ambient temperature between -10°C (14°F) and 55°C (131°F).

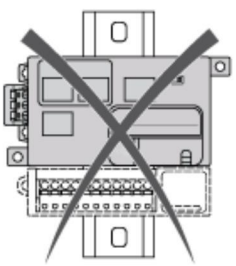
Acceptable Mounting

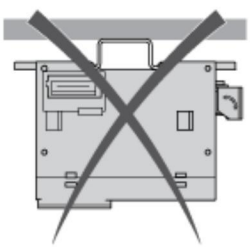


NOTE: Expansion modules must be mounted above the controller.

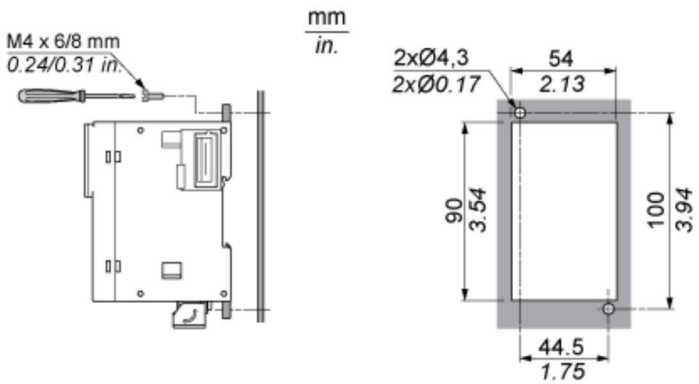
Incorrect Mounting







Direct Mounting on a Panel Surface

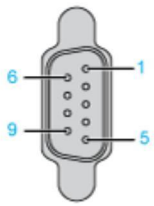


USB Connection to a PC

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