Product data sheet

Specifications

Green Premium™

logic controller, Modicon M251, Ethernet CAN

TM251MESC

Product availability: Stock - Normally stocked in distribution facility

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 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	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 77.0000000000 °F (25 °C)
Execution time for 1 KInstruction	0.3 ms event and periodic task 0.7 ms 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 77.0000000000 °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
Supply	Serial)serial link supply 5 V, <200 mA
Transmission rate	1.2...115.2 kbit/s (115.2 kbit/s by default) 49.2 ft (15 m) RS485 1.2...115.2 kbit/s (115.2 kbit/s by default) 9.8 ft (3 m) RS232 480 Mbit/s 9.8 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

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

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 server device(s)	63 CANopen
Local signalling	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 Ethernet port activity 1 LED (green)
	for SL 1 LED (green)
	for bus fault on TM4 (TM4) 1 LED (red)
	for CANopen run 1 LED (green)
	for 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 IEC 61000-4-5
	1 kV power lines common mode IEC 61000-4-5
	0.5 kV power lines differential mode 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
Height	3.5 in (90 mm)
Depth	3.7 in (95 mm)
Width	2.1 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
	IEC 61131-2:2007
	Marine specification (LR, ABS, DNV, GL)
	UL 508

Product Certifications	cULus CE UKCA DNV-GL ABS LR
Resistance to electrostatic discharge	8 kV in air IEC 61000-4-2 4 kV on contact IEC 61000-4-2
Resistance to electromagnetic fields	9.1 V/m (10 V/m) 80 MHz...1 GHz IEC 61000-4-3 2.7 V/m (3 V/m) 1.4 GHz...2 GHz IEC 61000-4-3 0.9 V/m (1 V/m) 2 GHz...3 GHz IEC 61000-4-3
Resistance to fast transients	2 kV IEC 61000-4-4 power lines) 1 kV IEC 61000-4-4 Ethernet line) 1 kV IEC 61000-4-4 serial link)
Resistance to conducted disturbances	10 V 0.15...80 MHz 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 IEC 55011 Conducted emissions 63 dBµV/m QP power lines)1.5…30 MHz IEC 55011 Radiated emissions 40 dBµV/m QP class A 10 m)30…230 MHz IEC 55011 Conducted emissions 79...63 dBµV/m QP power lines)150…1500 kHz IEC 55011 Radiated emissions 47 dBµV/m QP class A 10 m)230…1000 MHz IEC 55011
Immunity to microbreaks	10 ms
Ambient air temperature for operation	14.0000000000…95.0000000000 °F (-10…35 °C) vertical installation) 14.0000000000…131.0000000000 °F (-10…55 °C) horizontal installation)
Ambient Air Temperature for Storage	-13.0000000000…158.0000000000 °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	0.0000000000…9842.5 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	US10MSX22533
Discount Schedule	0MSX
GTIN	3606480648861
Returnability	Yes
Country of origin	US

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	4.186 in (10.632 cm)
Package 1 Width	4.672 in (11.868 cm)
Package 1 Length	6.583 in (16.721 cm)

Package 1 Weight	13.4 oz (380.0 g)
Unit Type of Package 2	S03
Number of Units in Package 2	10
Package 2 Height	11.8 in (30 cm)
Package 2 Width	11.8 in (30 cm)
Package 2 Length	15.7 in (40 cm)
Package 2 Weight	9.835 lb(US) (4.461 kg)
Unit Type of Package 3	P06
Number of Units in Package 3	80
Package 3 Height	29.5 in (75.0 cm)
Package 3 Width	15.7 in (40.0 cm)
Package 3 Length	31.5 in (80.0 cm)
Package 3 Weight	94.8 lb(US) (43 kg)

Sustainability Green Premium™

Green Premium^{TM} label is Schneider Electric's commitment to delivering products with best-in-class environmental performance. Green Premium promises compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO_2 products.

Guide to assessing product sustainability is a white paper that clarifies global eco-label standards and how to interpret environmental declarations.

Learn more about Green Premium >

Guide to assess a product's sustainability >

Transparency   RoHS/REACh

Well-being performance

✓ Mercury Free

✓ Rohs Exemption Information   Yes

✓ Pvc Free
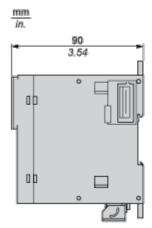
Certifications & Standards
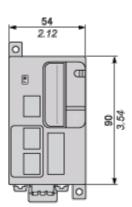
Reach Regulation	REACh Declaration
Eu Rohs Directive	Pro-active compliance (Product out of EU RoHS legal scope)
China Rohs Regulation	China RoHS declaration
Environmental Disclosure	Product Environmental Profile
Weee	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.
Circularity Profile	End of Life Information
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

Dimensions Drawings

Dimensions

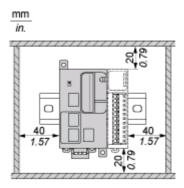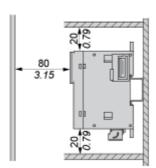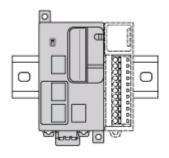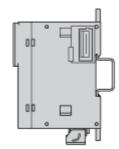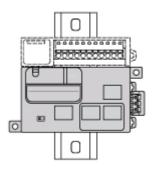Mounting and Clearance

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).
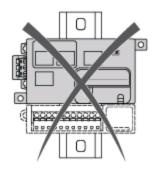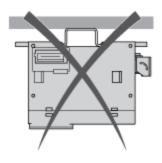
Acceptable Mounting

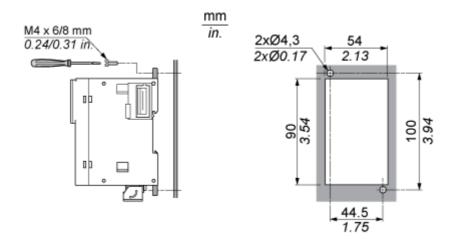NOTE: Expansion modules must be mounted above the controller.

Incorrect Mounting

Direct Mounting on a Panel Surface
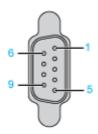
Connections and Schema

USB Connection to a PC

USB

USB Mini-B

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Ethernet Connection to a PC

RJ45　　　　　RJ45

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