



### Main

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

### Complementary

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
Memory capacity	8 MB program 64 MB system memory RAM
Data backed up	128 MB built-in flash memory for 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 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 25 °C
Integrated connection type	USB port with mini B USB 2.0 connector CANopen with SUB-D 9 connector Non isolated serial link "serial" with RJ45 connector; physical interface: RS232/RS485 Dual-port "Ethernet" with RJ45 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 3 m - communication protocol: RS232 480 Mbit/s for bus length of 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	FTP SNMP DHCP client Modbus TCP server Modbus TCP client IEC VAR ACCESS Modbus TCP slave device Ethernet/IP slave device NGVL

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	Programming Downloading Updating firmware Monitoring
Maximum number of connections	8 Modbus server 16 Ethernet/IP device
CANopen feature profile	DR 303-1 DS 301 V4.02
Number of slave	<= 63 CANopen
Local signalling	1 LED red for module error (ERR) 1 LED green for PWR 1 LED green for RUN 1 LED green for SD card access (SD) 1 LED red for BAT 1 LED green for SL 1 LED red for I/O error (I/O) 1 LED red for bus fault on TM4 (TM4) 1 LED green for Ethernet port activity 1 LED green for CANopen run 1 LED green for CANopen error
Electrical connection	Removable screw terminal block for 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	90 mm
Depth	95 mm
Width	54 mm
Product weight	0.22 kg

## Environment

Standards	CSA C22.2 No 142 UL 1604 UL 508 ANSI/ISA 12-12-01 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	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, induced by radio frequency fields	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: 79...63 dB $\mu$ V/m QP (power lines) at 150 kHz...1.5 MHz 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 Radiated emissions - test level: 47 dB $\mu$ V/m QP class A (10 m) at 230 MHz...1 GHz conforming to EN/IEC 55011

Immunity to microbreaks	10 ms
Ambient air temperature for operation	-10...55 °C horizontal installation -10...35 °C vertical 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 during 11 ms