Product data sheet
Characteristics

TM251MESE
logic controller, Modicon M251, 2x Ethernet



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 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	4 cyclic master tasks 8 event 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 Non isolated serial link serial with RJ45 connector and RS232/RS485 interface Dual-port Ethernet 1 with RJ45 connector Ethernet port Ethernet 2 with RJ45 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 1 marking 10BASE-T/100BASE-TX - 2 copper cable Ethernet 2 marking 10BASE-T/100BASE-TX - 1 copper cable
Web services	Web server

Communication service	Downloading IEC VAR ACCESS Modbus TCP client Modbus TCP server Modbus TCP slave device Monitoring NGVL Programming Updating firmware SMS notifications DHCP client (Eth1) DHCP server (Eth2) Ethernet/IP originator (Eth2) Ethernet/IP target (Eth1, Eth2) Ethernet/IP scanner (Eth2) Modbus TCP I/O Scanner and Messaging (Eth2) FDR 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
Number of server device(s)	16 EtherNet/IP: 64 Modbus TCP:
Cycle time	10 Ms 16 EtherNet/IP 64 Ms 64 Modbus TCP
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 SL 1 LED (red) for bus fault on TM4 (TM4) 1 LED (green) for Ethernet activity (ETH1) 1 LED (green) for Ethernet activity (ETH2)
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 IEC 61000-4-5 1 KV power lines common mode conforming to IEC 61000-4-5 0.5 KV power lines differential mode conforming to 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 IEC 61131-2:2007 Marine specification (LR, ABS, DNV, GL) UL 508
Product certifications	cULus[RETURN]CE[RETURN]UKCA[RETURN]DNV-GL[RETURN]ABS[RETURN]LR
Resistance to electrostatic discharge	8 KV in air conforming to IEC 61000-4-2 4 KV on contact conforming to IEC 61000-4-2
Resistance to electromagnetic fields	10 V/M 80 MHz...1 GHz conforming to IEC 61000-4-3 3 V/M 1.4 GHz...2 GHz conforming to IEC 61000-4-3 1 V/M 2 GHz...3 GHz conforming to IEC 61000-4-3
Resistance to fast transients	2 KV (power lines) conforming to IEC 61000-4-4 1 KV (Ethernet line) conforming to IEC 61000-4-4 1 KV (serial link) conforming to IEC 61000-4-4
Resistance to conducted disturbances	10 V 0.15...80 MHz conforming to 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 spec
Electromagnetic emission	Conducted emissions - test level: 120...69 dBµV/m QP (power lines) at 10…150 kHz conformi Conducted emissions - test level: 63 dBµV/m QP (power lines) at 1.5…30 MHz conforming to Radiated emissions - test level: 40 dBµV/m QP class A (10 m) at 30…230 MHz conforming to Conducted emissions - test level: 79...63 dBµV/m QP (power lines) at 150…1500 kHz conform Radiated emissions - test level: 47 dBµV/m QP class A (10 m) at 230…1000 MHz conforming
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	10.511 Cm
Package 1 Width	11.725 Cm
Package 1 Length	17.063 Cm
Package 1 Weight	371.0 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	4.651 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	48 Kg

Offer Sustainability

Recyclability potential, in %	0
Total lifecycle Carbon footprint	696 kg CO2 eq.
Carbon footprint of the manufacturing phase [A1 to A3]	16.85464764538549
Carbon footprint of the manufacturing phase [A1 to A3]	17 kg CO2 eq.
Carbon footprint of the distribution phase [A4]	1.9799277850166308
Carbon footprint of the distribution phase [A4]	2 kg CO2 eq.
Carbon footprint of the installation phase [A5]	0.02014583954585999
Carbon footprint of the installation phase [A5]	0 kg CO2 eq.
Carbon footprint of the use phase [B2, B3, B4, B6]	676.3289711229976
Carbon footprint of the use phase [B2, B3, B4, B6]	676 kg CO2 eq.
Mercury free	Yes
Sustainable packaging	Yes
Carbon footprint of the end-of-life phase [C1 to C4]	0.7043969702190856
Carbon footprint of the end-of-life phase [C1 to C4]	0.7 kg CO2 eq.
Environmental Disclosure	Product Environmental Profile
Total lifecycle Carbon footprint	696
Packaging made with recycled cardboard	Yes
Packaging without single use plastic	Yes
SCIP Number	C0f4b1e4-ee0f-48bb-9bdf-1bcc0df7db56
REACh Regulation	Reference contains Substances of Very High Concern above the threshold
EU RoHS Directive	Compliant By Exemption
California proposition 65	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which
PVC free	Yes
End of life manual availability	End Of Life Information
Removable battery	No
Take-back	No
WEEE Label	The product must be disposed on European Union markets following specific waste collection and

Contractual warranty

Warranty (in months)	18

Product Life Status : Commercialised