

TM251MESC Manual

Brand	-
Product Series	Sheet1
Product Type	Logic controller

Description

TM251MESC logic controller, Modicon M251,
Ethernet CAN

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 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

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

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 Server Device(S) 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 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

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Top hat type TH35-7.5 rail IEC 60715
plate or panel with fixing kit
Height 3.54 in (90 mm)
Depth 3.74 in (95 mm)
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
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
9.14 V/yd (10 V/m) 80 MHz...1 GHz IEC 61000-4-3
2.74 V/yd (3 V/m) 1.4 GHz...2 GHz IEC 61000-4-3
0.91 V/yd (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 dB μ V/m QP power lines)10...150 kHz IEC 55011
Conducted emissions 63 dB μ V/m QP power lines)1.5...30 MHz IEC 55011
Radiated emissions 40 dB μ V/m QP class A 10 m)30...230 MHz IEC 55011
Conducted emissions 79...63 dB μ V/m QP power lines)150...1500 kHz IEC 55011
Radiated emissions 47 dB μ V/m QP class A 10 m)230...1000 MHz 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...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

Packing Units

Unit Type Of Package 1 PCE

Number Of Units In Package 1 1

Package 1 Height 4.19 in (10.632 cm)

Package 1 Width 4.67 in (11.868 cm)

Package 1 Length 6.58 in (16.721 cm)

Package 1 Weight 13.40 oz (380.0 g)

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