



## 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)<br>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 for program<br>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<br>0.7 Ms for other instruction                                                                                                                                                  |
| Execution time per instruction         | 0.022 µs                                                                                                                                                                                                            |
| Application structure                  | 4 cyclic master tasks<br>8 event tasks<br>3 cyclic master tasks + 1 freewheeling task<br>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<br>Non isolated serial link serial with RJ45 connector and RS232/RS485 interface<br>Dual-port Ethernet 1 with RJ45 connector<br>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<br>1.2...115.2 kbit/s (115.2 kbit/s by default) for bus length of 3 m for RS232<br>480 Mbit/s for bus length of 3 m for USB           |
| Communication port protocol            | USB port: USB - SoMachine-Network<br>Non isolated serial link: Modbus master/slave - RTU/ASCII or SoMachine-Network                                                                                                 |
| Port Ethernet                          | Ethernet 1 marking 10BASE-T/100BASE-TX - 2 copper cable<br>Ethernet 2 marking 10BASE-T/100BASE-TX - 1 copper cable                                                                                                  |
| Web services                           | Web server                                                                                                                                                                                                          |

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| Communication service         | Downloading<br>IEC VAR ACCESS<br>Modbus TCP client<br>Modbus TCP server<br>Modbus TCP slave device<br>Monitoring<br>NGVL<br>Programming<br>Updating firmware<br>SMS notifications<br>DHCP client (Eth1)<br>DHCP server (Eth2)<br>Ethernet/IP originator (Eth2)<br>Ethernet/IP target (Eth1, Eth2)<br>Ethernet/IP scanner (Eth2)<br>Modbus TCP I/O Scanner and Messaging (Eth2)<br>FDR<br>FTP client/server<br>SNMP client/server<br>SQL client<br>Send and receive email from the controller based on TCP/UDP library<br>Web server (WebVisu & XWeb system)<br>OPC UA server<br>DNS client |
| Maximum number of connections | 8 Modbus server<br>8 Modbus client<br>16 Ethernet/IP target<br>4 FTP server<br>10 web server<br>8 SoMachine protocol                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Number of slave               | 16 Ethernet/IP:<br>64 Modbus TCP:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Cycle time                    | 10 Ms 16 Ethernet/IP<br>64 Ms 64 Modbus TCP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Local signalling              | 1 LED (green)PWR:<br>1 LED (green)RUN:<br>1 LED (red)module error (ERR):<br>1 LED (red)I/O error (I/O):<br>1 LED (green)SD card access (SD):<br>1 LED (red)BAT:<br>1 LED (green)SL:<br>1 LED (red)bus fault on TM4 (TM4):<br>1 LED (green)Ethernet activity (ETH1):<br>1 LED (green)Ethernet activity (ETH2):                                                                                                                                                                                                                                                                              |
| Electrical connection         | Removable screw terminal blockpower supply (pitch 5.08 mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Insulation                    | Non-insulated between supply and internal logic<br>Between supply and ground at 500 V AC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Marking                       | CE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Surge withstand               | 1 KV shielded cable common mode conforming to EN/IEC 61000-4-5<br>1 KV power lines common mode conforming to EN/IEC 61000-4-5<br>0.5 KV power lines differential mode conforming to EN/IEC 61000-4-5                                                                                                                                                                                                                                                                                                                                                                                       |
| Mounting support              | Top hat type TH35-15 rail conforming to IEC 60715<br>Top hat type TH35-7.5 rail conforming to IEC 60715<br>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<br>CSA C22.2 No 142<br>CSA C22.2 No 213<br>EN/IEC 61131-2:2007<br>Marine specification (LR, ABS, DNV, GL)<br>UL 1604<br>UL 508                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Product certifications                | CULus<br>CSA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Resistance to electrostatic discharge | 8 KV in air conforming to EN/IEC 61000-4-2<br>4 KV on contact 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<br>3 V/M 1.4 GHz...2 GHz conforming to EN/IEC 61000-4-3<br>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<br>1 KV (Ethernet line) conforming to EN/IEC 61000-4-4<br>1 KV (serial link) conforming to EN/IEC 61000-4-4                                                                                                                                                                                                                                                                                                                                                                                                           |
| Resistance to conducted disturbances  | 10 V 0.15...80 MHz conforming to EN/IEC 61000-4-6<br>3 V 0.1...80 MHz conforming to Marine specification (LR, ABS, DNV, GL)<br>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 dBµV/m QP ( power-lines) at 10...150 kHz conforming to EN/IEC 55011<br>Conducted emissions - test level: 63 dBµV/m QP ( power lines) at 1.5...30 MHz-conforming to EN/IEC 55011<br>Radiated emissions - test level: 40 dBµV/m QP class A ( 10 m) at 30...230 MHz-conforming to EN/IEC 55011<br>Conducted emissions - test level: 79...63 dBµV/m QP ( power-lines) at 150...1500 kHz conforming to EN/IEC 55011<br>Radiated emissions - test level: 47 dBµV/m QP class A ( 10 m) at 230...1000 MHz conforming to EN/IEC 55011 |
| Immunity to microbreaks               | 10 Ms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Ambient air temperature for operation | -10...35 °C (vertical installation)<br>-10...55 °C (horizontal installation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Ambient air temperature for storage   | -25...70 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Relative humidity                     | 10...95 %, without condensation (in operation)<br>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<br>3 gn at 8.4...150 Hz on symmetrical rail<br>3.5 mm at 5...8.4 Hz on panel mounting<br>3 gn at 8.4...150 Hz on panel mounting                                                                                                                                                                                                                                                                                                                                                                                                |
| Shock resistance                      | 15 gn for 11 ms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## Packing Units

|                  |           |
|------------------|-----------|
| Package 1 Weight | 0.376 Kg  |
| Package 1 Height | 10.800 Cm |
| Package 1 width  | 11.600 Cm |
| Package 1 Length | 16.800 Cm |

## Offer Sustainability

|                            |                                                                                                |
|----------------------------|------------------------------------------------------------------------------------------------|
| Sustainable offer status   | Green Premium product                                                                          |
| EU RoHS Directive          | Pro-active compliance (Product out of EU RoHS legal scope) <a href="#">EU RoHS Declaration</a> |
| Mercury free               | Yes                                                                                            |
| RoHS exemption information | <a href="#">Yes</a>                                                                            |
| China RoHS Regulation      | <a href="#">China RoHS Declaration</a>                                                         |
| Environmental Disclosure   | <a href="#">Product Environmental Profile</a>                                                  |

|                     |                                                                                                                             |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Circularity Profile | <a href="#">End Of Life Information</a>                                                                                     |
| WEEE                | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |
| PVC free            | Yes                                                                                                                         |

|                       |                |
|-----------------------|----------------|
| Product Life Status : | Commercialised |
|-----------------------|----------------|