

Product datasheet

Specifications



Controller M100 - 9I/7O relay - 220VAC

TM100C16RN

Main

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| Range of product | Easy Modicon M100 |
| Product or component type | Logic controller |
| [Us] rated supply voltage | 100...240 V AC |
| Discrete I/O number | 16 |
| Discrete input number | I2...I5: 4 fast input I6...I8: 3 regular input I0...I1: 2 high speed input |
| Discrete output number | 7 relay |
| Discrete input voltage | 24 V |
| Discrete input voltage type | DC |
| Discrete input current | 7 mA for regular input 7 mA for fast input 9 mA for high speed input |
| Discrete output voltage | 24 V DC 220 V AC |
| Discrete output current | 2 A |
| Discrete output type | Relay normally open |
| Power consumption in VA | 30...40 VA at 100...240 V AC (with max I/O) |

Complementary

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| Supply voltage limits | 85...264 V |
| Voltage state 1 guaranteed | ≥ 15 V for input |
| Voltage state 0 guaranteed | ≤ 5 V for input |
| Network frequency | 50/60 Hz |
| Inrush current | 50 A |
| Input impedance | 3.3 kOhm for regular input 3.3 kOhm for fast input 2.81 kOhm for high speed input |
| Response time | 10 ms turn-on, Q0...Q6 terminal(s) for relay output 10 ms turn-off, Q0...Q6 terminal(s) for relay output 35 μ s turn-on, I2...I5 terminal(s) for fast input 100 μ s turn-off, I2...I5 terminal(s) for fast input 5 μ s turn-on, I0...I1 terminal(s) for high speed input 5 μ s turn-off, I0...I1 terminal(s) for high speed input 35 μ s turn-on, I6...I8 terminal(s) for regular input 100 μ s turn-off, I6...I8 terminal(s) for regular input |
| Configurable filtering time | 0 ms for input 3 ms for input |

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| | 12 ms for input |
| Output voltage limits | 30 V DC 250 V AC |
| Maximum current per output common | 4 A at COM 0 4 A at COM 1 |
| Electrical durability | 100000 cycles AC-12, 240 V, 480 VA, resistive 100000 cycles DC-12, 24 V, 48 W, resistive |
| Switching frequency | 0.1 Hz with maximum load 5 Hz without maximum load |
| Mechanical durability | 20000000 cycles for relay output |
| Minimum load | 10 mA at 5 V DC for relay output |
| Memory capacity | 1024 kB internal flash with 10000 instructions for backup of programs |
| Data storage equipment | 32 GB micro SD card (optional) |
| Execution time for 1 KInstruction | 0.3 ms for event and periodic task |
| Execution time per instruction | 0.2 µs Boolean |
| Exct time for event task | 60 µs response time |
| Regulation loop | Adjustable PID regulator up to 14 simultaneous loops |
| Control signal type | Quadrature (x1, x2, x4) at 60 kHz for fast input (HSC mode) Pulse/direction at 60 kHz for fast input (HSC mode) Single phase at 60 kHz for fast input (HSC mode) CW/CCW at 60 kHz for fast input (HSC mode) |
| Counting input number | 2 fast input (HSC mode) at 60 kHz 32 bits |
| Integrated connection type | USB port with mini B USB 2.0 connector Non isolated serial link serial 1 with terminal block connector and RS485 interface Non isolated serial link serial 2 with terminal block connector and RS232/RS485 interface |
| 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 12 Mbit/s for USB |
| Communication port protocol | USB port: USB - SoMachine-Network Non isolated serial link: Modbus master/slave - RTU/ASCII or SoMachine-Network |
| Local signalling | 1 LED (green) for PWR 1 LED (green) for RUN 1 LED (red) for module error (ERR) 1 LED (green) for SD card access (SD) 1 LED (green) for SL1 1 LED per channel (green) for I/O state |
| Electrical connection | removable screw terminal blockfor inputs removable screw terminal blockfor outputs removable screw terminal block, 4 terminal(s) for connecting the serial link1 Mini B USB 2.0 connectorfor a programming terminal removable screw terminal block, 3 terminal(s) for connecting the 100-240 V AC power supply |
| Maximum cable distance between devices | Shielded cable: <10 m for fast input Shielded cable: <10 m for high speed input Unshielded cable: <150 m for output Unshielded cable: <50 m for regular input |
| Insulation | Between input and internal logic at 560 V AC Between fast input and internal logic at 560 V AC Between input groups at 560 V AC Non-insulated between inputs Between output and internal logic at 1780 V AC Between output groups at 1780 V AC Between supply and internal logic at 1780 V AC |
| Sensor power supply | 24 V DC |
| Mounting support | Top hat type TH35-15 rail conforming to IEC 60715 Top hat type TH35-7.5 plate or panel with fixing kit conforming to IEC 60715 |
| Height | 90 mm |
| Depth | 70 mm |
| Width | 110 mm |
| Net weight | 0.31 kg |

Environment

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| IP degree of protection | IP20 with protective cover in place |
| Product certifications | CE |
| Standards | EN/IEC 61010-2-201 EN/IEC 61131-2 |
| Electromagnetic compatibility | Electrostatic discharge immunity test - test level: 8 kV (air discharge) conforming to EN/IEC 61000-4-2 Electrostatic discharge immunity test - test level: 6 kV (contact discharge) conforming to EN/IEC 61000-4-2 Susceptibility to electromagnetic fields - test level: 10 V/m (80 MHz...3 GHz) conforming to EN/IEC 61000-4-3 Conducted emission - test level: 79 dB μ V/m QP/66 dB μ V/m AV (power lines (AC)) conforming to EN/IEC 55011 Conducted emission - test level: 73 dB μ V/m QP/60 dB μ V/m AV (power lines (AC)) conforming to EN/IEC 55011 Radiated emission - test level: 40 dB μ V/m QP class A (10 m) conforming to EN/IEC 55011 Radiated emission - test level: 47 dB μ V/m QP class A (10 m) conforming to EN/IEC 55011 Magnetic field at power frequency - test level: 30 A/m (I/O) conforming to EN/IEC 61000-4-8 Electrical fast transient/burst immunity test - test level: 2 kV (power lines) conforming to EN/IEC 61000-4-4 Electrical fast transient/burst immunity test - test level: 2 kV (relay output) conforming to EN/IEC 61000-4-4 Electrical fast transient/burst immunity test - test level: 1 kV (I/O) conforming to EN/IEC 61000-4-4 Electrical fast transient/burst immunity test - test level: 1 kV (serial link) conforming to EN/IEC 61000-4-4 1.2/50 μ s shock waves immunity test - test level: 1 kV (power lines (DC)) conforming to EN/IEC 61000-4-5 1.2/50 μ s shock waves immunity test - test level: 2 kV (power lines (AC)) conforming to EN/IEC 61000-4-5 1.2/50 μ s shock waves immunity test - test level: 2 kV (relay output) conforming to EN/IEC 61000-4-5 1.2/50 μ s shock waves immunity test - test level: 1 kV (I/O) conforming to EN/IEC 61000-4-5 1.2/50 μ s shock waves immunity test - test level: 1 kV (shielded cable) conforming to EN/IEC 61000-4-5 1.2/50 μ s shock waves immunity test - test level: 0.5 kV class A (power lines (DC)) conforming to EN/IEC 61000-4-5 1.2/50 μ s shock waves immunity test - test level: 1 kV class A (power lines (AC)) conforming to EN/IEC 61000-4-5 1.2/50 μ s shock waves immunity test - test level: 1 kV (relay output) conforming to EN/IEC 61000-4-5 Conducted RF disturbances - test level: 10 V (0.15...80 MHz) conforming to EN/IEC 61000-4-6 |
| Shock resistance | 15 gn for 11 ms 30 gn for 6 ms |
| Immunity to microbreaks | 10 ms |
| Vibration resistance | 3.5 mm at 5...8.4 Hz on symmetrical rail 1 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 |
| Relative humidity | 10...95 %, without condensation (in operation) 10...95 %, without condensation (in storage) |
| Ambient air temperature for operation | 0...55 °C (horizontal installation) |
| Ambient air temperature for storage | -25...70 °C |
| Pollution degree | \leq 2 |
| Operating altitude | 0...2000 m |
| Storage altitude | 0...3000 m |

Packing Units

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| Unit Type of Package 1 | PCE |
| Number of Units in Package 1 | 1 |
| Package 1 Height | 9.493 cm |
| Package 1 Width | 12.157 cm |
| Package 1 Length | 13.668 cm |
| Package 1 Weight | 450 g |
| Unit Type of Package 2 | S03 |
| Number of Units in Package 2 | 18 |
| Package 2 Height | 30 cm |

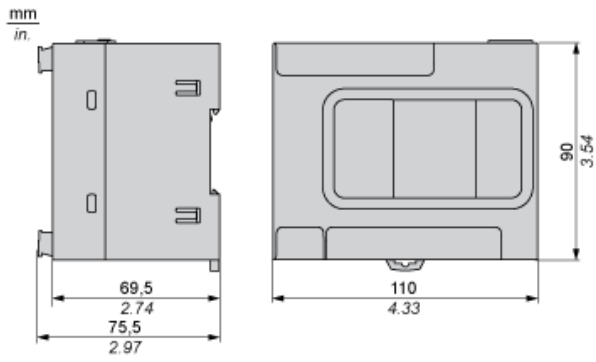
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| Package 2 Width | 30 cm |
| Package 2 Length | 40 cm |
| Package 2 Weight | 8600 g |
| Unit Type of Package 3 | P12 |
| Number of Units in Package 3 | 432 |
| Package 3 Height | 95 cm |
| Package 3 Width | 80 cm |
| Package 3 Length | 120 cm |
| Package 3 Weight | 215400 g |

Offer Sustainability

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| Sustainable offer status | Green Premium product |
| REACH Regulation | REACH Declaration |
| EU RoHS Directive | Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration |
| Mercury free | Yes |
| China RoHS Regulation | China RoHS declaration |
| RoHS exemption information | Yes |
| Environmental Disclosure | Product Environmental Profile |
| Circularity Profile | End of Life Information |
| WEEE | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |

Dimensions Drawings

Dimensions



Recommended replacement(s)