



Main

Range of product	Modicon Easy M100
Product or component type	Logic controller
[Us] rated supply voltage	100...240 V AC
Discrete input number	9 DC input (4 fast input) conforming to IEC 61131-2 type 1
Discrete output type	Relay normally open
Discrete output number	7 relay
Discrete output voltage	100...250 V AC 5...30 V DC
Discrete output current	2 A

Complementary

Discrete I/O number	16
Supply voltage limits	85...264 V
Network frequency	50/60 Hz
Inrush current	≤ 50 A
Power consumption in VA	≤ 11 VA at 100...240 V
Discrete input logic	Sink or source (positive/negative)
Discrete input voltage	24 V
Discrete input voltage type	DC
Voltage state1 guaranteed	≥ 15 V for input
Current state 1 guaranteed	≥ 2.5 mA for input
Voltage state 0 guaranteed	≤ 5 V for input
Current state 0 guaranteed	≤ 1.5 mA for input
Discrete input current	7 mA for input
Input impedance	3.3 kOhm for discrete input
Response time	10 ms during turn-off operation for output with Q0...Q6 terminal(s) 10 ms during turn-on operation for output with Q0...Q6 terminal(s) 5 μ s during turn-off operation for fast input with I0, I1, I6, I7 terminal(s) 5 μ s during turn-on operation for fast input with I0, I1, I6, I7 terminal(s) 100 μ s during turn-off operation for input with I8 terminal(s) 35 μ s during turn-on operation for input with I8 terminal(s) 100 μ s during turn-off operation for input with I2...I5 terminal(s) 35 μ s during turn-on operation for input with I2...I5 terminal(s)
Configurable filtering time	12 ms during input 3 ms during input 0 ms during input
Output voltage limits	250 V AC 30 V DC
Current per output common	4 A at COM 1 terminal 4 A at COM 0 terminal
Electrical durability	Resistive DC-12, 24 V / 48 W : 100000 cycles Resistive AC-12, 240 V / 480 VA : 100000 cycles
Switching frequency	0.1 Hz with maximum load
Mechanical durability	≥ 20000000 cycles for relay output
Minimum load	10 mA at 5 V DC for relay output
Memory capacity	256 kB internal flash memory with 10000 instructions for backup of programs
Data storage equipment	32 GB micro SD card (optional)
Battery type	BR2032 Li-CFx (Lithium-Carbon Monofluoride), battery life: 4 yr
Backup time	3 years at 25 °C by interruption of power supply

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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
Clock drift	<= 90 s/month at 25 °C
Regulation loop	Adjustable PID regulator up to 14 simultaneous loops
Control signal type	CW/CCW signal at 100 kHz for fast input (HSC mode) Single phase signal at 100 kHz for fast input (HSC mode) Pulse/Direction signal at 100 kHz for fast input (HSC mode) Quadrature (x1, x2, x4) signal at 100 kHz for fast input (HSC mode)
Counting input number	4 fast input (HSC mode) (counting frequency: 100 kHz) 32 bits
Integrated connection type	Non isolated serial link "serial 2" terminal block and interface RS232/RS485 Non isolated serial link "serial 1" terminal block and interface RS485 USB port mini B USB 2.0
Transmission rate	12 Mbit/s - communication protocol: USB 1.2...115.2 kbit/s (115.2 kbit/s by default) for bus length of 3 m - communication protocol: RS232 1.2...115.2 kbit/s (115.2 kbit/s by default) for bus length of 15 m - communication protocol: RS485
Communication port protocol	Non isolated serial link : Modbus protocol with master/slave method - RTU/ASCII or SoMachine-Network USB port : USB protocol - SoMachine-Network
Local signalling	1 LED per channel green for I/O state 1 LED green for SL1 1 LED green for SD card access (SD) 1 LED red for module error (ERR) 1 LED green for RUN 1 LED green for PWR
Electrical connection	Mini B USB 2.0 connector for a programming terminal Fixed screw terminal block, 4 terminal(s) for connecting the serial link1 Fixed screw terminal block, 3 terminal(s) for connecting the 24 V DC power supply Fixed screw terminal block for outputs Fixed screw terminal block for inputs
Cable length	<= 150 m unshielded cable for output <= 10 m shielded cable for high speed input <= 10 m shielded cable for fast input <= 50 m unshielded cable for input
Insulation	1780 V AC between supply and internal logic 1780 V AC between output groups 1780 V AC between output and internal logic Non-insulated between inputs 560 V AC between input groups 560 V AC between fast input and internal logic 560 V AC between input and internal logic
Mounting support	Plate or panel with fixing kit top hat type TH35-7.5 conforming to IEC 60715 Rail top hat type TH35-15 conforming to IEC 60715
Height	90 mm
Depth	70 mm
Width	110 mm
Product weight	0.295 kg

Environment

Standards	EN/IEC 61131-2 EN/IEC 61010-2-201
Product certifications	CSA CULus IACS E10 RCM
Marking	CE
Electromagnetic compatibility	Conducted RF disturbances (test level: 10 V - 0.15...80 MHz) conforming to EN/IEC 61000-4-6 1.2/50 µs shock waves immunity test (test level: 1 kV - relay output) conforming to EN/IEC 61000-4-5 1.2/50 µs shock waves immunity test (test level: 1 kV - power lines (AC)) conforming to EN/IEC 61000-4-5 1.2/50 µs shock waves immunity test (test level: 0.5 kV - power lines (DC)) conforming to EN/IEC 61000-4-5 1.2/50 µs shock waves immunity test (test level: 1 kV - shielded cable) conforming to EN/IEC 61000-4-5 1.2/50 µs shock waves immunity test (test level: 1 kV - I/O) conforming to EN/IEC 61000-4-5 1.2/50 µs shock waves immunity test (test level: 2 kV - relay output) conforming to EN/IEC 61000-4-5 1.2/50 µs shock waves immunity test (test level: 2 kV - power lines (AC)) conforming to EN/IEC 61000-4-5 1.2/50 µs shock waves immunity test (test level: 1 kV - power lines (DC)) conforming to EN/IEC 61000-4-5 Electrical fast transient/burst immunity test (test level: 1 kV - serial link) 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: 2 kV - relay output) conforming to EN/IEC 61000-4-4 Electrical fast transient/burst immunity test (test level: 2 kV - power lines) conforming to EN/IEC 61000-4-4 Magnetic field at power frequency (test level: 30 A/m conforming to EN/IEC 61000-4-8) Radiated emission (test level: 47 dBµV/m QP, class A - 10 m) conforming to EN/IEC 55011 Radiated emission (test level: 40 dBµV/m QP, class A - 10 m) conforming to EN/IEC 55011 Conducted emission (test level: 73 dBµV/m QP/60 dBµV/m AV - power lines (AC)) conforming to EN/IEC 55011 Conducted emission (test level: 79 dBµV/m QP/66 dBµV/m AV - power lines (AC)) conforming to EN/IEC 55011 Susceptibility to electromagnetic fields (test level: 10 V/m - 80 MHz...3 GHz) conforming to EN/IEC 61000-4-3 Electrostatic discharge immunity test (test level: 6 kV - contact discharge) conforming to EN/IEC 61000-4-2 Electrostatic discharge immunity test (test level: 8 kV - air discharge) conforming to EN/IEC 61000-4-2
Immunity to microbreaks	10 ms
Ambient air temperature for operation	0...55 °C for horizontal installation
Ambient air temperature for storage	-25...70 °C
Relative humidity	10...95 % without condensation in storage 10...95 % without condensation in operation
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 gn (vibration frequency: 8.4...150 Hz) on panel mounting 3.5 mm (vibration frequency: 5...8.4 Hz) on panel mounting 1 gn (vibration frequency: 8.4...150 Hz) on symmetrical rail 3.5 mm (vibration frequency: 5...8.4 Hz) on symmetrical rail
Shock resistance	30 gn (test wave duration: 11 ms) 15 gn (test wave duration: 11 ms)