Product data sheet
Characteristics

TM200CE40T
Controller, Modicon M200, 40 IO, transistor source, Ethernet



Main

Range of product	Modicon M200
Product or component type	Logic controller
[Us] rated supply voltage	24 V DC
Discrete I/O number	40
Discrete input number	I2...I5: 4 fast input I0, I1, I6, I7: 4 high speed input I8...I23: 16 regular input
Discrete output number	Q0...Q1: 2 fast output (PLS/PWM/PTO mode) Q2...Q15: 14 transistor output
Discrete input voltage	24 V
Discrete input voltage type	DC
Discrete input current	7 MA for input
Discrete input logic	Sink or source (positive/negative) type 1 conforming to IEC 61131-2
Discrete output voltage	24 V DC
Discrete output current	0.5 A
Discrete output type	Transistor
Discrete output logic	Positive logic (source)
Power consumption in W	18 W at 24 V DC (with max I/O)

Complementary

Maximum number of I/O expansion module	4 with 64 discrete output(s) for relay output 4 with 144 discrete output(s) for transistor output
Supply voltage limits	20.4…28.8 V
Inrush current	35 A
Voltage state 1 guaranteed	>= 15 V for input
Voltage state 0 guaranteed	<= 5 V for input
Input impedance	3.3 kOhm for discrete input
Response time	1 ms turn-on, Q0...Q15 terminal(s) for output 1 ms turn-off, Q0...Q15 terminal(s) for output 5 µs turn-off, I0, I1, I6, I7 terminal(s) for high speed input 5 µs turn-on, I0, I1, I6, I7 terminal(s) for high speed input 100 µs turn-off, I2...I5 terminal(s) for fast input 35 µs turn-on, I2...I5 terminal(s) for fast input 100 µs turn-off, I8...I13 terminal(s) for regular input 35 µs turn-on, I8...I13 terminal(s) for regular input 125 µs turn-off, I14...I23 terminal(s) for regular input 55 µs turn-on, I14...I23 terminal(s) for regular input
Configurable filtering time	0 ms for input 3 ms for input 12 ms for input
Maximum current per output common	2 A 4 A

Output frequency	100 KHz for fast output (PWM/PLS mode) at Q0...Q1
Maximum leakage current	0.1 MA for transistor output
Maximum voltage drop	<1 V
Maximum tungsten load	<12 W for output and fast output
Protection type	Overload and short-circuit protection at 2 A
Reset time	1 S automatic reset
Memory capacity	512 byte internal flash for backup of programs
Data storage equipment	32 GB micro SD card (optional)
Battery type	BR2032 Li-CFx (Lithium-Carbon Monofluoride), battery life: 5 year(s)
Backup time	3 years at 25 °C (by interruption of power supply)
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
Positioning functions	PWM/PLS 2 channel(s) at 100 kHz
Control signal type	Quadrature (x1, x2, x4) at 100 kHz for fast input (HSC mode) Pulse/Direction at 100 kHz for fast input (HSC mode) Single phase at 100 kHz for fast input (HSC mode) CW/CCW at 100 kHz for fast input (HSC mode)
Counting input number	4 fast input (HSC mode) at 100 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 Ethernet Modbus TCP/IP Ethernet with RJ45 connector and 1 Ethernet port 10/100BASE-T interfa Isolated serial link serial 2 with terminal block connector and 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 10/100 Mbit/s for bus length of 100 m for Ethernet Modbus TCP/IP
Communication port protocol	USB port: USB - SoMachine-Network Non isolated serial link: Modbus master/slave - RTU/ASCII or SoMachine-Network Ethernet Modbus TCP/IP: Modbus TCP/IP client/server
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 (red) for BAT 1 LED (green) for SL1 1 LED per channel (green) for I/O state 2 LEDs (green) for communication (LK/ACT 10/100)
Electrical connection	Mini B USB 2.0 connectorfor a programming terminal RJ45 connectorfor connecting Ethernet network Removable screw terminal blockfor inputs Removable screw terminal blockfor outputs Removable screw terminal block, 3 terminal(s) for connecting the 24 V DC power supply removable screw terminal block, 4 terminal(s) for connecting the serial link1
Maximum cable distance between devices	Unshielded cable: <50 m for input Shielded cable: <10 m for fast input Shielded cable: <10 m for high speed input Unshielded cable: <150 m for output
Insulation	Non-insulated between inputs Between input and internal logic at 500 V AC Between fast input and internal logic at 500 V AC Between input groups at 500 V AC Between output and internal logic at 500 V AC Between output groups at 500 V AC Between supply and internal logic at 500 V DC
Marking	CE
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	175 Mm
Net weight	0.523 Kg

Environment

IP degree of protection	IP20 with protective cover in place
Product certifications	CE
Standards	IEC 61131-2 IEC 61010-2-201
Electromagnetic compatibility	Electrostatic discharge immunity test - test level: 8 kV (air discharge) conforming to IEC 61000- Electrostatic discharge immunity test - test level: 6 kV (contact discharge) conforming to IEC 6 Susceptibility to electromagnetic fields - test level: 10 V/m (80 MHz...3 GHz) conforming to IEC Magnetic field at power frequency - test level: 30 A/m conforming to IEC 61000-4-8 Electrical fast transient/burst immunity test - test level: 2 kV (power lines) conforming to IEC 61 Electrical fast transient/burst immunity test - test level: 2 kV (relay output) conforming to IEC 61 Electrical fast transient/burst immunity test - test level: 1 kV (I/O) conforming to IEC 61000-4-4 Electrical fast transient/burst immunity test - test level: 1 kV (serial link) conforming to IEC 6100 1.2/50 µs shock waves immunity test - test level: 1 kV (power lines (DC)) conforming to IEC 61 1.2/50 µs shock waves immunity test - test level: 2 kV (power lines (AC)) conforming to IEC 61 1.2/50 µs shock waves immunity test - test level: 2 kV (relay output) conforming to IEC 61000- 1.2/50 µs shock waves immunity test - test level: 1 kV (I/O) conforming to IEC 61000-4-5 1.2/50 µs shock waves immunity test - test level: 1 kV (shielded cable) conforming to IEC 6100 1.2/50 µs shock waves immunity test - test level: 0.5 kV (power lines (DC)) conforming to IEC 6 1.2/50 µs shock waves immunity test - test level: 1 kV (power lines (AC)) conforming to IEC 61 Conducted RF disturbances - test level: 10 V (0.15...80 MHz) conforming to IEC 61000-4-6 Conducted emission - test level: 79 dBµV/m QP/66 dBµV/m AV (power lines (AC)) conforming Conducted emission - test level: 73 dBµV/m QP/60 dBµV/m AV (power lines (AC)) conforming Radiated emission - test level: 40 dBµV/m QP class A (10 m) conforming to IEC 55011 Radiated emission - test level: 47 dBµV/m QP class A (10 m) conforming to IEC 55011 Electrical fast transient/burst immunity test - test level: 1 kV (Ethernet line) conforming to IEC 6
Shock resistance	15 gn for 11 ms 30 gn for 6 ms
Immunity to microbreaks	2 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…8.7 Hz on panel mounting 2 gn at 8.7…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	<= 2
Operating altitude	0...2000 m
Storage altitude	0…3000 M

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	9.63 Cm
Package 1 Width	13.735 Cm
Package 1 Length	18.785 Cm
Package 1 Weight	766 G
Unit Type of Package 2	S03
Number of Units in Package 2	12
Package 2 Height	30 Cm
Package 2 Width	30 Cm
Package 2 Length	40 Cm
Package 2 Weight	9713 G
Unit Type of Package 3	P12
Number of Units in Package 3	288
Package 3 Height	95 Cm
Package 3 Width	80 Cm
Package 3 Length	120 Cm
Package 3 Weight	242112 G

Offer Sustainability

Recyclability potential, in %	0
Total lifecycle Carbon footprint	1 392 kg CO2 eq.
Carbon footprint of the manufacturing phase [A1 to A3]	15.166044743280258
Carbon footprint of the manufacturing phase [A1 to A3]	15 kg CO2 eq.
Carbon footprint of the distribution phase [A4]	0.15085971344362265
Carbon footprint of the distribution phase [A4]	0.2 kg CO2 eq.
Carbon footprint of the installation phase [A5]	0.28622665407873715
Carbon footprint of the installation phase [A5]	0.3 kg CO2 eq.
Carbon footprint of the use phase [B2, B3, B4, B6]	1376.4599999999998
Carbon footprint of the use phase [B2, B3, B4, B6]	1 376 kg CO2 eq.
Mercury free	Yes
Sustainable packaging	Yes
Carbon footprint of the end-of-life phase [C1 to C4]	0.3786041886697541
Carbon footprint of the end-of-life phase [C1 to C4]	0.4 kg CO2 eq.
Environmental Disclosure	Product Environmental Profile
Total lifecycle Carbon footprint	1392
Packaging made with recycled cardboard	Yes
Packaging without single use plastic	Yes
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
End of life manual availability	End Of Life Information
Take-back	No

Contractual warranty

Warranty (in months)	18

Product Life Status : Commercialised