

Schneider Electric TM200CE24T

TM200CE24T

controller M200 24 IO transistor Source+
Ethernet

Main

Range of product Easy Modicon M200

Product or component

type

Logic controller

[Us] rated supply

voltage

24 V DC

Discrete I/O number 24

Discrete input number I2...I5: 4 fast input

I0, I1, I6, I7: 4 high speed input

I8...I13: 6 regular input

Discrete output number Q0...Q1: 2 fast output (PLS/PWM/PTO mode)

Q2...Q9: 8 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 EN/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

16 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 138 discrete output(s) for transistor output

Supply voltage limits 20.4...28.8 V

Inrush current 35 A

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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...Q9 terminal(s) for output
1 ms turn-off, Q0...Q9 terminal(s) for output
5 μ s turn-off, I0, I1, I6, I7 terminal(s) for high speed input
5 μ s turn-on, I0, I1, I6, I7 terminal(s) for high speed input
100 μ s turn-off, I2...I5 terminal(s) for fast input
35 μ s turn-on, I2...I5 terminal(s) for fast input
100 μ s turn-off, I8...I13 terminal(s) for regular input
35 μ s turn-on, I8...I13 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 at COM 0
3 A at COM 1
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 μ s Boolean
Exct time for event task 60 μ s 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

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interface

Ethernet Modbus TCP/IP Ethernet with RJ45 connector and 1 Ethernet port
10/100BASE-T interface

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 SoMachineNetwork

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 connector for a programming terminal

RJ45 connector for connecting Ethernet network

Removable screw terminal block for inputs

Removable screw terminal block for 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 link

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

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Depth 70 mm
Width 130 mm
Net weight 0.424 kg

Environment

IP degree of protection IP20 with protective cover in place

Standards EN/IEC 61131-2

EN/IEC 61010-2-201

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

Magnetic field at power frequency - test level: 30 A/m 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 (power lines (DC)) conforming to EN/IEC 61000-4-5

1.2/50 μ s shock waves immunity test - test level: 1 kV (power lines (AC)) 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

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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

Electrical fast transient/burst immunity test - test level: 1 kV (Ethernet line) conforming to EN/IEC 61000-4-4

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 $\leq$ 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 13.6 cm

Package 1 Width 9.0 cm

Package 1 Length 13.8 cm

Package 1 Weight 620.0 g

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