

Schneider Electric TM200C16T

TM200C16T | Schneider Electric | Controller M200 16I/O transistor Source

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Controller M200 16I/O transistor Source

Main

Range of product Easy Modicon M200

Product or component

type

Logic controller

[Us] rated supply

voltage

24 V DC

Discrete I/O number 16

Discrete input number I8: 1 regular input

I2...I5: 4 fast input

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

Discrete output number Q2...Q6: 5 transistor output

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

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

15.5 W at 24 V DC (with max I/O)

Complementary

Maximum number of I/O expansion module 4 with 135 discrete output(s) for transistor output

4 with 64 discrete output(s) for relay output

Supply voltage limits 20.4...28.8 V

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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...Q6 terminal(s) for output
1 ms turn-off, Q0...Q7 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 terminal(s) for regular input
35 μ s turn-on, I8 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 3.5 A at COM 0
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

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

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 (red) for BAT

1 LED (green) for SL1

1 LED per channel (green) for I/O state

Electrical connection Mini B USB 2.0 connector for a programming terminal

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 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 110 mm

Net weight 0.365 kg

Environment

IP degree of protection IP20 with protective cover in place

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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

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

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Radiated emission - test level: 47 dB μ V/m QP class A (10 m) conforming to EN/IEC 55011

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 cm

Package 1 Length 11.8 cm

Package 1 Weight 517 g

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