# Controller M200 60I/O relay



TM200C60R

### Main

Range of product	Easy Modicon M200	
Product or component type	Logic controller	
[Us] rated supply voltage	220 V AC	
Discrete I/O number	60	
Discrete input number	I2I5: 4 fast input I0, I1, I6, I7: 4 high speed input I8I35: 28 regular input	
Discrete output number	24 relay	
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 220 V AC	
Discrete output current	2 A	
Discrete output type	Relay normally open	
Power consumption in VA	6174 VA at 100240 V AC (with max I/O)	

#### **Complementary**

4 with 128 discrete output(s) for transistor output 4 with 88 discrete output(s) for relay output
85264 V
50 A
>= 15 V for input
<= 5 V for input
3.3 kOhm for discrete input
10 ms turn-on, Q0Q23 terminal(s) for output 10 ms turn-off, Q0Q23 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, I2I5 terminal(s) for fast input 35 µs turn-on, I2I5 terminal(s) for fast input 100 µs turn-off, I8I13 terminal(s) for regular input 35 µs turn-on, I8I13 terminal(s) for regular input
125 µs turn-off, I14I35 terminal(s) for regular input 55 µs turn-on, I14I35 terminal(s) for regular input  0 ms for input 3 ms for input 12 ms for input

Output voltage limits	30 V DC 250 V AC
Maximum current per output common	4 A at COM 2 4 A at COM 0 4 A at COM 1 4 A at COM 3 4 A at COM 4 4 A at COM 5
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
Mechanical durability	20000000 cycles for relay output
Minimum load	10 mA at 5 V DC for relay output
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
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 interface Isolated serial link serial 2 with terminal block connector and RS485 interface
Transmission rate	1.2115.2 kbit/s (115.2 kbit/s by default) for bus length of 15 m for RS485 1.2115.2 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 connectorfor a programming terminal removable screw terminal blockfor inputs removable screw terminal blockfor outputs removable screw terminal block, 4 terminal(s) for connecting the serial link1 removable screw terminal block, 3 terminal(s) for connecting the 100-240 V AC power supply
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 output and internal logic at 1780 V AC Between output groups at 1780 V AC Between supply and internal logic at 1780 V AC 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	
Sensor power supply	24 V DC at 300 mA supplied by the controller	
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	225 mm	
Net weight	0.684 kg 0.684 kg	

IP degree of protection	IP20 with protective cover in place
Standards	IEC 61131-2 IEC 61010-2-201
Electromagnetic compatibility	Electrostatic discharge immunity test - test level: 8 kV (air discharge) conforming to IEC 61000-4-2
	Electrostatic discharge immunity test - test level: 6 kV (contact discharge) conforming to IEC 61000-4-2
	Susceptibility to electromagnetic fields - test level: 10 V/m (80 MHz3 GHz) conforming to IEC 61000-4-3
	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 61000-4-4
	Electrical fast transient/burst immunity test - test level: 2 kV (relay output) conforming to IEC 61000-4-4
	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 61000-4-4
	1.2/50 μs shock waves immunity test - test level: 1 kV (power lines (DC)) conforming to IEC 61000-4-5
	1.2/50 μs shock waves immunity test - test level: 2 kV (power lines (AC)) conforming to IEC 61000-4-5
	1.2/50 µs shock waves immunity test - test level: 2 kV (relay output) conforming to IEC 61000-4-5
	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 61000-4-5
	1.2/50 µs shock waves immunity test - test level: 0.5 kV (power lines (DC)) conforming to IEC 61000-4-5
	1.2/50 µs shock waves immunity test - test level: 1 kV (power lines (AC)) conforming to IEC 61000-4-5
	Conducted RF disturbances - test level: 10 V (0.1580 MHz) conforming to IEC 61000-4-6
	Conducted emission - test level: 79 dBµV/m QP/66 dBµV/m AV (power lines (AC)) conforming to IEC 55011
	Conducted emission - test level: 73 dBµV/m QP/60 dBµV/m AV (power lines (AC)) conforming to IEC 55011
	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 61000-4-4
Shock resistance	15 gn for 11 ms 30 gn for 6 ms
Immunity to microbreaks	10 ms

Vibration resistance	3.5 mm at 58.4 Hz on symmetrical rail 1 gn at 8.4150 Hz on symmetrical rail 3.5 mm at 58.7 Hz on panel mounting 2 gn at 8.7150 Hz on panel mounting	
Relative humidity	1095 %, without condensation (in operation) 1095 %, without condensation (in storage)	
Ambient air temperature for operation	055 °C (horizontal installation)	
Ambient air temperature for storage	-2570 °C	
Pollution degree	<= 2	
Operating altitude	02000 m	
Storage altitude	03000 m	

# **Packing Units**

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	9.467 cm
Package 1 Width	13.692 cm
Package 1 Length	23.764 cm
Package 1 Weight	900.5 g
Unit Type of Package 2	S03
Number of Units in Package 2	9
Package 2 Height	30 cm
Package 2 Width	30 cm
Package 2 Length	40 cm
Package 2 Weight	8629.5 g
Unit Type of Package 3	P12
Number of Units in Package 3	216
Package 3 Height	95 cm
Package 3 Width	80 cm
Package 3 Length	120 cm
Package 3 Weight	216108 g



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Transparency RoHS/REACh

### Well-being performance



Mercury Free



Rohs Exemption Information

Yes

### **Certifications & Standards**

Reach Regulation	REACh Declaration
Eu Rohs Directive	Pro-active compliance (Product out of EU RoHS legal scope)
China Rohs Regulation	China RoHS declaration
Environmental Disclosure	Product Environmental Profile
Weee	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins
Circularity Profile	End of Life Information

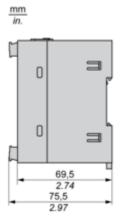
### **Product datasheet**

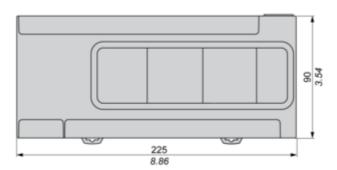
### TM200C60R

### **Dimensions Drawings**

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#### **Dimensions**

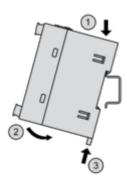




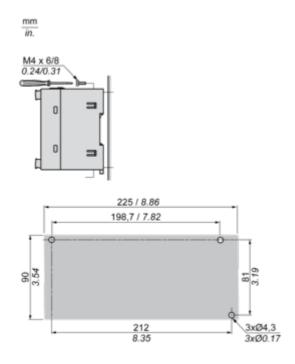
Mounting and Clearance

### Mounting and Clearance

#### Mounting on a Rail



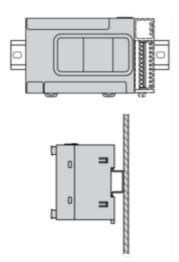
#### **Direct Mounting on a Panel Surface**



#### **Mounting Position**

## **Product datasheet**

### TM200C60R



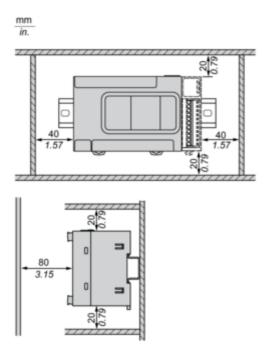




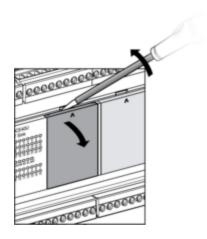


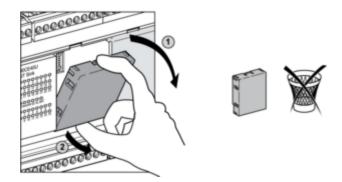


#### Clearance

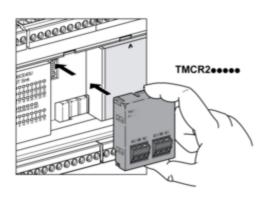


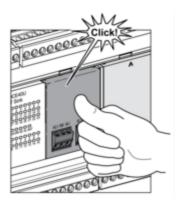
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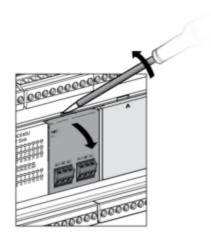


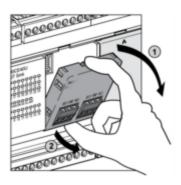
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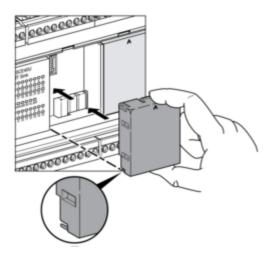
TMCR2 ••• De-Installation





## **Product datasheet**

### TM200C60R



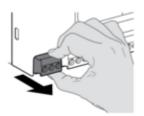


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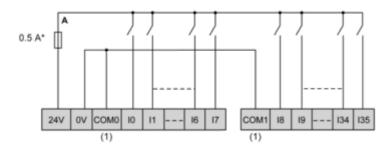
#### Connections and Schema

#### Wiring Diagram / Connections Schema

#### **AC Power Supply**



#### Digital Inputs Positive Logic (Sink)

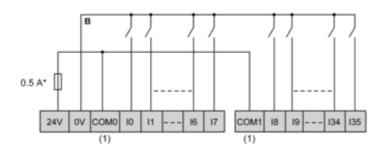


\*\* 10...17



- (\*) Type T fuse
- (\*\*) Fast inputs
- A Sink wiring (positive logic)
- (1) The COM0 and COM1 terminals are **not** connected internally.

#### **Digital Inputs Negative Logic (Source)**



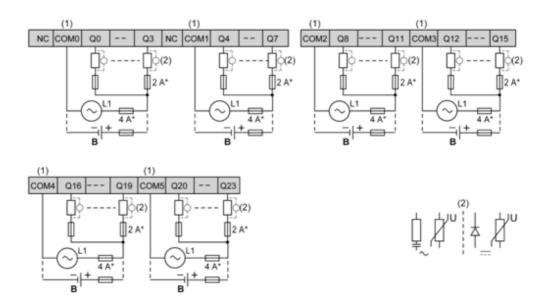
(\*\*) 10...17



- (\*) Type T fuse
- (\*\*) Fast inputs
- B Source wiring (negative logic)
- (1) The COM0 and COM1 terminals are not connected internally.

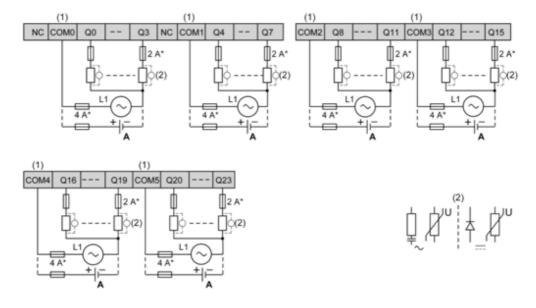
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#### Relay Outputs - Negative Logic (Sink)



- (\*) Type T fuse
- (B) Sink wiring (negative logic)
- (1) The COM0, COM1, COM2, COM3, COM4, and COM5 terminals are not connected internally.
- (2) A free wheeling diode or an RC snubber.

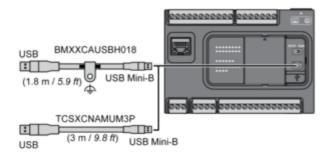
#### Relay Outputs - Positive Logic (Source)



- (\*) Type T fuse
- (A) Source wiring (positive logic)
- (1) The COM0, COM1, COM2, COM3, COM4, and COM5 terminals are not connected internally.
- (2) A free wheeling diode or an RC snubber.

#### **USB Mini-B Connection**

#### TM200C60R



#### **SL1Connection**

