

Product data sheet

Specifications



Discrete I/O module, Modicon TM3, 24 IO (16 inputs, 8 relay outputs, screw) 24 VDC

TM3DM24R

Main

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|---------------------------|--|
| Range of product | Modicon TM3 |
| Product or component type | Discrete I/O module |
| Range compatibility | Modicon M241 Modicon M251 Modicon M221 Modicon M262 |
| Discrete input number | 16 for input conforming to IEC 61131-2 Type 1 |
| Discrete input logic | Sink or source (positive/negative) |
| Discrete input voltage | 24 V |
| Discrete input current | 7 mA for input |
| Discrete output type | Relay normally open |
| Discrete output number | 8 |
| Discrete output logic | Positive or negative |
| Discrete output voltage | 24 V DC for relay output 240 V AC for relay output |
| Discrete output current | 2000 mA for relay output |

Complementary

| | |
|-----------------------------------|---|
| Discrete I/O number | 24 |
| Current consumption | 5 mA at 5 V DC via bus connector (at state off) 0 mA at 24 V DC via bus connector (at state on) 0 mA at 24 V DC via bus connector (at state off) 65 mA at 5 V DC via bus connector (at state on) |
| Discrete input voltage type | DC |
| Voltage state 1 guaranteed | 15...28.8 V for input |
| Current state 1 guaranteed | ≥ 2.5 mA (input) |
| Voltage state 0 guaranteed | 0...5 V for input |
| Current state 0 guaranteed | ≤ 1 mA (input) |
| Input impedance | 3.4 kOhm |
| Response time | 4 ms (turn-on) 4 ms (turn-off) |
| Maximum current per output common | 7 A |
| Mechanical durability | 20000000 cycles |

| | |
|---|---|
| Minimum load | 10 mA at 5 V DC for relay output |
| Local signalling | 1 LED per channel (green) for I/O state |
| Electrical connection | 17 x 1.5 mm ² removable screw terminal block with pitch 3.81 mm adjustment for inputs 11 x 1.5 mm ² removable screw terminal block with pitch 3.81 mm adjustment for outputs |
| Maximum cable distance between devices | Unshielded cable: <30 m for regular input |
| Insulation | Between input and internal logic at 500 V AC Non-insulated between inputs Between input groups and output groups at 1500 V AC Between open contact at 750 V AC Between output and internal logic at 500 V AC Non-insulated between outputs |
| Marking | CE |
| Mounting support | Top hat type TH35-15 rail conforming to IEC 60715 Top hat type TH35-7.5 rail conforming to IEC 60715 plate or panel with fixing kit |
| Height | 90 mm |
| Depth | 84.6 mm |
| Width | 42.9 mm |
| Environment | |
| Standards | EN/IEC 61131-2 EN/IEC 61010-2-201 |
| Product certifications | cULus C-Tick |
| Resistance to electrostatic discharge | 8 kV in air conforming to EN/IEC 61000-4-2 4 kV on contact conforming to EN/IEC 61000-4-2 |
| Resistance to electromagnetic fields | 10 V/m 80 MHz...1 GHz conforming to EN/IEC 61000-4-3 3 V/m 1.4 GHz...2 GHz conforming to EN/IEC 61000-4-3 1 V/m 2 GHz...3 GHz conforming to EN/IEC 61000-4-3 |
| Resistance to magnetic fields | 30 A/m 50/60 Hz conforming to EN/IEC 61000-4-8 |
| Resistance to fast transients | 1 kV for I/O conforming to EN/IEC 61000-4-4 2 kV for relay output conforming to EN/IEC 61000-4-4 |
| Surge withstand | 2 kV output common mode conforming to EN/IEC 61000-4-5 1 kV input common mode conforming to EN/IEC 61000-4-5 |
| Resistance to conducted disturbances | 10 V 0.15...80 MHz conforming to EN/IEC 61000-4-6 3 V spot frequency (2, 3, 4, 6.2, 8.2, 12.6, 16.5, 18.8, 22, 25 MHz) conforming to Marine specification (LR, ABS, DNV, GL) |
| Electromagnetic emission | Radiated emissions - test level: 40 dB μ V/m QP class A (10 m) at 30...230 MHz conforming to EN/IEC 55011 Radiated emissions - test level: 47 dB μ V/m QP class A (10 m) at 230...1000 MHz conforming to EN/IEC 55011 |
| Ambient air temperature for operation | -10...35 °C vertical installation -10...55 °C horizontal installation |
| Ambient air temperature for storage | -25...70 °C |
| Relative humidity | 10...95 %, without condensation (in operation) 10...95 %, without condensation (in storage) |
| 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 | 3.5 mm at 5...8.4 Hz on DIN rail 3 gn at 8.4...150 Hz on DIN rail 3.5 mm at 5...8.4 Hz on panel 3 gn at 8.4...150 Hz on panel |
| Shock resistance | 15 gn for 11 ms |

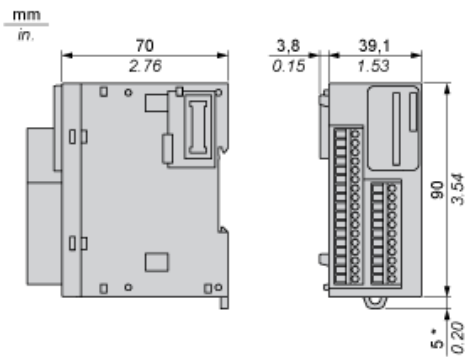
Packing Units

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|------------------------------|-----------|
| Unit Type of Package 1 | PCE |
| Number of Units in Package 1 | 1 |
| Package 1 Height | 7.551 cm |
| Package 1 Width | 10.686 cm |
| Package 1 Length | 12.849 cm |
| Package 1 Weight | 281.0 g |
| Unit Type of Package 2 | CAR |
| Number of Units in Package 2 | 42 |
| Package 2 Height | 30.6 cm |
| Package 2 Width | 40.1 cm |
| Package 2 Length | 57.6 cm |
| Package 2 Weight | 12.61 kg |
| Unit Type of Package 3 | P12 |
| Number of Units in Package 3 | 504 |
| Package 3 Height | 105 cm |
| Package 3 Width | 120 cm |
| Package 3 Length | 80 cm |
| Package 3 Weight | 144 kg |

Offer Sustainability

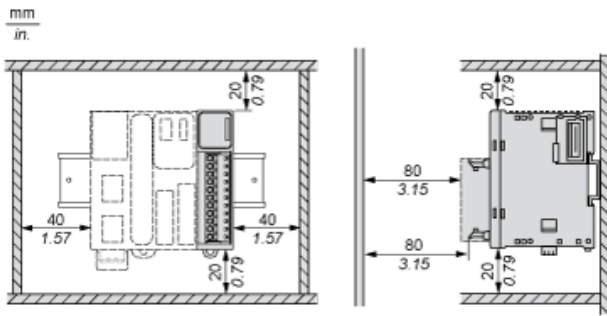
| | |
|----------------------------|---|
| Sustainable offer status | Green Premium product |
| REACH Regulation | REACH Declaration |
| REACH free of SVHC | Yes |
| EU RoHS Directive | Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration |
| Toxic heavy metal free | Yes |
| Mercury free | Yes |
| China RoHS Regulation | China RoHS declaration |
| RoHS exemption information | Yes |
| Environmental Disclosure | Product Environmental Profile |
| Circularity Profile | End of Life Information |
| WEEE | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |
| PVC free | Yes |
| California proposition 65 | WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov |

Dimensions

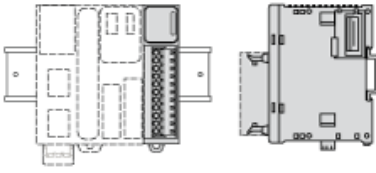


(*) 8.5 mm/0.33 in. when the clamp is pulled out.

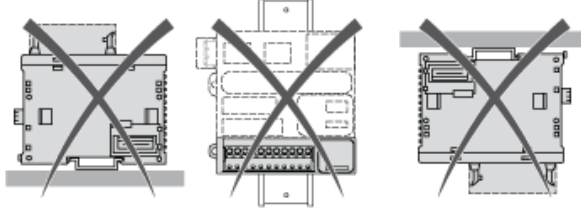
Spacing Requirements



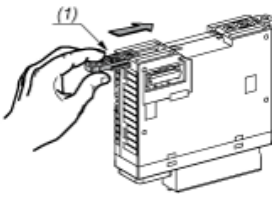
Mounting on a Rail



Incorrect Mounting

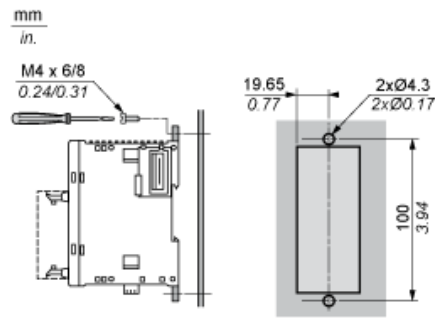


Mounting on a Panel Surface



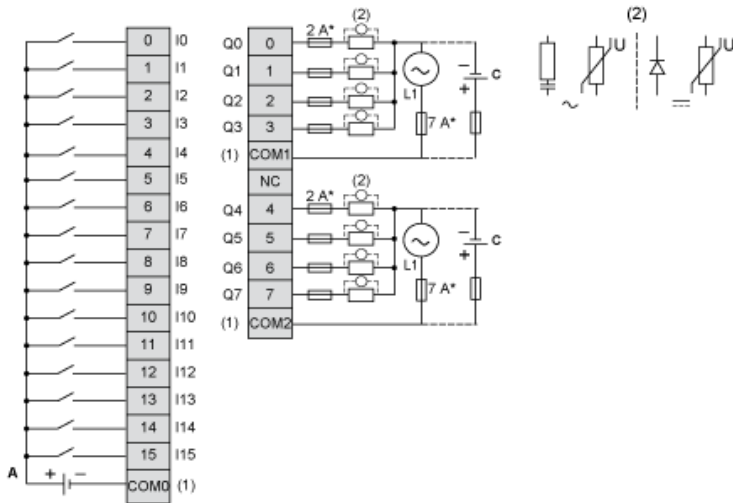
(1) Install a mounting strip

Mounting Hole Layout



Digital Mixed I/O Module (24-channel)

Wiring Diagram (Source)



(*) Type T fuse

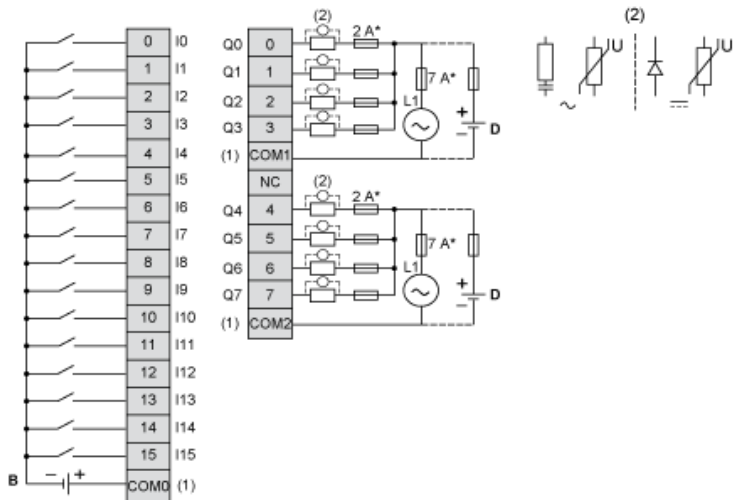
(1) The COM0, COM1 and COM2 terminals are **not** connected internally.

(2) To improve the life time of the contacts, and to protect from potential inductive load damage, it is recommended to connect a free wheeling diode

(A) Sink wiring (positive logic)

(C) Source wiring (positive logic)

Wiring Diagram (Sink)



(*) Type T fuse

(1) The COM0, COM1 and COM2 terminals are **not** connected internally.

(2) To improve the life time of the contacts, and to protect from potential inductive load damage, it is recommended to connect a free wheeling diode

(B) Source wiring (negative logic)

(D) Sink wiring (negative logic)

Recommended replacement(s)