

# Product data sheet

Specifications



discrete IO module, Modicon TM3,  
24 IO, 16 inputs, 8 relay outputs,  
screw, 24V DC

TM3DM24R

## Main

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 input IEC 61131-2 Type 1
Discrete input logic	Sink or source (positive/negative)
Discrete input voltage	24 V
Discrete input current	7 mA input
Discrete output type	Relay normally open
Discrete output number	8
Discrete output logic	Positive or negative
Discrete output voltage	24 V DC relay output 240 V AC relay output
Discrete output current	2000 mA relay output

## Complementary

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

<b>Mechanical durability</b>	20000000 cycles
<b>Minimum load</b>	10 mA 5 V DC relay output
<b>Local signalling</b>	for I/O state 1 LED per channel (green)
<b>Electrical connection</b>	17 x 1.5 mm <sup>2</sup> removable screw terminal block pitch 3.81 mm for inputs 11 x 1.5 mm <sup>2</sup> removable screw terminal block pitch 3.81 mm for outputs
<b>Maximum cable distance between devices</b>	Unshielded cable <98.43 ft (30 m) regular input
<b>Insulation</b>	Between input and internal logic 500 V AC Non-insulated between inputs Between input groups and output groups 1500 V AC Between open contact 750 V AC Between output and internal logic 500 V AC Non-insulated between outputs
<b>Marking</b>	CE
<b>Mounting support</b>	Top hat type TH35-15 rail IEC 60715 Top hat type TH35-7.5 rail IEC 60715 plate or panel with fixing kit
<b>Height</b>	3.54 in (90 mm)
<b>Depth</b>	3.33 in (84.6 mm)
<b>Width</b>	1.69 in (42.9 mm)

## Environment

<b>Standards</b>	EN/IEC 61131-2
<b>Product Certifications</b>	cULus CE UKCA RCM EAC cULus HazLoc
<b>Resistance to electrostatic discharge</b>	8 kV in air EN/IEC 61000-4-2 4 kV on contact EN/IEC 61000-4-2
<b>Resistance to electromagnetic fields</b>	9.14 V/m (10 V/m) 80 MHz...1 GHz EN/IEC 61000-4-3 2.74 V/m (3 V/m) 1.4 GHz...2 GHz EN/IEC 61000-4-3 0.91 V/m (1 V/m) 2 GHz...3 GHz EN/IEC 61000-4-3
<b>Resistance to magnetic fields</b>	98.43 A/m (30 A/m) 50/60 Hz EN/IEC 61000-4-8
<b>Resistance to fast transients</b>	1 kV I/OEN/IEC 61000-4-4 2 kV relay outputEN/IEC 61000-4-4
<b>Surge withstand</b>	2 kV output common mode EN/IEC 61000-4-5 1 kV input common mode EN/IEC 61000-4-5
<b>Resistance to conducted disturbances</b>	10 V 0.15...80 MHz 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) Marine specification (LR, ABS, DNV, GL)
<b>Electromagnetic emission</b>	Radiated emissions 40 dB $\mu$ V/m QP class A 10 m)30...230 MHz EN/IEC 55011 Radiated emissions 47 dB $\mu$ V/m QP class A 10 m)230...1000 MHz EN/IEC 55011
<b>Ambient Air Temperature for Operation</b>	14...95 °F (-10...35 °C) vertical installation 14...131 °F (-10...55 °C) horizontal installation
<b>Ambient Air Temperature for Storage</b>	-13...158 °F (-25...70 °C)
<b>Relative humidity</b>	10...95 %, without condensation in operation) 10...95 %, without condensation in storage)
<b>IP degree of protection</b>	IP20 with protective cover in place
<b>Pollution degree</b>	2
<b>Operating altitude</b>	0...6561.68 ft (0...2000 m)
<b>Storage altitude</b>	0.00...9842.52 ft (0...3000 m)
<b>Vibration resistance</b>	3.5 mm 5...8.4 Hz DIN rail 3 gn 8.4...150 Hz DIN rail 3.5 mm 5...8.4 Hz panel 3 gn 8.4...150 Hz panel

Shock resistance	15 gn 11 ms
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## Ordering and shipping details

Category	22533-M2XX PLC & ACCESSORIES
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Discount Schedule	MSX
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GTIN	3606480611544
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Returnability	Yes
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Country of origin	TW
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## Packing Units

Unit Type of Package 1	PCE
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Number of Units in Package 1	1
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Package 1 Height	2.97 in (7.551 cm)
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Package 1 Width	4.21 in (10.686 cm)
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Package 1 Length	5.06 in (12.849 cm)
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Package 1 Weight	9.91 oz (281.0 g)
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Unit Type of Package 2	CAR
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Number of Units in Package 2	42
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Package 2 Height	12.05 in (30.6 cm)
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Package 2 Width	15.79 in (40.1 cm)
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Package 2 Length	22.68 in (57.6 cm)
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Package 2 Weight	27.80 lb(US) (12.61 kg)
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Unit Type of Package 3	P12
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Number of Units in Package 3	504
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Package 3 Height	41.34 in (105 cm)
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Package 3 Width	47.24 in (120 cm)
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Package 3 Length	31.50 in (80 cm)
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Package 3 Weight	317.47 lb(US) (144 kg)
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## Offer Sustainability

Sustainable offer status	Green Premium product
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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 <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a>
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REACH Regulation	<a href="#">REACH Declaration</a>
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REACH free of SVHC	Yes
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EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope) <a href="#">EU RoHS Declaration</a>
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Toxic heavy metal free	Yes
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Mercury free	Yes
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China RoHS Regulation	<a href="#">China RoHS declaration</a>
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RoHS exemption information	<a href="#">Yes</a>
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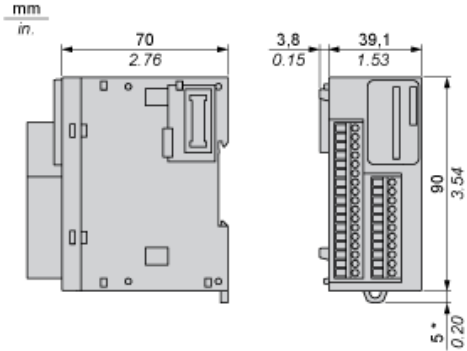
Environmental Disclosure	<a href="#">Product Environmental Profile</a>
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Circularity Profile	<a href="#">End of Life Information</a>
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WEEE	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.
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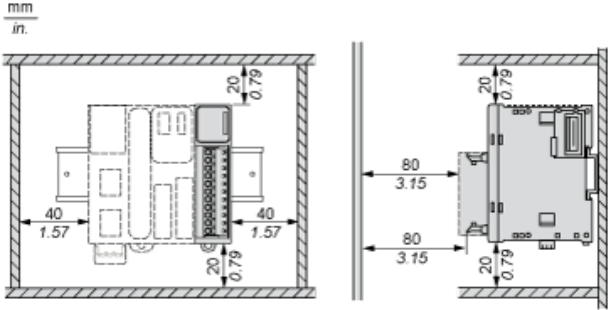


Dimensions



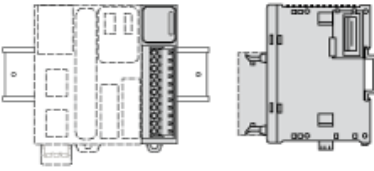
(\*) 8.5 mm/0.33 in. when the clamp is pulled out.

Spacing Requirements

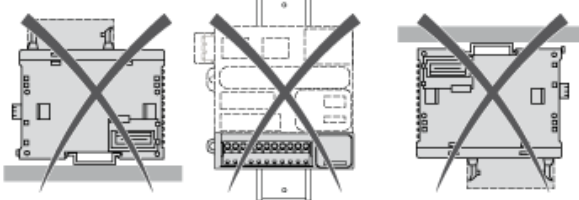


**Mounting on a Rail**

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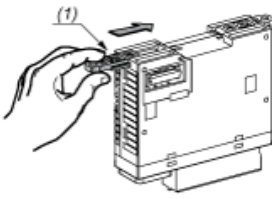


**Incorrect Mounting**



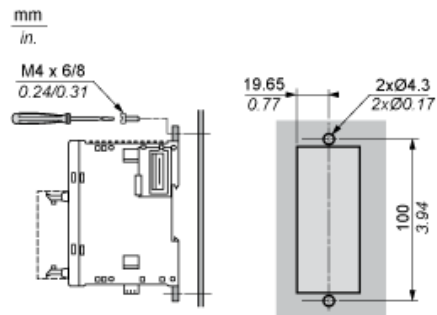
**Mounting on a Panel Surface**

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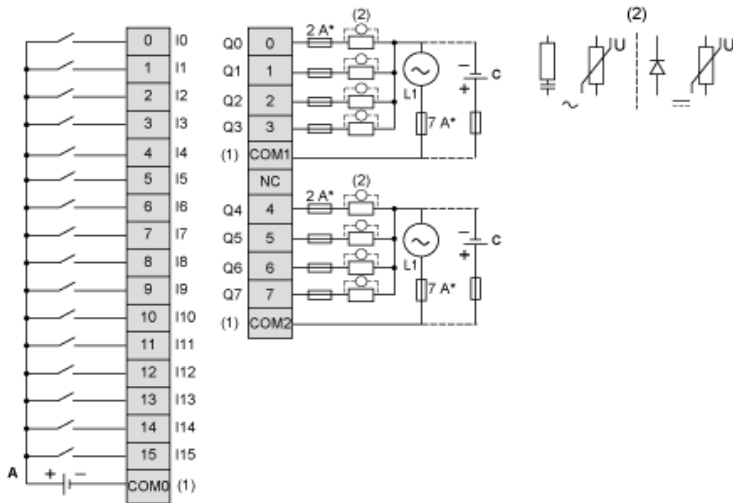
(1) Install a mounting strip

**Mounting Hole Layout**



### Digital Mixed I/O Module (24-channel)

#### Wiring Diagram (Source)



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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

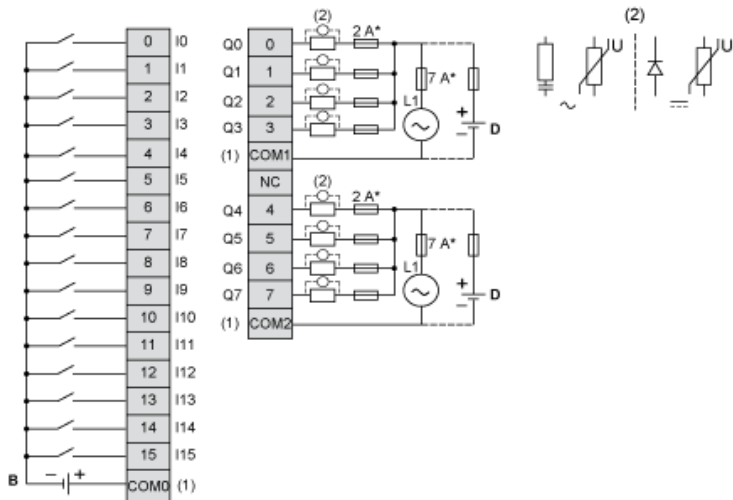
(A)

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)