



Main

Range of product	Modicon TM3
Product or component type	Discrete I/O module
Range compatibility	Modicon M221 Modicon M241 Modicon M251
Discrete input number	16 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	240 V AC for relay output 24 V DC for relay output
Discrete output current	2000 mA for relay output

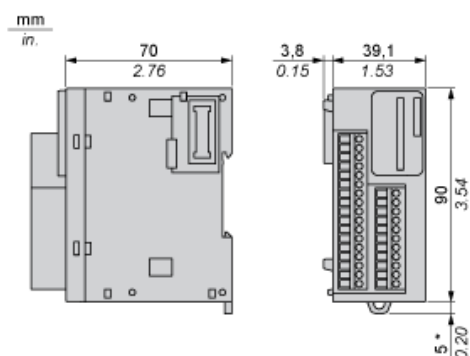
Complementary

Discrete I/O number	24
Current consumption	65 mA at 5 V DC via bus connector at state on 0 mA at 24 V DC via bus connector at state off 0 mA at 24 V DC via bus connector at state on 5 mA at 5 V DC via bus connector at state off
Discrete input voltage type	DC
Voltage state1 guaranteed	15...28.8 V for input
Current state 1 guaranteed	>= 2.5 mA for input
Voltage state 0 guaranteed	0...5 V for input
Current state 0 guaranteed	<= 1 mA for input
Input impedance	3.4 kOhm
Response time	4 ms for turn-off 4 ms for turn-on
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	Removable screw terminal block pitch 3.81 mm with 11 terminal(s) of 1.5 mm ² connection capacity for outputs Removable screw terminal block pitch 3.81 mm with 17 terminal(s) of 1.5 mm ² connection capacity for inputs
Cable length	<= 30 m unshielded cable cable for regular input
Insulation	Non-insulated between outputs 500 V AC between output and internal logic 750 V AC between open contact 1500 V AC between input groups and output groups Non-insulated between inputs 500 V AC between input and internal logic
Marking	CE
Mounting support	Plate or panel with fixing kit Top hat type TH35-7.5 rail conforming to IEC 60715 Top hat type TH35-15 rail conforming to IEC 60715
Height	70 mm
Depth	84.6 mm
Width	27.3 mm

Environment

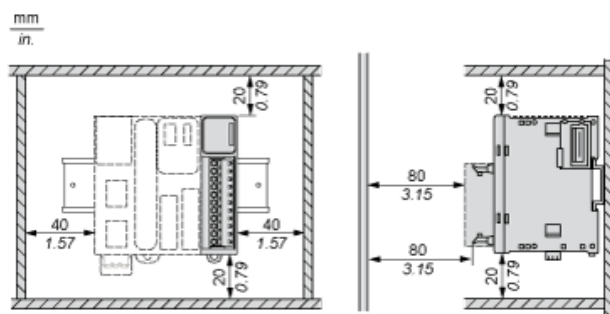
Standards	EN/IEC 61131-2 EN/IEC 61010-2-201
Product certifications	C-Tick CULus
Resistance to electrostatic discharge	On contact - EN/IEC 61000-4-2 In air - EN/IEC 61000-4-2
Resistance to electromagnetic fields	1 V/m (2 GHz...3 GHz) - EN/IEC 61000-4-3 3 V/m (1.4 GHz...2 GHz) - EN/IEC 61000-4-3 10 V/m (80 MHz...1 GHz) - EN/IEC 61000-4-3
Resistance to magnetic fields	30 A/m (50...60 Hz) - EN/IEC 61000-4-8
Resistance to fast transients	2 kV for relay output - EN/IEC 61000-4-4 1 kV for I/O - EN/IEC 61000-4-4
Surge withstand	1 kV for input in common mode - EN/IEC 61000-4-5 2 kV for output in common mode - EN/IEC 61000-4-5
Resistance to conducted disturbances, induced by radio frequency fields	3 Vrms (spot frequency (2, 3, 4, 6.2, 8.2, 12.6, 16.5, 18.8, 22, 25 MHz)) - Marine specification (LR, ABS, DNV, GL) 10 Vrms (0.15...80 MHz) - EN/IEC 61000-4-6
Electromagnetic emission	Radiated emissions - EN/IEC 55011 class A 10 m, 230 MHz...1 GHz : 47 dBμV/m QP Radiated emissions - EN/IEC 55011 class A 10 m, 30...230 MHz : 40 dBμV/m QP
Ambient air temperature for operation	-10...55 °C for horizontal installation -10...35 °C for vertical installation
Ambient air temperature for storage	-25...70 °C
Relative humidity	10...95 % without condensation in storage 10...95 % without condensation in operation
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 gn (vibration frequency: 8.4...150 Hz) on panel 3.5 mm (vibration frequency: 5...8.4 Hz) on panel 3 gn (vibration frequency: 8.4...150 Hz) on DIN rail 3.5 mm (vibration frequency: 5...8.4 Hz) on DIN rail
Shock resistance	15 gn (test wave duration:11 ms)

Dimensions

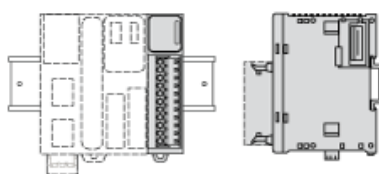


(*) 8.5 mm/0.33 in. when the clamp is pulled out.

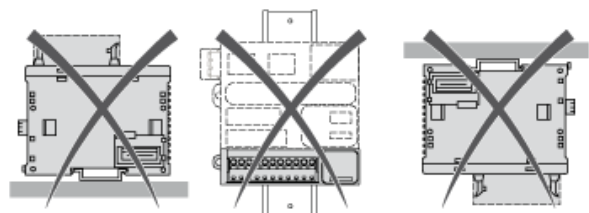
Spacing Requirements



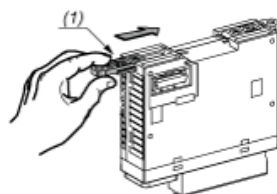
Mounting on a Rail



Incorrect Mounting

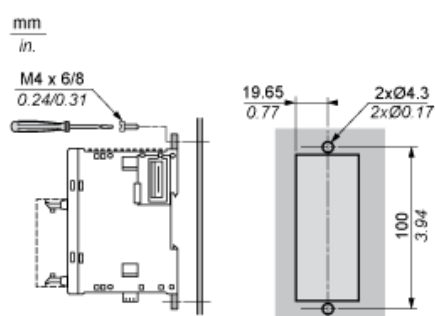


Mounting on a Panel Surface



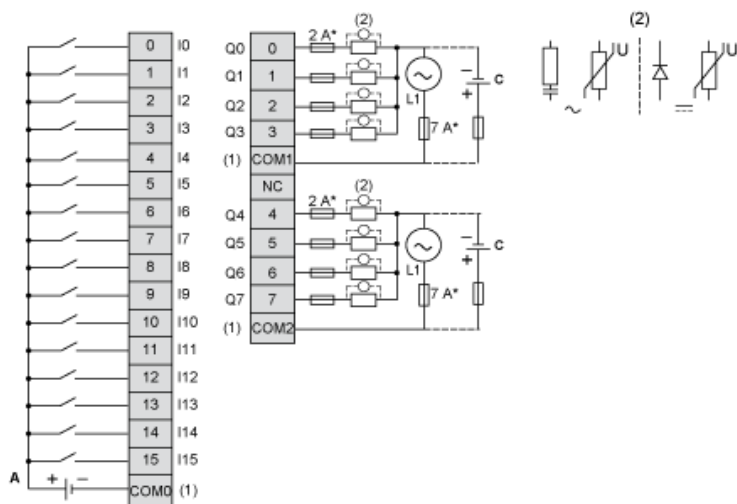
(1) Install a mounting strip

Mounting Hole Layout



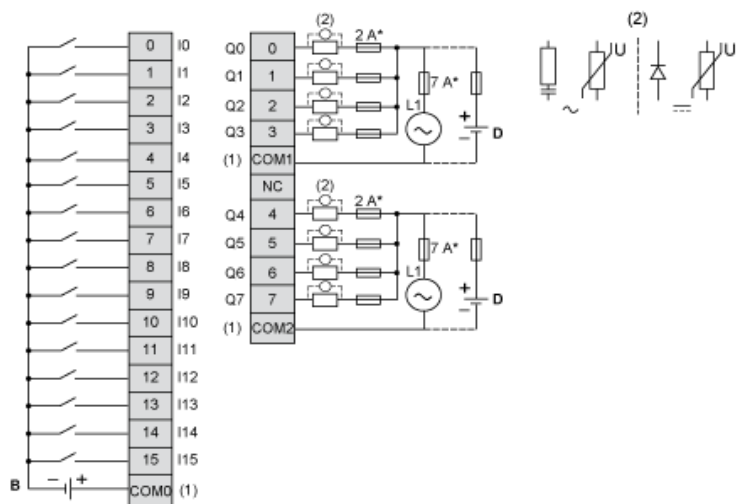
Digital Mixed I/O Module (24-channel)

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 in parallel to each inductive DC load or an RC snubber in parallel of each inductive AC load.
- (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 in parallel to each inductive DC load or an RC snubber in parallel of each inductive AC load.
- (B) Source wiring (negative logic)
- (D) Sink wiring (negative logic)