

Scheinder Electric TM221CE40U

TM221CE40U

Logic controller, Modicon M221, 40io tr.npn

ethernet

Main

Range of Product Modicon M221

Product or Component

Type

Logic controller

[Us] rated supply

voltage

24 V DC

Discrete input number 24, discrete input 4 fast input IEC 61131-2 Type 1

Analogue input number 2 0...10 V

Discrete output type Transistor

Discrete output number 16 transistor 4 fast output

Discrete output voltage 24 V DC

Discrete output current 0.5 A

Complementary

Discrete I/O number 40

Maximum number of I/O expansion module 7 relay output

Supply voltage limits 20.4...28.8 V

Inrush current 35 A

Maximum power consumption in W 17 W 24 V with max number of I/O expansion module)

4.9 W 24 V without I/O expansion module)

Power supply output current 0.52 A 5 V expansion bus

0.3 A 24 V expansion bus

Discrete input logic Sink or source (positive/negative)

Discrete input voltage 24 V

Discrete input voltage type DC

Analogue input resolution 10 bits

LSB value 10 mV

Conversion time 1 ms per channel + 1 controller cycle time analog input

Permitted overload on inputs +/- 30 V DC 5 min maximum)analog input

+/- 13 V DC permanent)analog input

Voltage state 1 guaranteed ≥ 15 V input

Voltage state 0 guaranteed ≤ 5 V input

Discrete input current 7 MA discrete input

5 mA fast input

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Input impedance 3.4 kOhm discrete input
100 kOhm analog input
4.9 kOhm fast input
Response time 35 µs turn-off, I2...I5 input
5 µs turn-on, I0, I1, I6, I7 fast input
35 µs turn-on, other terminals input
5 µs turn-off, I0, I1, I6, I7 fast input
100 µs turn-off, other terminals input
300 µs turn-on, turn-off, other terminals output
5 µs turn-on, turn-off, Q0...Q3 output
Configurable filtering time 0 ms input
3 ms input
12 ms input
Discrete output logic Negative logic (sink)
Maximum current per output common 4 A
Output Frequency (sync to mains) 0.1 KHz output Q4...Q15
100 kHz fast output (PWM/PLS mode) Q0...Q3
Absolute accuracy error +/- 1 % of full scale analog input
Maximum leakage current 0.1 mA transistor output
Maximum voltage drop <1 V
Mechanical durability 20000000 cycles transistor output
Maximum tungsten load <12 W output and fast output
Protection type Without protection
Memory capacity 256 kB user application and data RAM 10000 instructions
256 kB internal variables RAM
Data backed up 256 kB built-in flash memory backup of application and data
Data storage equipment 2 GB SD card optional)
Battery type BR2032 lithium non-rechargeable 4 year(s)
Backup time 1 year 77 ° F (25 ° C) by interruption of power supply)
Execution time for 1 KInstruction 0.3 ms event and periodic task
Execution time per instruction 0.2 µs Boolean
Exct time for event task 60 µs response time
Maximum size of object areas 8000 %MW memory words
255 %TM timers
512 %KW constant words
255 %C counters
512 %M memory bits
Realtime clock With
Clock drift <= 30 s/month 77 ° F (25 ° C)
Regulation loop Adjustable PID regulator up to 14 simultaneous loops

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Positioning functions PTO 4 pulse/direction 100 kHz)
PTO 2 CW/CCW 100 kHz)
Function Available PLS
PWM
Frequency generator
Counting input number 4 fast input (HSC mode) 100 kHz 32 bits
Counter function A/B
Single phase
Pulse/direction
Integrated connection type USB port mini B USB 2.0
Non isolated serial link serial 1 RJ45 RS232/RS485
Ethernet RJ45
Supply Serial)serial link supply 5 V, <200 mA
Transmission rate 1.2...115.2 kbit/s (115.2 kbit/s by default) 49.21 ft (15 m) RS485
1.2...115.2 kbit/s (115.2 kbit/s by default) 9.84 ft (3 m) RS232
480 Mbit/s USB
Communication port protocol USB port USB - SoMachine-Network
Non isolated serial link Modbus master/slave - RTU/ASCII or SoMachine-Network
Ethernet
Port Ethernet 10BASE-T/100BASE-TX 1 328.08 ft (100 m) copper cable
Communication Service DHCP client
Modbus TCP slave device
Ethernet/IP adapter
Modbus TCP server
Modbus TCP client
Local signalling For PWR 1 LED (green)
For RUN 1 LED (green)
For module error (ERR) 1 LED (red)
For SD card access (SD) 1 LED (green)
For BAT 1 LED (red)
For I/O state 1 LED per channel (green)
For SL 1 LED (green)
For ACT Ethernet network activity (green)
For Link (Link Status) Ethernet network link (yellow)
Electrical connection Removable screw terminal block for inputs
Removable screw terminal block for outputs
Terminal block, 3 for connecting the 24 V DC power supply
Connector, 4 for analogue inputs
Mini B USB 2.0 connector for a programming terminal
Maximum cable distance between devices Shielded cable <32.81 ft (10 m) fast input
Unshielded cable <98.43 ft (30 m) output

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Unshielded cable <98.43 ft (30 m) digital input

Unshielded cable <3.28 ft (1 m) analog input

Shielded cable <9.84 ft (3 m) fast output

Insulation Between input and internal logic 500 V AC

Between fast input and internal logic 500 V AC

Non-insulated between inputs

Between output and internal logic 500 V AC

Non-insulated between analogue input and internal logic

Non-insulated between analogue inputs

Marking CE

Mounting support Top hat type TH35-15 rail IEC 60715

Top hat type TH35-7.5 rail IEC 60715

Plate or panel with fixing kit

Height 3.54 in (90 mm)

Depth 2.76 in (70 mm)

Width 6.30 in (160 mm)

Net Weight 1.72 lb(US) (0.78 kg)

Environment

Standards EN/IEC 61131-2

EN/IEC 61010-2-201

EN/IEC 60664-1

Product Certifications LR

CULus

CSA

EAC

DNV-GL

ABS

RCM

IACS E10

Environmental characteristic Ordinary and hazardous location

Resistance to electrostatic discharge 8 KV in air EN/IEC 61000-4-2

4 kV on contact EN/IEC 61000-4-2

Resistance to electromagnetic fields 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

Resistance to magnetic fields 98.43 A/m (30 A/m) 50/60 Hz EN/IEC 61000-4-8

Resistance to fast transients 2 KV EN/IEC 61000-4-4 power lines)

2 KV EN/IEC 61000-4-4 relay output)

1 KV EN/IEC 61000-4-4 I/O)

1 KV EN/IEC 61000-4-4 Ethernet line)

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1 kV EN/IEC 61000-4-4 serial link)
 Surge withstand 2 kV power lines (AC) common mode EN/IEC 61000-4-5
 2 kV relay output common mode EN/IEC 61000-4-5
 1 kV I/O common mode EN/IEC 61000-4-5
 1 kV shielded cable common mode EN/IEC 61000-4-5
 0.5 kV power lines (DC) differential mode EN/IEC 61000-4-5
 1 kV power lines (AC) differential mode EN/IEC 61000-4-5
 1 kV relay output differential mode EN/IEC 61000-4-5
 0.5 kV power lines (DC) common mode EN/IEC 61000-4-5
 Resistance to conducted disturbances 10 V 0.15...80 MHz EN/IEC 61000-4-6
 3 V 0.1...80 MHz Marine specification (LR, ABS, DNV, GL)
 10 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)
 Electromagnetic emission Conducted emissions 79 dB μ V/m QP/66 dB μ V/m AV power lines (AC) 0.15...
 0.5 MHz EN/IEC 55011
 Conducted emissions 73 dB μ V/m QP/60 dB μ V/m AV power lines (AC) 0.5...
 300 MHz EN/IEC 55011
 Conducted emissions 120...69 dB μ V/m QP power lines) 10...150 kHz EN/IEC 55011
 Conducted emissions 63 dB μ V/m QP power lines) 1.5...30 MHz EN/IEC 55011
 Radiated emissions 40 dB μ V/m QP class A 10 m) 30...230 MHz EN/IEC 55011
 Conducted emissions 79...63 dB μ V/m QP power lines) 150...1500 kHz EN/IEC 55011
 Radiated emissions 47 dB μ V/m QP class A 10 m) 200...1000 MHz EN/IEC 55011
 Immunity to microbreaks 10 ms
 Ambient air temperature for operation 14...131 ° F (-10...55 ° C) horizontal installation)
 14...95 ° F (-10...35 ° C) vertical installation)
 Ambient Air Temperature for Storage -13...158 ° F (-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 $\leq$ 2
 Operating altitude 0...6561.68 ft (0...2000 m)
 Storage altitude 0.00...9842.52 ft (0...3000 m)
 Vibration resistance 3.5 mm 5...8.4 Hz symmetrical rail
 3.5 mm 5...8.4 Hz panel mounting
 1 gn 8.4...150 Hz symmetrical rail
 1 gn 8.4...150 Hz panel mounting
 Shock resistance 147 m/s² 11 ms

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Ordering and shipping details

Category 22533-M2XX PLC & ACCESSORIES

Discount Schedule MSX

GTIN 3606485408644

Nbr. of units in pkg. 1

Package weight(Lbs) 25.96 oz (736.0 g)

Returnability No

Country of origin TW

Packing Units

Unit Type of Package 1 PCE

Package 1 Height 5.63 in (14.3 cm)

Package 1 width 8.27 in (21 cm)

Package 1 Length 4.41 in (11.2 cm)

Unit Type of Package 2 S04

Number of Units in Package 2 12

Package 2 Weight 23.42 lb(US) (10.624 kg)

Package 2 Height 11.81 in (30 cm)

Package 2 width 15.75 in (40 cm)

Package 2 Length 23.62 in (60 cm)



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