

# Product datasheet

Specifications



## motion controller LMC078-20DIO transistor sercos compact Ethernet Canopen 24Vdc

LMC078CECS20T

⚠ Discontinued on: 8 Nov 2022

⚠ Discontinued

EAN Code: 3606480694837

### Main

Range of product	Modicon LMC078
Product or component type	Motion controller
Product specific application	Material handling Packaging Material working
Discrete I/O number	20
Battery type	3 V lithium battery

### Complementary

Discrete input number	12 for total input 8 for regular input 4 for capture input
Discrete input logic	Sink
Discrete input voltage	24 V
Discrete input voltage type	DC
Voltage state 1 guaranteed	15...30 V for input
Voltage state 0 guaranteed	-3...5 V for input
Discrete input current	4 mA
Input impedance	6 kOhm
Configurable filtering time	0.1...4290 ms for regular input 0.1...4290 ms for capture input
Discrete output number	8 output
Discrete output logic	Source
Discrete output voltage	24 V DC
Output voltage limits	19.2...28.8 V
Protection type	Short-circuit protection
Maximum input/output number	768 distributed for discrete inputs and outputs 364 distributed for analog inputs and outputs
[Us] rated supply voltage	24 V DC
Supply voltage limits	20.4...30 V
[In] rated current	500 mA for per output 2 A for for all outputs
Peak current	2 A (duration = 1 s)
Execution time per instruction	2 ns

<b>Memory type</b>	128 MB NVRAM 512 MB RAM
<b>Data storage equipment</b>	512 MB SD card
<b>Programming language</b>	SFC (sequential function chart) CFC (continuous function chart) ST (structured text) IL (instruction list) LD (ladder) FBD (function block diagram)
<b>Realtime clock</b>	With clock, clock drift +/- 1 s/day
<b>Data backed up</b>	Battery variables of type retain and retain persistent Battery date and hour
<b>Battery life</b>	10 year(s)
<b>Integrated connection type</b>	1 isolated serial link with female RJ45 connectorModbus with master/slave RTU/ ASCII or character mode ASCII, physical interface: RS232/RS485, transmission rate: 480 Mbit/s 1 CAN port with male SUB-D 9 connectorCANopen with master 1 isolated serial link with mini B USB connector, transmission rate: 480 Mbit/s 1 encoder with screw terminal block connector 1 isolated serial link with female RJ45 connector, physical interface: SERCOS III 1 isolated serial link with female RJ45 connectorEthernet Modbus TCP/IP with slave, physical interface: 10BASE-T/100BASE-TX, transmission rate: 300...115200 bps 1 isolated serial link with USB type A connector
<b>Local signalling</b>	1 LED green with PRG marking for programming indication 1 LED green, orange and red with SIII marking for SERCOS III bus status 1 LED green/red with STS marking for status of the module (Mod Status) 1 LED green/red with CAN marking for CANopen bus status
<b>Marking</b>	CE
<b>Mounting support</b>	Screw clamp
<b>Width</b>	45 mm
<b>Height</b>	230 mm
<b>Depth</b>	220 mm
<b>Net weight</b>	2.2 kg

## Environment

<b>Standards</b>	CSA C22.2 No 142 UL 508
<b>Product certifications</b>	CSA UL
<b>Ambient air temperature for operation</b>	5...55 °C (vertical installation)
<b>Ambient air temperature for storage</b>	-25...70 °C
<b>Relative humidity</b>	5...95 % without condensation
<b>IP degree of protection</b>	IP20 conforming to IEC 61131-2
<b>Pollution degree</b>	2
<b>Operating altitude</b>	0...2000 m without derating
<b>Storage altitude</b>	0...3000 m
<b>Vibration resistance</b>	10 m/s <sup>2</sup>
<b>Shock resistance</b>	100 m/s <sup>2</sup>

## Packing Units

<b>Unit Type of Package 1</b>	PCE
-------------------------------	-----

<b>Number of Units in Package 1</b>	1
<b>Package 1 Height</b>	10.600 cm
<b>Package 1 Width</b>	33.200 cm
<b>Package 1 Length</b>	44.600 cm
<b>Package 1 Weight</b>	2.188 kg
<b>Unit Type of Package 2</b>	P06
<b>Number of Units in Package 2</b>	8
<b>Package 2 Height</b>	75.000 cm
<b>Package 2 Width</b>	60.000 cm
<b>Package 2 Length</b>	80.000 cm
<b>Package 2 Weight</b>	30.104 kg

## Contractual warranty

<b>Warranty</b>	18 months
-----------------	-----------



## Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

[Environmental Data explained >](#)

[How we assess product sustainability >](#)

### Environmental footprint

[Environmental Disclosure](#)

[Product Environmental Profile](#)

## Use Better

### Materials and Substances

Packaging made with recycled cardboard

No

Packaging without single use plastic

No

[EU RoHS Directive](#)

Pro-active compliance (Product out of EU RoHS legal scope)

SCIP Number

90542e8d-37a0-413c-9a67-b77780cef36

REACH Regulation

[REACH Declaration](#)

PVC free

Yes

## Use Again

### Repack and remanufacture

End of life manual availability

[End of Life Information](#)

Take-back

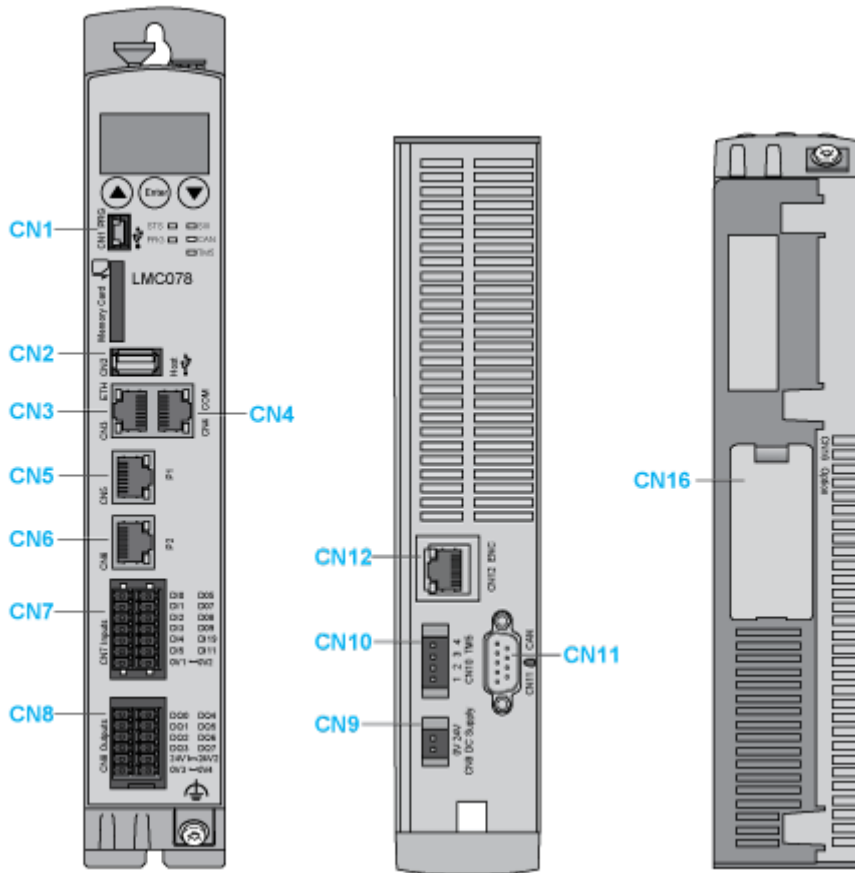
No

WEEE Label

 The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins

Presentation

Presentation

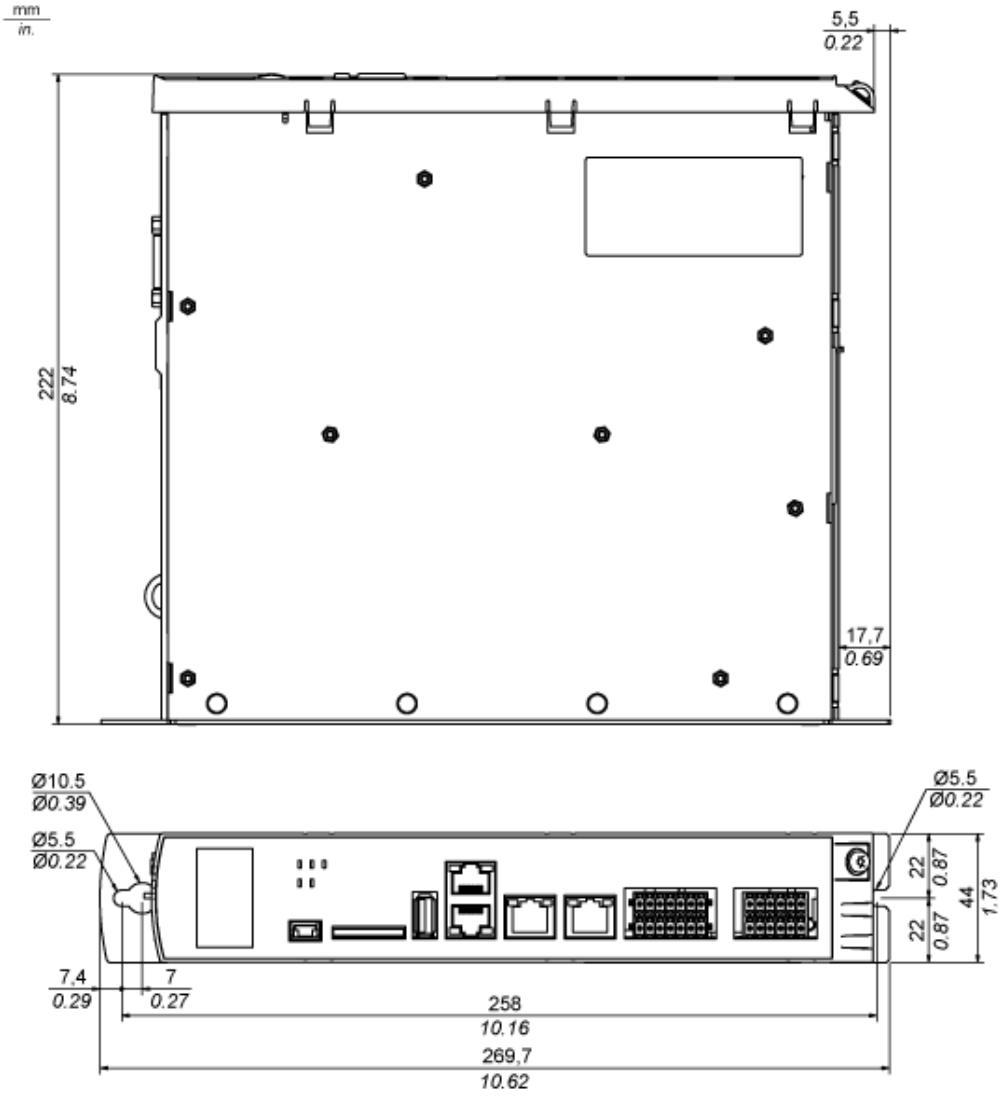


- CN1** : USB mini-B (PRG)
- CN2** : USB A port (Host)
- CN3** : Ethernet port (ETH)
- CN4** : Serial line port (COM)
- CN5** : Sercos, port 1 (P1)
- CN6** : Sercos, port 2 (P2)
- CN7** : Digital inputs
- CN8** : Digital outputs
- CN9** : 24 Vdc
- CN10** : Not used
- CN11** : CANopen port (CAN)
- CN12** : Master encoder input (ENC)
- CN16** : Slot for optional communication module

Dimensions Drawings

Modicon LMC078

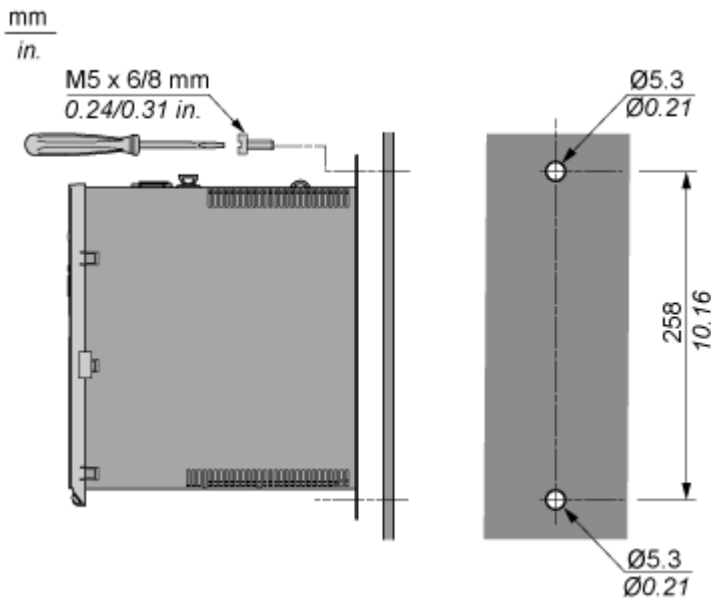
Dimensions



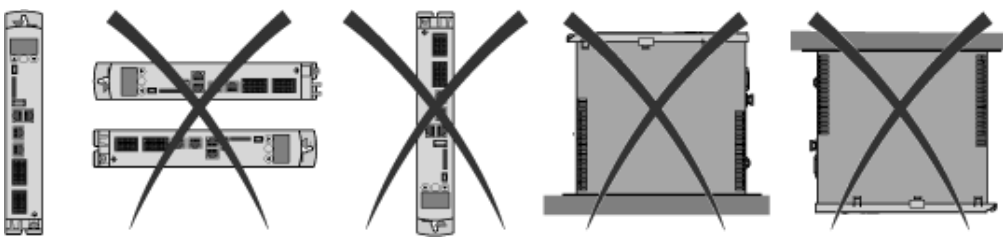
Mounting and Clearance

Mounting Clearance

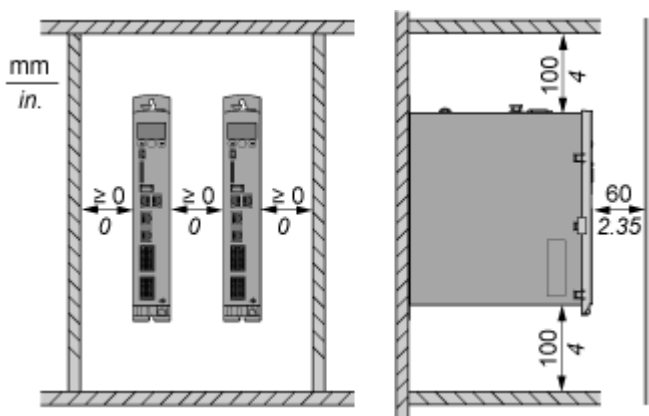
Mounting



Mounting Position



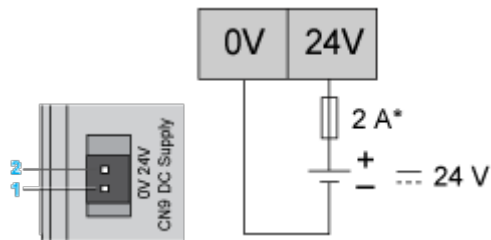
Clearance



Connections and Schema

Connections and Schema

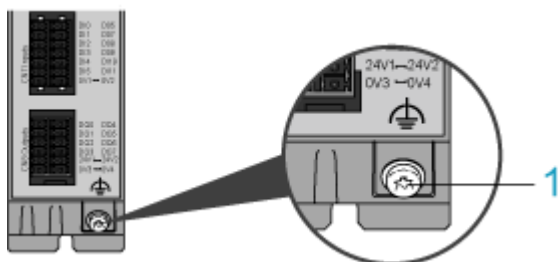
DC Power Supply



\* : Type T fuse

Pin	Description
1	0 Vdc
2	24 Vdc

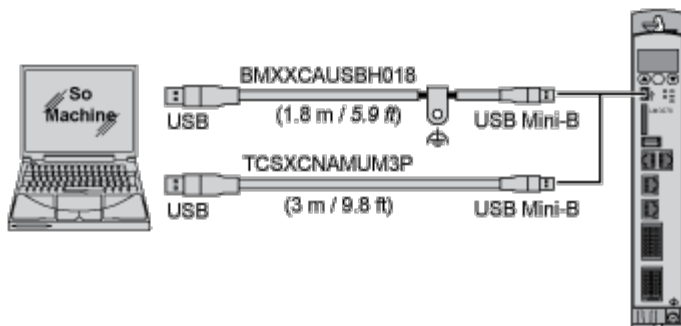
Grounding



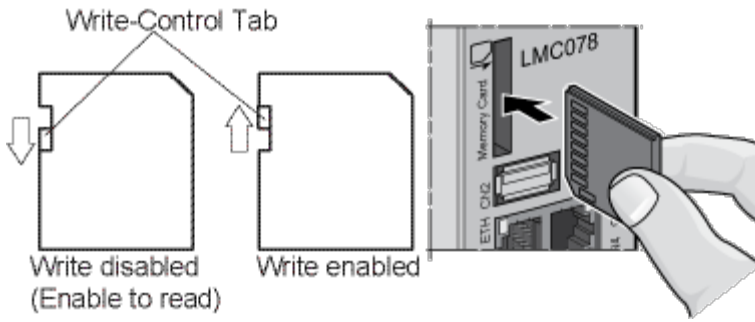
1 : Grounding terminal

mm	4.3	4.3
in.	0.17	0.17

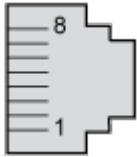
USB Mini-B Port Connection



SD Card Slot



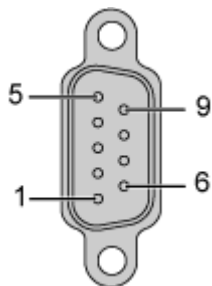
**Ethernet Port**



Pin	Signal	Description
1	TD+	Transmit data+
2	TD-	Transmit data-
3	RD+	Receive data+
4	-	-
5	-	-
6	RD-	Receive data-
7	-	-
8	-	-

**CAN Port**

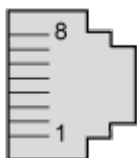
---



This table describes the pins of the CAN port:

Pin N°	Signal	Description
1	-	Reserved
2	CAN_L	CAN_L bus line (Low)
3	CAN_GND	CAN 0 Vdc
4	-	Reserved
5	-	Reserved
6	GND	0 Vdc
7	CAN_H	CAN_H bus line (High)
8	-	Reserved
9	-	Reserved

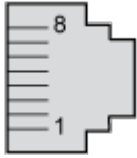
**Sercos Port**



Pin	Signal	Description
1	TD+	Transmit data +
2	TD-	Transmit data -
3	RD+	Receive data +
4	-	Reserved
5	-	Reserved
6	RD-	Receive data -

Pin	Signal	Description
7	-	Reserved
8	-	Reserved

**Serial Line Port**

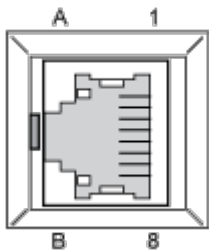


Pin	RS-485 signal	RS-232 signal
1	-	TxD
2	-	RxD
3	-	CTS
4	D1 (A+)	-
5	D0 (B-)	-
6	-	RTS
7	-	-
8	0 Vdc	0 Vdc

- TXD** : Transmitted data
- RXD** : Received data
- CTS** : Clear to send
- RTS** : Request to send
- 0 Vdc** : Common
- D1 (A+)** : Modbus D1
- D0 (B-)** : Modbus D0
- : Reserved

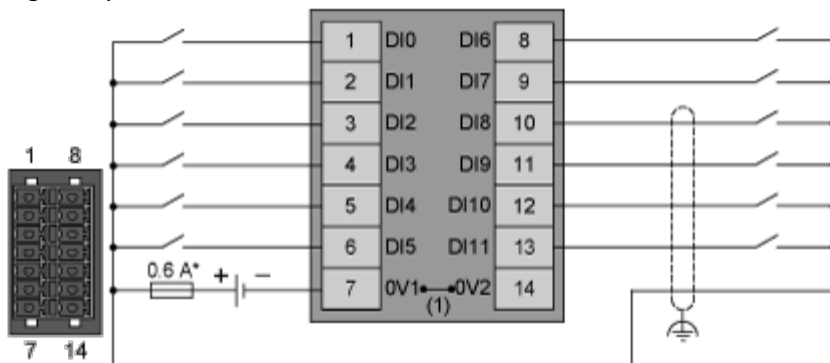
Encoder Interface

RJ45 with 2 additional power supply contacts (A, B)



Type	Pin	Designation	Description
Hiperface encoder	1	COS	Cosine track
	2	REFCOS	Reference signal cosinus
	3	SIN	Sinusoidal trace
	4	RS485+	Parameter channel +
	5	RS485-	Parameter channel -
	6	REFSIN	Reference signal sine
	7	-	Reserved
	8	-	Reserved
	A	10 Vdc	Encoder supply
	B	GND	Ground
Incremental encoder	1	B+	Track signal B+
	2	B-	Track signal B-
	3	A+	Track signal A+
	4	Z+	Track signal Z+
	5	Z-	Track signal Z-
	6	A-	Track signal A-
	7	-	Reserved
	8	-	Reserved
	A	5 Vdc	Encoder supply
	B	GND	Ground

Digital Inputs



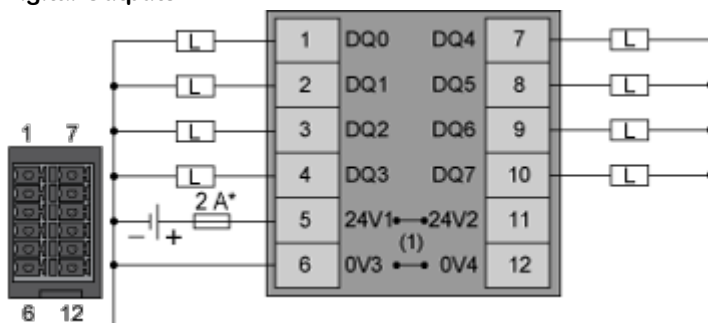
\* : Type T fuse

(1) The 0V1 and 0V2 terminals (7 and 14) are connected internally

This table describes the pin assignment of the CN7 connector:

Pin	Label	Description
1	DI0	Digital input 0
2	DI1	Digital input 1
3	DI2	Digital input 2
4	DI3	Digital input 3
5	DI4	Digital input 4
6	DI5	Digital input 5
7	0V1	0V1 Reference potential DI0...DI11
8	DI6	Digital input 6
9	DI7	Digital input 7
10	DI8	Advanced digital input 8 (touchprobe/interrupt)
11	DI9	Advanced digital input 9 (touchprobe/interrupt)
12	DI10	Advanced digital input 10 (touchprobe/interrupt)
13	DI11	Advanced digital input 11 (touchprobe/interrupt)
14	0V2	Reference potential DI0...DI11

Digital Outputs



\* : Type T fuse

(1) The 24V1 and 24V2 terminals (5 and 11) are connected internally. The 0V3 and 0V4 terminals (6 and 12) are connected internally.

Pin	Label	Description
1	DQ0	Digital output 0
2	DQ1	Digital output 1
3	DQ2	Digital output 2
4	DQ3	Digital output 3
5	24V1	Supply voltage DQ0...DQ7 (24 Vdc)
6	0V3	Supply voltage DQ0...DQ7 (0 Vdc)
7	DQ4	Digital output 4
8	DQ5	Digital output 5
9	DQ6	Digital output 6
10	DQ7	Digital output 7
11	24V2	24V2 Supply voltage DQ0...DQ7 (24 Vdc)
12	0V4	Supply voltage DQ0...DQ7 (0 Vdc)