

C-PRO MEGA Programmable and application-oriented controllers

ENGLISH 1 GETTING STARTED

1.1 Important

Read these instructions carefully before installing and using the instrument and follow all additional information for installation and electrical connection; keep these instructions close to the instrument for future consultations.

The instrument must be disposed according to the local legislation about the collection for electrical and electronic equipment.

2 INTRODUCTION

2.1 Introduction

C-PRO MEGA is a family of programmable or application-oriented controllers.

The family is made of the following models:

- CPM2LQ* - built-in controller with 4 x 20 characters alphanumeric display
- CPM2SQ* - blind controller (to be used with the user interface V LEDc, V VIEW or V GRAPH)
- CPM2BQ* - blind open frame controller (to be used with the user interface V LEDc, V VIEW or V GRAPH).

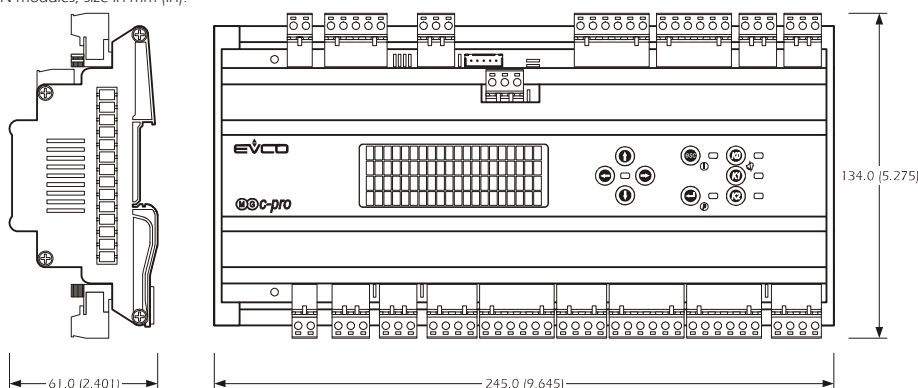
The controllers have the following kind of inputs and outputs:

- 8 analog inputs
- 10 digital inputs
- 4 analog outputs
- 8 digital outputs.

3 SIZE AND INSTALLATION

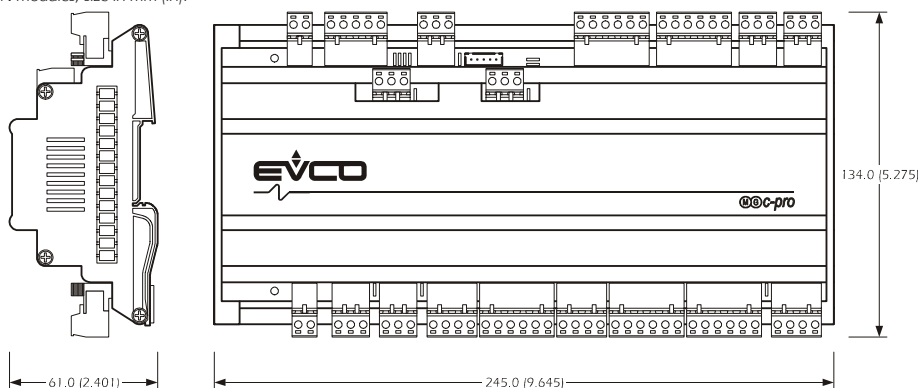
3.1 Size built-in models

14 DIN modules; size in mm (in).



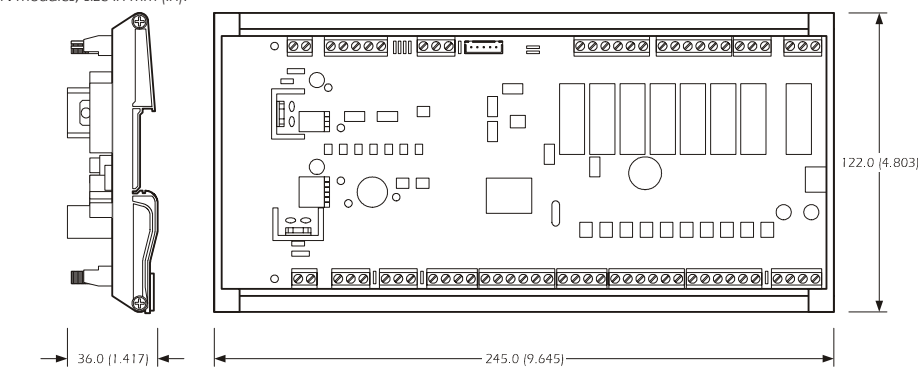
3.2 Size blind models

14 DIN modules; size in mm (in).



3.3 Size open frame models

14 DIN modules; size in mm (in).



Through the expansions belonging to the families C-PRO EXP MEGA and C-PRO EXP GIGA it is possible to increase the I/O.

The controllers also have the following kind of communication ports:

- 1 optoisolated RS-485 port
- 1 non optoisolated local CAN port
- 1 optoisolated RS-485 port or a RS-232 one (by request, not available in the built-in models and in the blind open frame models)
- 1 optoisolated wide CAN port (by request, not available in the blind open frame models, only available in the models with 128 KB of program memory otherwise).

The controllers have the real time clock.

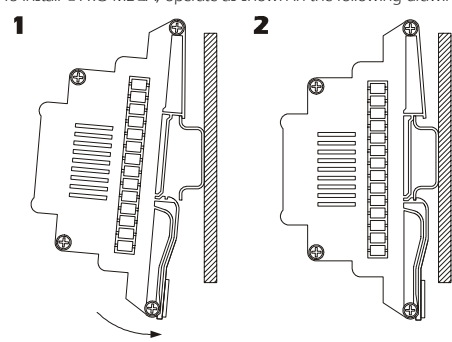
The programmable versions can be programmed with the development ambient UNI-PRO.

For further information consult the Hardware manual of C-PRO MEGA, the Software manual of UNI-PRO and the Application manual.

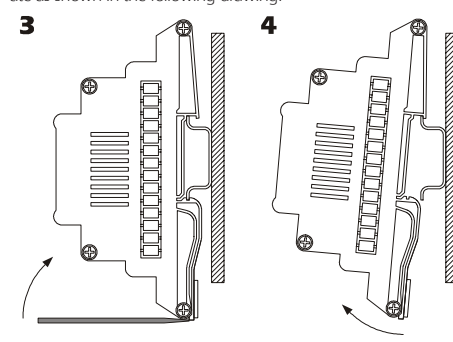
3.4 Installation

On DIN rail.

To install C-PRO MEGA, operate as shown in the following drawing.

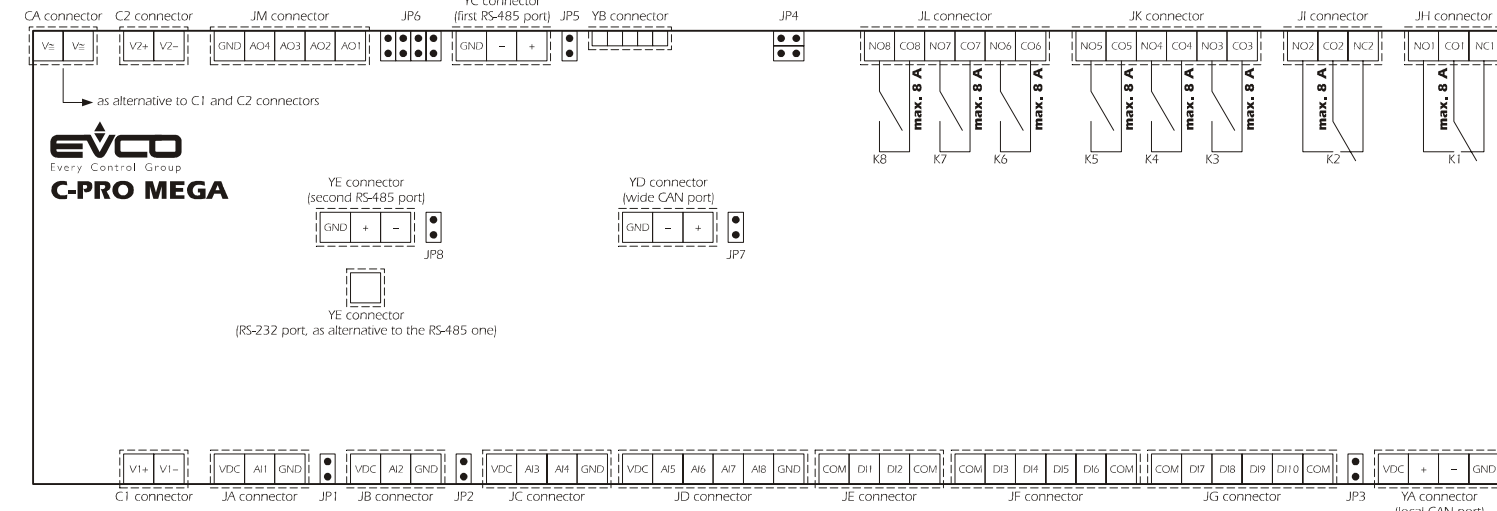


To remove C-PRO MEGA, provide oneself with a screwdriver and operate as shown in the following drawing.



4 ELECTRICAL CONNECTION

4.1 Electrical connection



C1 connector: main power supply controller (12 VDC); also look at C2 connector.

PIN	MEANING
V1+	main power supply controller (+)
V1-	main power supply controller (-)

C2 connector: secondary power supply (12 VDC); also look at C1 connector.

PIN	MEANING
V2+	secondary power supply (+)
V2-	secondary power supply (-)

With reference to the electrical connection, the secondary power supply supplies the following users:

- the analog outputs
- the first RS-485 port
- the second RS-485 port or the RS-232 one
- the wide CAN port.

In order that these users are optoisolated, the main power supply and the secondary power supply must be galvanically insulated each other.

CA connector: power supply controller (24 VAC/DC, as alternative to the main power supply controller and to the secondary power supply).

PIN	MEANING
V≡	power supply controller
V≡	power supply controller

With reference to the electrical connection, if you supply the controller through the CA connector, the following users will not be optoisolated:

- the analog outputs
- the first RS-485 port
- the second RS-485 port or the RS-232 one
- the wide CAN port.

JA connector: analog input 1; also look at JP1.

PIN	MEANING
VDC	power supply transducer (12 VDC)
A1	analog input 1 (PTC probe, NTC probe, 0-5 V transducer, 0-10 V transducer, 0-20 mA transducer or 4-20 mA transducer)
GND	ground

JB connector: analog input 2; also look at JP2.

PIN	MEANING
VDC	power supply transducer (12 VDC)
A12	analog input 2 (PTC probe, NTC probe, 0-5 V transducer, 0-10 V transducer, 0-20 mA transducer or 4-20 mA transducer)
GND	ground

JC connector: analog inputs 3 ... 4.

PIN	MEANING
VDC	power supply transducers (12 VDC)
A13	analog input 3 (NTC probe, 0-20 mA transducer or 4-20 mA transducer); it must be of the same type of analog input 4
A14	analog input 4 (NTC probe, 0-20 mA transducer or 4-20 mA transducer); it must be of the same type of analog input 3
GND	ground

JD connector: analog inputs 5 ... 8.

PIN	MEANING
VDC	power supply transducers (12 VDC)
A15	analog input 5 (NTC probe, 0-20 mA transducer or 4-20 mA transducer); it must be of the same type of analog input 6
A16	analog input 6 (NTC probe, 0-20 mA transducer or 4-20 mA transducer); it must be of the same type of analog input 5
A17	analog input 7 (NTC probe, 0-20 mA transducer or 4-20 mA transducer); it must be of the same type of analog input 8
A18	analog input 8 (NTC probe, 0-20 mA transducer or 4-20 mA transducer); it must be of the same type of analog input 7
GND	ground

JE connector: low voltage digital inputs 1 ... 2 (12-24 VAC/DC).

PIN	MEANING
COM	common digital inputs
DI1	digital input 1
DI2	digital input 2
COM	common digital inputs

JF connector: low voltage digital inputs 3 ... 6 (12-24 VAC/DC).

PIN	MEANING
COM	common digital inputs
DI3	digital input 3
DI4	digital input 4
DI5	digital input 5
DI6	digital input 6
COM	common digital inputs

JG connector: low voltage digital inputs 7 ... 10 (12-24 VAC/DC).

PIN	MEANING
COM	common digital inputs
DI7	digital input 7
DI8	digital input 8
DI9	digital input 9
DI10	digital input 10
COM	common digital inputs

JH connector: digital output 1.

JI connector: digital output 2.

JK connector: digital outputs 3 ... 5.

JL connector: digital outputs 6 ... 8.

JM connector: analog outputs 1 ... 4; also look at JP6.

3.5 Additional information for installation

- working conditions (working temperature, humidity, etc.) must be between the limits indicated in the technical data
- do not install the instrument close to heating sources (heaters, hot air ducts, etc.), devices provided with big magnetos (big speakers, etc.), locations subject to direct sunlight, rain, humidity, dust, mechanical vibrations or bumps
- according to the safety legislation, the protection against electrical parts must be ensured by a correct installation of the instrument; the parts that ensure the protection must be installed so that you can not remove them if not by using a tool.

JP4: baud rate local CAN port selection.

	20,000 baud
	50,000 baud
	125,000 baud
	500,000 baud

Select the baud rate of the device connected to this port.

JP5: first RS-485 port termination.

	termination off
	termination on (120 Ω)

JP6: analog outputs selection.

	remove the jumper when you use a 0.5-10 V analog output
	insert the jumper when you use a 0-20 mA or a 4-20 mA analog output

All combinations are allowed.

JP7: wide CAN port termination.

	termination off
	termination on (120 Ω)

JP8: second RS-485 port termination.

	termination off
	termination on (120 Ω)

4.2 Additional information for electrical connection

- do not operate on the terminal blocks with electrical or pneumatic screwdrivers
- if the instrument has been moved from a cold location to a warm one, the humidity could condense on the inside; wait about an hour before supplying it
- test the working power supply voltage, working electrical frequency and working electrical power of the instrument; they must correspond with the local power supply
- disconnect the local power supply before servicing the instrument
- do not use the instrument as safety device
- for repairs and information on the instrument please contact Evco sales network.

5 TECHNICAL DATA

5.1 Technical data

Box: self-extinguishing grey.
Size: 245.0 x 122.0 x 36.0 mm (9.645 x 4.803 x 1.417 in) the open frame models, 245.0 x 134.0 x 61.0 mm (9.645 x 5.275 x 2.401 in) otherwise; 14 DIN modules.

Size refers to the controller with all the connectors properly plugged.

Installation: on DIN rail.

Frontal protection: IP00 the open frame models, IP40 otherwise.

Connections: extractable male terminal blocks (power supply, inputs, outputs, RS-485 ports and CAN ports); screw terminal blocks in the open frame models), 8 poles female telephone connector (RS-232 port), 5 poles male JST connector pitch 2.5 mm (0.098 in, programming).

The maximum lengths of the connecting cables are the followings:

- power supply: 1 m (3.280 ft)
- analog inputs: 3 m (9.842 ft)
- digital inputs: 3 m (9.842 ft)
- analog outputs: 3 m (9.842 ft)
- digital outputs: 3 m (9.842 ft)
- RS-485 ports: 1,000 m (3,280 ft)
- local CAN port:

- 10 m (32.808 ft) with baud rate 20,000 baud
- 5 m (16.404 ft) with baud rate 50,000 baud
- 2 m (6.561 ft) with baud rate 125,000 baud
- 1 m (3.280 ft) with baud rate 500,000 baud

• RS-232 port: 3 m (9.842 ft)

• wide CAN port:

- 1,000 m (3,280 ft) with baud rate 20,000 baud
- 500 m (1,640 ft) with baud rate 50,000 baud
- 250 m (820 ft) with baud rate 125,000 baud
- 50 m (164 ft) with baud rate 500,000 baud.

One suggests using the connecting kit CIAV00 for the models supplied with 12 VDC + 12 VDC and the connecting kit CIAV06 for the models supplied with 24 VAC/DC (extractable female terminal blocks pitch 5.0 mm, 0.196 in; the kit is not supplied with the controller).

Working temperature: from 0 to 50 °C (32 to 120 °F; 10 ... 90% of relative humidity without condensate).

Power supply: 12 VDC (main power supply controller), max. 0.8 A + 12 VDC (secondary power supply), max. 0.15 A; 24 VAC/DC, 50/60 Hz, max. 1 A as alternative.

Real time clock data maintenance in absence of power supply: 3 days will battery fully charged.

Battery charge time: 2 min without interruptions (the battery is charged by the power supply of the controller).

Alarm buzzer: incorporated.

PIN	MEANING
GND	ground
AO1	analog output 1 (0.5-10 V, 0-20 mA or 4-20 mA)
AO2	analog output 2 (0.5-10 V, 0-20 mA or 4-20 mA)
AO3	analog output 3 (0.5-10 V, 0-20 mA or 4-20 mA)
AO4	analog output 4 (0.5-10 V, 0-20 mA or 4-20 mA)

YA connector: local CAN port; also look at JP3 and JP4.

PIN	MEANING
VDC	power supply user interface (12 VDC)
+	signal +
-	signal -
GND	ground

The power supply of the controller and the one of the expansion (or the one of another controller) must be galvanically insulated each other.

YB connector: port to program the controller.

YC connector: first RS-485 port; also look at JP5.

PIN	MEANING
GND	ground
+	signal +
-	signal -
GND	ground

YD connector: wide CAN port; also look at JP7.

PIN	MEANING
+	signal +
-	signal -
GND	ground

The power supply of the controller and the one of the expansion (or the one of another controller) must be galvanically insulated each other.

YE connector: second RS-485 port; also look at JP8.

PIN	MEANING
+	signal +
-	signal -
GND	ground

JP1: analog input 1 selection.

	remove the jumper when you use a 0-10 V transducer
	insert the jumper when you do not use a 0-10 V transducer

JP2: analog input 2 selection.

	remove the jumper when you use a 0-10 V transducer
	insert the jumper when you do not use a 0-10 V transducer

JP3: local CAN port termination.

	termination off
	termination on (120 Ω)

