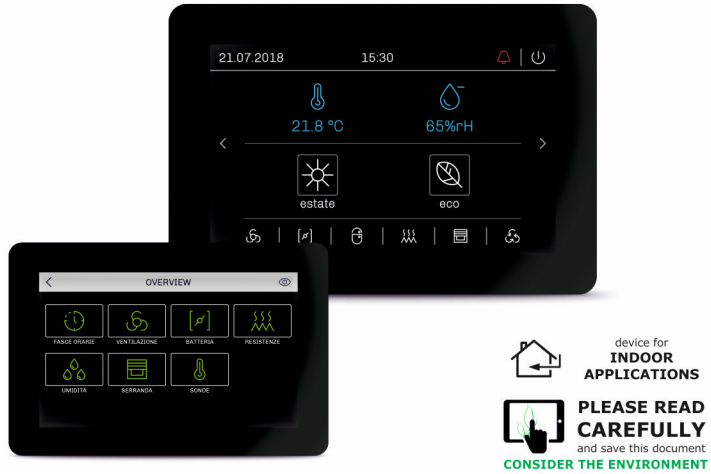


EPcolor M & L

Programmable (with UNI-PRO graphic tool) remote user interfaces



- EN ENGLISH
- back-panel, panel or wall mounting (according to the model)
 - 24 VAC/12... 30 VDC power supply not insulated
 - 5 or 7 in colour touch-screen TFT graphic display (according to the model)
 - clock
 - alarm buzzer
 - 2 RS-485 MODBUS ports
 - CAN port
 - 1 MB program memory
 - **device for indoor applications.**

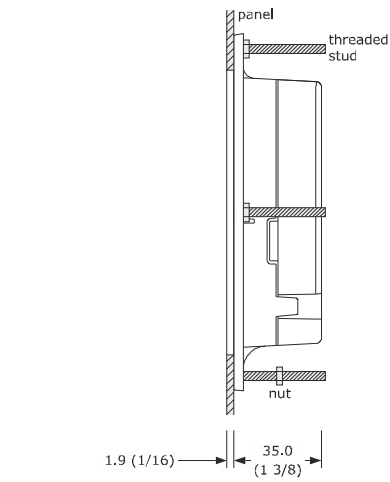
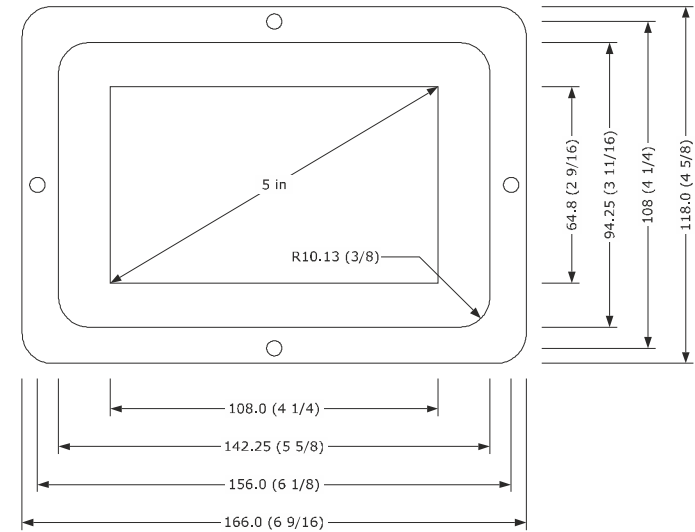
Purchasing codes	Series	Display size	Installation mode
EPCM90X4	EPcolor M	5 in	back-panel mounted
EPCM91X4	EPcolor M	5 in	panel mounted
EPCM94X4V	EPcolor M	5 in	wall mounted
EPCL90X4	EPcolor L	7 in	back-panel mounted
EPCL91X4	EPcolor L	7 in	panel mounted
EPCL94X4V	EPcolor L	7 in	wall mounted

For further information please consult the hardware manual.

1 MEASUREMENTS AND INSTALLATION | Measurements in mm (in)

1.1 Measurements and installation EPcolor M

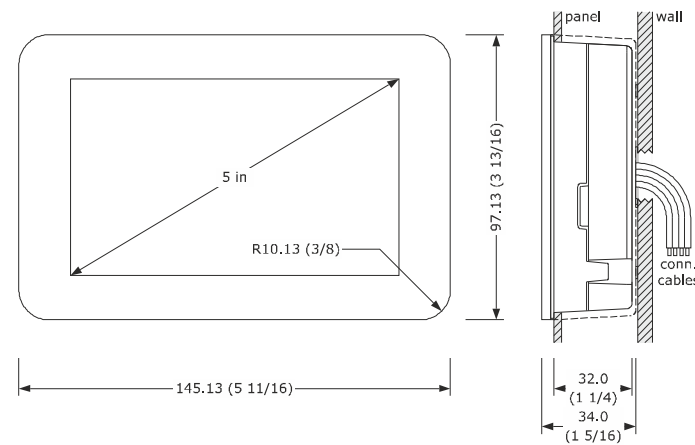
1.1.1 Models for back-panel mounting



Back-panel mounting, with threaded studs.

1.1.2 Models for panel and wall mounting

- N.B.
- the thickness of a metal panel must be between 0.8 and 1.5 mm (1/32 and 1/16 in), while that for a plastic panel must be between 0.8 and 3.4 mm (1/32 and 1/8 in)
 - the measurements of drilling template of the panel must be 130 x 88.4 mm (5 1/8 x 3 1/2 in), with rounded corners R 3.0 mm (1/8 in)
 - 34.0 (1 5/16) is the depth for models for wall mounting.

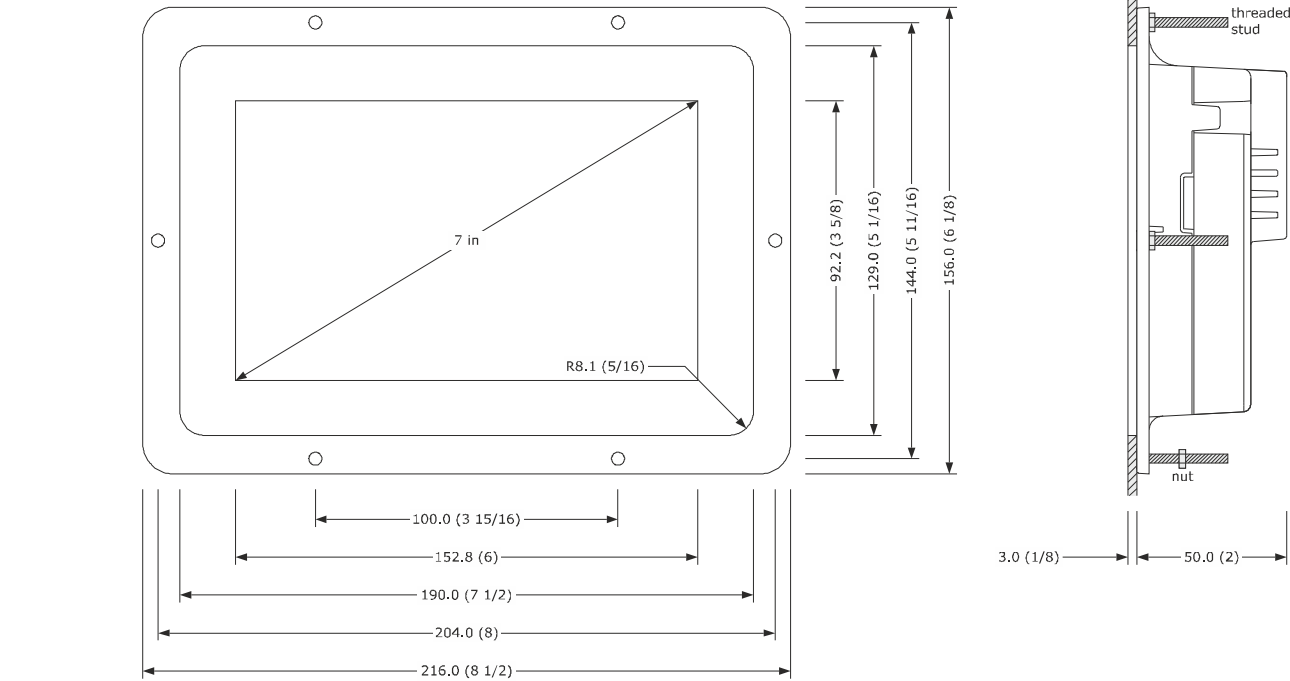


Panel mounting: to be fitted to a panel, with elastic holding flaps.

Wall mounting: with bolts and fastening screws. Position the back shell so that the arrow above the writing TOP points upwards.

1.2 Measurements and installation EPcolor L

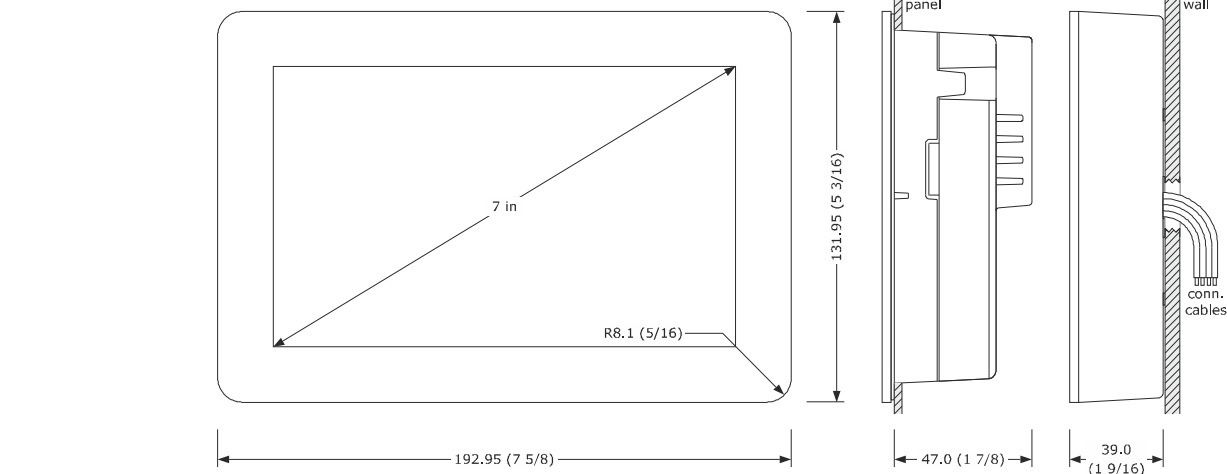
1.2.1 Models for back-panel mounting



Back-panel mounting, with threaded studs.

1.2.2 Models for panel and wall mounting

- N.B.
- the thickness of a metal panel must be between 0.8 and 1.5 mm (1/32 and 1/16 in), while that for a plastic panel must be between 0.8 and 3.4 mm (1/32 and 1/8 in)
 - the measurements of drilling template must be 178.2 x 118.2 mm (7 x 4 5/8 in), with rounded corners R 3.0 mm (1/8 in).



Panel mounting: to be fitted to a panel, with elastic holding flaps.

Wall mounting: with bolts and fastening screws. Position the back shell so that the arrow above the writing TOP points upwards.

INSTALLATION PRECAUTIONS

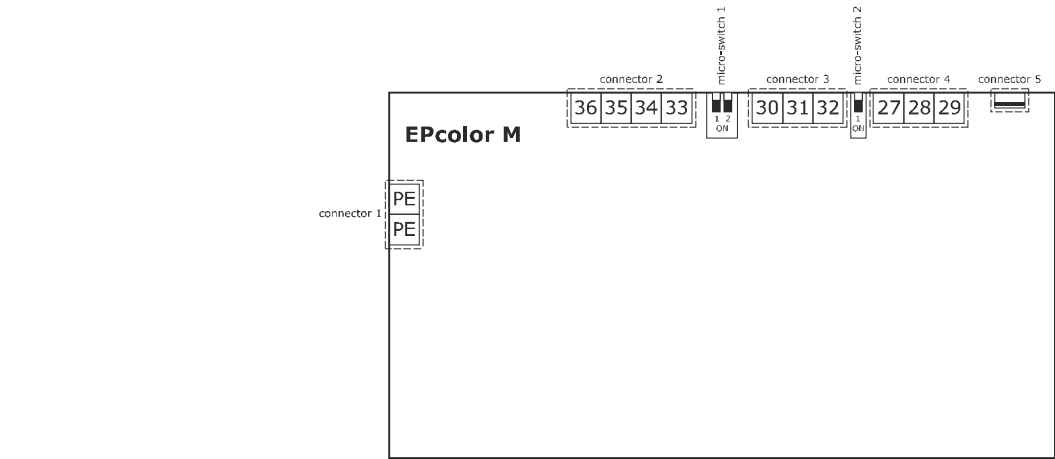
- Ensure that the working conditions are within the limits stated in the *TECHNICAL SPECIFICATIONS* section
- Do not install the device close to heat sources, equipment with a strong magnetic field, in places subject to direct sunlight, rain, damp, excessive dust, mechanical vibrations or shocks
- In compliance with safety regulations, the device must be installed properly to ensure adequate protection from contact with electrical parts. All protective parts must be fixed in such a way as to need the aid of a tool to remove them.

2 ELECTRICAL CONNECTION

- N.B.
- Use cables of an adequate section for the current running through them
 - To reduce any electromagnetic interference connect the power cables as far away as possible from the signal cables and connect to a CAN network and RS-485 MODBUS network by using a twisted pair.
 - do not supply another device with the same transformer
 - for the CAN of EPcolor M port use a ferrite (for example *Essentra RKCF-08-A5*) to which the conductors of the shielded cable must be wound with two coils.

2.1 Electrical connection EPcolor M

2.1.1 Connectors and parts



Connector 1

N.	DESCRIPTION
PE	grounding equipment
PE	grounding equipment

Connector 2

N.	DESCRIPTION
36	GND reference device power supply and RS-485 MODBUS master port
35	RS-485 MODBUS master port signal -
34	RS-485 MODBUS master port signal +
33	device power supply (24 VAC/12... 30 VDC)

Connector 3

N.	DESCRIPTION
30	GND reference RS-485 MODBUS slave port
31	RS-485 MODBUS slave port signal -
32	RS-485 MODBUS slave port signal +

Connector 4

N.	DESCRIZIONE
27	GND reference CAN port
28	CAN port signal -
29	CAN port signal +

- Micro-switch 1:
- to insert the RS-485 MODBUS master port termination resistor.
 - to insert the RS-485 MODBUS slave port termination resistor.

Micro-switch 2, to insert the CAN port termination resistor.

2.1.2 Insertion of the RS-485 MODBUS ports and CAN port termination resistor

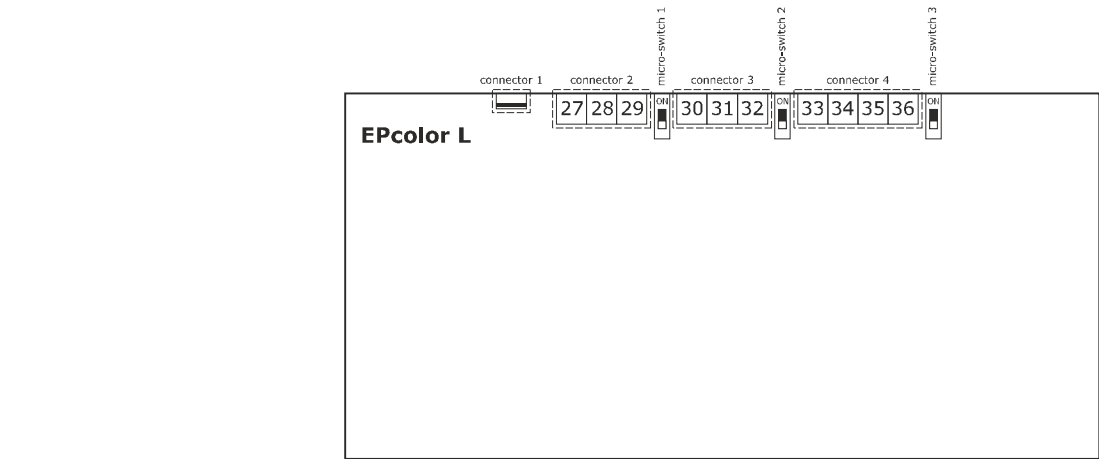
To insert the RS-485 MODBUS master port termination resistor, place dip 1 of micro-switch 1 in position ON.

To insert the RS-485 MODBUS slave port termination resistor, place dip 2 micro-switch 1 in position ON.

To insert the CAN port termination resistor, place micro-switch 2 in position ON.

2.2 Electrical connection EPCOLOR L

2.2.1 Connectors and parts



Connector 1: USB port, for programming the device.

Connector 2	
N.	DESCRIZIONE
27	GND reference CAN port
28	CAN port signal -
29	CAN port signal +

Connector 3	
N.	DESCRIPTION
30	GND reference RS-485 MODBUS slave port
31	RS-485 MODBUS slave port signal -
32	RS-485 MODBUS slave port signal +

Connector 4	
N.	DESCRIPTION
33	GND reference device power supply and RS-485 MODBUS master port
34	RS-485 MODBUS master port signal -
35	RS-485 MODBUS master port signal +
36	device power supply (24 VAC/12... 30 VDC)

- Micro-switch 1: to insert the CAN port termination resistor.
- Micro-switch 2: to insert the RS-485 MODBUS slave port termination resistor.
- Micro-switch 3: to insert the RS-485 MODBUS master port termination resistor.

2.2.2 Insertion of the RS-485 MODBUS port and CAN port termination resistor

To insert the CAN port termination resistor, place micro-switch 1 in position ON.

To insert the RS-485 MODBUS slave port termination resistor, place micro-switch 2 in position ON.

To insert the RS-485 MODBUS master port termination resistor, place micro-switch 3 in position ON.

PRECAUTIONS FOR ELECTRICAL CONNECTION	
-	If using an electrical or pneumatic screwdriver, adjust the tightening torque
-	If the device has been moved from a cold to a warm place, the humidity may have caused condensation to form inside. Wait about an hour before switching on the power
-	Make sure that the supply voltage, electrical frequency and power are within the set limits. See the section <i>TECHNICAL SPECIFICATIONS</i>
-	Disconnect the power supply before doing any type of maintenance
-	Do not use the device as safety device
-	For repairs and for further information, contact the EVCO sales network; possible returns without label data will not be accepted.

3 TECHNICAL SPECIFICATIONS		
Purpose of the control device		Function controller
Construction of the control device		Built-in electronic device
Container		Black, self-extinguishing
Category of heat and fire resistance		D
Measurements	EPcolor M models for back-panel mounting	166.0 x 118.0 x 35.0 mm (6 9/16 x 4 5/8 x 1 3/8 in)
	EPcolor M models for panel mounting	145.13 x 97.13 x 32.0 mm (5 11/16 x 3 13/16 x 1 1/4 in)
	EPcolor M models for wall mounting	145.13 x 97.13 x 34.0 mm (5 11/16 x 3 13/16 x 1 5/16 in)
	EPcolor L models for back-panel mounting	216.0 x 156.0 x 50.0 mm (8 1/2 x 6 1/8 x 2 in)
	EPcolor L models for panel mounting	192.95 x 131.95 x 47.0 mm (7 5/8 x 5 3/16 x 1 7/8 in)
	EPcolor L models for wall mounting	192.95 x 131.95 x 39.0 mm (7 5/8 x 5 3/16 x 1 9/16 in)
Mounting methods for the control device		According to the model, back-panel mounting (with threaded studs), panel mounting (with elastic holding flaps) or wall mounting (with bolts and fastening screws)
Connection method		Removable screw terminal blocks for wires up to 1 mm²
Maximum permitted length for connection cables		
Power supply: 10 m (32.8 ft)		RS-485 MODBUS port: 1,000 m (3,280 ft)
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		
Over 10 m (32.8 ft) use a shielded cable		
Operating temperature		From 0 to 55 °C (from 32 to 131 °F)
Storage temperature		From -20 to 70 °C (from -4 to 158 °F)
Operating humidity		Relative humidity without condensate from 5 to 95%
Pollution status of the control device		2
Compliance		
RoHS 2011/65/EC		WEEE 2012/19/EU
REACH (EC) Regulation N. 1907/2006		EMC 2014/30/UE RED 2014/53/UE
Power supply		
24 VAC (±15%), 50/60 Hz (±3 Hz), max. 6.5 VA not insulated or 12... 30 VDC, max. 3 W not insulated in EPcolor M		24 VAC (±15%), 50/60 Hz (±3 Hz), max. 10 VA not insulated or 12... 30 VDC, max. 4.6 W not insulated in EPcolor L
Earthing methods for the control device		None
Rated impulse-withstand voltage		I
Over-voltage category		330 V
Software class and structure		A
Clock		Incorporated secondary lithium battery
Clock drift		≤ 55 s/month at 25 °C (77 °F)
Clock battery autonomy in the absence of a power supply		6 months
Clock battery charging time		24 h (the battery is charged by the power supply of the device)
Displays	EPcolor M models	5 in colour touch-screen TFT graphic display
	EPcolor L models	7 in colour touch-screen TFT graphic display
Alarm buzzer		Built-in
Program memory		1 MB
Communications ports		
1 RS-485 MODBUS master port		1 RS-485 MODBUS slave port
1 CAN port		1 USB port

	N.B. The device must be disposed of according to local regulations governing the collection of electrical and electronic waste.
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