

INSTALLATION AND WIRING



CHAPTER 4

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Safety Guidelines



NOTE: *Products with CE marks perform their required functions safely and adhere to relevant standards as specified by CE directives provided they are used according to their intended purpose and that the instructions in this manual are adhered to. The protection provided by the equipment may be impaired if this equipment is used in a manner not specified in this manual. A listing of our international affiliates is available on our Web site: <http://www.automationdirect.com>*

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WARNING: Providing a safe operating environment for personnel and equipment is your responsibility and should be your primary goal during system planning and installation. Automation systems can fail and may result in situations that can cause serious injury to personnel or damage to equipment. Do not rely on the automation system alone to provide a safe operating environment. You should use external electromechanical devices, such as relays or limit switches, that are independent of the PLC application to provide protection for any part of the system that may cause personal injury or damage. Every automation application is different, so there may be special requirements for your particular application. Make sure you follow all national, state, and local government requirements for the proper installation and use of your equipment.

Plan for Safety

The best way to provide a safe operating environment is to make personnel and equipment safety part of the planning process. You should examine every aspect of the system to determine which areas are critical to operator or machine safety. If you are not familiar with control system installation practices, or your company does not have established installation guidelines, you should obtain additional information from the following sources.

- NEMA — The National Electrical Manufacturers Association, located in Washington, D.C. publishes many different documents that discuss standards for industrial control systems. You can order these publications directly from NEMA. Some of these include:
 - ICS 1, General Standards for Industrial Control and Systems
 - ICS 3, Industrial Systems
 - ICS 6, Enclosures for Industrial Control Systems
- NEC — The National Electrical Code provides regulations concerning the installation and use of various types of electrical equipment. Copies of the NEC Handbook can often be obtained from your local electrical equipment distributor or your local library.
- Local and State Agencies — many local governments and state governments have additional requirements above and beyond those described in the NEC Handbook. Check with your local Electrical Inspector or Fire Marshall office for information.

Introduction

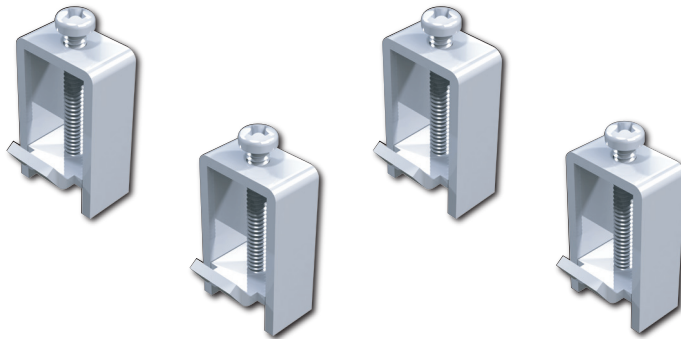
The installation and wiring of the *C-more*® touch panels requires selecting an appropriate location for the touch panel, laying out the cutout dimensions on the surface of the control cabinet that the panel will be mounted through, securing the touch panel with the provided mounting clips, tightening the screws to the appropriate torque rating to assure the gasket is sealing correctly, and finally connecting the appropriate power source to the touch panel.



NOTE: Each *C-more* touch panel is provided with a cutout template to make marking the proper cutout size on the surface of the control cabinet that the panel will be mounted through a simple task.

This chapter covers the proper mounting of the touch panel and connecting power. Once power is applied to the touch panel, the user will want to read Chapter 5 on the System Setup Screens in order to set the internal time and date for the panel, become familiar with the touch panel test features, and check memory options.

Mounting Clips - EA9-BRK



UL Requirements

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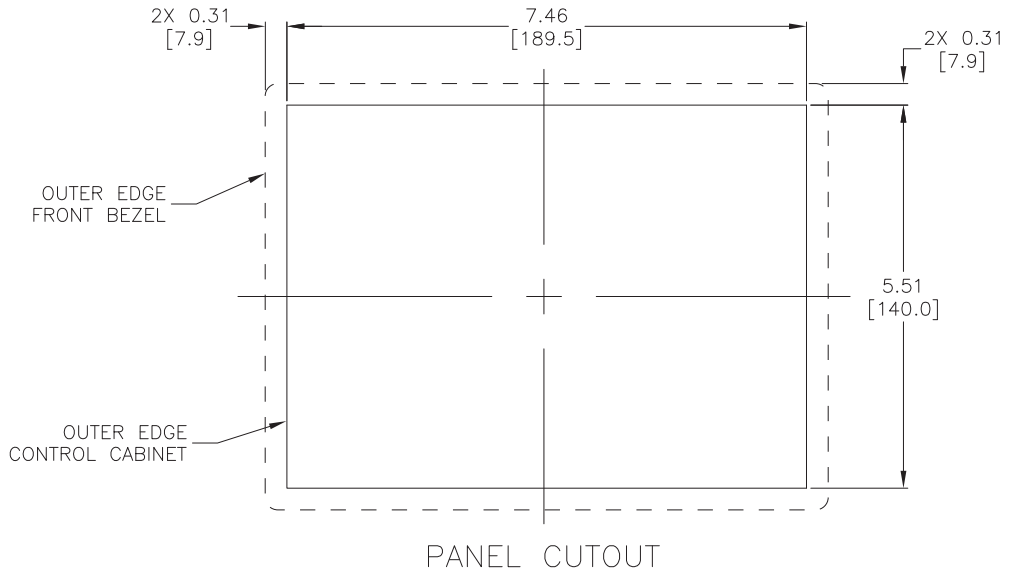
UL Satisfaction Ratings	
Model Number	Input Ratings
EA9-T6CL-R	12 - 24 VDC, Class 2, SELV or LEC, Maximum 16.0W
EA9-T6CL	
EA9-T7CL-R	
EA9-T7CL	
EA9-T8CL	12 - 24 VDC, Class 2, SELV or LEC, Maximum 18.0W
EA9-T10WCL	12 - 24 VDC, Class 2, SELV or LEC, Maximum 17.0W
EA9-T10CL	12 - 24 VDC, Class 2, SELV or LEC, Maximum 18.0W
EA9-T12CL	12 - 24 VDC, Class 2, SELV or LEC, Maximum 21.0W
EA9-T15CL-R	12 - 24 VDC, Class 2, SELV or LEC, Maximum 29.0W
EA9-T15CL	
Terminal connecting wire size 12 - 24 AWG	
Connecting torque 71 - 85 oz-in (5 - 7 lbf-in) (0.5 - 0.6 Nm)	
Maximum surrounding air temperature rating, 50°C	
For use in Pollution Degree 2 environment	
All interface ports are intended to be directly connected to an isolated secondary circuit	
For use on a flat surface of a type 4X Indoor Use Only enclosure	

Class 1, Div 2, Groups A, B, C Hazardous Location Installation Requirements
Models EA9-T6CL-R and EA9-T6CL Only
<p>Hazardous Location Installation Requirements</p> <p>SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C AND D HAZARDOUS LOCATIONS, OR NONHAZARDOUS LOCATIONS ONLY.</p> <p>WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.</p> <p>WARNING - EXPLOSION HAZARD - SUBSTITUTION OF ANY COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.</p> <p>DEVICES SHALL BE INSTALLED INTO AN ENCLOSURE THAT UTILIZES A TOOL REMOVABLE DOOR/COVER.</p>

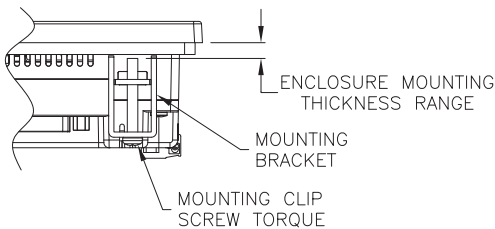
EA9-T6CL-R, EA9-T6CL, EA9-T7CL-R and EA9-T7CL Cutout Dimensions

The *C-more* 6" and 7" touch panels are mounted into a cutout through the control cabinet and secured with four (4) mounting clips. The mounting clips are provided with the touch panel. The mounting clips will insert into a series of slots around the rear perimeter of the touch panel. Each clip has a tab that will mate to a slot. The screw of each mounting clip needs to be tightened to the torque rating shown in the table below so that the gasket is compressed to form the proper seal between the panel and cabinet surface.

INCHES [MM]



Enclosure Mounting Thickness Ranges and Mounting Clip Screw Torque

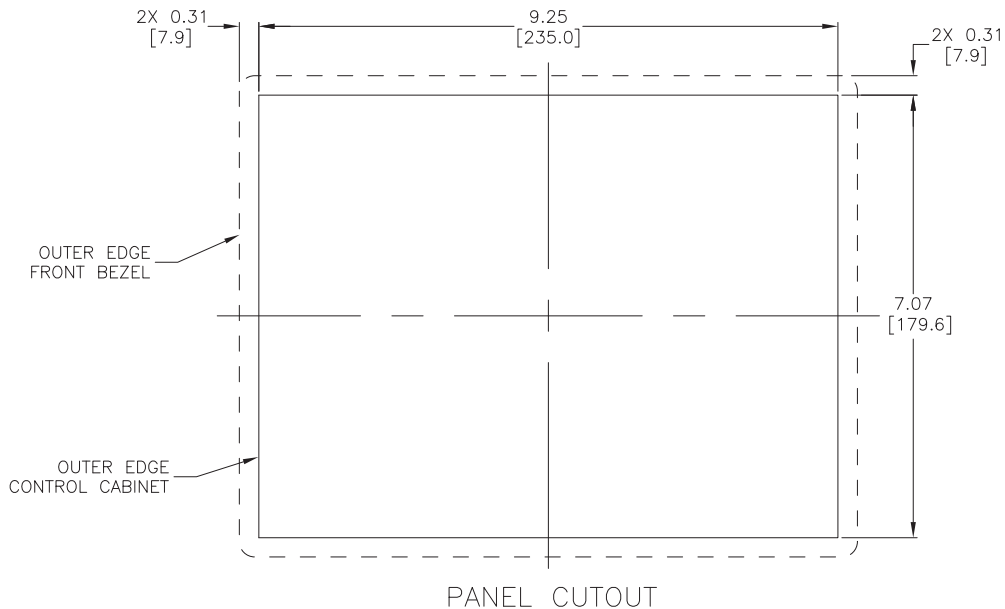


Touch Panel Size	Enclosure Thickness Range	Mounting Clip Screw Torque	Material
6", 7", 8", 10" & 12"	0.039 - 0.20 inch [1 - 5 mm]	63 - 77 oz-in [0.45 - 0.55 Nm]	Metal
10" Wide, 15"	0.039 - 0.20 inch [1 - 5 mm]	92 - 106 oz-in [0.65 - 0.75 Nm]	Metal

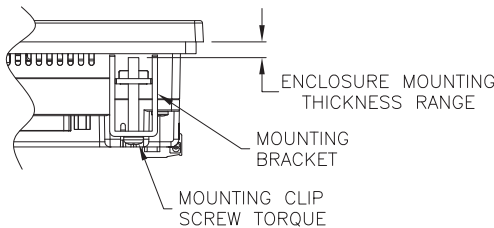
EA9-T8CL Cutout Dimensions

The *C-more* EA9-T8CL touch panel is mounted into the cutout through the control cabinet and secured with four (4) mounting clips. The mounting clips are provided with the touch panel. The mounting clips will insert into a series of slots around the rear perimeter of the touch panel. Each clip has a tab that will mate to a slot. The screw of each mounting clip needs to be tightened to the torque rating shown in the table below so that the gasket is compressed to form the proper seal between the panel and cabinet surface.

INCHES [MM]



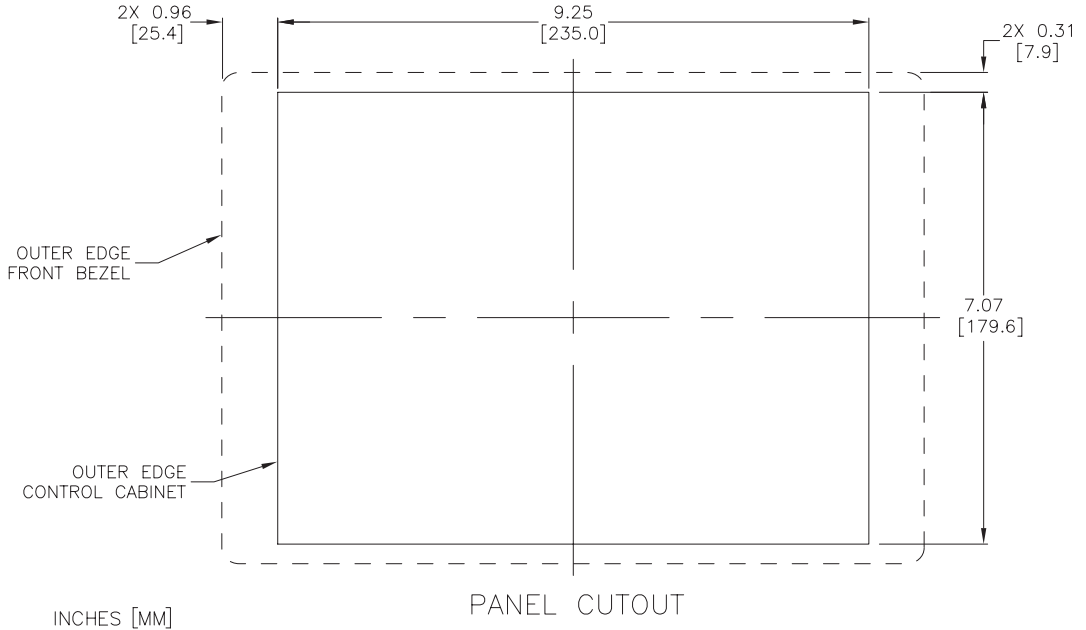
Enclosure Mounting Thickness Ranges and Mounting Clip Screw Torque



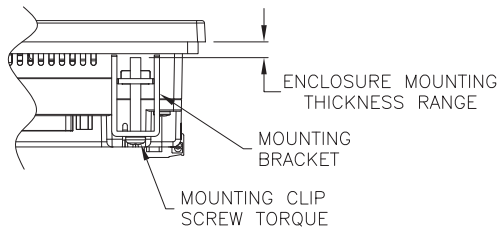
Touch Panel Size	Enclosure Thickness Range	Mounting Clip Screw Torque	Material
6", 7", 8", 10" & 12"	0.039 - 0.20 inch [1 - 5 mm]	63 - 77 oz-in [0.45 - 0.55 Nm]	Metal
10" Wide, 15"	0.039 - 0.20 inch [1 - 5 mm]	92 - 106 oz-in [0.65 - 0.75 Nm]	Metal

EA9-T10WCL Cutout Dimensions

The *C-more* EA9-T10WCL touch panel is mounted into the cutout through the control cabinet and secured with four (4) mounting clips. The mounting clips are provided with the touch panel. The mounting clips will insert into a series of slots around the rear perimeter of the touch panel. Each clip has a tab that will mate to a slot. The screw of each mounting clip needs to be tightened to the torque rating shown in the table below so that the gasket is compressed to form the proper seal between the panel and cabinet surface.



Enclosure Mounting Thickness Ranges and Mounting Clip Screw Torque

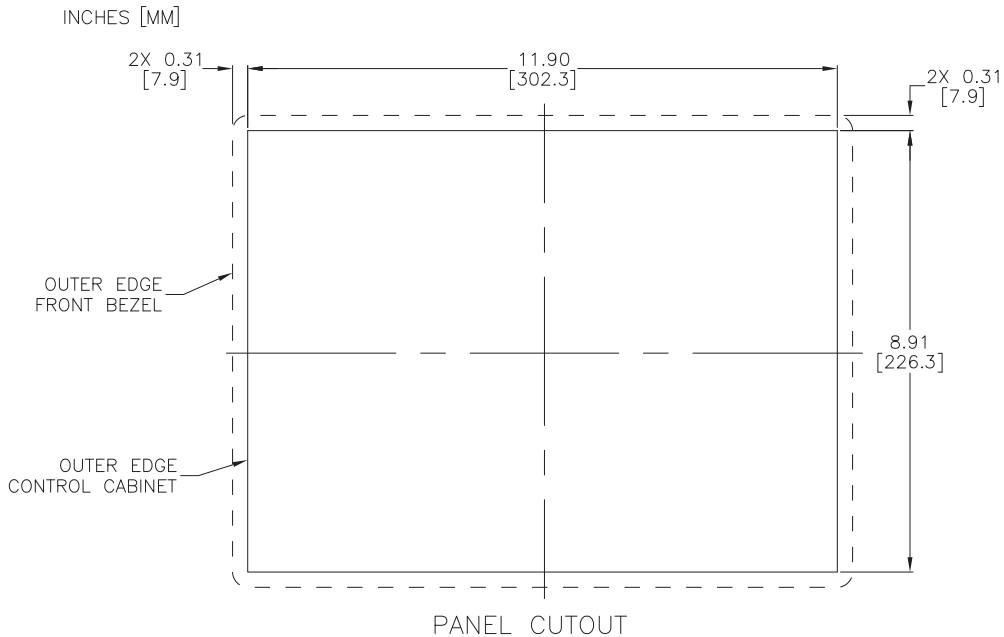


Touch Panel Size	Enclosure Thickness Range	Mounting Clip Screw Torque	Material
6", 7", 8", 10" & 12"	0.039 - 0.20 inch [1 - 5 mm]	63 - 77 oz-in [0.45 - 0.55 Nm]	Metal
10" Wide, 15"	0.039 - 0.20 inch [1 - 5 mm]	92 - 106 oz-in [0.65 - 0.75 Nm]	Metal

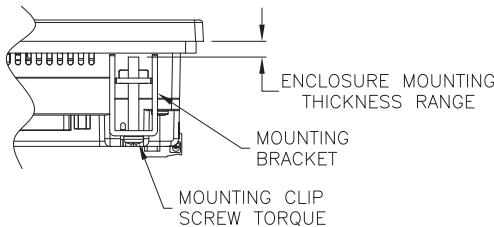
EA9-T10CL Cutout Dimensions

The *C-more* 10" touch panels are mounted into a cutout through the control cabinet and secured with eight (8) mounting clips. The mounting clips are provided with the touch panel. The mounting clips will insert into a series of slots around the rear perimeter of the touch panel. Each clip has a tab that will mate to a slot. The screw of each mounting clip needs to be tightened to the torque rating shown in the table below so that the gasket is compressed to form the proper seal between the panel and cabinet surface.

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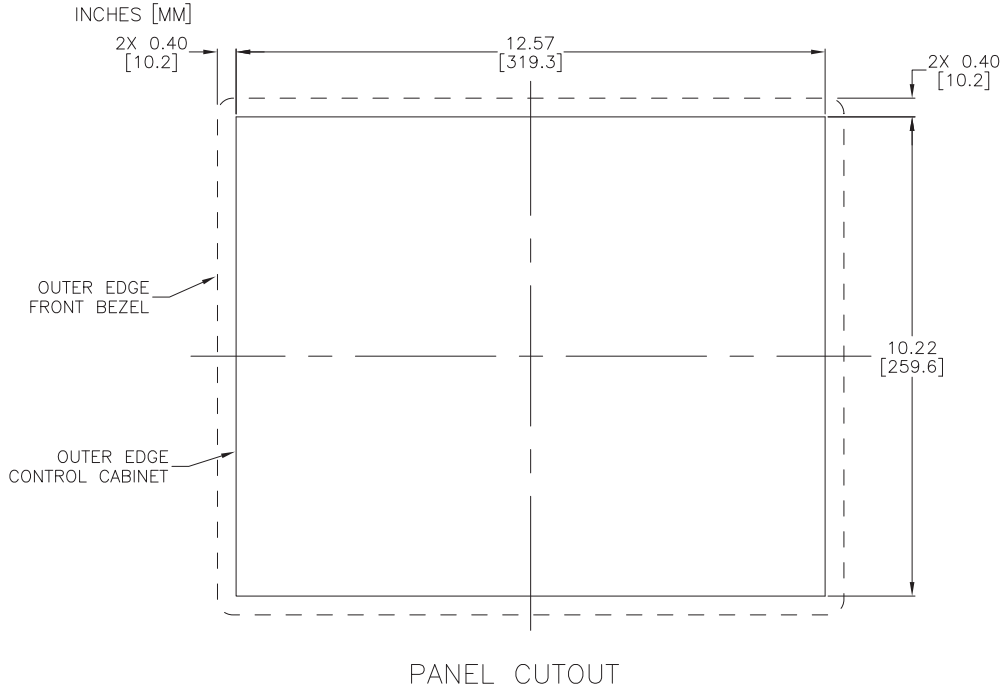
Enclosure Mounting Thickness Ranges and Mounting Clip Screw Torque



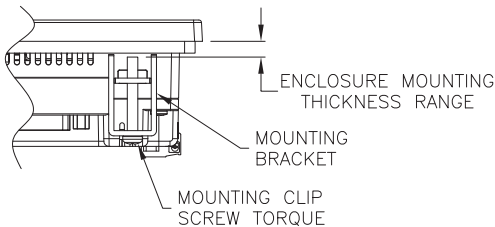
Touch Panel Size	Enclosure Thickness Range	Mounting Clip Screw Torque	Material
6", 7", 8", 10" & 12"	0.039 - 0.20 inch [1 - 5 mm]	63 - 77 oz-in [0.45 - 0.55 Nm]	Metal
10" Wide, 15"	0.039 - 0.20 inch [1 - 5 mm]	92 - 106 oz-in [0.65 - 0.75 Nm]	Metal

EA9-T12CL Cutout Dimensions

The *C-more* 12" touch panels are mounted into a cutout through the control cabinet and secured with eight (8) mounting clips. The mounting clips are provided with the touch panel. The mounting clips will insert into a series of slots around the rear perimeter of the touch panel. Each clip has a tab that will mate to a slot. The screw of each mounting clip needs to be tightened to the torque rating shown in the table below so that the gasket is compressed to form the proper seal between the panel and cabinet surface.



Enclosure Mounting Thickness Ranges and Mounting Clip Screw Torque

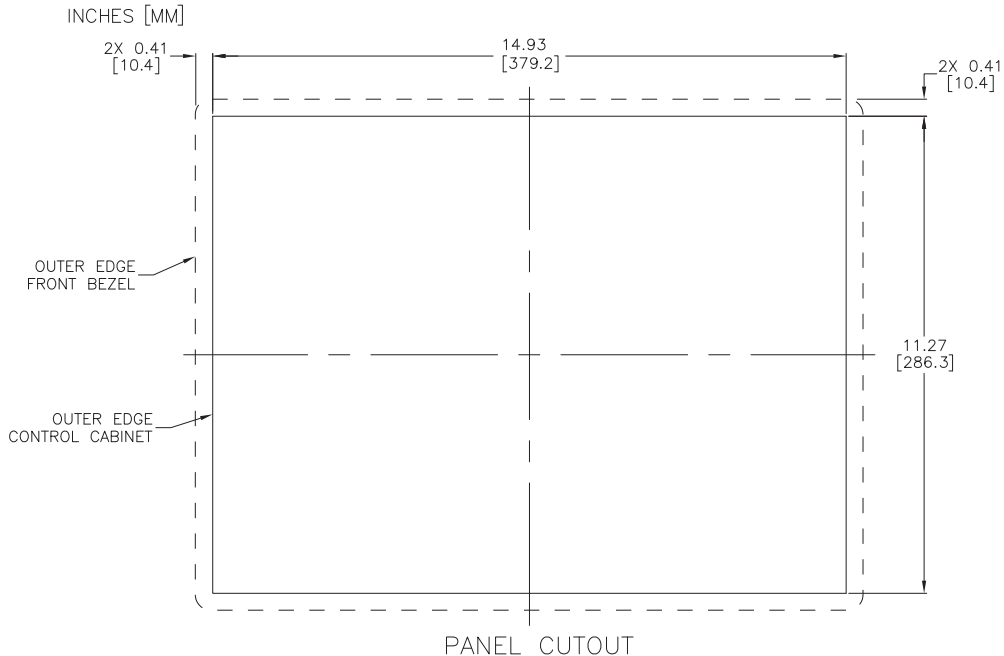


Touch Panel Size	Enclosure Thickness Range	Mounting Clip Screw Torque	Material
6", 7", 8", 10" & 12"	0.039 - 0.20 inch [1 - 5 mm]	63 - 77 oz-in [0.45 - 0.55 Nm]	Metal
10" Wide, 15"	0.039 - 0.20 inch [1 - 5 mm]	92 - 106 oz-in [0.65 - 0.75 Nm]	Metal

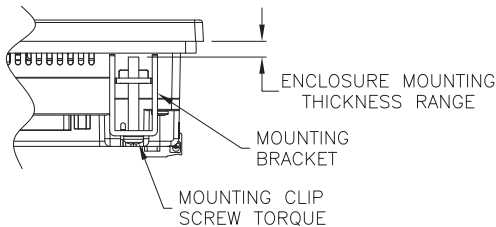
EA9-T15CL-R and EA9-T15CL Cutout Dimensions

The *C-more* 15" touch panels are mounted into a cutout through the control cabinet and secured with eight (8) mounting clips. The mounting clips are provided with the touch panel. The mounting clips will insert into a series of slots around the rear perimeter of the touch panel. Each clip has a tab that will mate to a slot. The screw of each mounting clip needs to be tightened to the torque rating shown in the table below so that the gasket is compressed to form the proper seal between the panel and cabinet surface.

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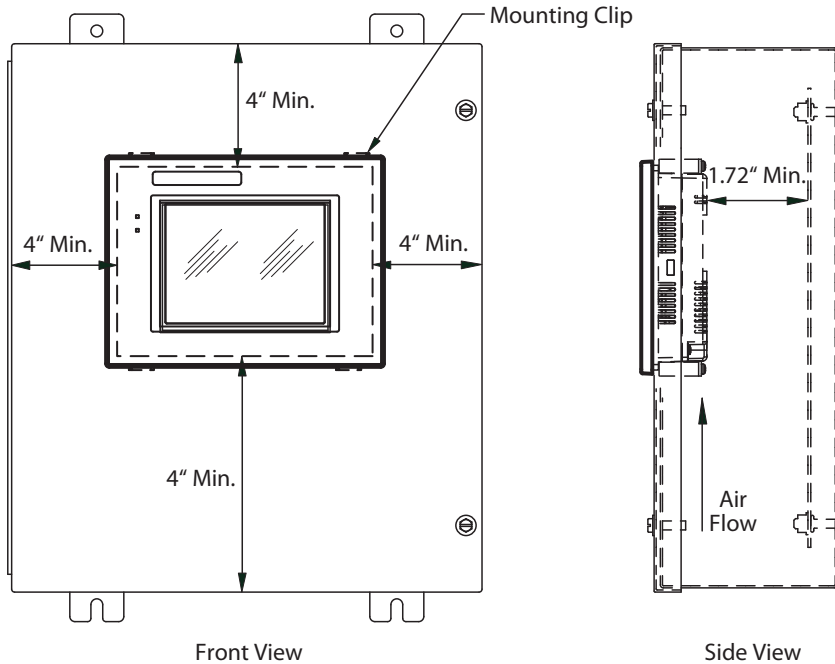
Enclosure Mounting Thickness Ranges and Mounting Clip Screw Torque



Touch Panel Size	Enclosure Thickness Range	Mounting Clip Screw Torque	Material
6", 7", 8", 10" & 12"	0.039 - 0.20 inch [1 - 5 mm]	63 - 77 oz-in [0.45 - 0.55 Nm]	Metal
10" Wide, 15"	0.039 - 0.20 inch [1 - 5 mm]	92 - 106 oz-in [0.65 - 0.75 Nm]	Metal

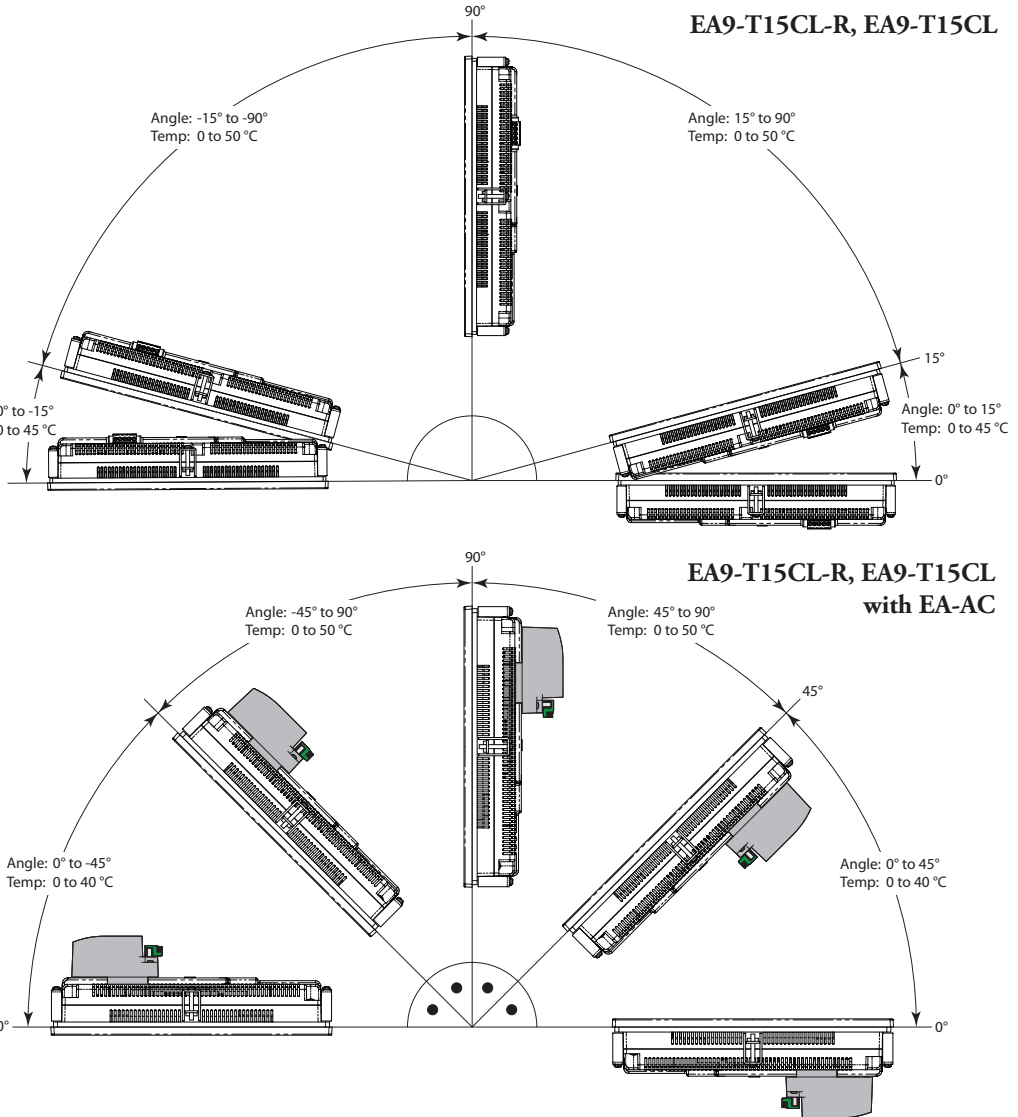
Mounting Clearances

The following drawing shows the mounting clearances for the *C-more* touch panel. There should be a minimum of 4 inches of space between all sides of the panel and the nearest object or obstruction and at least 1.72 inches between the rear of the panel and the nearest object or obstruction.



EA9-T15CL-R, EA9-T15CL Derating

If EA9-T15CL-R and EA9-T15CL are mounted off the vertical plane facing upward, the temperature shall be derated as shown below. Other panels may be mounted at any angle without derating consideration.



Wiring Guidelines



WARNING: To minimize the risk of potential safety problems, you should follow all applicable local and national codes that regulate the installation and operation of your equipment. These codes vary from area to area and it is your responsibility to determine which codes should be followed, and to verify that the equipment, installation, and operation are in compliance with the latest revision of these codes.

Equipment damage or serious injury to personnel can result from the failure to follow all applicable codes and standards. We do not guarantee the products described in this publication are suitable for your particular application, nor do we assume any responsibility for your product design, installation, or operation.

If you have any questions concerning the installation or operation of this equipment, or if you need additional information, please call technical support at 1-800-633-0405 or 770-844-4200.

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Agency Approvals

Some applications require agency approvals for particular components. The *C-more* touch panel agency approvals are listed below:

- UL (Underwriters' Laboratories, Inc.)
- CUL (Canadian Underwriters' Laboratories, Inc.)
- CE (European Economic Union)

Wiring Guidelines (cont'd)

Providing Power to the Touch Panel

- Connect a **dedicated** 12-24 VDC Class 2 power supply to the DC connector on the rear of the **C-more** touch panel, include wiring the ground terminal to a proper equipment ground
- or install a **C-more** AC/DC Power Adapter, EA-AC, to the rear of the touch panel and connect an AC voltage source of 100-240 VAC, 50/60Hertz, to its AC connector (see note below)
- then turn on the power **source** and check the LED status indicators on the front and rear of the **C-more** touch panel for proper indication (see next page)

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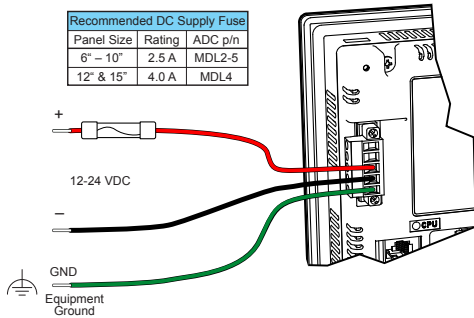


NOTE: A dedicated power supply is recommended. If the power supply also feeds inductive loads such as solenoids or relays, the transients caused by these loads can affect the operation of the panel or damage panel components.

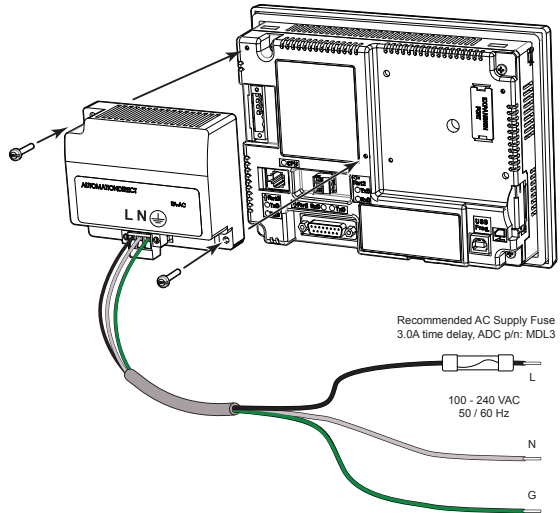


NOTE: The AC/DC Power Adapter, EA-AC, is for **C-more** touch panels only. The adapter is powered from a 100-240 VAC, 50/60 Hertz power source. The adapter provides 24 VDC @ 1.5 A. Power Fault features help protect data on an SD memory card during power failures.

DC Wiring



AC Wiring



DC-CON Tightening Torque

Power connector screw torque	70.4 oz-in (0.5 Nm)
Power connector mounting torque	56 oz-in (0.4 Nm)

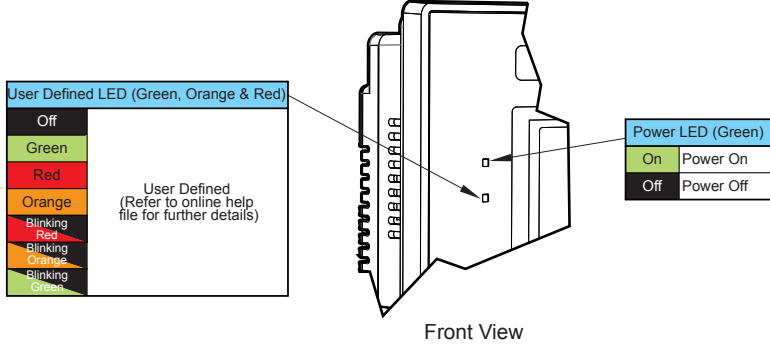
Tightening Torque

Power supply cable torque	71 - 85 oz-in (0.5 - 0.6 Nm)
Power connector mounting torque	71 - 85 oz-in (0.5 - 0.6 Nm)
Mounting flange screw torque	57 - 71 oz-in (0.4 - 0.5 Nm)

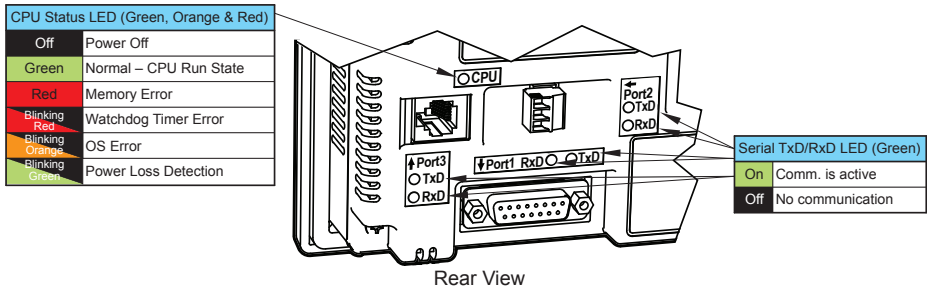


Warning: Use 60 / 75°C copper conductors only.

C-more LED Status Indicators



Front View



Rear View

