

INSTALLATION & 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.



WARNING: *C-more* touch panels need to be mounted on a vertical surface to ensure proper cooling of the panel and its components.



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.

The *C-more* 6" touch panels include two mounting clips. The clips can be viewed as a long metal bracket with two screws in each clip. The 6" panel clips can be fitted to the touch panel at two different depth locations that allow the 6" panel to be mounted through a wide range of enclosure thicknesses. The 8" through 12" touch panels include six mounting clips while the 15" touch panel includes eight. The 8" through 15" panel mounting clips are all the same. They are fitted to the touch panel by inserting two tabs into mating wide slots around the panel and then sliding the clip into a narrower slot to secure it in place. There is one screw on each clip that needs tightening to secure the panel in place.

Any *C-more* touch panel can be mounted directly through the existing cutout of a same size EZTouch slim touch panel. There is a simple solution for the need to replace an EZTouch 6" non-slim (rounded bezel) touch panel as explained in the following note.

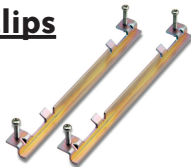


NOTE: The *C-more* 6" touch panels will fit into the existing cutout of any EZTouch 6" slim bezel panel. Use the *C-more* 6" Adapter Plate, EA-6-ADPTR, to install *C-more* 6" panels into existing cutouts of EZTouch 6" non-slim (rounded bezel) panels. The adapter plate gasket is included.

This chapter only 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, check the information menu to make sure the panel is the correct unit for the application and is the latest version, set communication port parameters that may be required, become familiar with the touch panel test features, and check memory options.

The next step will be to select the appropriate PLC protocol and communications cable as described in Chapter 6.

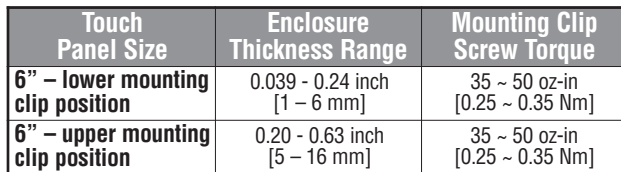
6" Mounting Clips



8-15" Mounting Clip



Note: Mount the touch panel on a vertical surface to allow convection air flow for proper cooling.

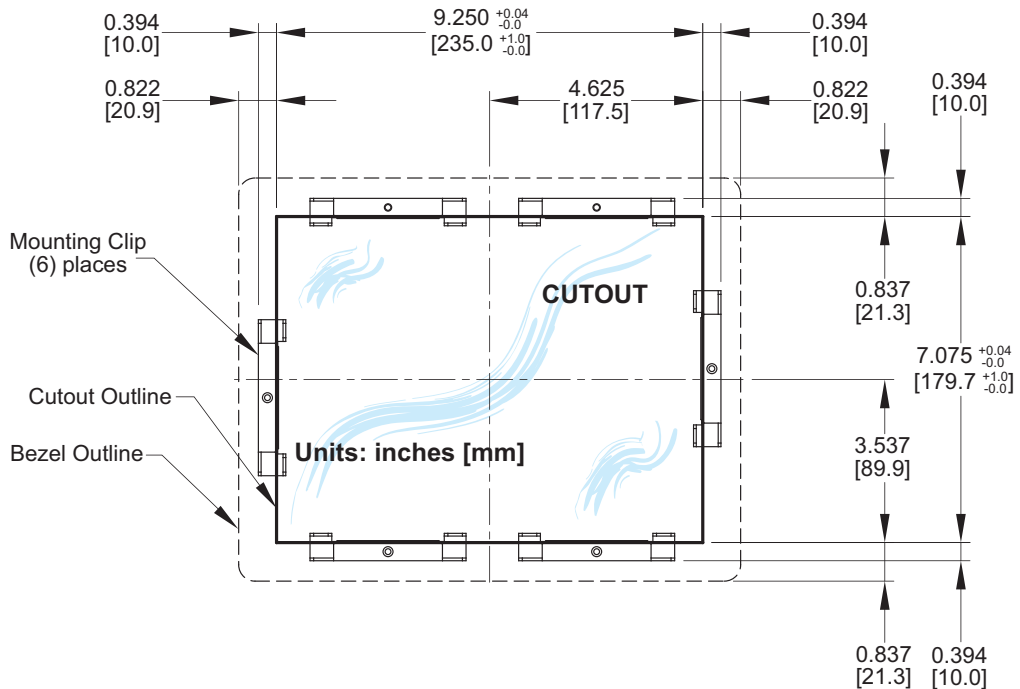


EA7-T8C – Cutout Dimensions

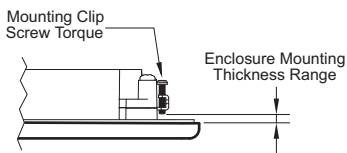
The *C-more* 8" touch panels are mounted into a cutout through the control cabinet and secured with six (6) mounting clips. The mounting clips are provided with the touch panel. The mounting clips will insert into a series of slots around the rear perimeter of the touch panel. Each clip has two tabs that will mate to two slots, using the larger rectangular holes. The mounting clips are held in place by sliding the clip toward the smaller rectangular holes. 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.



Note: Mount the touch panel on a vertical surface to allow convection air flow for proper cooling.



Enclosure Mounting Thickness Ranges and Mounting Clip Screw Torque

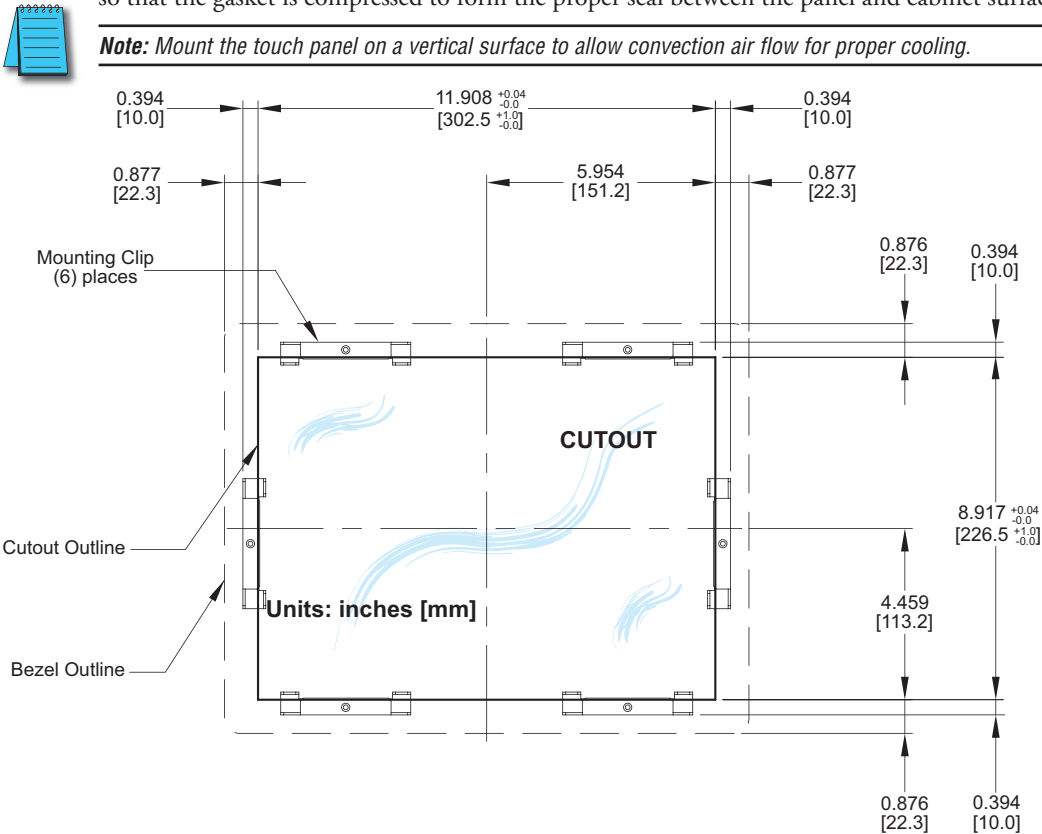


Touch Panel Size	Enclosure Thickness Range	Mounting Clip Screw Torque
8", 10", 12" & 15"	0.039 - 0.20 inch [1 - 5 mm]	42 ~ 57 oz-in [0.3 ~ 0.4 Nm]

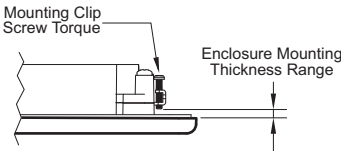
EA7-T10C – Cutout Dimensions

The *C-more* 10” touch panels are mounted into a cutout through the control cabinet and secured with six (6) 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 two tabs that will mate to two slots, using the larger rectangular holes. The mounting clips are held in place by sliding the clip toward the smaller rectangular holes. 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.

Note: Mount the touch panel on a vertical surface to allow convection air flow for proper cooling.



**Enclosure Mounting Thickness Ranges
and Mounting Clip Screw Torque**



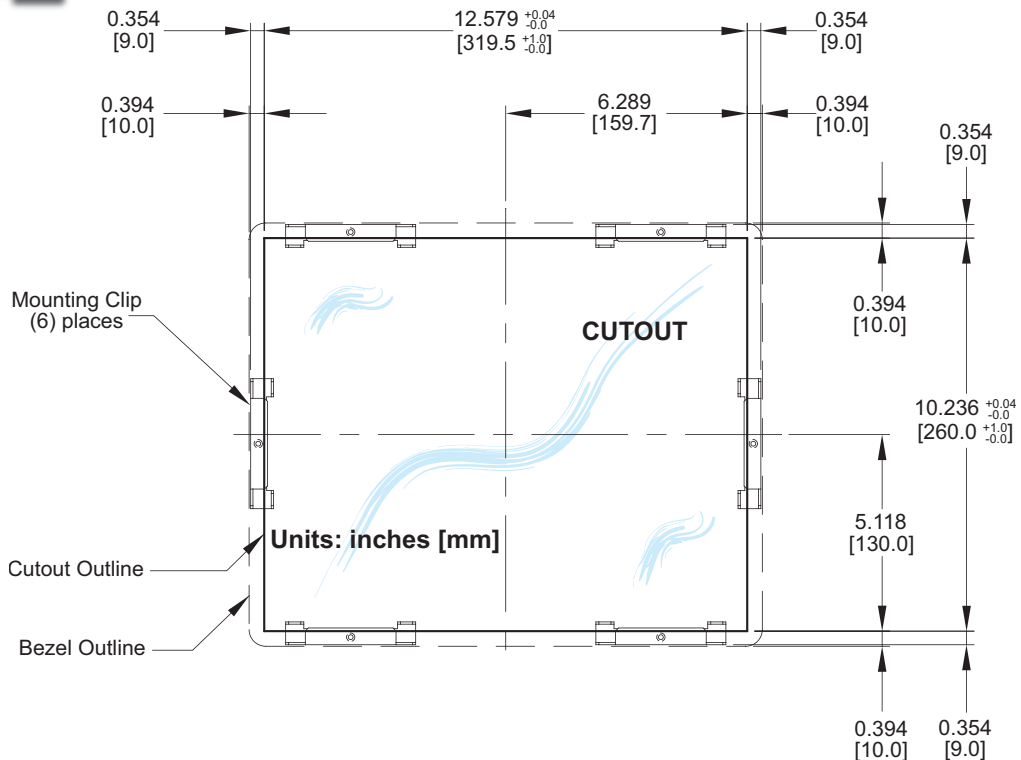
Touch Panel Size	Enclosure Thickness Range	Mounting Clip Screw Torque
8", 10", 12" & 15"	0.039 - 0.20 inch [1 - 5 mm]	42 ~ 57 oz-in [0.3 ~ 0.4 Nm]

EA7-T12C – Cutout Dimensions

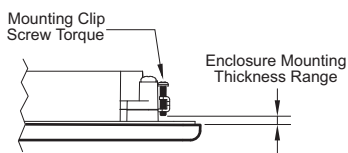
The *C-more* 12" touch panels are mounted into a cutout through the control cabinet and secured with six (6) mounting clips. The mounting clips are provided with the touch panel. The mounting clips will insert into a series of slots around the rear perimeter of the touch panel. Each clip has two tabs that will mate to two slots, using the larger rectangular holes. The mounting clips are held in place by sliding the clip toward the smaller rectangular holes. 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.



Note: Mount the touch panel on a vertical surface to allow convection air flow for proper cooling.



Enclosure Mounting Thickness Ranges and Mounting Clip Screw Torque

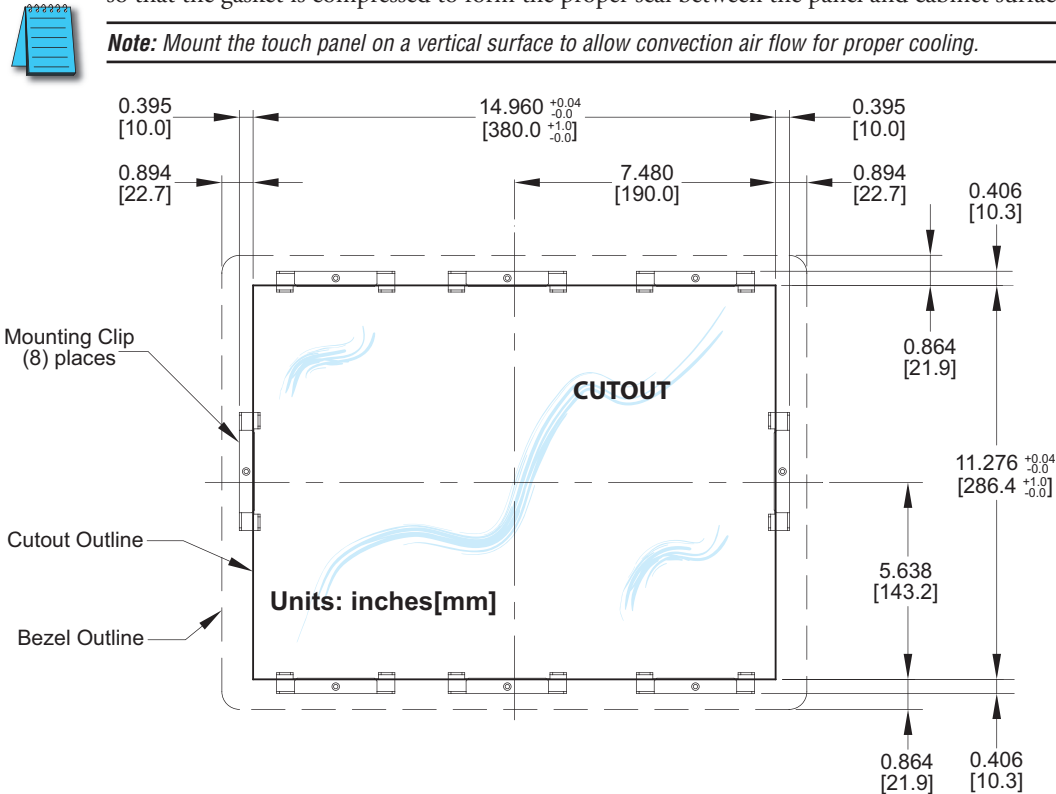


Touch Panel Size	Enclosure Thickness Range	Mounting Clip Screw Torque
8", 10", 12" & 15"	0.039 - 0.20 inch [1 - 5 mm]	42 ~ 57 oz-in [0.3 ~ 0.4 Nm]

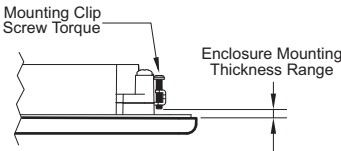
EA7-T15C – Cutout Dimensions

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 two tabs that will mate to two slots, using the larger rectangular holes. The mounting clips are held in place by sliding the clip toward the smaller rectangular holes. 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.

Note: Mount the touch panel on a vertical surface to allow convection air flow for proper cooling.



**Enclosure Mounting Thickness Ranges
and Mounting Clip Screw Torque**

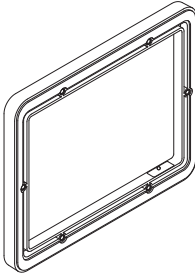


Touch Panel Size	Enclosure Thickness Range	Mounting Clip Screw Torque
8", 10", 12" & 15"	0.039 - 0.20 inch [1 - 5 mm]	42 ~ 57 oz-in [0.3 ~ 0.4 Nm]

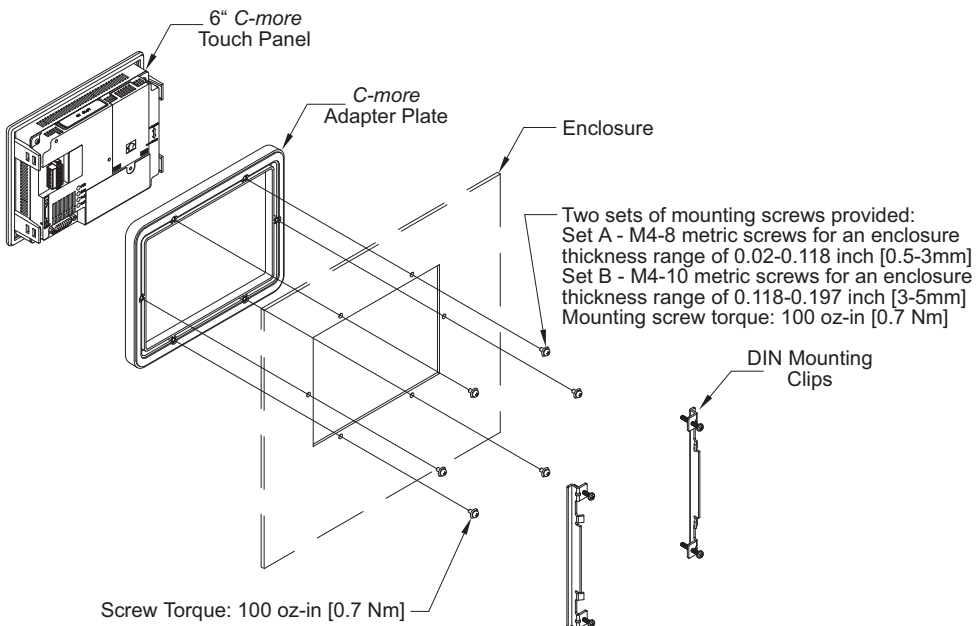
6" Adapter Plate

Use the *C-more* 6" Adapter Plate, p/n EA-6-ADPTR, to install a *C-more* 6" touch panel into the existing cutout of an EZTouch 6" non-slim (rounded bezel) touch panel. Gasket and mounting hardware is included.

Part No. EA-6-ADPTR

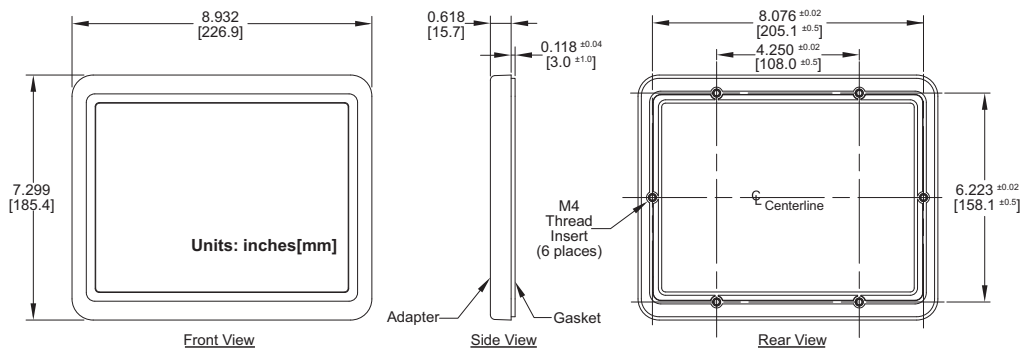


6" Adapter Plate Assembly

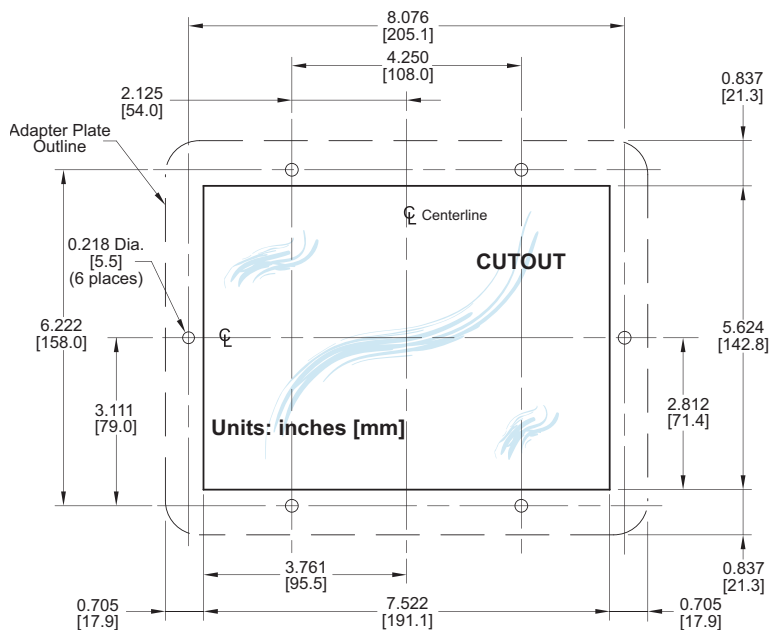


6" Adapter Plate (cont'd)

6" Adapter Plate Dimensions



6" Adapter Plate Cutout Dimensions



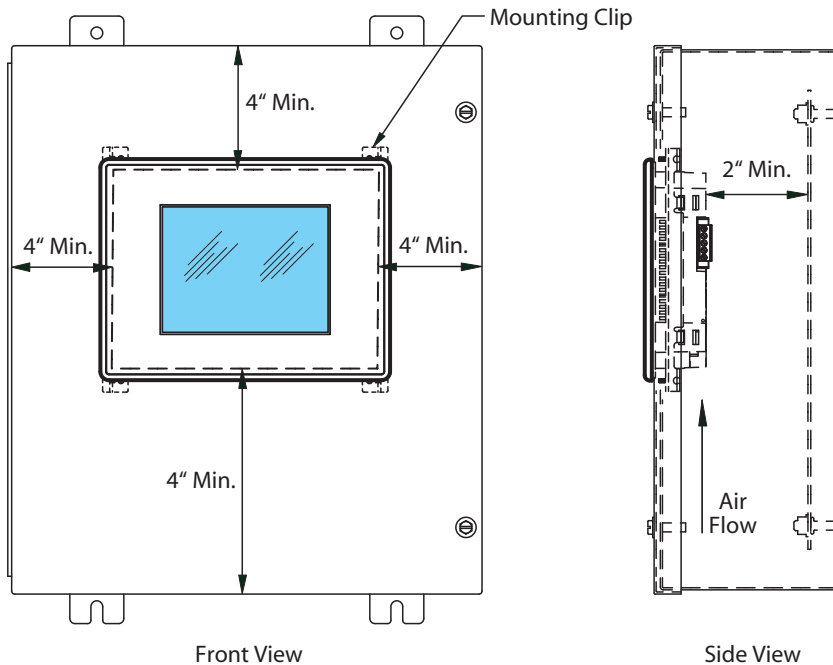
Mounting Clearances

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 2 inches between the rear of the panel and the nearest object or obstruction.



Note: Make sure the touch panel is mounted on a vertical surface to allow convection air flow for proper cooling.

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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 us 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.)
- CSA (Canadian Standards Association)
- CE (European Economic Union)

Marine Use

American Bureau of Shipping (ABS) certification requires flame-retarding insulation as per 4-8-3/5.3.6(a). ABS will accept Navy low smoke cables, cable qualified to NEC "Plenum rated" (fire resistant level 4), or other similar flammability resistant rated cables. Use cable specifications for your system that meet a recognized flame retardant standard (i.e. UL, IEEE, etc.), including evidence of cable test certification (i.e. tests certificate, UL file number, etc.).



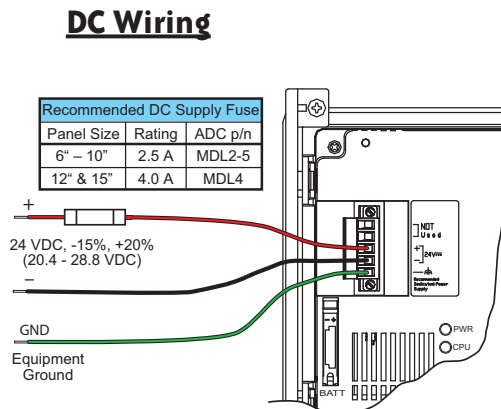
NOTE: Wiring needs to be "low smoke" per the above paragraph. Teflon coated wire is also recommended.

Wiring Guidelines (cont'd)

Providing Power to the Touch Panel

- Connect a dedicated 24 VDC (20.4 - 28.8 VDC) switching power supply rated for a minimum of 1.5 A to the DC connector on the rear of the *C-more* touch panel. Connect 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.
- then turn on the power source and check the LED status indicators on the rear of the *C-more* touch panel for proper operation. See the LED Status Indicator diagram on the next page for reference.

DC Wiring Diagram



Recommended DC Power Supply:
AutomationDirect Part No. PS24-050D

AC Wiring Diagram

AutomationDirect
KOYO ELECTRONICS INDUSTRIES CO., LTD.

AC Power Adapter

EA-AC

LISTED ENEC **UL** **CE** Not recommended for use with the EA7-T15C when operating temperatures are expected to be above 40 deg C.

100-240V~ 50/60Hz
DC OUTPUT 12V 1.5A

MADE IN CHINA

5010

Recommended AC Supply Fuse
3.0 A time delay, ADC p/n MDL3

100 - 240 VAC
50/60 Hz



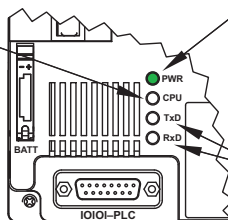
WARNING: The AC/DC Power Adapter is not recommended for use with the EA7-T15C touch panel when operating temperatures are expected to exceed 40 °C [104 °F].



Note: Power Fault features help protect data being logged to CompactFlash during power failures. The **C-more** panel must have firmware version 1.21 Build 6.18E or higher for proper operation.

C-more LED Status Indicators

CPU Status LED (Green, Orange & Red)	
Off	Power Off
Green	Normal – CPU Run State
Red	Memory Error
Blinking Red	Operating System not found
Blinking Orange	LCD Backlight Failure
Blinking Green	Power Loss Detection



Rear View

Power LED (Green)	
On	Power On
Off	Power Off

Serial Tx/D/RxD LED (Green)	
On	Comm. is active
Off	No communication