ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Automation Direct EA9-T8CL* at our website: *Click HERE*



Hardware User Manual

EA9-USER-M

WARNING

Thank you for purchasing automation equipment from **Automationdirect.com®**, doing business as, **AutomationDirect**. We want your new automation equipment to operate safely. Anyone who installs or uses this equipment should read this publication (and any other relevant publications) before installing or operating the equipment.

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 usually change with time. It is your responsibility to determine which codes should be followed, and to verify that the equipment, installation, and operation is in compliance with the latest revision of these codes.

At a minimum, you should follow all applicable sections of the National Fire Code, National Electrical Code, and the codes of the National Electrical Manufacturer's Association (NEMA). There may be local regulatory or government offices that can also help determine which codes and standards are necessary for safe installation and operation.

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.

Our products are not fault-tolerant and are not designed, manufactured or intended for use or resale as on-line control equipment in hazardous environments requiring fail-safe performance, such as in the operation of nuclear facilities, aircraft navigation or communication systems, air traffic control, direct life support machines, or weapons systems, in which the failure of the product could lead directly to death, personal injury, or severe physical or environmental damage ("High Risk Activities"). **AutomationDirect** specifically disclaims any expressed or implied warranty of fitness for High Risk Activities.

For additional warranty and safety information, see the Terms and Conditions section of our catalog. If you have any questions concerning the installation or operation of this equipment, or if you need additional information, please call us at 770-844-4200.

This publication is based on information that was available at the time it was printed. At **AutomationDirect** we constantly strive to improve our products and services, so we reserve the right to make changes to the products and/or publications at any time without notice and without any obligation. This publication may also discuss features that may not be available in certain revisions of the product.

Trademarks

This publication may contain references to products produced and/or offered by other companies. The product and company names may be trademarked and are the sole property of their respective owners. **AutomationDirect** disclaims any proprietary interest in the marks and names of others.

Copyright 2020, Automationdirect.com® Incorporated
All Rights Reserved

No part of this manual shall be copied, reproduced, or transmitted in any way without the prior, written consent of **Automationdirect.com® Incorporated**. **AutomationDirect** retains the exclusive rights to all information included in this document.

ADVERTENCIA

Gracias por comprar equipo de automatización de **Automationdirect.com**®. Deseamos que su nuevo equipo de automatización opere de manera segura. Cualquier persona que instale o use este equipo debe leer esta publicación (y cualquier otra publicación pertinente) antes de instalar u operar el equipo.

Para reducir al mínimo el riesgo debido a problemas de seguridad, debe seguir todos los códigos de seguridad locales o nacionales aplicables que regulan la instalación y operación de su equipo. Estos códigos varian de área en área y usualmente cambian con el tiempo. Es su responsabilidad determinar cuales códigos deben ser seguidos y verificar que el equipo, instalación y operación estén en cumplimiento con la revisión mas reciente de estos códigos.

Como mínimo, debe seguir las secciones aplicables del Código Nacional de Incendio, Código Nacional Eléctrico, y los códigos de (NEMA) la Asociación Nacional de Fabricantes Eléctricos de USA. Puede haber oficinas de normas locales o del gobierno que pueden ayudar a determinar cuales códigos y normas son necesarios para una instalación y operación segura.

Si no se siguen todos los códigos y normas aplicables, puede resultar en daños al equipo o lesiones serias a personas. No garantizamos los productos descritos en esta publicación para ser adecuados para su aplicación en particular, ni asumimos ninguna responsabilidad por el diseño de su producto, la instalación u operación.

Nuestros productos no son tolerantes a fallas y no han sido diseñados, fabricados o intencionados para uso o reventa como equipo de control en línea en ambientes peligrosos que requieren una ejecución sin fallas, tales como operación en instalaciones nucleares, sistemas de navegación aérea, o de comunicación, control de tráfico aéreo, máquinas de soporte de vida o sistemas de armamentos en las cuales la falla del producto puede resultar directamente en muerte, heridas personales, o daños físicos o ambientales severos ("Actividades de Alto Riesgo"). **Automationdirect.com** específicamente rechaza cualquier garantía ya sea expresada o implicada para actividades de alto riesgo. Para información adicional acerca de garantía e información de seguridad, vea la sección de Términos y Condiciones de nuestro catálogo. Si tiene alguna pregunta sobre instalación u operación de este equipo, o si necesita información adicional, por favor llámenos al número 770-844-4200 en Estados Unidos. Esta publicación está basada en la información disponible al momento de impresión. En **Automationdirect.com** nos esforzamos constantemente para mejorar nuestros productos y servicios, así que nos reservamos el derecho de hacer cambios al producto y/o a las publicaciones en cualquier momento sin notificación y sin ninguna obligación. Esta publicación también puede discutir características que no estén disponibles en ciertas revisiones del producto.

Marcas Registradas

Esta publicación puede contener referencias a productos producidos y/u ofrecidos por otras compañías. Los nombres de las compañías y productos pueden tener marcas registradas y son propiedad única de sus respectivos dueños. Automationdirect.com, renuncia cualquier interés propietario en las marcas y nombres de otros.

PROPIEDAD LITERARIA 2020, AUTOMATIONDIRECT.COM® INCORPORATED
Todos los derechos reservados

No se permite copiar, reproducir, o transmitir de ninguna forma ninguna parte de este manual sin previo consentimiento por escrito de **Automationdirect.com® Incorprated**. **Automationdirect.com** retiene los derechos exclusivos a toda la información incluida en este documento. Los usuarios de este equipo pueden copiar este documento solamente para instalar, configurar y mantener el equipo correspondiente. También las instituciones de enseñanza pueden usar este manual para propósitos educativos.

AVERTISSEMENT

Nous vous remercions d'avoir acheté l'équipement d'automatisation de **Automationdirect.com®**, en faisant des affaires comme, **AutomationDirect**. Nous tenons à ce que votre nouvel équipement d'automatisation fonctionne en toute sécurité. Toute personne qui installe ou utilise cet équipement doit lire la présente publication (et toutes les autres publications pertinentes) avant de l'installer ou de l'utiliser.

Afin de réduire au minimum le risque d'éventuels problèmes de sécurité, vous devez respecter tous les codes locaux et nationaux applicables régissant l'installation et le fonctionnement de votre équipement. Ces codes diffèrent d'une région à l'autre et, habituellement, évoluent au fil du temps. Il vous incombe de déterminer les codes à respecter et de vous assurer que l'équipement, l'installation et le fonctionnement sont conformes aux exigences de la version la plus récente de ces codes.

Vous devez, à tout le moins, respecter toutes les sections applicables du Code national de prévention des incendies, du Code national de l'électricité et des codes de la National Electrical Manufacturer's Association (NEMA). Des organismes de réglementation ou des services gouvernementaux locaux peuvent également vous aider à déterminer les codes ainsi que les normes à respecter pour assurer une installation et un fonctionnement sûrs.

L'omission de respecter la totalité des codes et des normes applicables peut entraîner des dommages à l'équipement ou causer de graves blessures au personnel. Nous ne garantissons pas que les produits décrits dans cette publication conviennent à votre application particulière et nous n'assumons aucune responsabilité à l'égard de la conception, de l'installation ou du fonctionnement de votre produit.

Nos produits ne sont pas insensibles aux défaillances et ne sont ni conçus ni fabriqués pour l'utilisation ou la revente en tant qu'équipement de commande en ligne dans des environnements dangereux nécessitant une sécurité absolue, par exemple, l'exploitation d'installations nucléaires, les systèmes de navigation aérienne ou de communication, le contrôle de la circulation aérienne, les équipements de survie ou les systèmes d'armes, pour lesquels la défaillance du produit peut provoquer la mort, des blessures corporelles ou de graves dommages matériels ou environnementaux («activités à risque élevé»). La société **AutomationDirect** nie toute garantie expresse ou implicite d'aptitude à l'emploi en ce qui a trait aux activités à risque élevé.

Pour des renseignements additionnels touchant la garantie et la sécurité, veuillez consulter la section Modalités et conditions de notre documentation. Si vous avez des questions au sujet de l'installation ou du fonctionnement de cet équipement, ou encore si vous avez besoin de renseignements supplémentaires, n'hésitez pas à nous téléphoner au 770-844-4200.

Cette publication s'appuie sur l'information qui était disponible au moment de l'impression. À la société **AutomationDirect**, nous nous efforçons constamment d'améliorer nos produits et services. C'est pourquoi nous nous réservons le droit d'apporter des modifications aux produits ou aux publications en tout temps, sans préavis ni quelque obligation que ce soit. La présente publication peut aussi porter sur des caractéristiques susceptibles de ne pas être offertes dans certaines versions révisées du produit.

Marques de commerce

La présente publication peut contenir des références à des produits fabriqués ou offerts par d'autres entreprises. Les désignations des produits et des entreprises peuvent être des marques de commerce et appartiennent exclusivement à leurs propriétaires respectifs. **AutomationDirect** nie tout intérêt dans les autres marques et désignations.

Copyright 2020, Automationdirect.com® Incorporated
Tous droits réservés

Nulle partie de ce manuel ne doit être copiée, reproduite ou transmise de quelque façon que ce soit sans le consentement préalable écrit de la société **Automationdirect.com® Incorporated**. **AutomationDirect** conserve les droits exclusifs à l'égard de tous les renseignements contenus dans le présent document.

HARDWARE USER MANUAL

Please include the Manual Number and the Manual Issue, both shown below, when communicating with Technical Support regarding this publication.

Manual Number: EA9-USER-M
Issue: 1st Edition Revision K
Issue Date: 01/20

Publication History		
Issue	**Date**	**Description of Changes**
First Edition	03/14	Original
1st Ed. Rev. A	10/14	Minor Revisions
1st Ed. Rev. B	01/15	Revised PLC communication and drivers, minor revisions
1st Ed. Rev. C	03/16	Added Recovery Tool and No System Found to Troubleshooting, minor revisions
1st Ed. Rev. D	12/16	Added EA9-T7CL(-R). Added Appendix C, minor revisions
1st Ed. Rev. E	11/17	Added EA9-T10WCL and EA9-T15CL-R. Minor revisions
1st Ed. Rev. F	02/18	Revised Memory Device Formatting table
1st Ed. Rev. G	08/18	Corrected DH485-CBL description
1st Ed. Rev. H	08/19	Added Micro-800 series. Minor revisions
1st Ed. Rev. J	09/19	Minor Revisions
1st Ed. Rev. K	01/20	Added S7-1500

TABLE OF CONTENTS



Chapter 1: Getting Started

Introduction **1-2**
The Purpose of this Manual 1-2
Supplemental Manuals 1-2
Technical Support 1-2

Conventions Used **1-3**
Key Topics for Each Chapter 1-3

Product Overview **1-4**

Quick Start Steps **1-5**
Step 1 – Unpack and Inspect 1-5
Step 2 – Install Optional Hardware Accessories 1-6
Step 3 – Become Familiar with Available Communication Ports 1-7
Step 4 – Install the Programming Software and Develop a Project 1-8
Step 5 – Connect Touch Panel to Computer 1-9
Step 6 – Provide Power to the Touch Panel 1-10
Step 7 – Access the Touch Panel Setup Screens 1-12
Step 8 – Choose Touch Panel to Device Cables 1-13
Step 9 – Connect Touch Panel to PLC 1-16

Chapter 2: Specifications

Available Models **2-4**

Model Specifications **2-5**
Specifications common to all models 2-6
6-inch Models 2-7
7-inch Models 2-8
8-inch and 10-inch Models 2-9
12-inch and 15-inch Models 2-10

EA9-T6CL-R, EA9-T6CL 2-11
Dimensions, Inches [mm] 2-11
Ports and Memory Expansion 2-12
EA9-T7CL-R, EA9-T7CL 2-13
Dimensions, Inches [mm] 2-13
Ports and Memory Expansion 2-14
EA9-T8CL 2-15
Dimensions, Inches [mm] 2-15
Ports and Memory Expansion 2-16
EA9-T10CL 2-17
Dimensions, Inches [mm] 2-17
EA9-T10WCL 2-18
Dimensions, Inches [mm] 2-18
Ports and Memory Expansion 2-19
EA9-T12CL 2-20
Dimensions, Inches [mm] 2-20
Ports and Memory Expansion 2-21
EA9-T15CL-R, EA9-T15CL 2-22
Dimensions, Inches [mm] 2-22
Ports and Memory Expansion 2-23
Mounting Clearances 2-25
EA9-T15CL-R, EA9-T15CL Derating 2-26
Communications Ports 2-27
Handling External Memory Devices 2-30
Writing to External Memory Devices 2-30
Memory Device Formatting 2-30
Minimizing Data Errors 2-31
Monitoring Available Memory 2-31
File Name Limitations 2-32
Power Loss Retention 2-32
Chemical Compatibility 2-32

Chapter 3: Accessories

Accessories Overview **3-2**
AC/DC Power Adapter **3-3**
AC/DC Power Adapter Dimensions 3-5
AC/DC Power Adapter Installation 3-6
EA-ECOM Ethernet Communication Module **3-7**
D-SUB 15-pin to Terminal Block Adapters **3-8**
Non-glare Screen Covers **3-9**
Clear Screen Overlay Installation 3-10
SD Card **3-11**
USB FLASH Drive **3-11**

Chapter 4: Installation and Wiring

Safety Guidelines **4-2**
Introduction **4-3**
EA9-T6CL-R, EA9-T6CL, EA9-T7CL-R and EA9-T7CL Cutout Dimensions **4-4**
EA9-T8CL and EA9-T10WCL Cutout Dimensions **4-5**
EA9-T12CL Cutout Dimensions **4-7**
EA9-T15CL-R and EA9-T15CL Cutout Dimensions **4-8**
Mounting Clearances **4-9**
EA9-T15CL-R, EA9-T15CL Derating 4-10
Wiring Guidelines **4-11**
Agency Approvals 4-11
Providing Power to the Touch Panel 4-12
C-more LED Status Indicators 4-13

Chapter 5: System Setup Screens

Introduction **5-2**
Accessing the System Setup Screens (no project loaded) **5-3**
Accessing the System Setup Screens (with project loaded) **5-4**
System Setup Screens – Enable Password in Software **5-6**

System Setup Screens Flowchart **5-12**
Main Menu **5-13**
Information Menu **5-14**
Setting Menu **5-18**
Test Menu **5-25**
Memory Menu **5-34**

Chapter 6: PLC Communications

Introduction **6-2**
***Direct*LOGIC PLCs Password Protection** **6-2**
PLC Protocols 6-3
PLC Communication Cables & Wiring Diagrams **6-5**
AutomationDirect PLCs RS-232C Serial 6-7
AutomationDirect PLCs RS-422A/RS-485A 6-10
***Direct*LOGIC Universal Isolated Network Adapter, p/n FA-ISOCON:** 6-16
***Direct*LOGIC Universal Converter, p/n F2-UNICON:** 6-17
RS-422A/RS-485A Multi-Drop Wiring Diagram Examples 6-18
Allen-Bradley 6-22
GE 6-27
GE VersaMax Micro 6-27
Mitsubishi 6-28
Omron 6-30
Modicon Modbus RS-232 6-31
Modicon Micro Series 6-31
Modicon Modbus with RJ45 6-31
Siemens 6-32

Chapter 7: Maintenance

Project Backup 7-2
Check Operating Environment 7-2
Check Operating Voltage 7-2
Check Status Indicators 7-2
Check Physical Conditions 7-3
Run Tests under System Setup Screens 7-3

Check Memory Usage 7-4
Check/Adjust Display Brightness 7-4
Check Error Log 7-4
Adjust Touch Panel 7-4
Cleaning the Display Screen 7-5
Check Project Functionality 7-6
Checks from ***C-more*** Programming Software 7-6
Notes: 7-7

Chapter 8: Troubleshooting

Common Problems 8-2
Troubleshooting Flow Chart 8-3
Touch Panel does not Power up 8-4
Display is Blank 8-5
Display is Dim 8-6
No User Program 8-7
Firmware Recovery Tool 8-8
No System Found 8-9
No Communications between Panel and PC (Personal Computer) via USB 8-10
USB Driver Troubleshooting 8-12
No Communications between Panel and PC (Personal Computer) via Ethernet 8-14
No Communications between Panel and PLC 8-18
IP Address in System Setup Screens displays 0.0.0.0 8-21
Difficulty Connecting to the Panel over the Internet (Web server and Remote Access features) 8-22
PLC Protocol Error Codes 8-23
Touch Panel Runtime Errors 8-24
Panel Constantly Displays "Initializing" when Powering up 8-25
Data not Logging Problems 8-25
Electrical Noise Problems 8-26

Chapter 9: Replacement Parts

Replacement Parts Overview 9-2
Panel Mounting Clip Replacements – EA9-BRK 9-3
Logo Label Replacement Insert - EA9-LBL 9-4

3-wire Communications Terminal Block – EA9-3TB **9-5**
DC Panel Power Connector Replacement – EA-DC-CON **9-5**
AC Power Adapter Connector Replacement– EA-AC-CON **9-6**
Panel Gasket Replacements – EA9-xx-GSK **9-7**
Gasket Replacement Installation Instructions: **9-7**

Appendix A: Panel and PLC Error Code Tables

Introduction **A-2**
C-more **Touch Panel Error Code Table** **A-3**
Direct**LOGIC – Panel Error Code PLC-499 Explanation** **A-5**
Direct**LOGIC K-Sequence Protocol – PLC Error Code Table** **A-5**
Direct**LOGIC *Direct*NET Protocol – PLC Error Codes** **A-5**
Modbus Protocols Error Code P499 Explanation **A-6**
AutomationDirect CLICK A-6
AutomationDirect DirectLOGIC - Modbus (Koyo) A-6
Modicon Modbus RTU A-6
Entivity Modbus RTU A-6
Direct**LOGIC ECOM Protocol – PLC Error Codes** **A-6**
Productivity Error Code P499 ..... **A-7**
AutomationDirect Do-More Error Codes **A-8**
Allen-Bradley – Panel Error Code PLC-499 Explanation **A-9**
Allen-Bradley DF1 & DH485 Protocols – PLC Error Code Tables **A-10**
Allen-Bradley EtherNet/IP Protocol –
Panel Error Code PLC-496, 497 and 498 Explanation **A-12**
Allen-Bradley – EtherNet/IP Protocol – PLC Error Code Tables ControlLogix,
CompactLogix, & FlexLogix **A-13**
Allen-Bradley – Micro800 Serial and EtherNet/IP Tag Based PLC Error Code Tables **A-17**
Allen-Bradley – EtherNet/IP Protocol – PLC Error Code Tables **A-21**
Generic EtherNet IP Protocol – PLC Error Codes **A-26**
GE 90-30 – Panel Error Code PLC-499 Explanation **A-27**

GE 90-30 SNPX Protocol – PLC Error Code Tables **A-28**
Mitsubishi FX Protocol – PLC Error Codes **A-37**
Omron – Panel Error Code PLC-499 Explanation **A-37**
Omron Host Link Protocol – PLC Error Code Table **A-38**
Omron FINS Protocol – PLC Error Code Table **A-39**
Omron – Panel Error Code P495 Explanation **A-42**
Omron CS/CJ FINS Ethernet Protocol – PLC Error Code Table **A-43**
Siemens – Panel Error Code P499 Explanation **A-44**
Siemens PPI Protocol – PLC Error Code Table **A-45**
Siemens ISO over TCP Protocol – PLC Error Code Table **A-46**

Appendix B: Touch Panel Runtime Errors

Introduction **B-2**
Runtime Errors **B-3**
Log File Naming B-4

Appendix C: Security Considerations for Control Systems Networks

Security Considerations for Control Systems Networks **C-2**

GETTING STARTED



In This Chapter...

Introduction **1-2**
The Purpose of this Manual 1-2
Supplemental Manuals 1-2
Technical Support 1-2
Conventions Used **1-3**
Key Topics for Each Chapter 1-3
Product Overview **1-4**
Quick Start Steps **1-5**
Step 1 – Unpack and Inspect 1-5
Step 2 – Install Optional Hardware Accessories 1-6
Step 3 – Become Familiar with Available Communication Ports 1-7
Step 4 – Install the Programming Software and Develop a Project 1-8
Step 5 – Connect Touch Panel to Computer 1-9
Step 6 – Provide Power to the Touch Panel 1-10
Step 7 – Access the Touch Panel Setup Screens 1-12
Step 8 – Choose Touch Panel to Device Cables 1-13
Step 9 – Connect Touch Panel to PLC 1-16

Introduction

1

The Purpose of this Manual

Thank you for purchasing our ***C-more***® Touch Panel family of products. This manual describes AutomationDirect.com's ***C-more*** Touch Panels, their specifications, included components, available accessories and provides you with important information for installation, connectivity and setup. The manual shows you how install, wire and use the products. It also helps you understand how to interface the panels to other devices in a control system.

This user manual contains important information for personnel who will install the touch panels and accessories, and for the personnel who will be programming the panel. If you understand control systems that make use of operating interfaces such as the ***C-more*** touch panels, our user manuals will provide all the information you need to get, and keep your system up and running.

Supplemental Manuals

If you are familiar with industrial control type devices, you may be able to get up and running with just the aide of the Quick Start Guide that is included with each touch panel. You can also refer to the On-line help that is available in the ***C-more*** programming software for more information about programming the panel.

Technical Support

We strive to make our manuals the best in the industry. We rely on your feedback to let us know if we are reaching our goal. If you cannot find the solution to your particular application, or, if for any reason you need technical assistance, please call us at:

770–844–4200

Our technical support group will work with you to answer your questions. They are available Monday through Friday from 9:00 A.M. to 6:00 P.M. Eastern Time. We also encourage you to visit our web site where you can find technical and non-technical information about our products and our company.

http://c-more.automationdirect.com

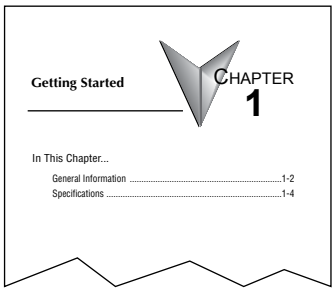
Conventions Used

*When you see the "notepad" icon in the left-hand margin, the paragraph to its immediate right will be a special note. The word **NOTE:** in boldface will mark the beginning of the text.*

When you see the "exclamation mark" icon in the left-hand margin, the paragraph to its immediate right will be a warning. This information could prevent injury, loss of property, or even death (in extreme cases). The word Warning: in boldface will mark the beginning of the text.

Key Topics for Each Chapter

The beginning of each chapter will list the key topics that can be found in that chapter.


Getting Started

CHAPTER 1

In This Chapter...

General Information 1-2
Specifications 1-4

Product Overview

Some of the features designed into the product to provide excellent hardware and software are listed below.

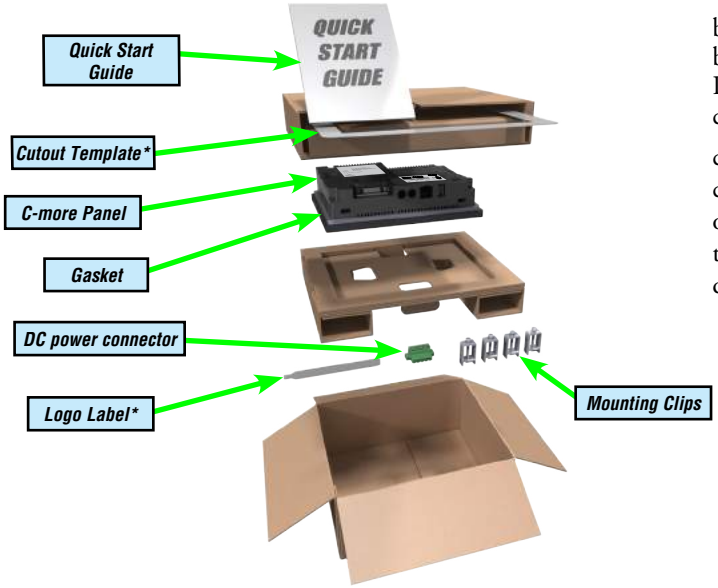
- Analog touch screen (no touch cell boundaries). The touchscreen is designed to respond to a single touch. If it is touched at multiple points at the same time, an unexpected object may be activated.
- Plenty of memory and methods to get data in/out of the panel
- Overlapping active devices on the touch screen
- 65,536 colors for enhanced graphics
- Screen resolutions up to 1024 X 768 pixel
- HDMI Video Output on 12-inch and 15-inch models.
- Built-in FTP client/server, E-mail client, and Web server
- Audio output port - stereo, requires amplifier and speaker(s) (full feature units only)
- User configurable LED on the front of the panel
- Built-in project simulation; test on PC while developing
- Ethernet 10/100Base-T communications (not available on EA9-T6CL-R)
- 15 pin serial port with RS-232, RS422/485
- 3-wire terminal block RS-485 port and RJ12 RS-232 port (full feature units only)
- Programming via USB or Ethernet (Ethernet not available on EA9-T6CL-R)
- Optional AC/DC power adapter (EA-AC)
- Animation of bitmaps and objects
- Thousands of built-in symbols and Windows fonts
- PID face plate, trending, alarming and a recipe database
- Event Manager to trigger actions based on assigned state changes, schedules, PLC tag names, etc. setup in a database environment. The event can also trigger a sound byte, initiate a screen capture, send a data file (FTP), send an E-mail, etc.
- Trend Data logging
- Internet Remote Access
- Customizable label on the front of the panel

Quick Start Steps

Step 1 – Unpack and Inspect

a.) Unpack the ***C-more*** Touch Panel from its shipping carton. Included in the carton are the following:

- ***C-more*** Touch Panel
- cutout template
- mounting clips
- DC power connector
- gasket
- logo label
- Quick Start Guide



*Not included with EA9-T7CL-R and EA9-T7CL.

b.) Unpack any accessories that have been ordered, such as: AC/DC Power Adapter, programming cable, communications cable, etc.

c.) Inspect all equipment for completeness. If anything is missing or damaged, immediately call the AutomationDirect® returns department @ 1-800-633-0405.

Shipping Carton Contents

Optional Accessories

AC Power Adapter EA-AC



USB Pen Drive USB-FLASH

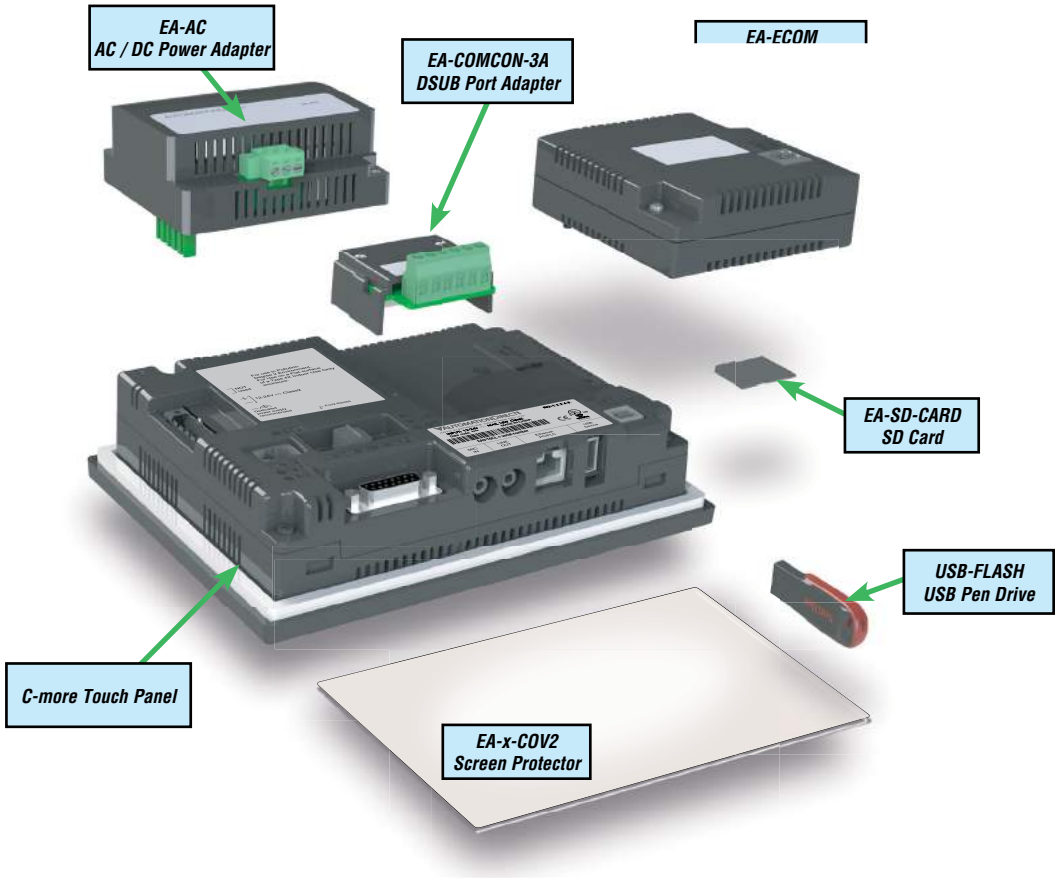


Protective Screen Cover EA-x-COV2

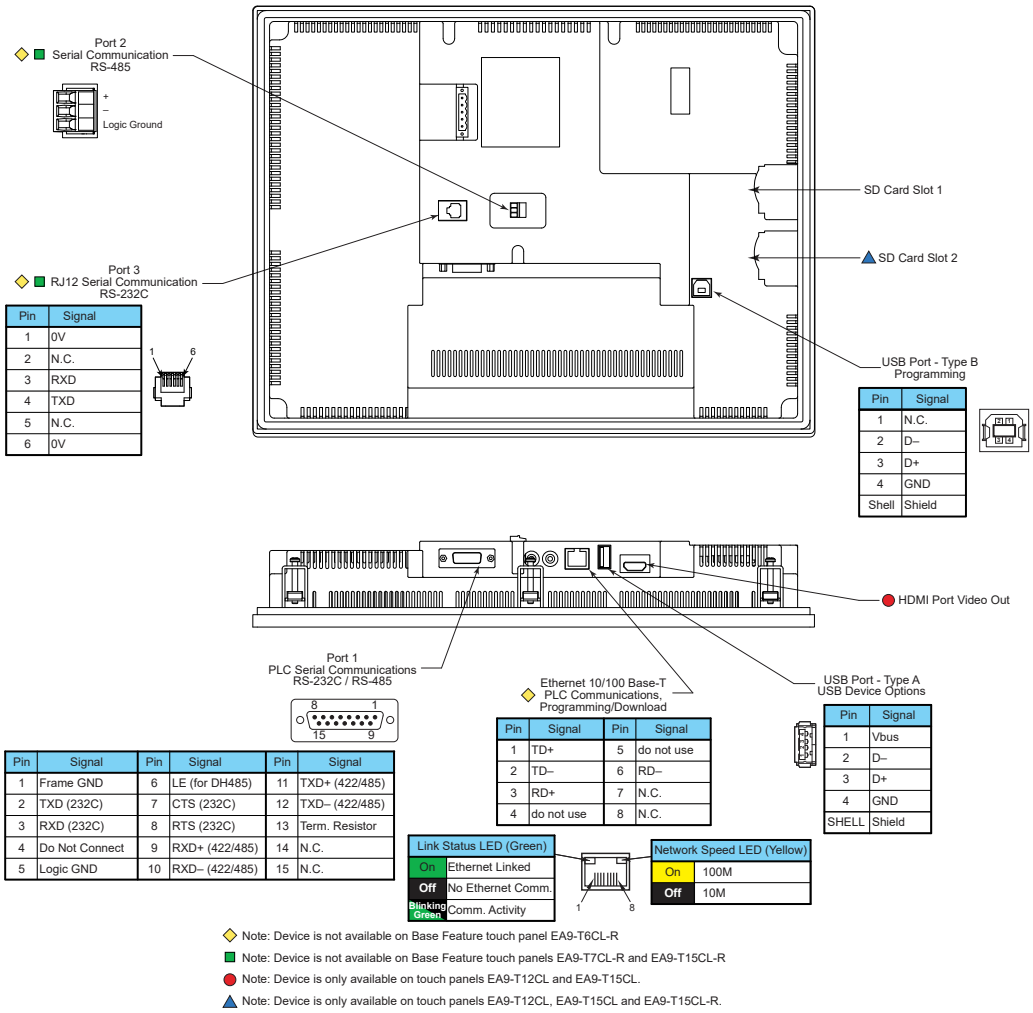


1

Step 2 – Install Optional Hardware Accessories



Step 3 – Become Familiar with Available Communication Ports



Pin	Signal
1	0V
2	N.C.
3	RXD
4	TXD
5	N.C.
6	0V

Pin	Signal
1	N.C.
2	D–
3	D+
4	GND
Shell	Shield

Pin	Signal	Pin	Signal	Pin	Signal
1	Frame GND	6	LE (for DH485)	11	TXD+ (422/485)
2	TXD (232C)	7	CTS (232C)	12	TXD– (422/485)
3	RXD (232C)	8	RTS (232C)	13	Term. Resistor
4	Do Not Connect	9	RXD+ (422/485)	14	N.C.
5	Logic GND	10	RXD– (422/485)	15	N.C.

Pin	Signal	Pin	Signal
1	TD+	5	do not use
2	TD–	6	RD–
3	RD+	7	N.C.
4	do not use	8	N.C.

Pin	Signal
1	Vbus
2	D–
3	D+
4	GND
SHELL	Shield

◇ Note: Device is not available on Base Feature touch panel EA9-T6CL-R

■ Note: Device is not available on Base Feature touch panels EA9-T7CL-R and EA9-T15CL-R

● Note: Device is only available on touch panels EA9-T12CL and EA9-T15CL.

▲ Note: Device is only available on touch panels EA9-T12CL, EA9-T15CL and EA9-T15CL-R.

NOTE: *See Chapter 2: Specifications and Chapter 6: PLC Communications for additional details on the available communication ports, protocols and cables.*

Step 4 – Install the Programming Software and Develop a Project

Download the latest version of the ***C-more*** Programming Software, p/n EA9-PGMSW, from the Automationdirect website. Alternately, if the ***C-more*** Programming Software CD is available, you may install from the software CD. Refer to the AutomationDirect website for current minimum system requirements for installation.

For software download installation, follow the screen prompts to download and install the ***C-more*** Programming Software.

For CD installation, insert the supplied CD into the PC's CD drive and navigate to the CD drive location on the PC. Double-click on *EA_Setup.exe* and follow the instructions. If you need assistance during the software installation, call the AutomationDirect Technical Support team @ 770-844-4200.

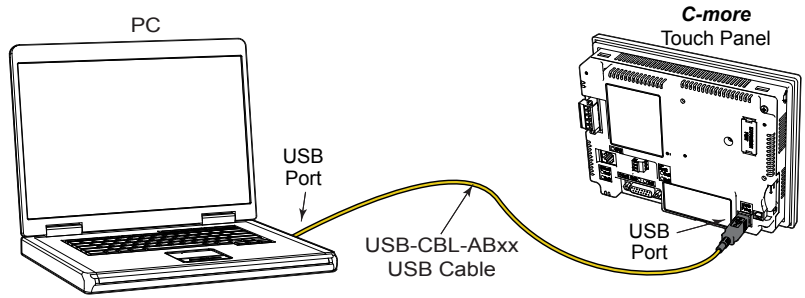


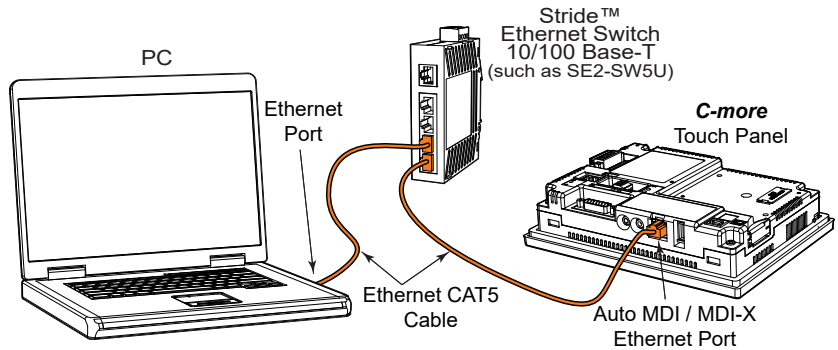
NOTES: *Regarding Ethernet access to a C-more panel.*
If you intend to take advantage of the methods of remote access to the panel, including the web server, PC remote access, FTP, iOS or Android app, you need to consider the security exposure in order to minimize the risks to your process and your C-more panel.

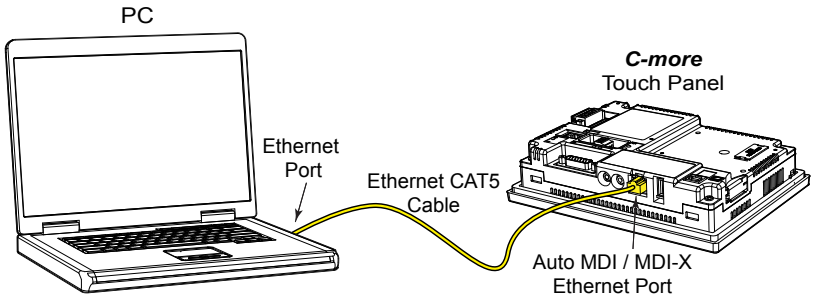
Security measures may include password protection, changing the ports exposed on your network, including a VPN in your network, and other methods. Security should always be carefully evaluated for each installation. Refer to Appendix C - Security Considerations for Control Systems Networks.

Step 5 – Connect Touch Panel to Computer

- **Connect** a USB Programming Cable, such as p/n USB-CBL-AB15, from a USB type A port on the PC to the USB type B programming port on the ***C-more*** touch panel
- **or** connect the ***C-more*** touch panel and PC together either directly or via an Ethernet switch, and CAT5 Ethernet cables (full feature panels only)







1

Step 6 – Provide Power to the Touch Panel

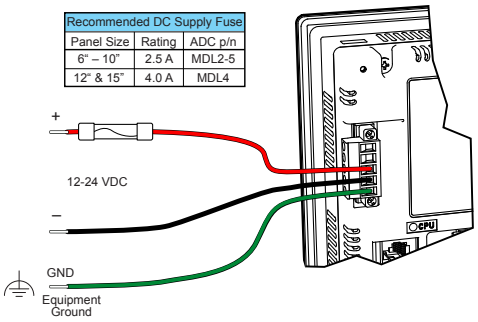
- **Connect** a **dedicated** 12-24 VDC Class 2 power supply to the DC connector on the rear of the ***C-more*** touch panel, include wiring the ground terminal to a proper equipment ground
- **or** install a ***C-more*** AC/DC Power Adapter, EA-AC, to the rear of the touch panel and connect an AC voltage 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)

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.*

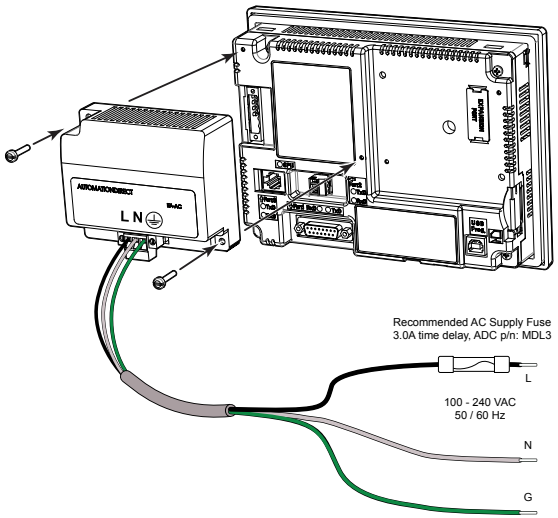
NOTE: *The AC/DC Power Adapter, EA-AC, is for* ***C-more*** *touch panels only. The adapter is powered from a 100-240 VAC, 50/60 Hertz power source. The adapter provides 24 VDC @ 1.5 A. Power Fault features help protect data on an SD memory card during power failures.*

DC Wiring

Recommended DC Supply Fuse		
Panel Size	Rating	ADC p/n
6" – 10"	2.5 A	MDL2-5
12" & 15"	4.0 A	MDL4



AC Wiring



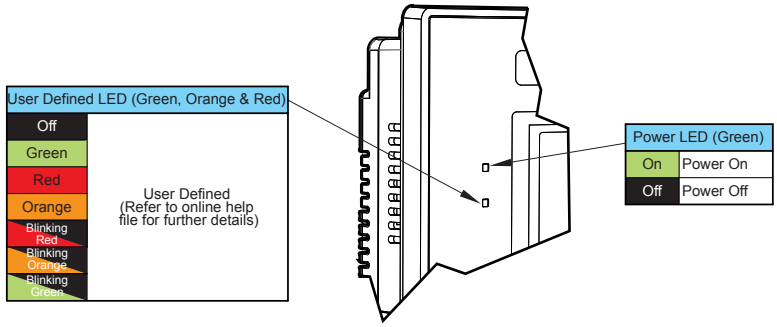
DC-CON Tightening Torque	
Power connector screw torque	70.4 oz-in (0.5 Nm)
Power connector mounting torque	56 oz-in (0.4 Nm)

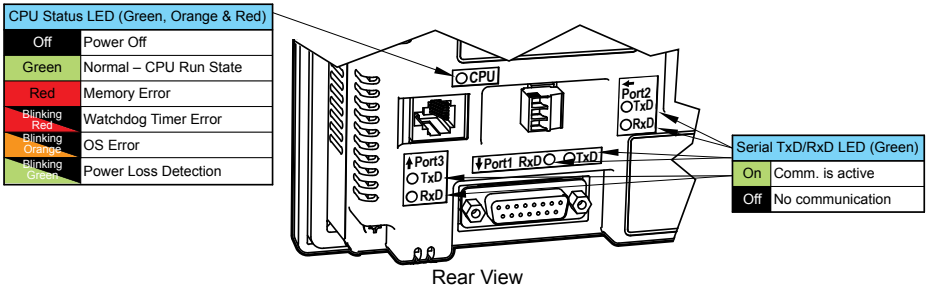
Tightening Torque	
Power supply cable torque	71 - 85 oz-in (0.5 - 0.6 Nm)
Power connector mounting torque	71 - 85 oz-in (0.5 - 0.6 Nm)
Mounting flange screw torque	57 - 71 oz-in (0.4 - 0.5 Nm)

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

Step 6 – Provide Power to the Touch Panel (cont'd)

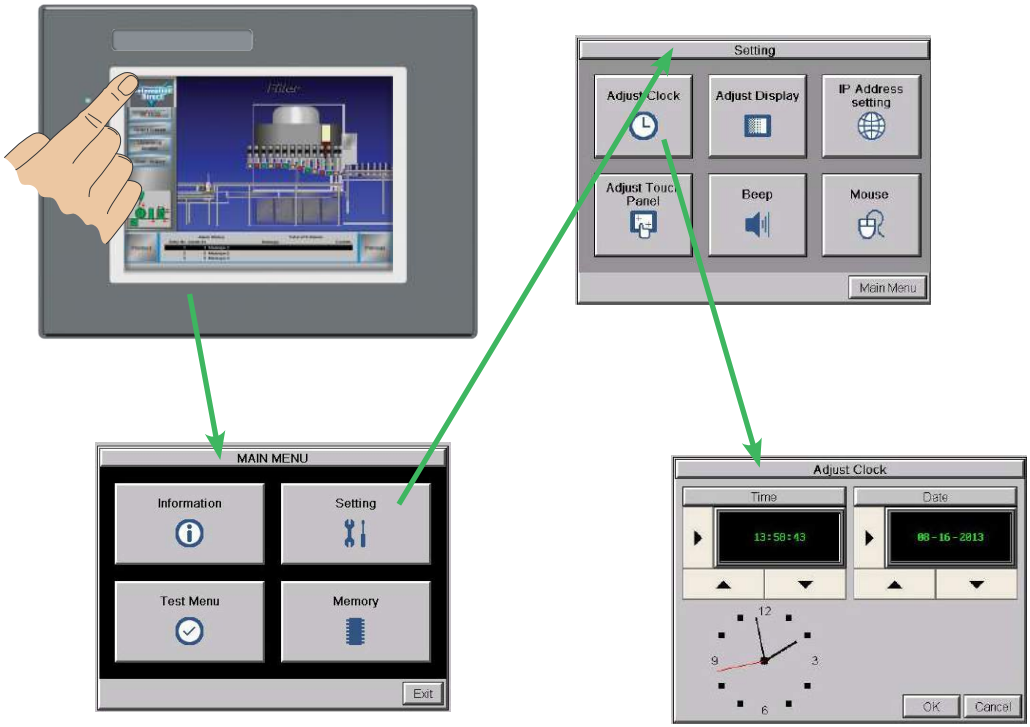
C-more LED Status Indicators





Step 7 – Access the Touch Panel Setup Screens

- Access the Main Menu of the touch panel System Setup Screens by pressing the extreme upper left corner of the panel display area for three (3) seconds as shown below.
- Adjust the time and date for the panel by pressing the Setting button on the Main Menu, then press the Adjust Clock button on the Setting screen.
- Use the right pointing arrows for the time or date display to select the unit to change. Use the up and down arrows to increment or decrement the value for the selected unit.
- Press OK when done to accept the changes to the time and date in the touch panel or press Cancel to exit the Adjust Clock setup screen without making any changes.
- Press the Main Menu button on the Setting screen and then the Exit button on the Main Menu screen to return to the application screen.



Step 8 – Choose Touch Panel to Device Cables

The table below shows the PLCs, controllers and protocols supported by the EA9-RHMI. Ensure your controller and protocol are supported.

PLC Protocol Table			
Model			**Protocols**
AutomationDirect	Productivity Series		Productivity Serial
			Productivity Ethernet
	Do-more (BRX)	all	Do-more Serial
			Do-more Ethernet
	CLICK		Modbus (CLICK addressing)
			Modbus TCP (CLICK addressing)
	DL05/DL06	all	K-Sequence
			DirectNET
			Modbus (Koyo addressing)
		H0-ECOM/H0-ECOM100	***Direct***LOGIC Ethernet
	DL105	all	K-Sequence
	DL205	D2-230	K-Sequence
		D2-240	K-Sequence
			DirectNET
		D2-250/D2-250-1/D2-260/D2-262	K-Sequence
			DirectNET
			Modbus (Koyo addressing)
		D2-240/D2-250-1/D2-260 Using DCM	***Direct***NET
			Modbus (Koyo addressing)
		H2-ECOM/H2-ECOM100	***Direct***LOGIC Ethernet
	DL305	D3-330/330P (Requires the use of a Data Communications Unit)	***Direct***NET
		D3-340	***Direct***NET
		D3-350	K-Sequence
			DirectNET
			Modbus (Koyo addressing)
		D3-350 DCM	***Direct***NET
			Modbus (Koyo addressing)
	DL405	D4-430	K-Sequence
			DirectNET
		D4-440	K-Sequence
			DirectNET
		D4-450/D4-454	K-Sequence
			DirectNET
			Modbus (Koyo addressing)
		All with DCM	***Direct***NET
			Modbus (Koyo addressing)
		H4-ECOM/H4-ECOM100	***Direct***LOGIC Ethernet
	H2-WinPLC (Think & Do) Live V5.2 or later and Studio any version		Think & Do Modbus RTU (serial port)
	H2-WinPLC (Think & Do) Live V5.5.1 or later and Studio V7.2.1 or later		Think & Do Modbus TCP/IP (Ethernet port)
	GS Drives		GS Drives Serial
			GS Drives TCP/IP (GS-EDRV)
	SOLO Temperature Controllers (models with serial communications)		SOLO Temperature Controller

Step 8 – Choose Touch Panel to Device Cables (cont'd)

PLC Protocol Table (cont'd)		
Model		**Protocols**
Allen-Bradley	MicroLogix 1000, 1100, 1200, 1400, 1500, SLC 5-01/02/03	DH485/AIC/AIC+
	MicroLogix 1000, 1100, 1200, 1400 and 1500	DF1 Half Duplex; DF1 Full Duplex
	SLC 5-03/04/05	
	ControlLogix™, CompactLogix™, FlexLogix™	
	PLC-5	DF1 Full Duplex
	ControlLogix, CompactLogix, FlexLogix - Tag Based	DF1 Half Duplex; DF1 Full Duplex
	ControlLogix, CompactLogix, FlexLogix - Generic I/O Messaging	EtherNet/IP Server
	ControlLogix, CompactLogix, FlexLogix - Tag Based	EtherNet/IP Client
	MicroLogix 1100, 1400 and SLC 5/05, via native Ethernet port	
	MicroLogix 1000, 1100, 1200, 1400, 1500, SLC 5-03/04/05, all via ENI adapter	
	Micro 800 Series	Modbus RTU
		Modbus TCP
	Micro 800 Series - Tag Based	DF1 Full Duplex
		EtherNet/IP Client
Modbus RTU	Modbus RTU devices	Modbus RTU
Modbus TCP/IP	Modbus TCP/IP devices	Modbus TCP/IP
GE	90/30, 90/70, Micro 90, VersaMax Micro	SNPX
	90/30, Rx3i	SRTP Ethernet
Mitsubishi	FX Series	FX Direct
	Q02, Q02H, Q06H, Q12H, Q25H	Q CPU
	Q, QnA Serial	QnA Serial
	Q, QnA Ethernet	QnA Ethernet
Modicon	984 CPU, Quantum 113 CPU, AEG Modicon Micro Series 110 CPU: 311-xx, 411-xx, 512-xx, 612-xx	Modbus RTU
	Other devices using Modicon Modbus addressing	Modbus RTU
		TUModbus TCP/IP
Omron	C200 Adapter, C500	Host Link
	CJ1/CS1 Serial	FINS
	CJ1/CS1 Ethernet	
Siemens	S7-200 CPU, RS-485 Serial	PPI
	S7-200 CPU, S7-300 CPU, S7-400, S7-1200, S7-1500 CPU Ethernet	Ethernet ISO over TCP

Step 8 – Choose Touch Panel to Device Cables (cont'd)

Available cables to connect from PLC to *C-more* serial Port 1

To use Serial communication through Port 1 of a ***C-more*** panel, consult the chart below for the proper cable. See Chapter 6: PLC Communications for wiring diagrams of additional user contructed cables.

Purchased Cable Description	Cable Part Number
AutomationDirect Productivity Series, Do-more, CLICK, ***Direct***LOGIC PLC RJ-12 port, DL05, DL06, DL105, DL205, D3-350, D4-450 & H2-WINPLC (RS-232C)	**EA-2CBL**
DirectLOGIC (VGA Style) 15-pin port DL06, D2-250 (250-1), D2-260 (RS-232C)	**EA-2CBL-1**
DirectLOGIC PLC RJ-11 port, D3-340 (RS-232C)	**EA-3CBL**
DirectLOGIC DL405 PLC 15-pin D-sub port, DL405 (RS-232C)	**EA-4CBL-1**
DirectLOGIC PLC 25-pin D-sub port, DL405, D3-350, DL305 DCU and all DCM's (RS-232C)	**EA-4CBL-2**
Allen-Bradley MicroLogix 1000, 1100, 1200, 1400, 1500 (RS-232C)	**EA-MLOGIX-CBL**
Allen-Bradley SLC 5-03/04/05, ControlLogix, CompactLogix, FlexLogix DF1 port (RS-232C)	**EA-SLC-232-CBL**
Allen-Bradley PLC-5 DF1 port (RS-232C)	**EA-PLC5-232-CBL**
Allen-Bradley SLC 5-01/02/03, PLC5 DH485 port	**EA-DH485-CBL**
GE 90/30, 90/70, Micro 90, VersaMax Micro 15-pin D-sub port (RS-422A)	**EA-90-30-CBL**
MITSUBISHI FX Series 25-pin port (RS-422A)	**EA-MITSU-CBL**
MITSUBISHI FX Series 8-pin mini-DIN (RS-422A)	**EA-MITSU-CBL-1**
OMRON Host Link (C200 Adapter, C500) (RS-232C)	**EA-OMRON-CBL**

NOTE: *The above list of pre-made communications cables may be purchased. See* ***Chapter 6: PLC Communications*** *for wiring diagrams of additional user constructed cables. Chapter 6 also includes wiring diagrams for the pre-made cables.*

Pre-made cable examples

EA-2CBL



EA-2CBL-1

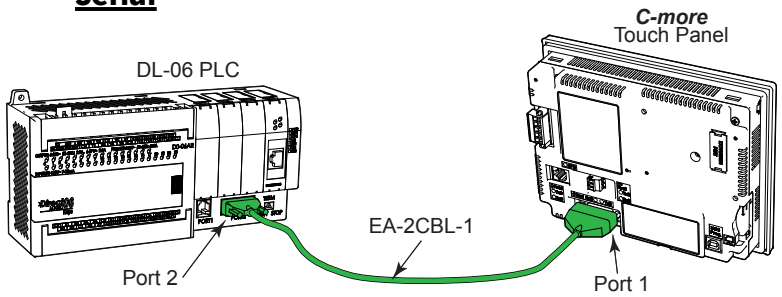


Step 9 – Connect Touch Panel to PLC

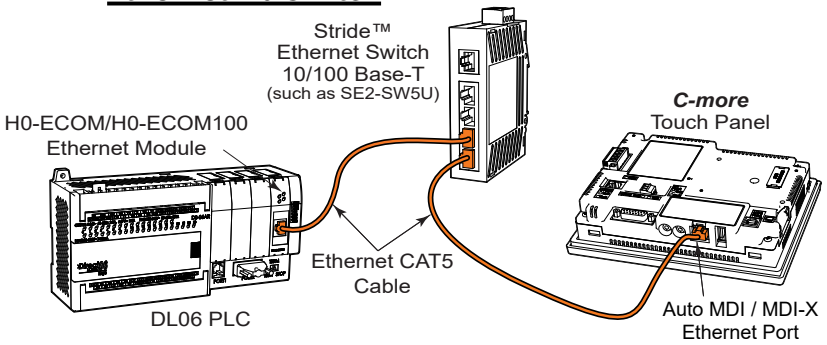
- Connect the serial communications cable between the ***C-more*** touch panel and the PLC
- or connect the ***C-more*** touch panel and PLC together either directly or via an Ethernet switch, and CAT5 Ethernet cables (full feature panels only)

For further information on setting up communications between a ***C-more*** panel and a PLC, see the ***C-more*** programming help file topic *CM129: Creating a New Project*.

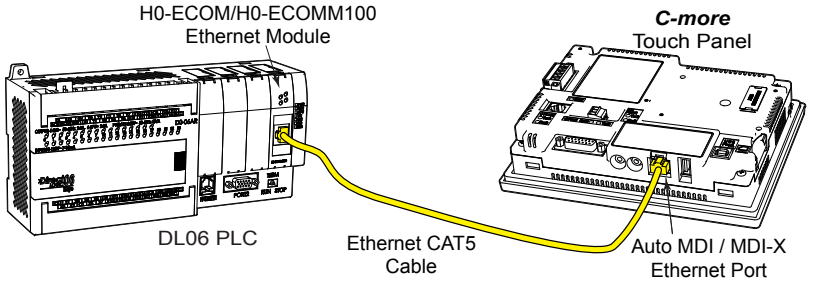
Serial



Ethernet via Switch



Ethernet



SPECIFICATIONS



In This Chapter...

Available Models **2-4**

Model Specifications **2-5**

Specifications common to all models 2-6

6-inch Models 2-7

7-inch Models 2-8

8-inch and 10-inch Models 2-9

12-inch and 15-inch Models 2-10

EA9-T6CL-R, EA9-T6CL **2-11**

Dimensions, Inches [mm] 2-11

Ports and Memory Expansion 2-12

EA9-T7CL-R, EA9-T7CL **2-13**

Dimensions, Inches [mm] 2-13

Ports and Memory Expansion 2-14

EA9-T8CL **2-15**

Dimensions, Inches [mm] 2-15

Ports and Memory Expansion 2-16

EA9-T10CL **2-17**

Dimensions, Inches [mm] 2-17

EA9-T10WCL **2-18**

Dimensions, Inches [mm] 2-18

Ports and Memory Expansion 2-19

SPECIFICATIONS



EA9-T12CL **2-20**
Dimensions, Inches [mm] 2-20
Ports and Memory Expansion 2-21
EA9-T15CL-R, EA9-T15CL **2-22**
Dimensions, Inches [mm] 2-22
Ports and Memory Expansion 2-23
Mounting Clearances **2-25**
EA9-T15CL-R, EA9-T15CL Derating 2-26
Communications Ports **2-27**
Handling External Memory Devices **2-30**
Writing to External Memory Devices 2-30
Memory Device Formatting 2-30
Minimizing Data Errors 2-31
Monitoring Available Memory 2-31
File Name Limitations 2-32
Power Loss Retention 2-32
Chemical Compatibility **2-32**

This page intentionally left blank

Available Models

The ***C-more***® Operator Interface is the next generation of touch panel brought to you by AutomationDirect. It has been designed to display and interchange graphical data from a PLC by merely viewing or touching the screen.

The ***C-more*** Touch Panel is available in a variety of models to suit your application. Refer to the following tables for a list of part numbers, descriptions and options available.

Part Number	Description	Project Memory	SD Card Option	USB Device	Ethernet	HDMI Video Out
EA9-T6CL-R	***C-more*** EA9 series touch screen HMI, 6in color TFT LCD, 320 x 240 pixel, QVGA, LED backlight, supports (1) serial and (2) USB ports and (1) memory card slot.	26 MB	1 slot	Yes	No	No
EA9-T6CL	***C-more*** EA9 series touch screen HMI, 6in color TFT LCD, 320 x 240 pixel, QVGA, LED backlight, supports (3) serial, (1) Ethernet and (2) USB ports, (1) memory card slot and (1) audio line out.	26 MB	1 slot	Yes	Yes	No
EA9-T7CL-R	***C-more*** EA9 series touch screen HMI, 7in color TFT LCD, widescreen, 800 x 480 pixel, WVGA, LED backlight, supports (1) serial, (1) Ethernet and (2) USB ports and (1) memory card slot.	26 MB	1 slot	Yes	Yes	No
EA9-T7CL	***C-more*** EA9 series touch screen HMI, 7in color TFT LCD, widescreen, 800 x 480 pixel, WVGA, LED backlight, supports (3) serial, (1) Ethernet and (2) USB ports, (1) memory card slot and (1) audio line out.	26 MB	1 slot	Yes	Yes	No
EA9-T8CL	***C-more*** EA9 series touch screen HMI, 8in color TFT LCD, 800 x 600 pixel, SVGA, LED backlight, supports (3) serial, (1) Ethernet and (2) USB ports, (1) memory card slot and (1) audio line out.	26 MB	1 slot	Yes	Yes	No
EA9-T10CL	***C-more*** EA9 series touch screen HMI, 10in color TFT LCD, 800 x 600 pixel, SVGA, LED backlight, supports (3) serial, (1) Ethernet and (2) USB ports, (1) memory card slot and (1) audio line out.	26 MB	1 slot	Yes	Yes	No
EA9-T10WCL	C-more EA9 series touch screen HMI, 10in color TFT LCD, widescreen, 1024 x 600 pixel, WSVGA, LED backlight, supports (3) serial, (1) Ethernet and (2) USB ports, (1) memory card slot and (1) audio line out.	26 MB	1 slot	Yes	Yes	No
EA9-T12CL	***C-more*** EA9 series touch screen HMI, 12in color TFT LCD, 800 x 600 pixel, SVGA, LED backlight, supports (3) serial, (1) Ethernet and (2) USB ports, (2) memory card slots, (1) HDMI video out and (1) audio line out.	82 MB	2 slots	Yes	Yes	Yes
EA9-T15CL-R	***C-more*** EA9 series touch screen HMI, 15in color TFT LCD, 1024 x 768 pixel, XGA, LED backlight, supports (1) serial, (1) Ethernet port and (2) USB ports and (2) memory card slots.	82 MB	2 slots	Yes	Yes	No
EA9-T15CL	***C-more*** EA9 series touch screen HMI, 15in color TFT LCD, 1024 x 768 pixel, XGA, LED backlight, supports (3) serial, (1) Ethernet and (2) USB ports, (2) memory card slots, (1) HDMI video out and (1) audio line out.	82 MB	2 slots	Yes	Yes	Yes

Model Specifications

The following specification tables are separated into these groups:

- Specifications common to all models
- 6” & 7” Reduced and Full Feature Models, EA9-T6CL-R, EA9-T6CL, EA9-T7CL-R and EA9-T7CL
- 8” & 10” Full Feature Models, EA9-T8CL, EA9-T10CL and EA9-T10WCL
- 12” & 15” Reduced and Full Feature Models, EA9-T12CL, EA9-T15CL-R and EA9-T15CL

Specification tables begin on the next page.

Specifications common to all models

Model / Specification	All Models
Operating Temperature	0 to 50 °C (32 to 122 °F); Maximum surrounding air temperature rating: 50 °C (122 °F) IEC 60068-2-14 (Test Nb, Thermal Shock)
Altitude	Up to 2000m (6562 ft)
Storage Temperature	–20 to +60 °C (–4 to +140 °F) IEC 60068-2-1 (Test Ab, Cold) IEC 60068-2-2 (Test Bb, Dry Heat) IEC 60068-2-14 (Test Na, Thermal Shock)
Humidity	5–95% RH (non-condensing)
Environment	For use in Pollution Degree 2 environment, no corrosive gases permitted
Noise Immunity	(EN61131-2) EN61000-4-2 (ESD), EN61000-4-3 (RFI) EN61000-4-4 (FTB) EN61000-4-5 (Serge) EN61000-4-6 (Conducted) EN61000-4-8 (Power frequency magnetic field immunity) (Local Test) RFI, (145MHz, 440Mhz 10W @ 10cm) Impulse 1000V @ 1µs pulse
Withstand Voltage	1000 VAC, 1 min. (FG to Power supply)
Insulation Resistance	> 10M ohm @ 500V DC (FG to Power supply)
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Emission	EN55011 Class A (Radiated RF emission)
Enclosure	NEMA 250 type 4/4X indoor use only UL50 type 4X indoor use only IP-65 indoor use only (When mounted correctly)
Backlight Average Lifetime*	50,000 hours @ 25 °C
Touch Panel Type**	Four-wire analog resistive
Supply Power	10.2-26.4VDC Class2 or SELV (Safety Extra-Low Voltage) Circuit or Limited Energy Circuit (LEC) or use the AC/DC Power Adapter, EA-AC, to power the touch panel from a 100-240 VAC, 50/60 Hz power source. Reverse Polarity Protected



** **NOTE:** The backlight average lifetime is defined as the average usage time it takes before the brightness becomes 50% of the initial brightness. The lifetime of the backlight depends on the ambient temperature. The lifetime will decrease under low or high temperature usage.*



*** **NOTE:** The Touchscreen is designed to respond to a single touch. If it is touched at multiple points at the same time, an unexpected object may be activated.*

6-inch Models

Specification \ Model	6" TFT color w/ base features	6" TFT color w/ full features
Part Number	EA9-T6CL-R	EA9-T6CL
Display Actual Size and Type	5.7" TFT color	
Display Viewing Area	4.54" x 3.40" [115.2 mm x 86.4 mm]	
Weight	1.56 lb (710g)	1.59 lb (720g)
Screen Pixel	320 x 240 (QVGA)	
Display Brightness	280 nits (typ)	
LCD Panel Dot Pitch	0.18 mm x 0.18 mm	
Color Scale	65,536	
Project Memory	26 MB	
Number of Screens	Up to 999 screens – limited by project memory	
Realtime Clock	Realtime Clock Built into panel, backed up for 30 days at 25°C after power has been applied for 24 hours	
Calendar - Month / Day / Year	Yes - monthly deviation 60 sec at 25°C	
Serial Port 1	15-pin D-sub female - RS2342C, RS-422/485	
Serial Port 2	N/A	3-wire terminal block - RS-485
Serial Port 3	N/A	RJ-12 modular jack - RS-232C
USB Port - Type B	USB 2.0 High speed (480 Mbps) Type B - Download/Program Max cable length - 15 ft.	
USB Port - Type A	USB 2.0 High speed (480 Mbps) Type A - for USB device options Max cable length - 15ft Bus Power – Less than 200mA at 5VDC	
Ethernet Port	N/A	Ethernet Port Ethernet 10/100 Base-T, auto MDI/MDI-X
Audio Line Out	N/A	3.5 mm mini jack: 3-pin – requires amplifier and speaker(s), Full Scale Output: 1.0 Vrms
Mic In (future)	N/A	3.5 mm mini jack: 2pin, Input: 100 mVrms, Impedance: <10kOhms
SD Card Slot	1 slot. Supports max 2 GB (SD,) max 32 GB (SDHC)	
HDMI Video Out	N/A	
Power Consumption	16.0W 1.30A @ 12 VDC 0.66A @ 24 VDC	
Internal Fuse (non-replaceable)	4A	
Agency Approvals	UL61010 (E157382), CE (EN61131-2), CUL Canadian C22.2, RoHS (2011/65/EU)	

7-inch Models

Specification \ Model	7" TFT color w/ base features	7" TFT color w/ full features
Part Number	EA9-T7CL-R	EA9-T7CL
Display Actual Size and Type	7.0" TFT color	
Display Viewing Area	6.0" x 3.60" [152.4 mm x 91.4 mm]	
Weight	1.46 lb (660g)	1.48 lb (670g)
Screen Pixel	800 x 480 (WVGA)	
Display Brightness	350 nits (typ)	
LCD Panel Dot Pitch	0.19 mm x 0.19 mm	
Color Scale	65,536	
Project Memory	26 MB	
Number of Screens	Up to 999 screens – limited by project memory	
Realtime Clock	Realtime Clock Built into panel, backed up for 30 days at 25°C after power has been applied for 24 hours	
Calendar - Month / Day / Year	Yes - monthly deviation 60 sec at 25°C	
Serial Port 1	15-pin D-sub female - RS2342C, RS-422/485	
Serial Port 2	N/A	3-wire terminal block - RS-485
Serial Port 3	N/A	RJ-12 modular jack - RS-232C
USB Port - Type B	USB 2.0 High speed (480 Mbps) Type B - Download/Program Max cable length - 15 ft.	
USB Port - Type A	USB 2.0 High speed (480 Mbps) Type A - for USB device options Max cable length - 15ft Bus Power – Less than 200mA at 5VDC	
Ethernet Port	Ethernet Port Ethernet 10/100 Base-T, auto MDI/MDI-X	
Audio Line Out	N/A	3.5 mm mini jack: 3-pin – requires amplifier and speaker(s), Full Scale Output: 1.0 Vrms
Mic In (future)	N/A	3.5 mm mini jack: 2pin, Input: 100 mVrms, Impedance: <10kOhms
SD Card Slot	1 slot. Supports max 2 GB (SD,) max 32 GB (SDHC)	
HDMI Video Out	N/A	
Power Consumption	16.0W 1.30A @ 12 VDC 0.66A @ 24 VDC	
Internal Fuse (non-replaceable)	4A	
Agency Approvals	UL61010 (E157382), CE (EN61131-2), CUL Canadian C22.2, RoHS (2011/65/EU)	

8-inch and 10-inch Models

Specification \ Model	8" TFT color w/ full features	10" TFT color w/ full features	10" TFT color widescreen w/ full features
Part Number	EA9-T8CL	EA9-T10CL	EA9-T10WCL
Display Actual Size and Type	8.4" TFT color	10.4" TFT color	10.1" TFT color wide
Display Viewing Area	6.71" x 5.03" [170.4 mm x127.8mm]	8.31" x 6.24" [211.2 mm x 158.4 mm]	8.769" x 4.932" [222.72 mm x 125.28 mm]
Weight	2.93 lb (1330g)	4.19 lb (1900g)	2.43 lb (1100g)
Screen Pixel	800 x 600 (SVGA)		1024 x 600 (WSVGA)
Display Brightness	310 nits (typ)	280 nits (typ)	240 nits (typ)
LCD Panel Dot Pitch	0.213 mm x 0.213 mm	0.264 mm x 0.264 mm	0.218 mm x 0.209 mm
Color Scale	65,536 colors		
Project Memory	26 MB		
Number of Screens	Up to 999 screens – limited by project memory		
Realtime Clock	Realtime Clock Built into panel, backed up for 30 days at 25°C		
Calendar - Month / Day / Year	Yes - monthly deviation 60 sec (Reference)		
Serial Port 1	15-pin D-sub female - RS2342C, RS-422/485		
Serial Port 2	3-wire terminal block - RS-485		
Serial Port 3	RJ-12 modular jack - RS-232C		
USB Port - Type B	USB 2.0 High speed (480 Mbps) Type B - Download/Program Max cable length - 15 ft.		
USB Port - Type A	USB 2.0 High speed (480 Mbps) Type A - for USB device options Max cable length - 15ft Bus Power – Less than 200mA at 5VDC		
Ethernet Port	Ethernet Port Ethernet 10/100 Base-T, auto MDI/MDI-X		
Audio Line Out	3.5 mm mini jack – requires amplifier and speaker(s)		
Mic In (future)	3.5 mm mini jack		
SD Card Slot	1 slot. Supports max 2 GB (SD,) max 32 GB (SDHC)		
HDMI Video Out	N/A		
Power Consumption	18.0W 1.50A @ 12 VDC 0.75A @ 24 VDC		17.0W 1.42A @ 12 VDC 0.71A @ 24 VDC
Internal Fuse (non-replaceable)	6.3A		
Agency Approvals	UL508 (E157382), CE (EN61131-2), CUL Canadian C22.2, RoHS (2011/65/EU)		

12-inch and 15-inch Models

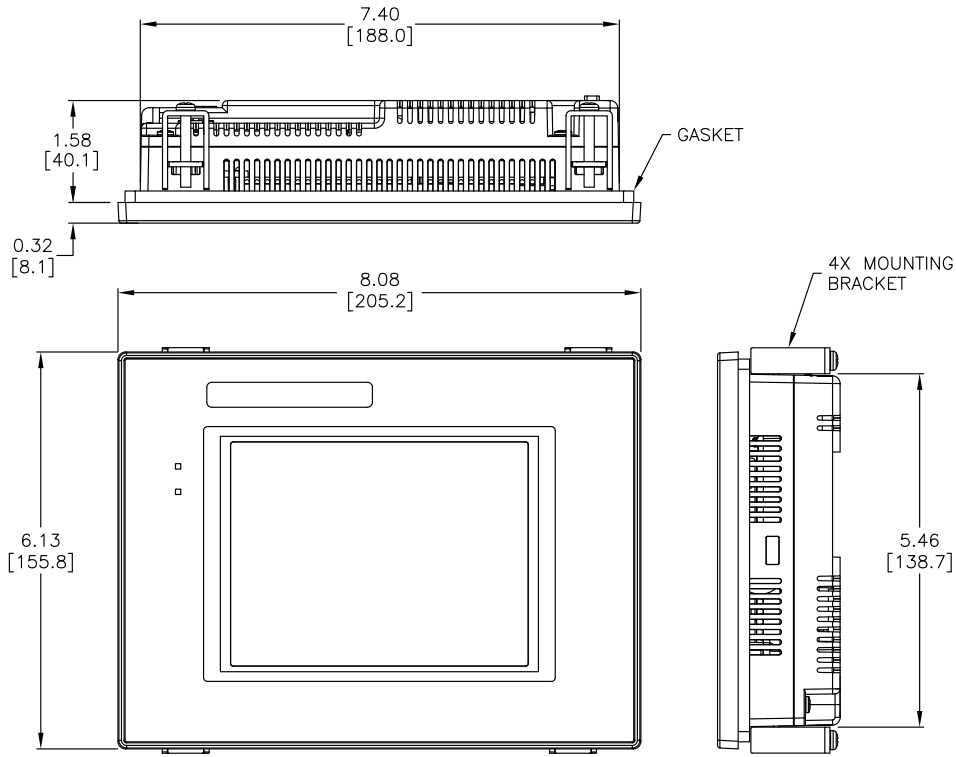
Specification \ Model	12" TFT color w/ full features	15" TFT color w/ base features	15" TFT color w/ full features
Part Number	EA9-T12CL	EA9-T15CL-R	EA9-T15CL
Display Actual Size and Type	12.1" TFT color	15.0" TFT color	
Display Viewing Area	9.69" x 7.26" [246.0 mm x 184.5 mm]	11.97" x 8.98" [304.1 mm x 228.0 mm]	
Weight	4.85 lb (2200g)	6.46 lb (2930g)	6.50 lb (2950g)
Screen Pixel	800 x 600 (SVGA)	1024 x 768 (XGA)	
Display Brightness	280 nits (typ)		
LCD Panel Dot Pitch	0.3075 mm x 0.3075 mm	0.297 mm x 0.297 mm	
Color Scale	65,536 colors		
Project Memory	82 MB		
Number of Screens	Up to 999 screens – limited by project memory		
Realtime Clock	Realtime Clock Built into panel, backed up for 30 days at 25°C		
Calendar - Month / Day / Year	Yes - monthly deviation 60 sec (Reference)		
Serial PLC Interface Port 1	15-pin D-sub female - RS2342C, RS-422/485		
Serial PLC Interface Port 2	3-wire terminal block - RS-485	N/A	3-wire terminal block - RS-485
Serial PLC Interface Port 3	RJ-12 modular jack - RS-232C	N/A	RJ-12 modular jack - RS-232C
USB Port - Type B	USB 2.0 High speed (480 Mbps) Type B - Download/Program Max cable length - 15 ft.		
USB Port - Type A	USB 2.0 High speed (480 Mbps) Type A - for USB device options Max cable length - 15ft Bus Power – Less than 200mA at 5VDC		
Ethernet Port	Ethernet Port Ethernet 10/100 Base-T, auto MDI/MDI-X		
Audio Line Out	3.5 mm mini jack – requires amplifier and speaker(s)	N/A	3.5 mm mini jack – requires amplifier and speaker(s)
Mic In (future)	3.5 mm mini jack	N/A	3.5 mm mini jack
SD Card Slot	2 slots. Supports max 2 GB (SD), max 32 GB (SDHC)		
HDMI Video Out	HDMI Type A Port	N/A	HDMI Type A Port
HDMI Supported Resolution	800 x 600 (SVGA)	N/A	1024 x 768 (XGA)
Power Consumption	21.0W 1.75A @ 12 VDC 0.88A @ 24 VDC	29.0W 2.40A @ 12 VDC 1.20A @ 24 VDC	
Internal Fuse (non-replaceable)	6.3A		
Agency Approvals	UL508 (E157382), CE (EN61131-2), CUL Canadian C22.2, RoHS (2011/65/EU)		

EA9-T6CL-R, EA9-T6CL

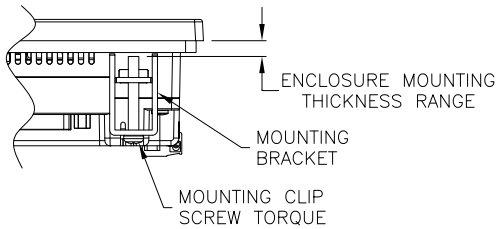
Dimensions, Inches [mm]

All the necessary mounting hardware is provided with the touch panel. Use the four mounting clips and screws to secure the touch panel to the cabinet or enclosure surface.

A template for marking the cutout dimensions on the mounting surface is provided in the box.



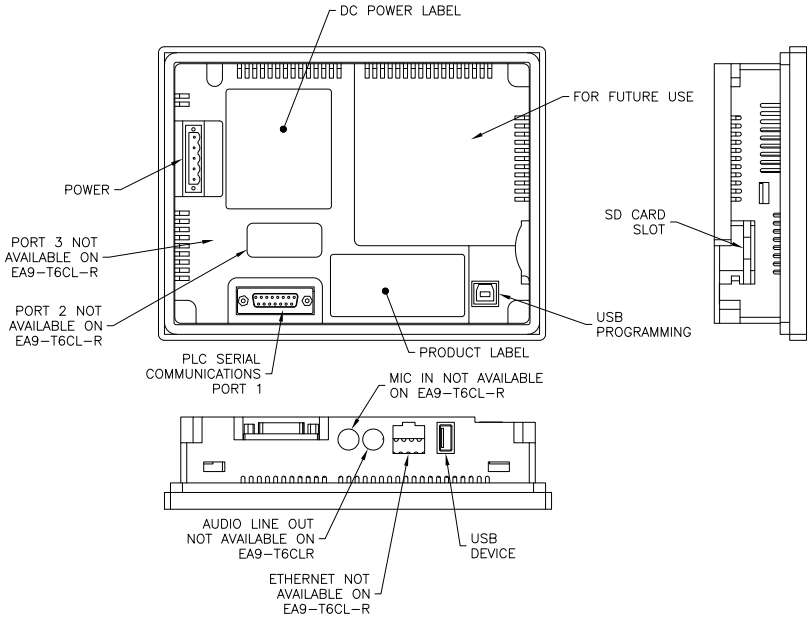
Enclosure Mounting Thickness Ranges and Mounting Clip Screw Torque



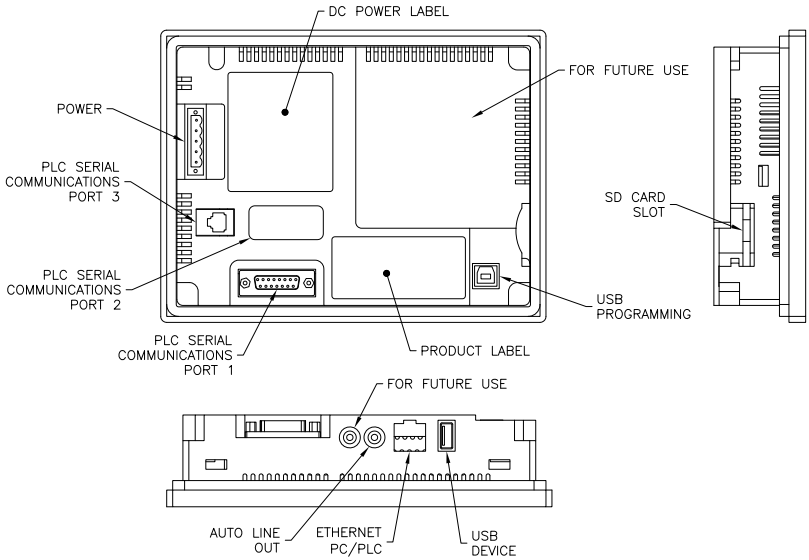
Touch Panel Size	Enclosure Thickness Range	Mounting Clip Screw Torque	Material
6", 7", 8", 10" & 12"	0.039 - 0.20 inch [1 – 5 mm]	63 - 77 oz-in [0.45 - 0.55 Nm]	Metal
10" Wide, 15"	0.039 - 0.20 inch [1 – 5 mm]	92 - 106 oz-in [0.65 - 0.75 Nm]	Metal

Ports and Memory Expansion

EA9-T6CL-R



EA9-T6CL

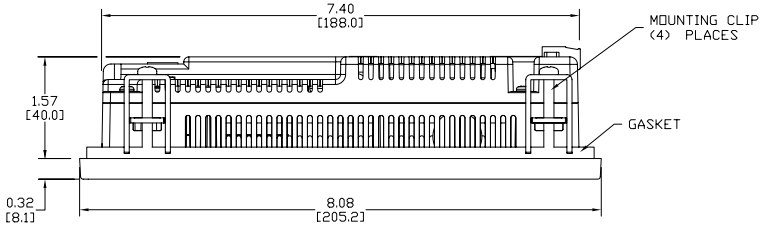


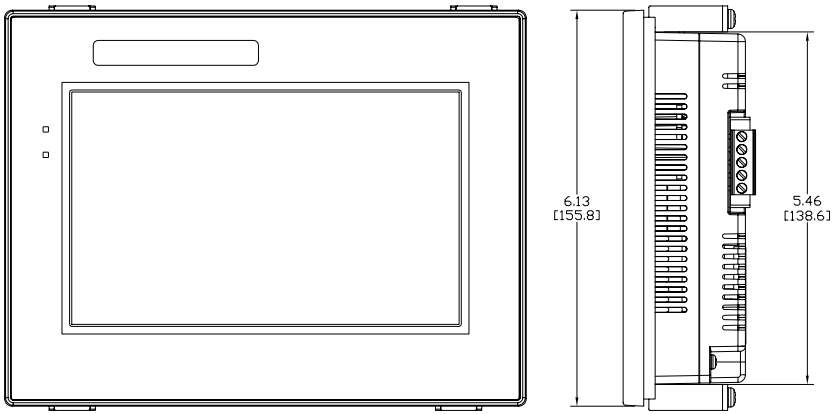
EA9-T7CL-R, EA9-T7CL

Dimensions, Inches [mm]

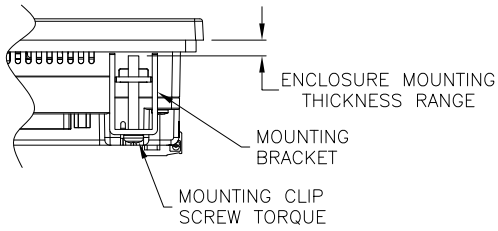
All the necessary mounting hardware is provided with the touch panel. Use the four mounting clips and screws to secure the touch panel to the cabinet or enclosure surface.

A template for marking the cutout dimensions on the mounting surface is provided in the box.





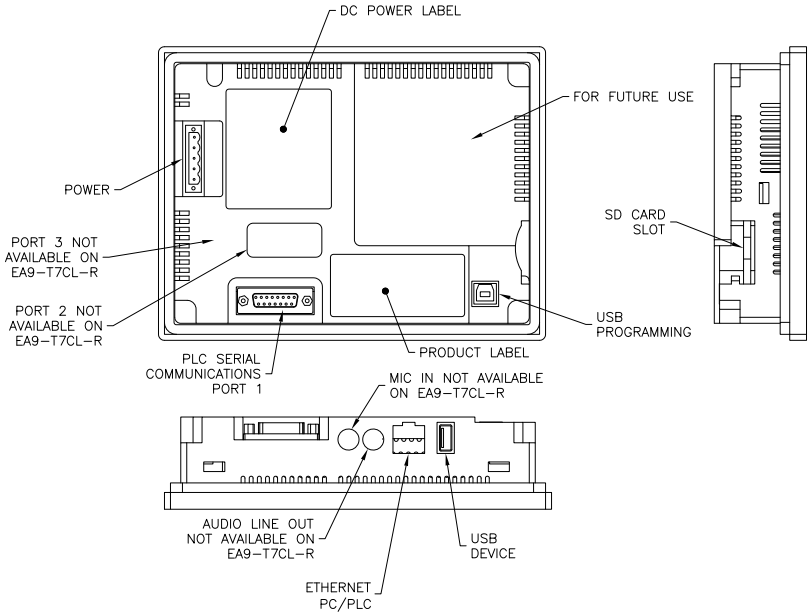
Enclosure Mounting Thickness Ranges and Mounting Clip Screw Torque



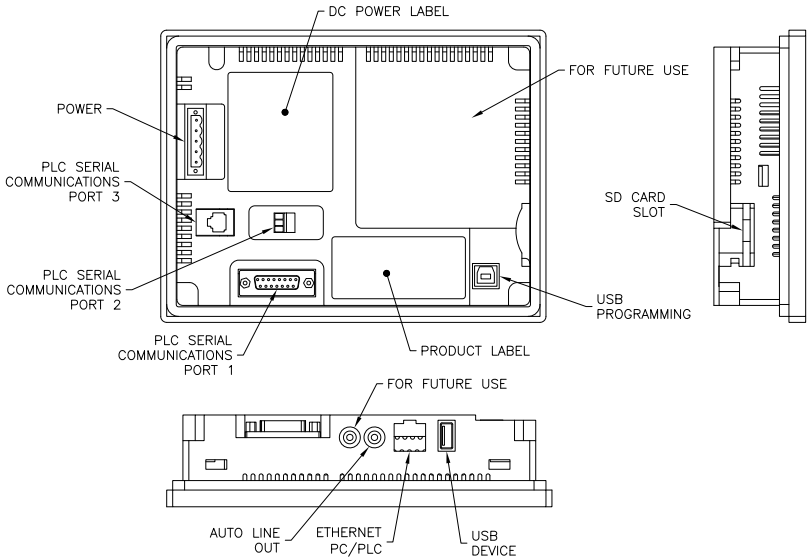
Touch Panel Size	Enclosure Thickness Range	Mounting Clip Screw Torque	Material
6", 7", 8", 10" & 12"	0.039 - 0.20 inch [1 – 5 mm]	63 - 77 oz-in [0.45 - 0.55 Nm]	Metal
10" Wide, 15"	0.039 - 0.20 inch [1 – 5 mm]	92 - 106 oz-in [0.65 - 0.75 Nm]	Metal

Ports and Memory Expansion

EA9-T7CL-R



EA9-T7CL

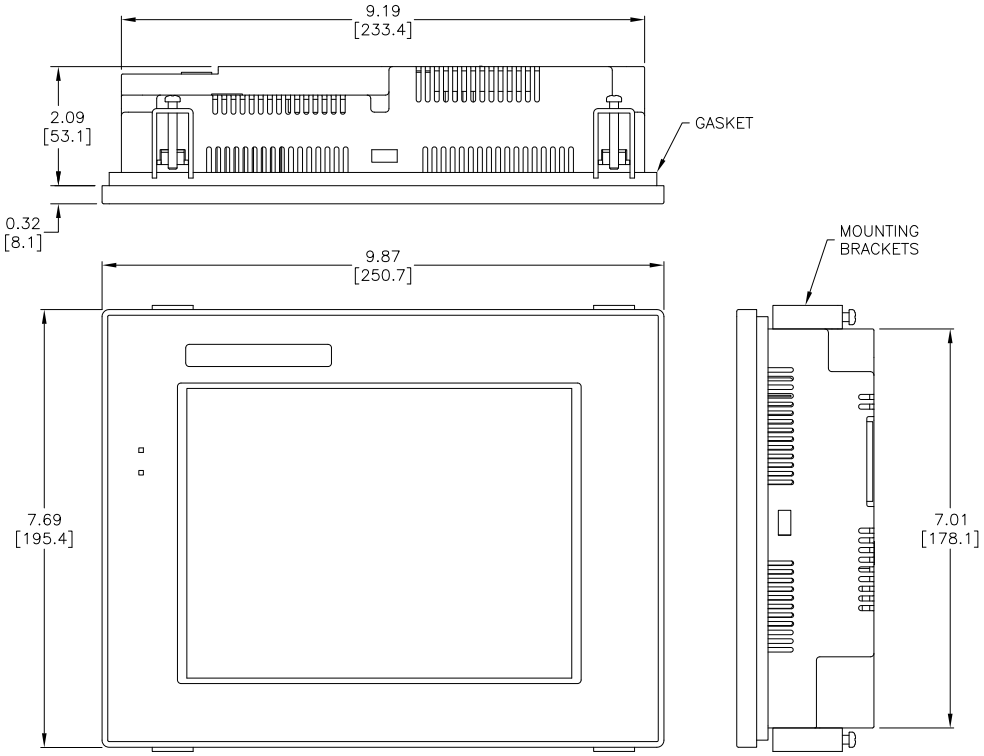


EA9-T8CL

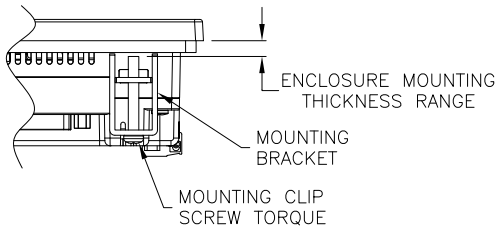
Dimensions, Inches [mm]

All the necessary mounting hardware is provided with the touch panel. Use the four mounting clips and screws to secure the touch panel to the cabinet or enclosure surface.

A template for marking the cutout dimensions on the mounting surface is provided in the box.



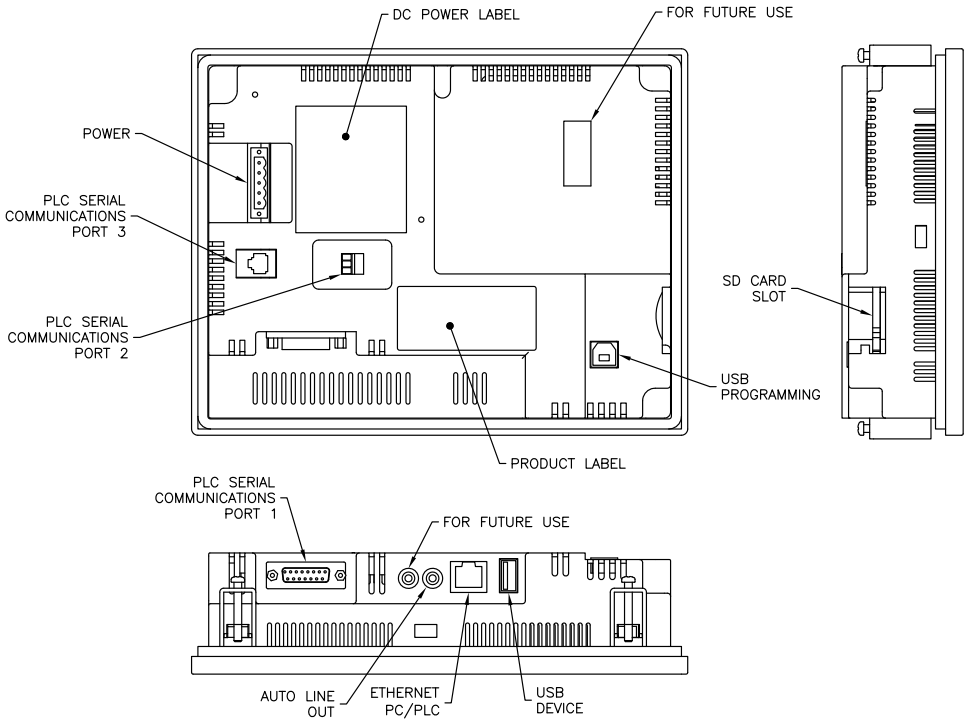
Enclosure Mounting Thickness Ranges and Mounting Clip Screw Torque



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

Ports and Memory Expansion

EA9-T8CL

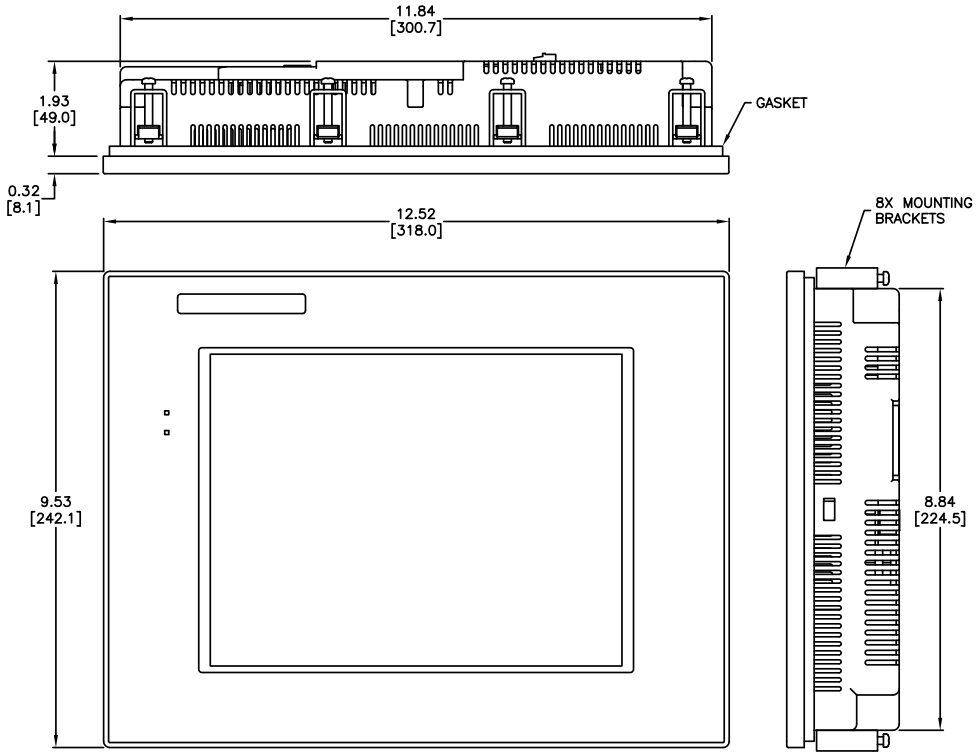


EA9-T10CL

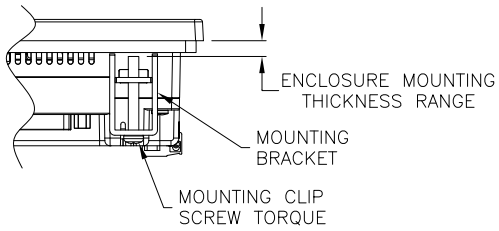
Dimensions, Inches [mm]

All the necessary mounting hardware is provided with the touch panel. Use the eight mounting clips and screws to secure the touch panel to the cabinet or enclosure surface.

A template for marking the cutout dimensions on the mounting surface is provided in the box.



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

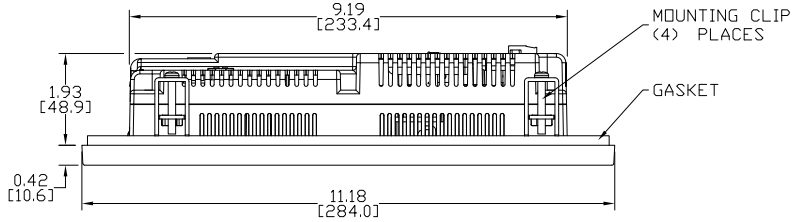
EA9-T10WCL

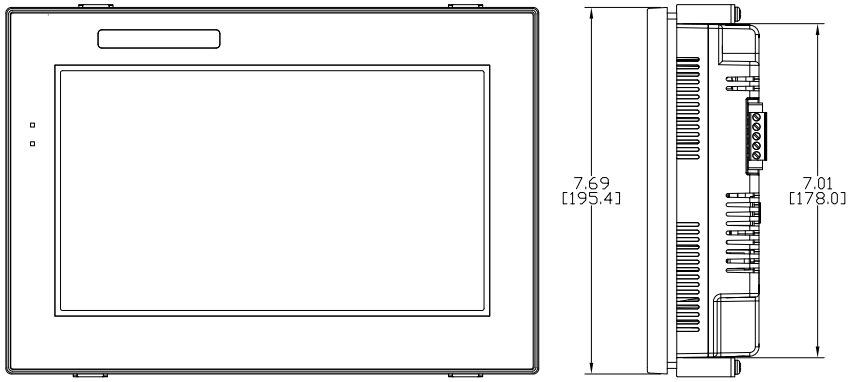
Dimensions, Inches [mm]

2

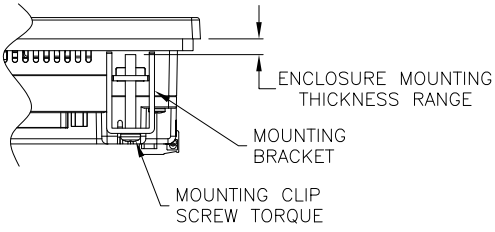
All the necessary mounting hardware is provided with the touch panel. Use the eight mounting clips and screws to secure the touch panel to the cabinet or enclosure surface.

A template for marking the cutout dimensions on the mounting surface is provided in the box.





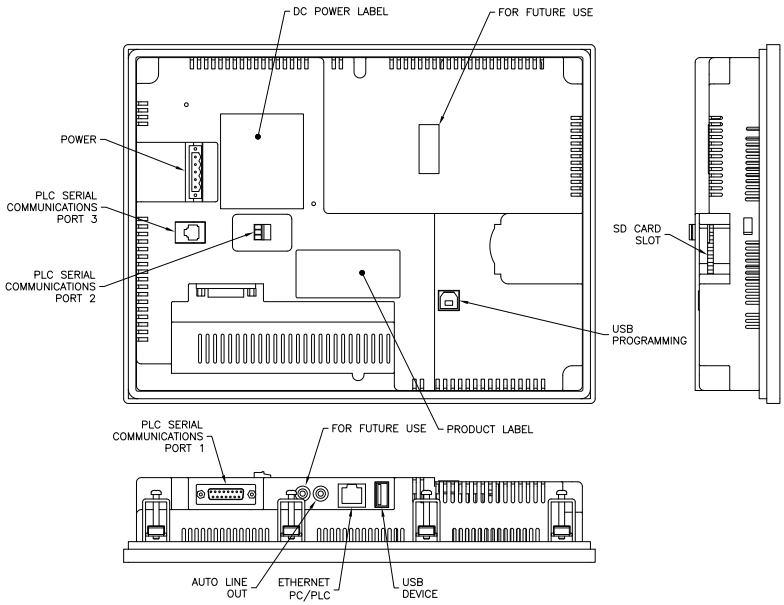
Enclosure Mounting Thickness Ranges and Mounting Clip Screw Torque



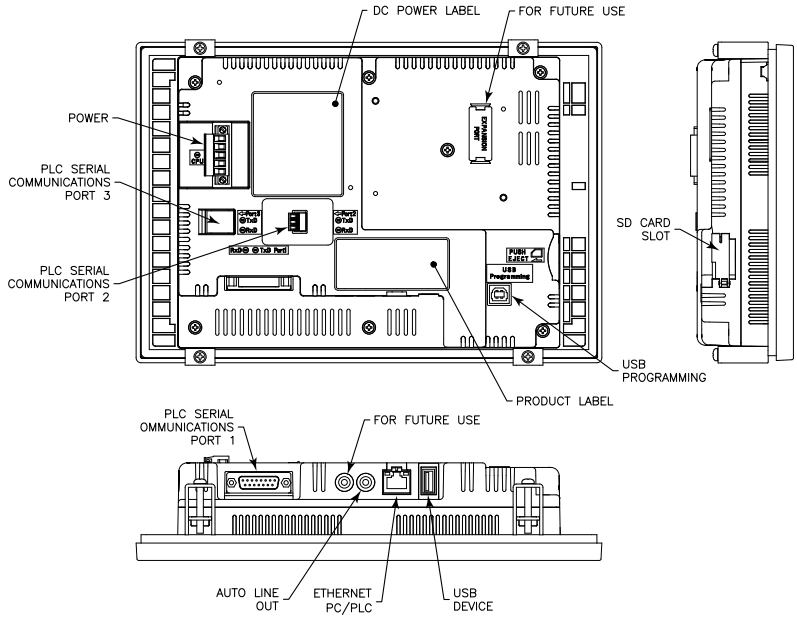
Touch Panel Size	Enclosure Thickness Range	Mounting Clip Screw Torque	Material
6", 7", 8", 10" & 12"	0.039 - 0.20 inch [1 – 5 mm]	63 - 77 oz-in [0.45 - 0.55 Nm]	Metal
10" Wide, 15"	0.039 - 0.20 inch [1 – 5 mm]	92 - 106 oz-in [0.65 - 0.75 Nm]	Metal

Ports and Memory Expansion

EA9-T10CL



EA9-T10WCL



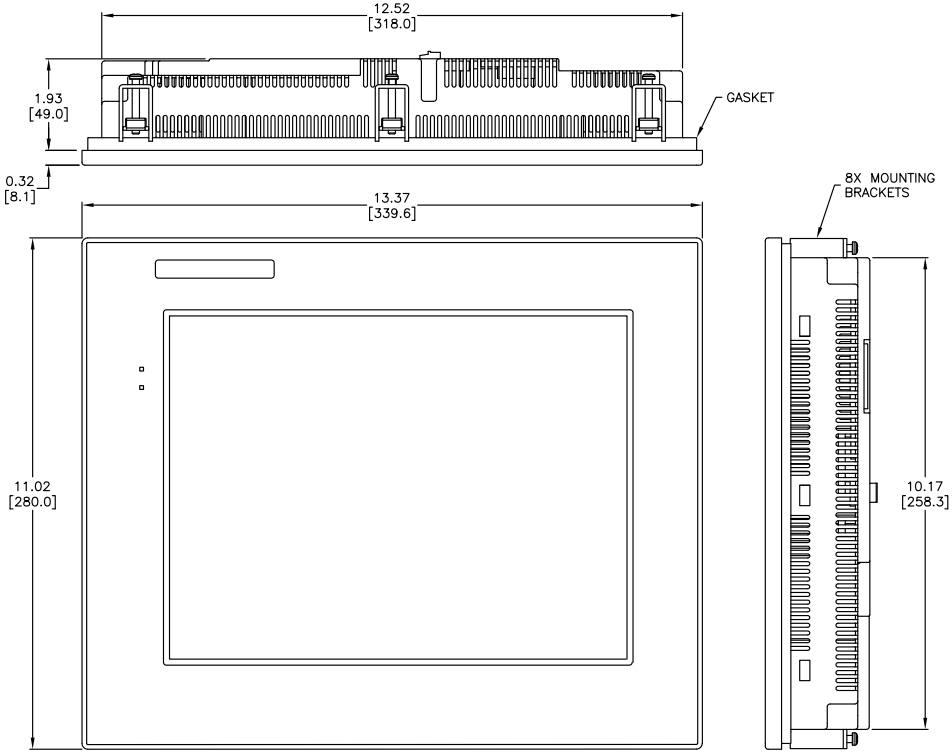
EA9-T12CL

Dimensions, Inches [mm]

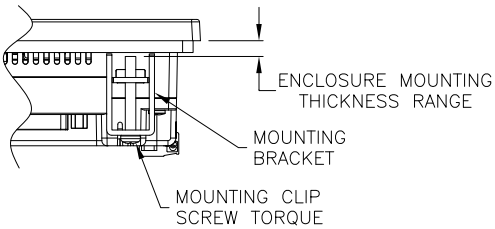
2

All the necessary mounting hardware is provided with the touch panel. Use the eight mounting clips and screws to secure the touch panel to the cabinet or enclosure surface.

A template for marking the cutout dimensions on the mounting surface is provided in the box.



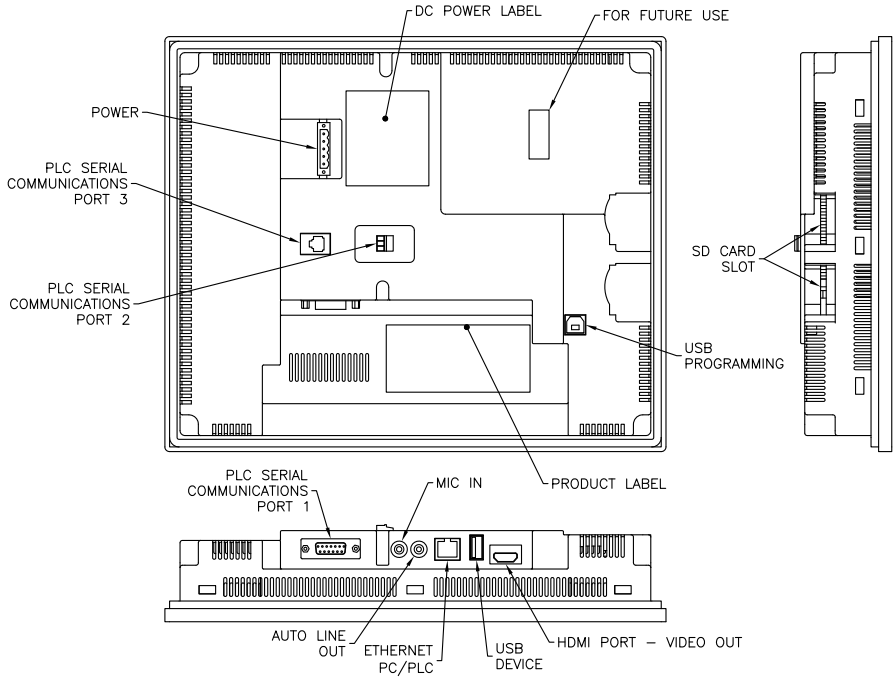
Enclosure Mounting Thickness Ranges and Mounting Clip Screw Torque



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

Ports and Memory Expansion

EA9-T12CL



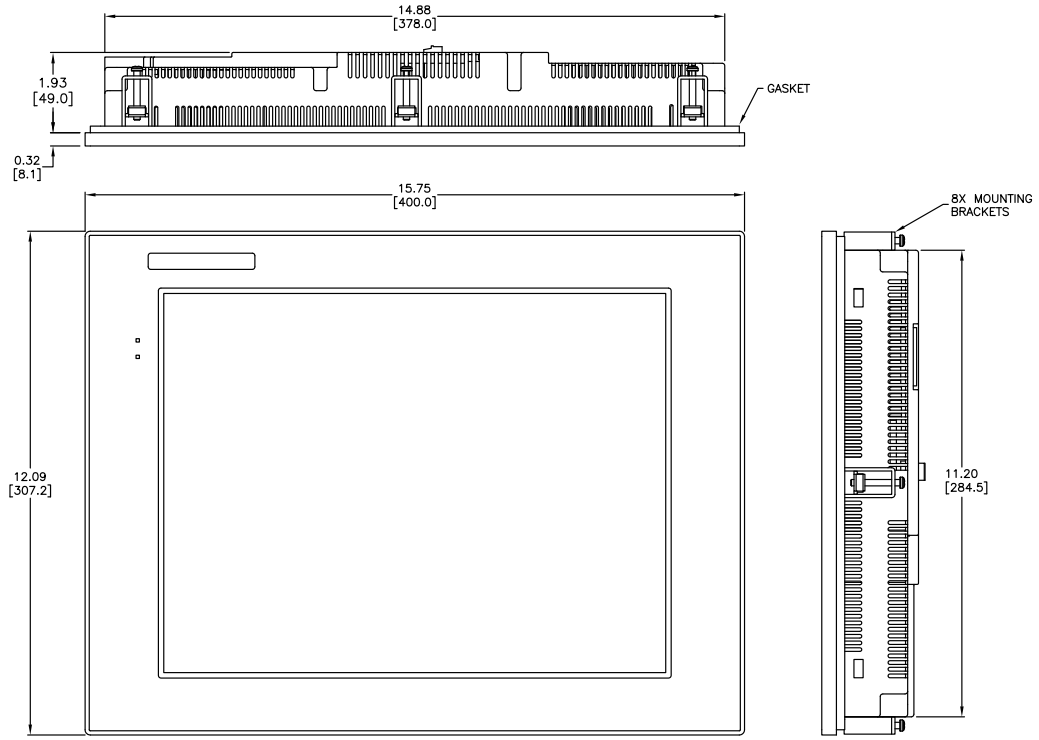
EA9-T15CL-R, EA9-T15CL

Dimensions, Inches [mm]

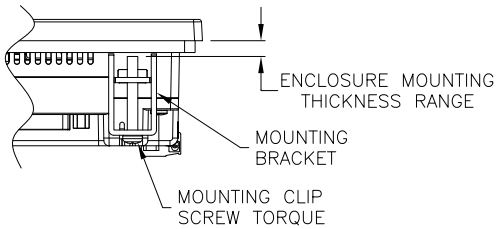
2

All the necessary mounting hardware is provided with the touch panel. Use the eight mounting clips and screws to secure the touch panel to the cabinet or enclosure surface.

A template is provided for marking the cutout dimensions on the mounting surface.



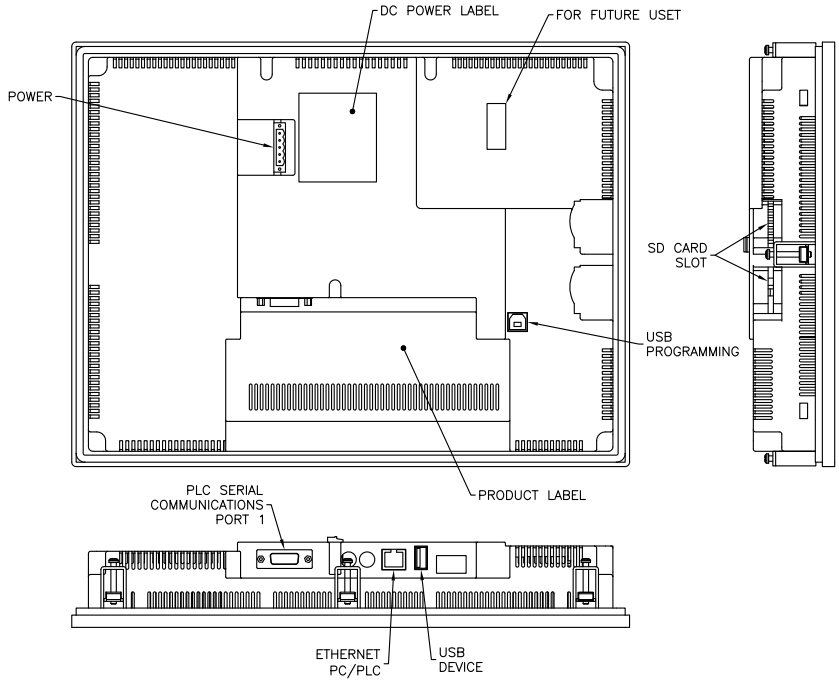
Enclosure Mounting Thickness Ranges and Mounting Clip Screw Torque



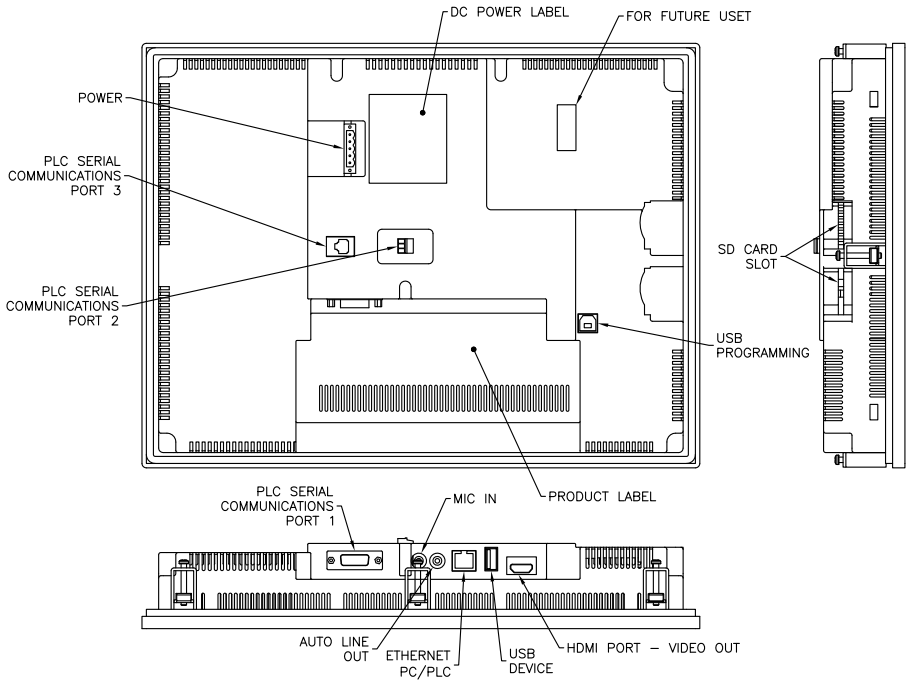
Touch Panel Size	Enclosure Thickness Range	Mounting Clip Screw Torque	Material
6", 7", 8", 10" & 12"	0.039 - 0.20 inch [1 – 5 mm]	63 - 77 oz-in [0.45 - 0.55 Nm]	Metal
10" Wide, 15"	0.039 - 0.20 inch [1 – 5 mm]	92 - 106 oz-in [0.65 - 0.75 Nm]	Metal

Ports and Memory Expansion

EA9-T15CL-R

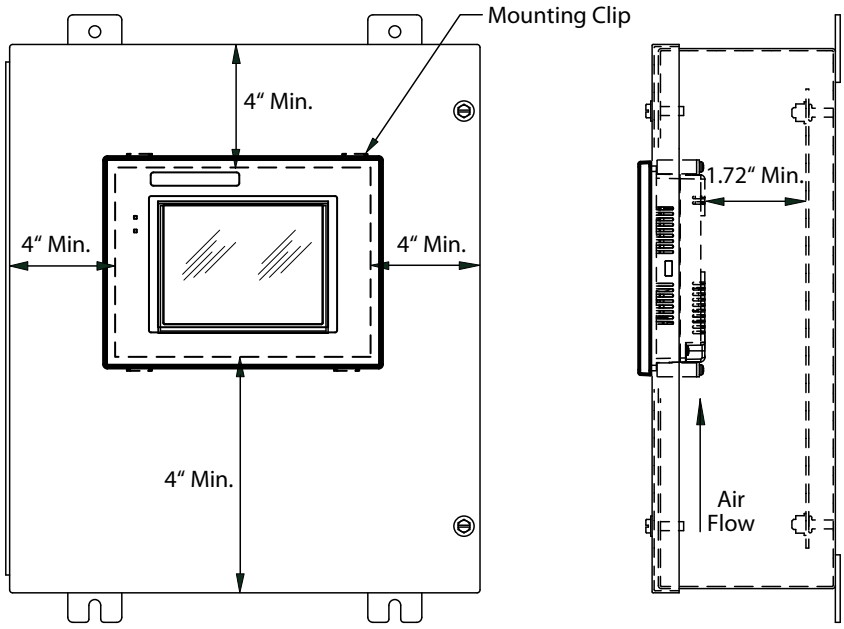


EA9-T15CL


DC POWER LABEL
FOR FUTURE USET
POWER
PLC SERIAL COMMUNICATIONS PORT 3
PLC SERIAL COMMUNICATIONS PORT 2
SD CARD SLOT
USB PROGRAMMING
PRODUCT LABEL
PLC SERIAL COMMUNICATIONS PORT 1
MIC IN
AUTO LINE OUT
ETHERNET PC/PLC
USB DEVICE
HDMI PORT – VIDEO OUT

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.



Front View

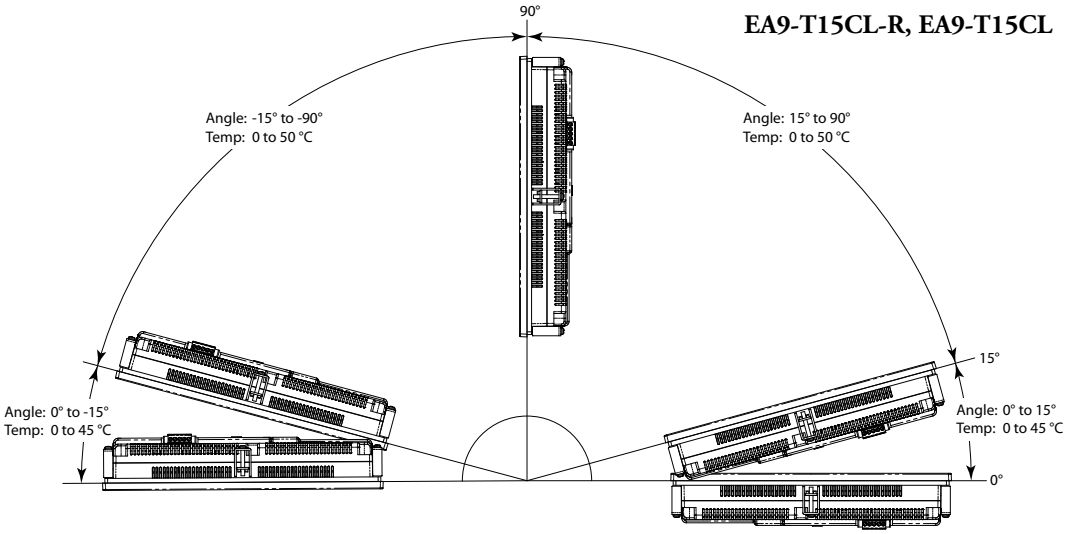
Side View

2

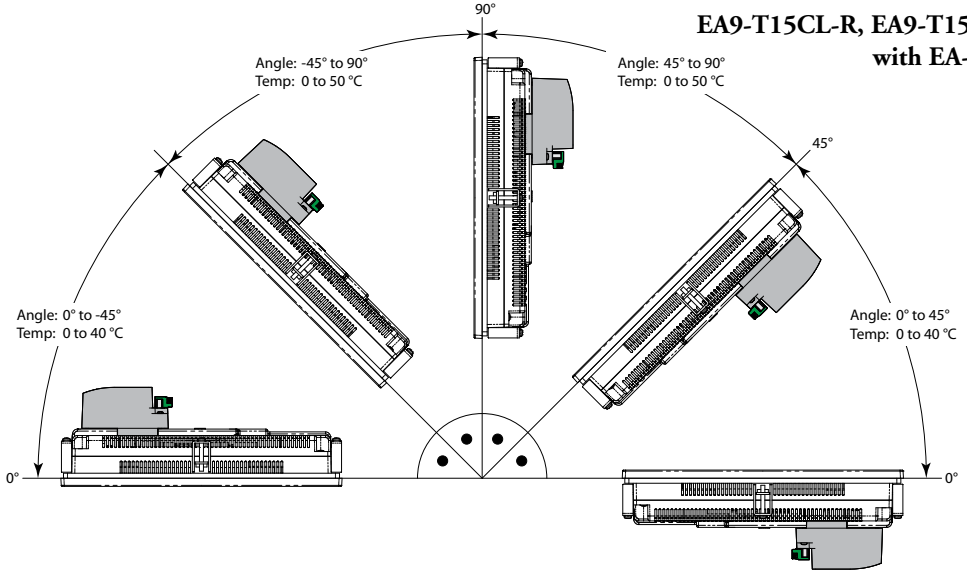
EA9-T15CL-R, EA9-T15CL Derating

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.

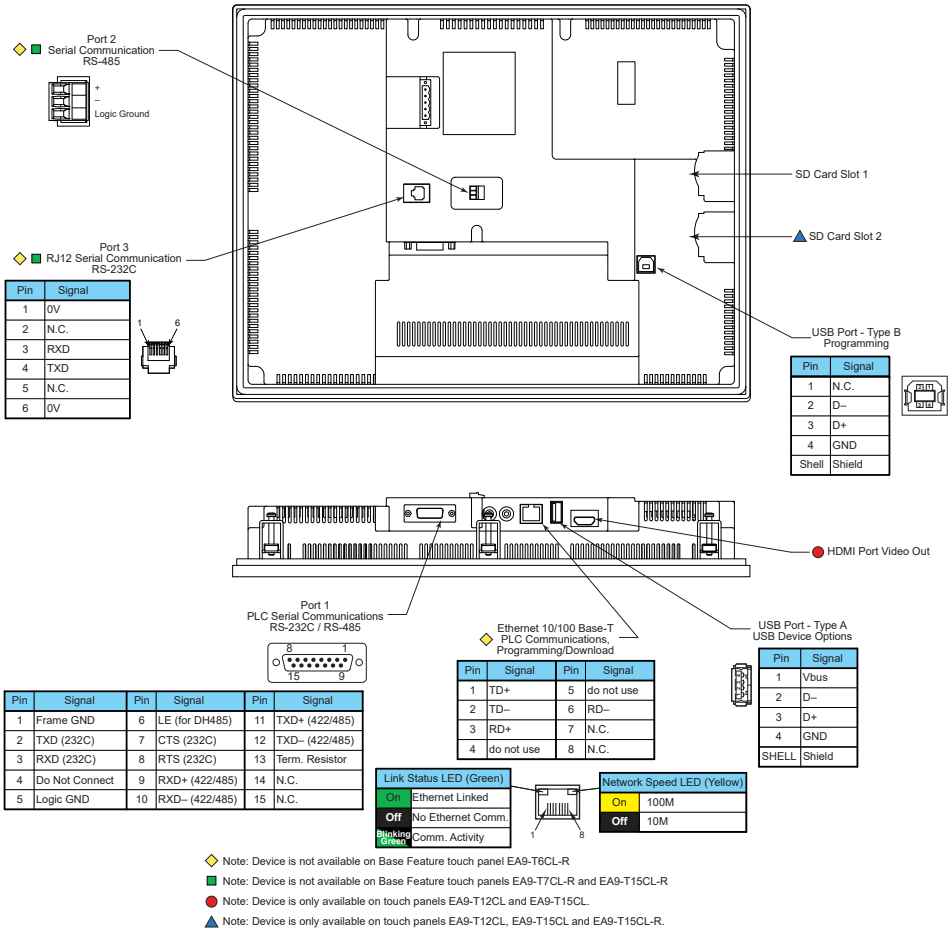
EA9-T15CL-R, EA9-T15CL



EA9-T15CL-R, EA9-T15CL with EA-AC



Communications Ports



Pin	Signal
1	0V
2	N.C.
3	RXD
4	TXD
5	N.C.
6	0V

Pin	Signal
1	N.C.
2	D–
3	D+
4	GND
Shell	Shield

Pin	Signal	Pin	Signal	Pin	Signal
1	Frame GND	6	LE (for DH485)	11	TXD+ (422/485)
2	TXD (232C)	7	CTS (232C)	12	TXD– (422/485)
3	RXD (232C)	8	RTS (232C)	13	Term. Resistor
4	Do Not Connect	9	RXD+ (422/485)	14	N.C.
5	Logic GND	10	RXD– (422/485)	15	N.C.

Pin	Signal	Pin	Signal
1	TD+	5	do not use
2	TD–	6	RD–
3	RD+	7	N.C.
4	do not use	8	N.C.

Pin	Signal
1	Vbus
2	D–
3	D+
4	GND
SHELL	Shield

Note: Device is not available on Base Feature touch panel EA9-T6CL-R

Note: Device is not available on Base Feature touch panels EA9-T7CL-R and EA9-T15CL-R

Note: Device is only available on touch panels EA9-T12CL and EA9-T15CL.

Note: Device is only available on touch panels EA9-T12CL, EA9-T15CL and EA9-T15CL-R.

Ethernet Port

The Ethernet port can be used several ways: for programming the panel (downloading a project), for PLC communication, and for the advanced features, such as sending e-mail, web server, FTP access, and allowing users to access and control the panel remotely.

The Ethernet connector is an RJ-45 Module jack.

NOTE: *EA9-T6CL-R does not include an Ethernet port and does not have these capabilities.*

Refer to http://c-more.automationdirect.com for the latest driver information.

Communications Ports (cont'd)

USB Type B Port

Program ***C-more*** via the USB programming port. It's fast and easy, with no baud rate settings, parity, or stop bits to worry about. We stock standard USB cables for your convenience, such as part no. USB-CBL-AB15. The USB type B port can be used to upload or download projects to and from a PC (personnel computer).

USB Type A Port

The USB type A port is a standard feature for all models and can be used to connect various USB 2.0 HID (Human Input Device) devices to the panel, such as:

- USB pen drives, (ADC p/n USB-FLASH)
- USB keyboards
- USB barcode scanners
- USB card scanners

C-more can log data to the USB pen drive as well as restore projects to the panel from the pen drive. You can also back up project files and panel firmware.



NOTE: *Output current is less than 200mA @ 5VDC.*

Sound Interface (Audio Line Out)

When attached to an amplifier and speaker(s), ***C-more*** can play warning sounds, or pre-recorded messages such as: "conveyor is jammed". Various "Objects" in the ***C-more*** programming software support sounds. ***C-more*** supports WAV type files. Sound files are stored in the sound library.

Audio WAV File Specifications

The ***C-more*** Audio Line Out port supports the following WAV file specifications:

Audio Format (codec): PCM

Audio Sample Rate: 44.1 kHz

Channels: 2 (stereo)

Audio Sample Size: 16-bit

Serial Communication Ports

Port 1

Connect to your serial controller network via Port 1. Port 1 is a 15-pin port that supports RS-232 and RS-422/485.

Port 2

Connect your RS-485 network via Port 2. Port 2 is provided with a 3-wire removable terminal block.

Port 3

Connect to your RS-232C device via Port 3. Port 3 is an RJ12 connection

NOTE: *EA9-T6CL-R, EA9-T7CL-R and EA9-T15CL-R do not include Serial Ports 2 and 3.*

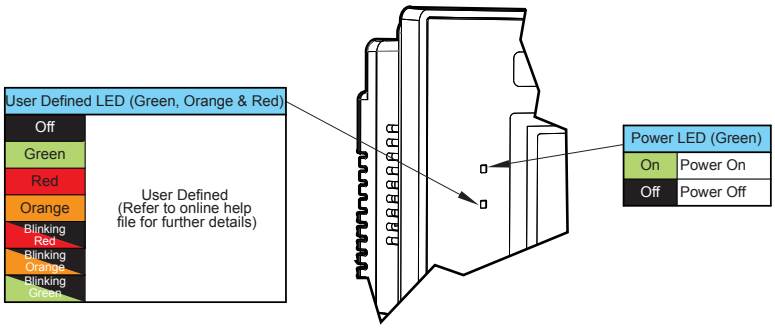
HDMI Port Video Out

EA9-T12CL and EA9-T15CL include an HDMI Type A port to provide video output to a projector or monitor.

Model	Supported Resolution
EA9-T12CL	SVGA 800 x 600 pixel
EA9-T15CL	XGA 1024 x 768 pixel
Output	Video Data - Same Screen as Panel
Sound Pass Through	Does not support Mic sound Pass Through

User Defined LED

The user defined LED on the panel front bezel can be controlled from the project to illuminate red, green or orange. It can also be configured to blink these colors. Refer to the online help file provided with the programming software for details.



Front View

Handling External Memory Devices

Writing to External Memory Devices

Different types of numeric and text data from the ***C-more*** touch panel can be stored on an SD card or a USB memory device. Numeric data from Line Trend Graph and PID Faceplate Trend Graph objects may be stored. Text data from Lookup Text and Multi-state Text objects can also be stored.

Up to 16 objects may be configured in the C-more programming software to log data. Along with the 16 object limit, available storage on the external memory device is subject to the memory capacity of the SD card or USB memory device. One log file is created in a 24 hour period for each object. Additionally logging data is initially stored in the buffer in the panel MRAM and data is written to the external memory device:

- when 2kB of data is cached,
- when 20 records have been stored,
- periodically, once every 1 minute,
- when one of the "SYS Copy LogTo %device%" or "SYS %device% Eject" tags is turned on.
- when there is an email or FTP action
- when the System Screen is called
- when the panel date is changed

Memory Device Formatting

Memory Devices should be formatted according to the following guidelines to insure best performance and integrity of logged data.

Item		Capacity	Supported Resolution	Supported
USB Memory Device		up to 2GB	FAT	Yes
		4GB to 32GB	FAT 32	Yes
		64GB or larger	exFAT	Yes
SD Card	Type			
	SD	up to 2GB	FAT	Yes
	SDHC	4GB to 32GB	FAT 32	Yes
	SDXC		exFAT	No

SD cards must be formatted using the SD formatter provided by the SD Association at www.sdcard.org using the standard allocation unit size for best performance.

Minimizing Data Errors

To minimize data errors when logging data to external memory, consider the following:

- Do not turn off power to the ***C-more*** touch panel while the external memory device is being accessed. The optional EA-AC power adapter is designed to protect external memory devices from damage during power failure.
- Do not remove any external memory device with the device is being accessed by the ***C-more*** panel.

The following internal tags should be used to monitor, access and safely remove external memory devices:

SYS SD1 WriteStatus
SYS SD2 WriteStatus
SYS USB WriteStatus
SYS Copy LogToSD1
SYS Copy LogToSD2
SYS Copy LogToUSB
SYS SD1 Eject
SYS SD2 Eject
SYS USB Eject
SYS SD1 ReadyToUse
SYS SD2 ReadyToUse
SYS USB ReadyToUse

- Be sure to backup the memory device at regular intervals.
- If you suspect the memory device is bad, you may want to use a PC to re-format the device, or use a known good memory device.
- The number of times the memory device can be written to is limited. Consequently, logging frequently will may shorten the service life of the memory device. Using slower sample rates will increase the life of the device.

Monitoring Available Memory

Each external memory device can be monitored and events can be configured to alert the user when available memory is approaching the maximum capacity of the external memory device. The following internal tags allow external memory devices data to be monitored:

SYS SD1 TotalMemory
SYS SD1 FreeMemory
SYS SD1 UsedMemory
SYS SD2 TotalMemory
SYS SD2 FreeMemory
SYS SD2 UsedMemory
SYS USB TotalMemory
SYS USB FreeMemory
SYS USB UsedMemory

Refer to the ***C-more*** programming software online help files for additional information on system tags and managing data logging devices.

File Name Limitations

There is a limit of 999 file names with the same first four characters. Internal file names are restricted by the DOS 8-character-dot-3-character limit. Therefore trend log files are identified internally by the first four characters of the object name plus tilde plus a three digit number.

Examples are:

TREND GRAPH EAST CHILLER TEMP_130925.txt is saved internally as TREN~001.txt
TREND GRAPH WEST CHILLER TEMP_130925.txt is saved internally as TREN~002.txt

As new log files are created in each 24 hour period, these files count against the maximum of 999 files. If multiple graph objects appear on one screen, the files will be identified internally by the first Two Characters of the screen name plus the first Two Characters of the object name plus tilde plus three digit number.

To maximize storage capabilities on external memory devices use screen names that have unique characters in the first four digits and object names that are unique in the first two characters.



NOTE: *When the 999 filename limit is reached, the oldest files will automatically be deleted and logging will continue.*

Power Loss Retention

When a power loss is detected, the panel will attempt to complete all data logging operations safely.

The power retention while using a DC power is not long enough to complete writes to an SD Card or USB device. An Uninterruptable Power Supply (UPS) should be considered.

Power Loss Detection (at 25°C)	
Power Supply	Detect Loss
DC (Panel only)	8.9 VDC
EA-AC	67VAC (6 - 10 inch) 70VAC (12 - 15 inch)

Chemical Compatibility

The ***C-more*** touch panels comprise three different materials that may be exposed to outside elements: a gasket, a screen sheet and a bezel.

- Gasket material is silicone.
- Screen sheets are PET.
- Panel bezels are ABS plastic.

CHAPTER 3

ACCESSORIES

In This Chapter...

Accessories Overview **3-2**

AC/DC Power Adapter **3-3**

AC/DC Power Adapter Dimensions 3-5

AC/DC Power Adapter Installation 3-6

EA-ECOM Ethernet Communication Module **3-7**

D-SUB 15-pin to Terminal Block Adapters **3-8**

Non-glare Screen Covers **3-9**

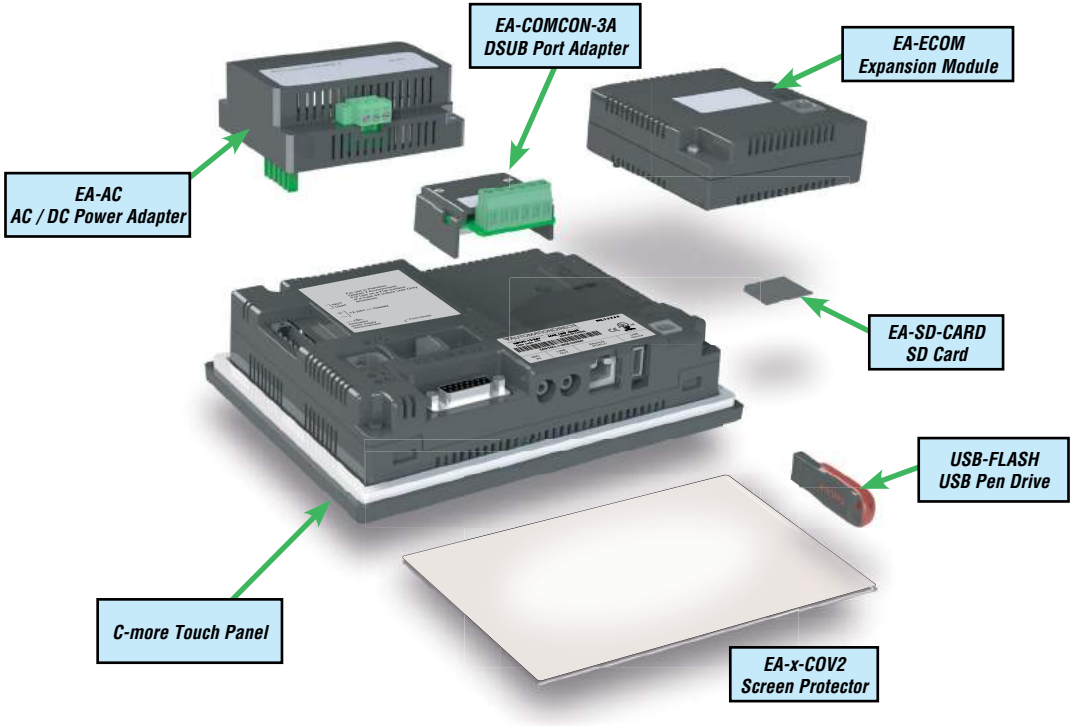
Clear Screen Overlay Installation 3-10

SD Card **3-11**

USB FLASH Drive **3-11**

3

Accessories Overview



Part Number	Description
EA-AC	AC/DC power adapter, 24 VDC. For use with C-more EA7 and EA9 series touch panels.
EA-6-COV2	Screen protector, non-glare, 6in. Package of 3. For use with C-more and C-more Micro 6in panels.
EA-7-COV2	Screen protector, non-glare, 7in. Package of 3. For use with C-more 7in panels.
EA-8-COV2	Screen protector, non-glare, 8in. Package of 3. For use with C-more and C-more Micro 8in panels.
EA-10-COV2	Screen protector, non-glare, 10in. Package of 3. For use with C-more EA9-T10CL and C-more Micro EA3-T10CL HMIs.
EA-10W-COV2	Screen protector, non-glare, 10in. Package of 3. For use with C-more EA9-T10WCL widescreen HMI.
EA-12-COV2	Screen protector, non-glare, 12in. Package of 3. For use with C-more 12in panels.
EA-15-COV2	Screen protector, non-glare, 15in. Package of 3. For use with C-more 15in panels.
EA-SD-CARD	SD memory card, 2GB, industrial.
USB-FLASH	SanDisk USB Flash drive, 32GB.
EA-COMCON-3*	DSUB port adapter, 15-pin male to 6-pole RS-422/485 terminal block, right angle cable entry. For use with C-more Micro EA1 series 4in and 6in HMIs, C-more Micro EA3 series 3in, 4in, and 6in HMIs, C-more EA9 6in and 7in HMIs.
EA-COMCON-3A*	EA-COMCON-3 is low profile and fits EA9-T6CL-R, EA9-T6CL, EA9-T7CL and EA9-T7CL-R EA-COMCON-3A is straight and fits EA-T8CL, EA9-T10CL, EA9-T12CL and EA9-T15CL
Note: EA-COMCON-3 is low profile and fits EA9-T6CL-R, EA9-T6CL, EA9-T7CL and EA9-T7CL-R EA-COMCON-3A is straight and fits EA-T8CL, EA9-T10CL, EA9-T12CL and EA9-T15CL	

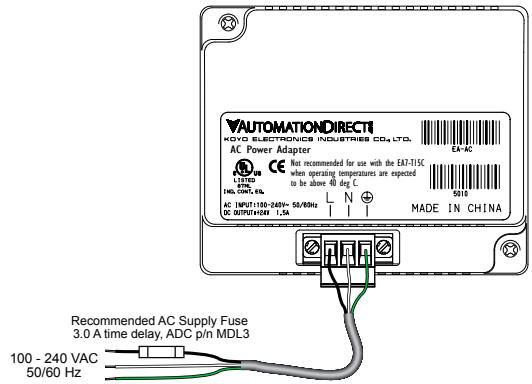
AC/DC Power Adapter

The optional ***C-more*** AC/DC Power Adapter can be used to power the ***C-more*** touch panels from a 100-240 VAC, 50/60 Hertz, voltage source. The adapter provides 24 VDC @ 1.5 A to the touch panel's DC power connector and can be conveniently secured to the touch panel with two captive screws. The adapter provides a power loss signal to the touch panel that causes the touch panel to stop writing data to SD memory devices providing a controlled shutdown for increased data logging reliability.

Part No. EA-AC



AC/DC Adapter Wiring



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.

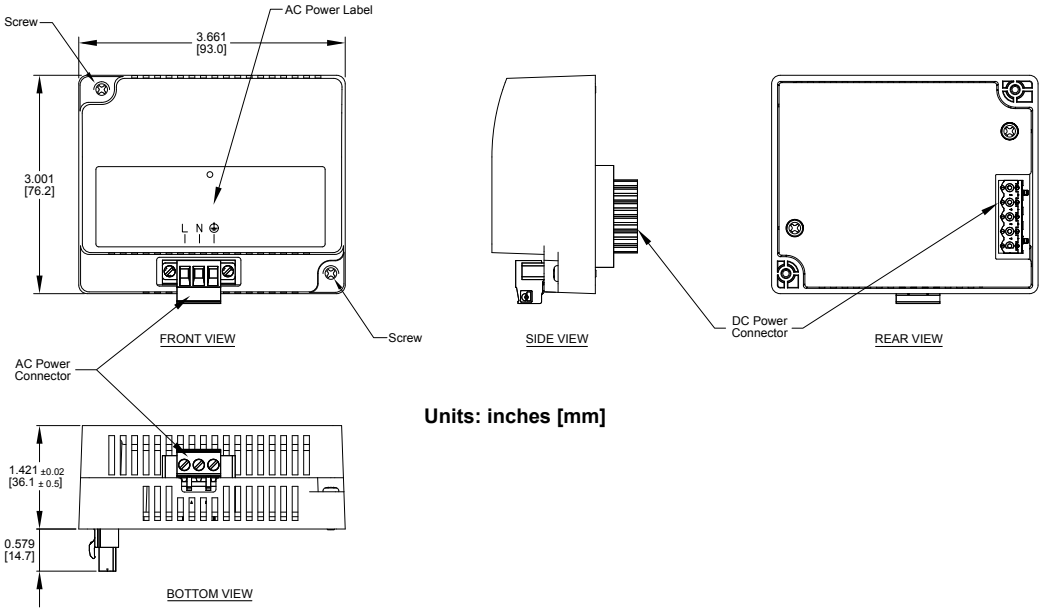
AC/DC Power Adapter Specifications	
Part Number	**EA-AC**
Input Voltage & frequency	100-240 VAC; 50/60 Hertz
Operating Temperature Range	0 °C to 50 °C [32 to 122 °F] Maximum surrounding temperature rating, 50 °C
Storage Temperature Range	-20 to 60 °C [-4 to 140 °F]
Operating & Storage Humidity	10-85% RH (non-condensing)
Noise Immunity	1000 VAC p-p (Pulse width 1 µs, rise time: 1 ns) With proper ground connection on AC terminal block.
Hi-pot	1000 VAC, 1 minute With proper ground connection on AC terminal block.
Insulation Resistance	500 VDC, 10 M ohm or above With proper ground connection on AC terminal block.
Vibration	Compliant with IEC61131-2
Shock	Pulse shape: Sine half wave, Peak acceleration: 147 m/s2 (15 G), X, Y, Z: 3 directions, 2 times each
Thermal Protection	140 °C [284 °F], with autorecovery
Short Circuit Protection	85 VAC: 2.6 A, 100 VAC: 2.8 A, 264 VAC: 3.9 A
Static Electricity Discharge Resistance	Compliant with IEC61000-4-2, Contact: 4 kV, Air: 8 kV
Agency Approvals	UL508, UL Recognized, cUL, CE, EMC EN61132-2
Environment	For use in pollution degree 2 environment
Grounding	Ground resistance: less than 100 ohm
Weight	6.13 oz. [175 g]
Removable AC Power Connector	EA-AC-CON or DECA Switchlab MC101-508-03G Secure with (2) captive M2.5 screws, torque to 70 oz-in [0.5 Nm]
Output Current	Maximum 1.5 A
Inrush Current	For 100 VAC: 15 A, 3 ms or less For 240 VAC: 20 A, 3 ms or less
Recommended AC Supply Fuse	3.0 A time delay, ADC p/n MDL3
Power Supply Cable Torque	71 - 85 oz-in (0.5 - 0.6 Nm)
Mounting to Touch Panel	Secure with (2) spring loaded captive M3-20 screws, torque to 50 oz-in [0.35 Nm]



NOTE: *Logic within the EA-AC will turn off the backlight instantly when a power failure is detected to allow the CPU to run longer. The backlight turns on automatically when the power returns to the* ***C-more*** *operating voltage.*

AC/DC Power Adapter Dimensions

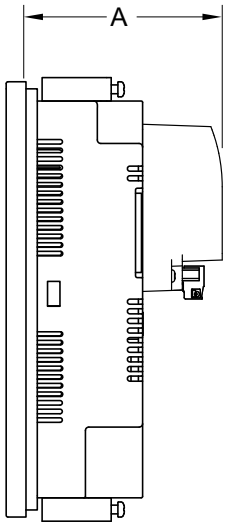
Dimensions



Units: inches [mm]

Panel Depth with AC/DC Power Adapter Installed

Units: inches[mm]



Part Number	A
EA9-T6CL-R	2.991 [76.0]
EA9-T6CL	2.991 [76.0]
EA9-T7CL-R	2.991 [76.0]
EA9-T7CL	2.991 [76.0]
EA9-T8CL	3.511 [89.2]
EA9-T10CL	3.511 [89.2]
EA9-T10WCL	3.511 [89.2]
EA9-T12CL	3.351 [85.8]
EA9-T15CL-R	3.351 [85.1]
EA9-T15CL	3.351 [85.1]

AC/DC Power Adapter Installation

WARNING: This procedure should only be performed by qualified personnel who are experienced in working with electronic equipment. Take the necessary steps to prevent damage that may be caused by static electricity discharge. Disconnect input power to the touch panel before proceeding.



Preparation: Place the touch panel face down on a lint-free soft surface to prevent scratching the display screen if not already installed in a control cabinet. Remove the DC power connector if it is installed.



Insert the AC/DC power adapter into the touch panel's 5-position DC power connector.



Secure the AC/DC Power Adapter to the touch panel by tightening the two (2) spring loaded captive M3-20 screws to a torque of 50 oz-in [0.35 Nm].



Plug the wired 3-pin AC Power Connector into its mating connector on the adapter and secure in place by tightening the two (2) captive M2.5 screws to a torque of 70 oz-in [0.5 Nm].

EA-ECOM Ethernet Communication Module

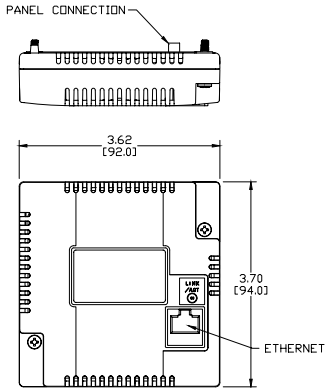
The EA-ECOM Ethernet Communication module plugs into the expansion port on the rear of the EA3 series 6, 8, and 10-inch ***C-more*** Micro panels to allow Ethernet communications for programming and PLC communications at a speed of 10/100 Mbps.

EA-ECOM



PLC Drivers
AutomationDirect Productivity Series Ethernet
AutomationDirect Do-more / BRX Ethernet
AutomationDirect CLICK Ethernet
AutomationDirect ECOM Ethernet
Modbus TCP/IP
Allen-Bradley EtherNet/IP (Client) SLC5/05
Allen-Bradley EtherNet/IP (Client) ENI Adapter
Allen-Bradley EtherNet/IP (Client) MicroLogix 1100/1400
Allen-Bradley EtherNet/IP (Client) control/ CompactLogix (SLC Mapping only)

Dimensions: Inches [mm]





Link Status LED (Green)	
On	Ethernet Linked
Off	No Ethernet Comm.
Blinking Green	Comm. Activity



EA-ECOM Specifications	
Part Number	EA-ECOM
Operating Temperature	0 to 50 °C (32 to 122 °F) Maximum surrounding air temperature rating: 50 °C
Storage Temperature	–20 to +60 °C (–4 to +140 °F)
Humidity	5–95% RH (non-condensing)
Environmental Air	For use in pollution degree 2 environment
Vibration	IEC60068-2-6 (Test Fc), 5-9 Hz: 3.5 mm amplitude, 9-150 Hz: 1.0G, sweeping, at a rate of 1 octave/min. (±10%), 10 sweep cycles per axis on each of 3 mutually perpendicular axes
Shock	IEC60068-2-27 (Test Ea), 15 G peak, 11ms duration, three shocks in each direction per axis, on 3 mutually perpendicular axes (total of 18 shocks)
Noise Immunity	NEMA ICS3-304 RFI, (145 MHz, 440 MHz 10 W @ 10 cm) Impulse 1000 V @ 1 µs pulse
Emission	EN55011 Class A (Radiated RF emission)
Enclosure (panel door installation)	NEMA 250 type 4/4X indoor use only UL50 type 4X indoor use only IP-65 indoor use only (When mounted correctly)
Agency Approvals	CE (EN61131-2), UL508, CUL Canadian C22.2 To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page
Mounting Torque	50 oz·in [0.35 N·m]
Weight	0.23 lb [105g]
Ethernet Specification	Conforms to IEEE802.3
Communication Speed	10/100 Base-T (Automatic Negotiation)
Cable Specification	Category 5
Auto MDI / MDI-X	Yes
Connector Type	RJ45

D-SUB 15-pin to Terminal Block Adapters

These adapters are plugged into the 15-pin serial port on the rear of the panels to allow wire terminal connections for RS-422/485 PLC communication cable. The wiring of both adapters is the same.

EA-COMCON-3 is used with EA9-T6CL-R, EA9-T6CL, EA9-T7CL-R and EA9-T7CL. EA-COMCON-3 is UL Recognized.

EA-COMCON-3A is NOT UL Recognized or Listed. It is used with EA9-T8CL, EA9-T10CL, EA9-T12CL, EA9-T15CL-R and EA9-T15CL

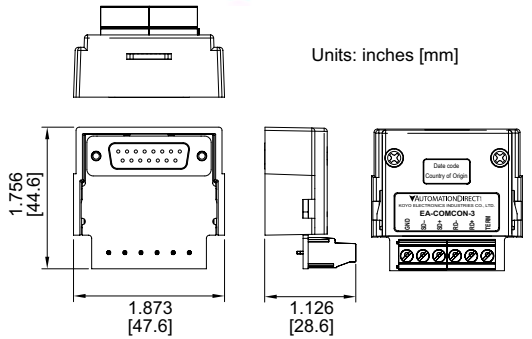
EA-COMCON-3



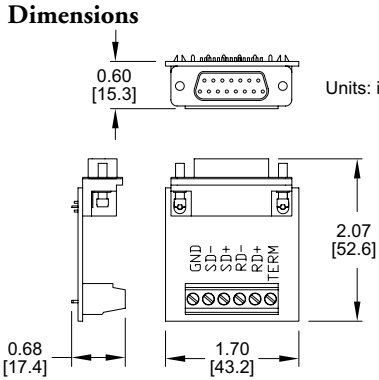
EA-COMCON-3A



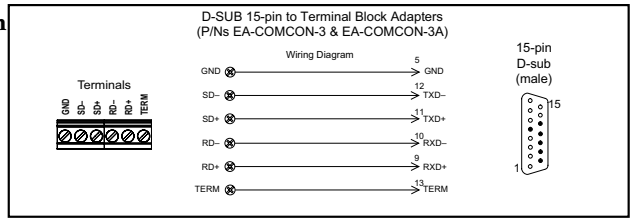
Dimensions



Dimensions



Wiring Diagram

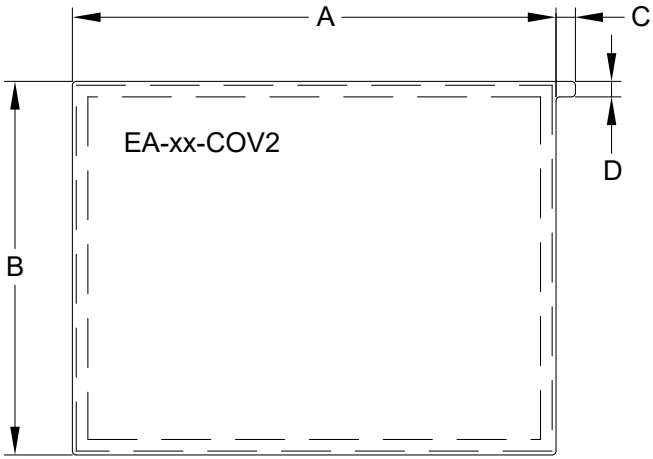


Non-glare Screen Covers

Non -glare PET screen covers are protective overlays used to protect the touch screen and help reduce glare from external light sources. (pk of 3)

Part No. EA-6-COV2, EA-7-COV2, EA-8-COV2, EA-10-COV2, EA-10W-COV2, EA-12-COV2 & EA-15-COV2





Non-glare Screen Covers Dimensions - inches [mm]				
Part Number	A	B	C	D
EA-6-COV2	4.91 [124.8]	3.80 [96.4]	0.197 [5.0]	0.157 [4.0]
EA-7-COV2	6.40 [162.6]	4.00 [101.5]		
EA-8-COV2	7.32 [185.8]	5.44 [138.2]		
EA-10-COV2	8.91 [226.2]	6.61 [168.0]		
EA-10W-COV2	9.23 [234.5]	5.38 [136.7]		
EA-12-COV2	10.26 [260.6]	7.64 [194.1]		
EA-15-COV2	12.56 [319.1]	9.37 [238.1]		

Non-glare Screen Covers (cont'd)

Clear Screen Overlay Installation

Step 1



Check to be sure that the proper size non-glare screen cover is being used on the subject touch panel. Notice that the outer perimeter of the screen cover has an adhesive band. The adhesive band will be located on the outside edge of the touch panel's white frame bordering the touch area when installed.

Step 2



Start in one corner and peel the screen cover from the backing.

Step 3



Align the screen cover over the touch panel's white frame, then start on one side and gently lay the cover over the entire touch area.

Step 4



Smooth out the screen cover and press all around the outside perimeter to secure the cover in place. The screen cover can be removed by lifting up on the small tab and gently pulling the cover away form the touch panel's surface.

Step 5



Remove the protective sheet.

NOTE: *The protective cover ships with a thin protective sheet on the face of the cover that needs to be carefully removed. If your panel is not clear, the protective sheet may not have been removed.*

SD Card

SD memory card for non-volatile storage, 2GB industrial grade. 85° C maximum operating temperature makes it suitable for data logging in industrial applications. Recommended for ***C-more*** EA9 series. The EA-SD-CARD utilizes SLC technology so it is the fastest option for writing and storing data. If logged data is saved to external memory, AutomationDirect recommends using an EA-SD-CARD.

EA-SD-CARD



NOTE: *SLC Flash memory utilized by EA-SD-CARD has the advantage of being the most accurate flash memory type when reading and writing data. SLC flash has the longest lifespan of flash types and can operate in a broader temperature range than other types.*

EA-SD-CARD with SLC Flash memory is recommended for industrial workloads that require heavy read/write cycles.

USB FLASH Drive

USB-FLASH sold by AutomationDirect has been tested with ***C-more*** HMIs and is Hi-Speed USB 2.0 certified. The EA-SD-CARD is the best option for logging data, but the USB-FLASH is a high quality flash drive perfect for transferring log files, capturing screens, backing up and restoring projects and storing images for the Image Viewer object.

USB-FLASH





Installation and Wiring



In This Chapter...

Safety Guidelines **4-2**

Introduction **4-3**

EA9-T6CL-R, EA9-T6CL, EA9-T7CL-R and EA9-T7CL Cutout Dimensions **4-4**

EA9-T8CL and EA9-T10WCL Cutout Dimensions **4-5**

EA9-T12CL Cutout Dimensions **4-7**

EA9-T15CL-R and EA9-T15CL Cutout Dimensions **4-8**

Mounting Clearances **4-9**

EA9-T15CL-R, EA9-T15CL Derating 4-10

Wiring Guidelines **4-11**

Agency Approvals 4-11

Providing Power to the Touch Panel 4-12

C-more LED Status Indicators 4-13

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*



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.

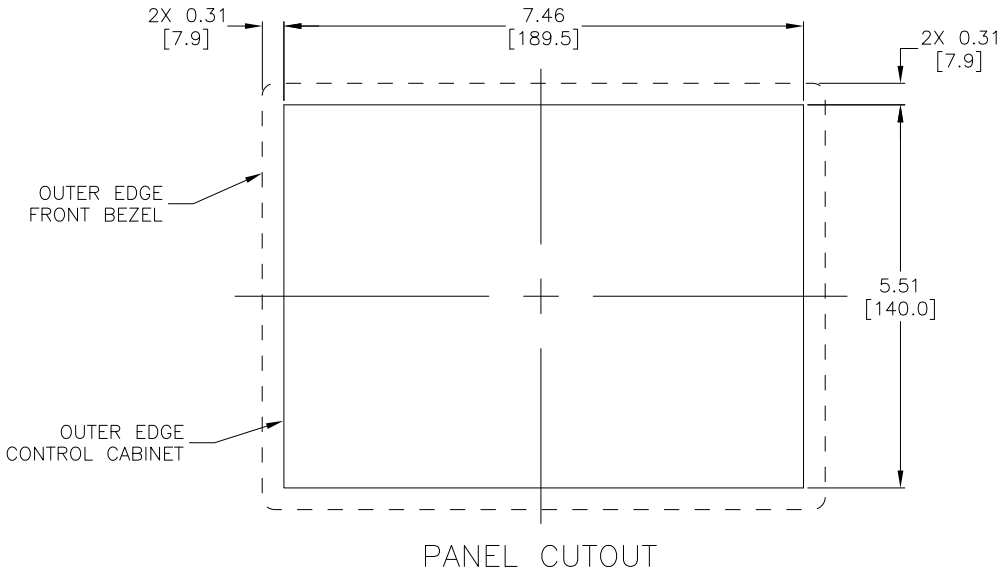
Mounting Clips - EA9-BRK



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

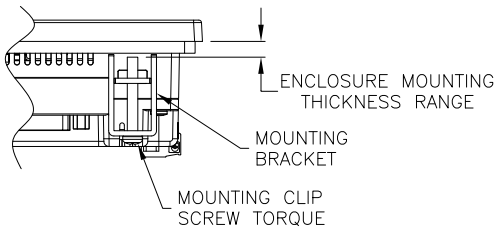
The ***C-more*** 6" and 7" touch panels are mounted into a cutout through the control cabinet and secured with four (4) mounting clips. The mounting clips are provided with the touch panel. The mounting clips will insert into a series of slots around the rear perimeter of the touch panel. Each clip has 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]



PANEL CUTOUT

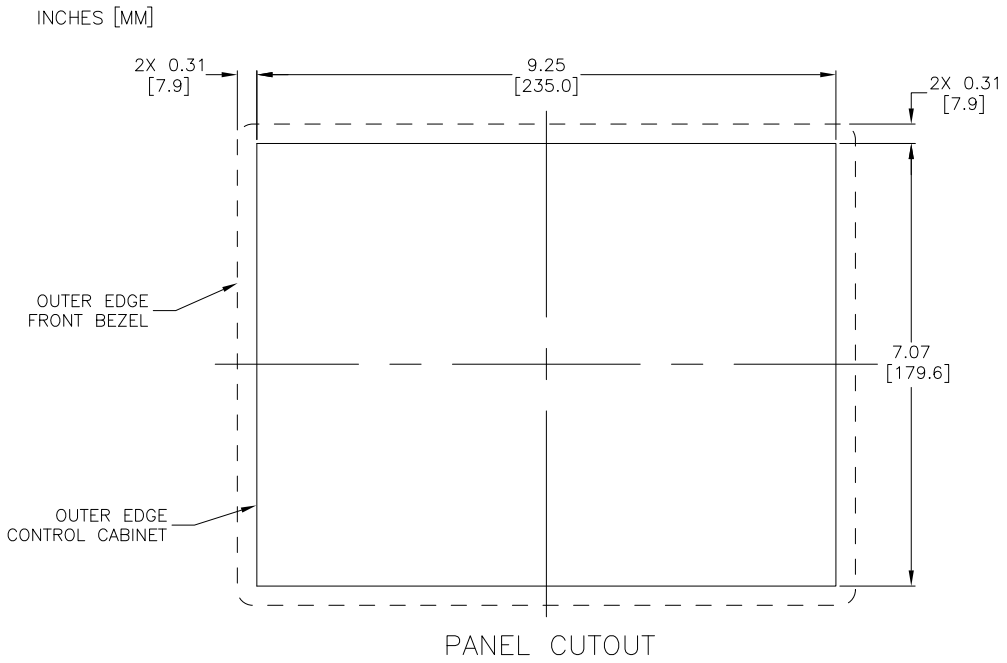
Enclosure Mounting Thickness Ranges and Mounting Clip Screw Torque



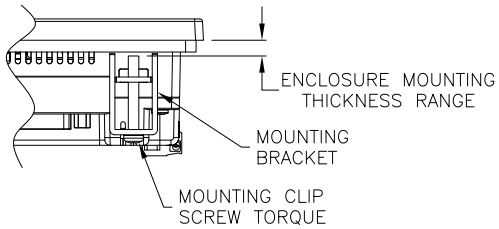
Touch Panel Size	Enclosure Thickness Range	Mounting Clip Screw Torque	Material
6", 7", 8", 10" & 12"	0.039 - 0.20 inch [1 – 5 mm]	63 - 77 oz-in [0.45 - 0.55 Nm]	Metal
10" Wide, 15"	0.039 - 0.20 inch [1 – 5 mm]	92 - 106 oz-in [0.65 - 0.75 Nm]	Metal

EA9-T8CL and EA9-T10WCL Cutout Dimensions

The ***C-more*** EA9-T8CL and EA9-T10WCL touch panels will mount into the same cutout and are 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.



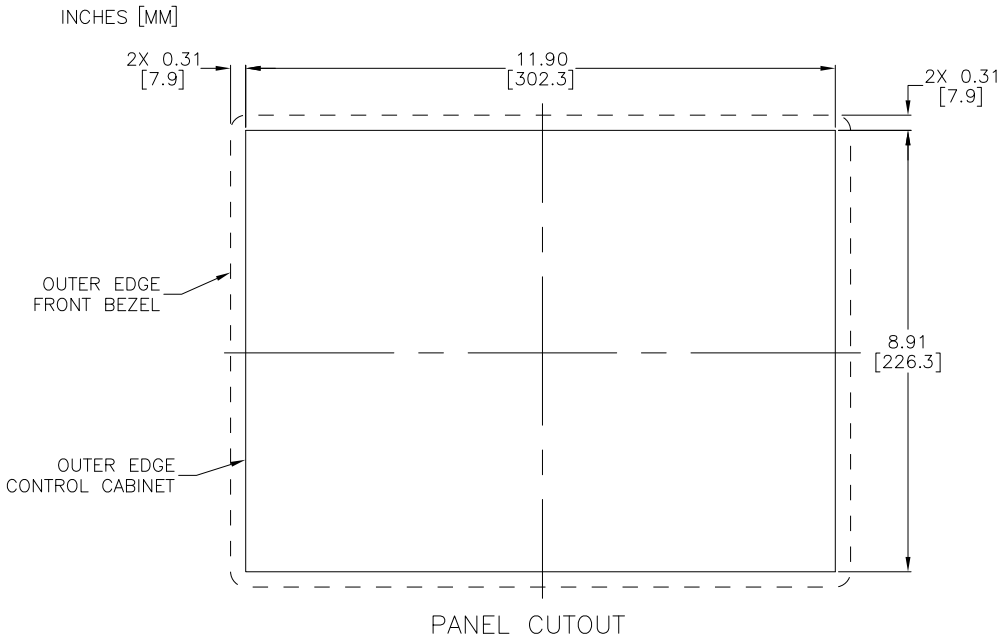
Enclosure Mounting Thickness Ranges and Mounting Clip Screw Torque



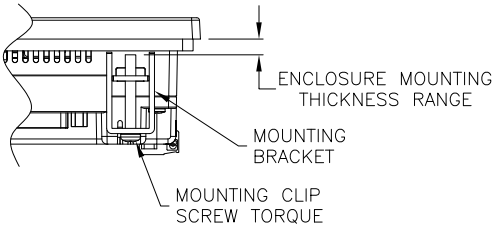
Touch Panel Size	Enclosure Thickness Range	Mounting Clip Screw Torque	Material
6", 7", 8", 10" & 12"	0.039 - 0.20 inch [1 – 5 mm]	63 - 77 oz-in [0.45 - 0.55 Nm]	Metal
10" Wide, 15"	0.039 - 0.20 inch [1 – 5 mm]	92 - 106 oz-in [0.65 - 0.75 Nm]	Metal

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.



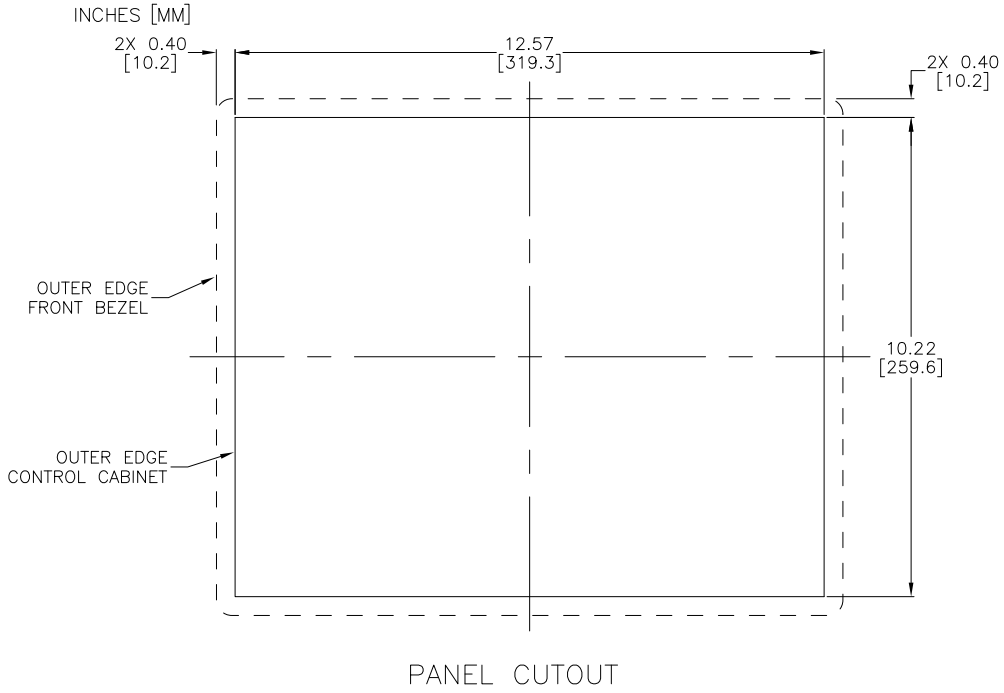
Enclosure Mounting Thickness Ranges and Mounting Clip Screw Torque



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

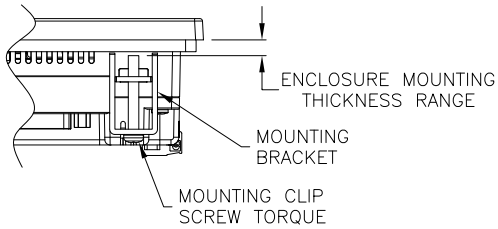
EA9-T12CL Cutout Dimensions

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.



PANEL CUTOUT

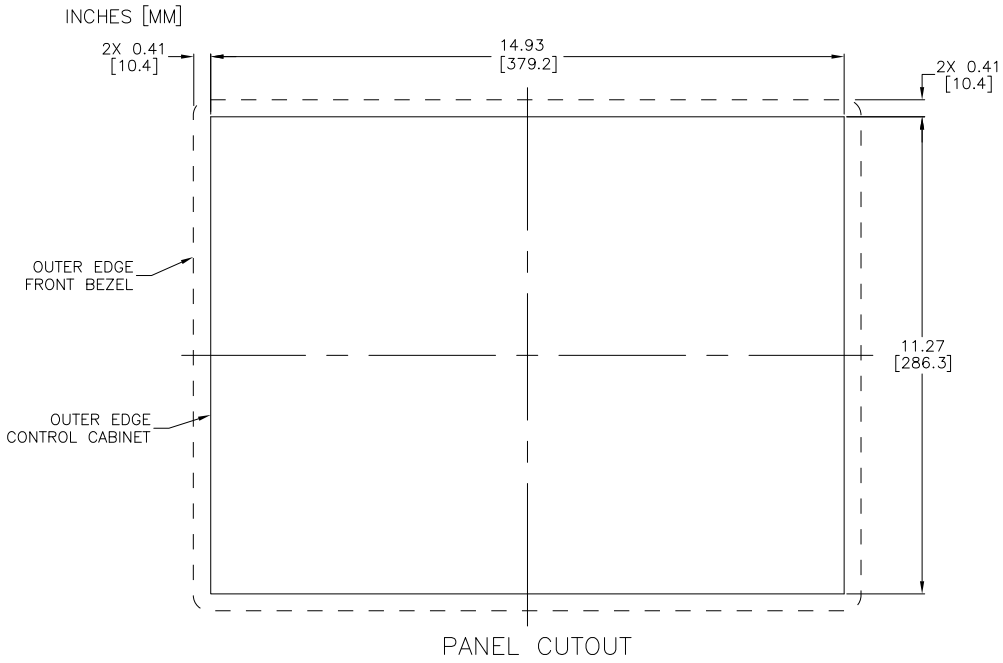
Enclosure Mounting Thickness Ranges and Mounting Clip Screw Torque



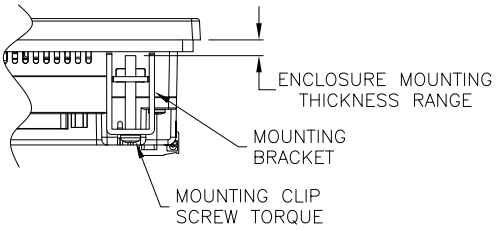
Touch Panel Size	Enclosure Thickness Range	Mounting Clip Screw Torque	Material
6", 7", 8", 10" & 12"	0.039 - 0.20 inch [1 – 5 mm]	63 - 77 oz-in [0.45 - 0.55 Nm]	Metal
10" Wide, 15"	0.039 - 0.20 inch [1 – 5 mm]	92 - 106 oz-in [0.65 - 0.75 Nm]	Metal

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.



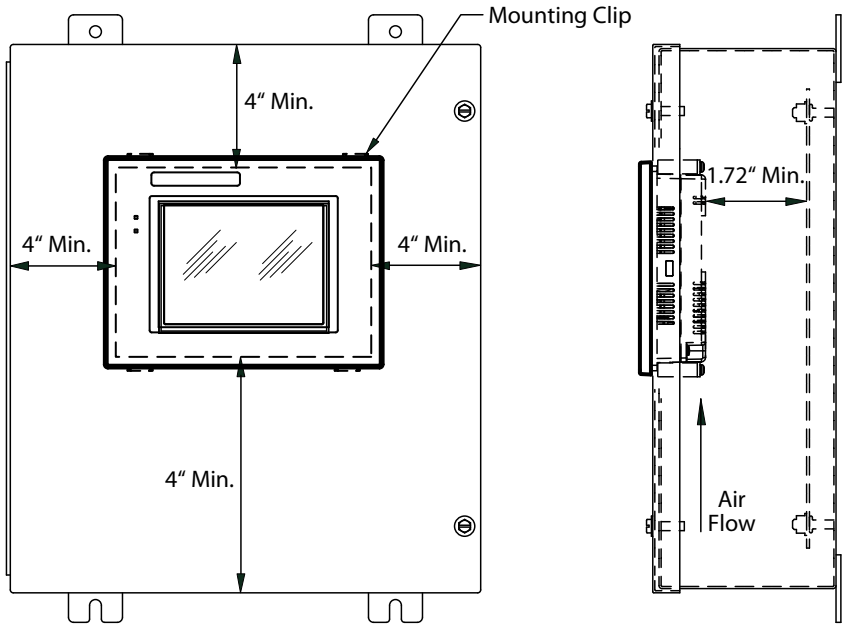
Enclosure Mounting Thickness Ranges and Mounting Clip Screw Torque



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.



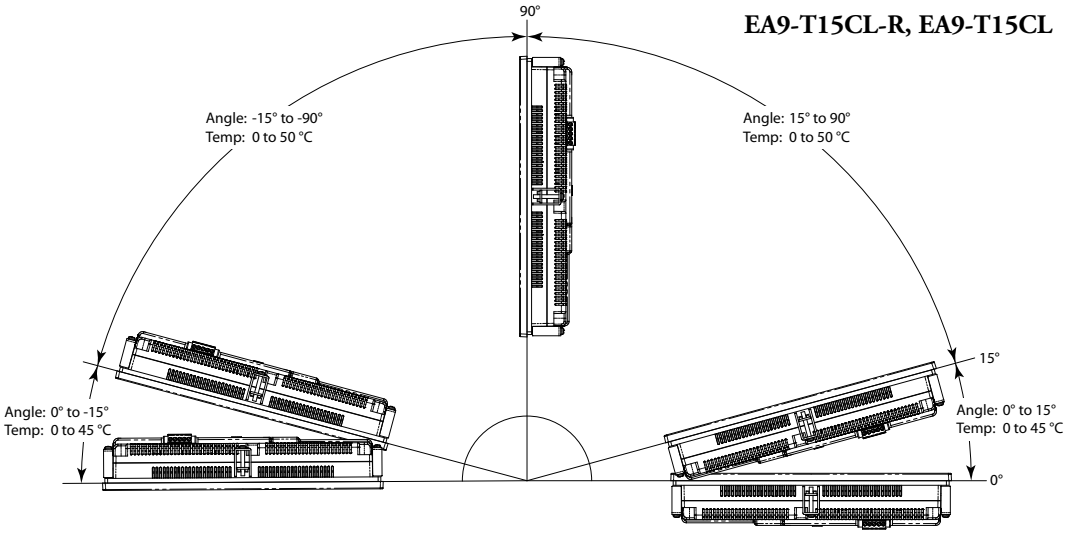
Front View

Side View

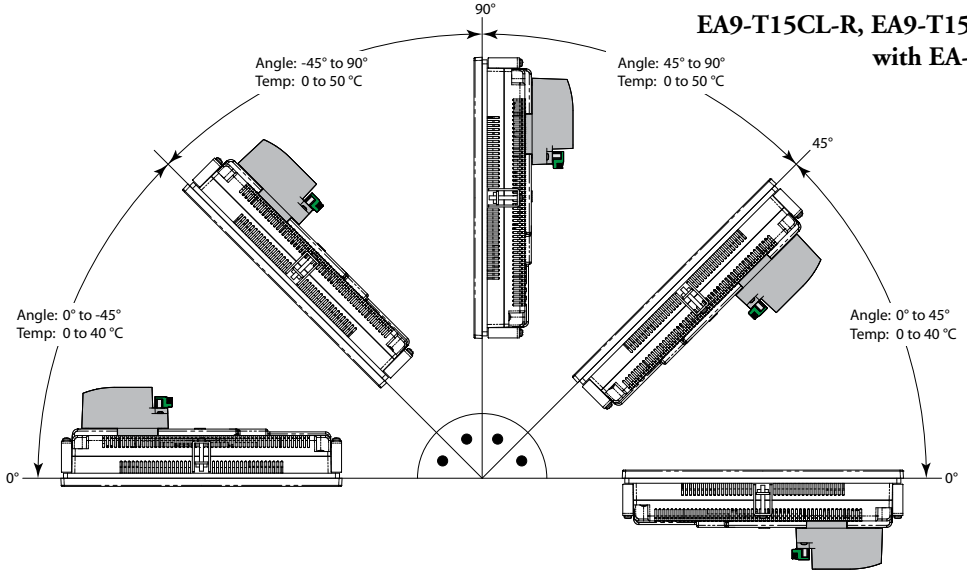
EA9-T15CL-R, EA9-T15CL Derating

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.

EA9-T15CL-R, EA9-T15CL



EA9-T15CL-R, EA9-T15CL with EA-AC



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.

This publication is based on information that was available at the time it was printed. At Automationdirect.com® we constantly strive to improve our products and services, so we reserve the right to make changes to the products and/or publications at any time without notice and without obligation. This publication may also discuss features that may not be available in certain revisions of the product.

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

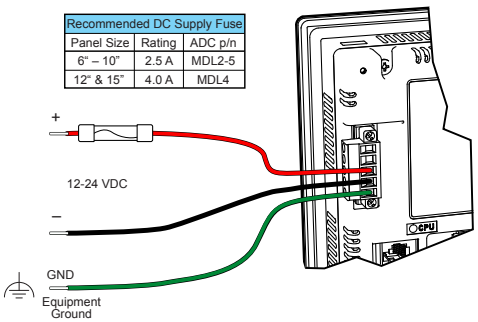
- **Connect** a **dedicated** 12-24 VDC Class 2 power supply to the DC connector on the rear of the ***C-more*** touch panel, include wiring the ground terminal to a proper equipment ground
- **or** install a ***C-more*** AC/DC Power Adapter, EA-AC, to the rear of the touch panel and connect an AC voltage 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)

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.*

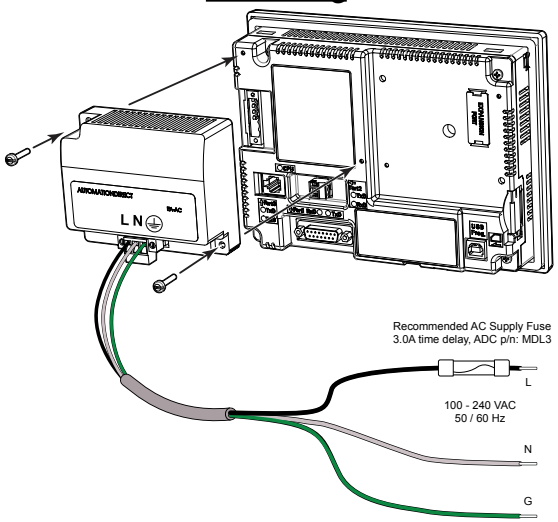
NOTE: *The AC/DC Power Adapter, EA-AC, is for* ***C-more*** *touch panels only. The adapter is powered from a 100-240 VAC, 50/60 Hertz power source. The adapter provides 24 VDC @ 1.5 A. Power Fault features help protect data on an SD memory card during power failures.*

DC Wiring

Recommended DC Supply Fuse		
Panel Size	Rating	ADC p/n
6" – 10"	2.5 A	MDL2-5
12" & 15"	4.0 A	MDL4



AC Wiring

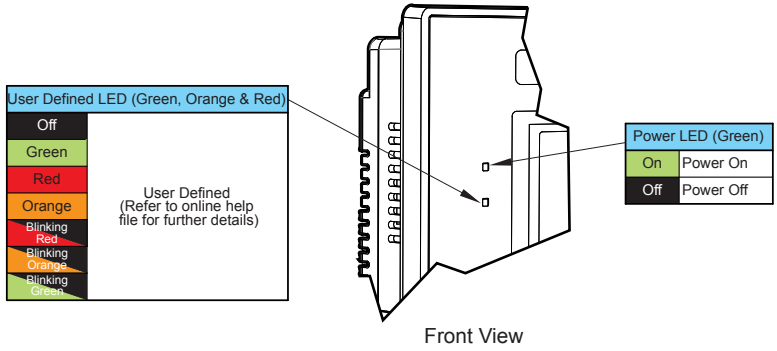


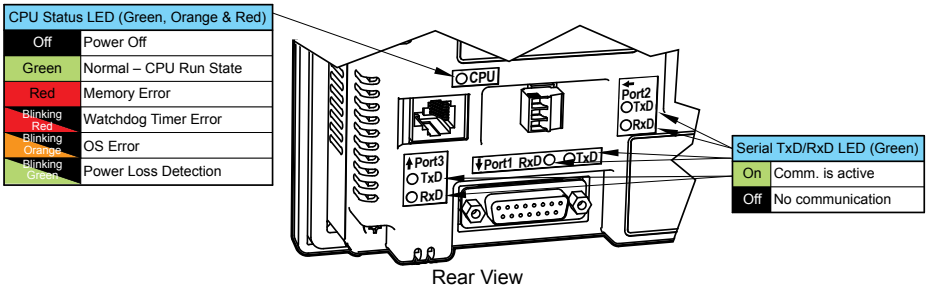
DC-CON Tightening Torque	
Power connector screw torque	70.4 oz-in (0.5 Nm)
Power connector mounting torque	56 oz-in (0.4 Nm)

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





System Setup Screens



In This Chapter...

Introduction 5-2
Accessing the System Setup Screens (no project loaded) 5-3
Accessing the System Setup Screens (with project loaded) 5-4
System Setup Screens – Enable Password in Software 5-6
System Setup Screens Flowchart 5-12
Main Menu 5-13
Information Menu 5-14
Setting Menu 5-18
Test Menu 5-25
Memory Menu 5-34

Introduction

The ***C-more*** touch panels include a series of built-in System Setup Screens that allow the user to view detailed information about the panel; adjust certain features; configure communications; test various functions of the touch panel; backup & restore firmware, recipe, log and project memory; clear memory and reset all values and conditions back to the original factory defaults.

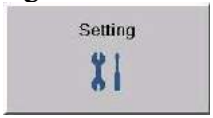
The four Main Menu selections are:

Information



The information tabs display details about the touch panel model; the panel's name; version information for the hardware, boot loader and firmware; clock source, and beeper status. Other tabs display details on the panel's internal memory and the status of any external memory devices. Communication port details are available in this area, as well as an error log to help in trouble-shooting the system

Setting



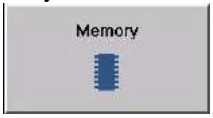
This is the area for 1.) making adjustments to the internal clock, 2.) adjusting the brightness of the display, 3.) setting the IP address 4.) adjusting (calibrating) the touch panel, 4.) enabling or disabling the internal beep, and 5.) enabling or disabling a mouse pointer.

Test Menu



From this sub menu, the user can 1.) test the touch panel, 2.) test the display, 3.) test the user LED 4.) test the communication ports, and 5.) test both the internal beeper or the audio line output, if a speaker with an amplifier is connected. A WAV sound file is system provided for the audio line output test.

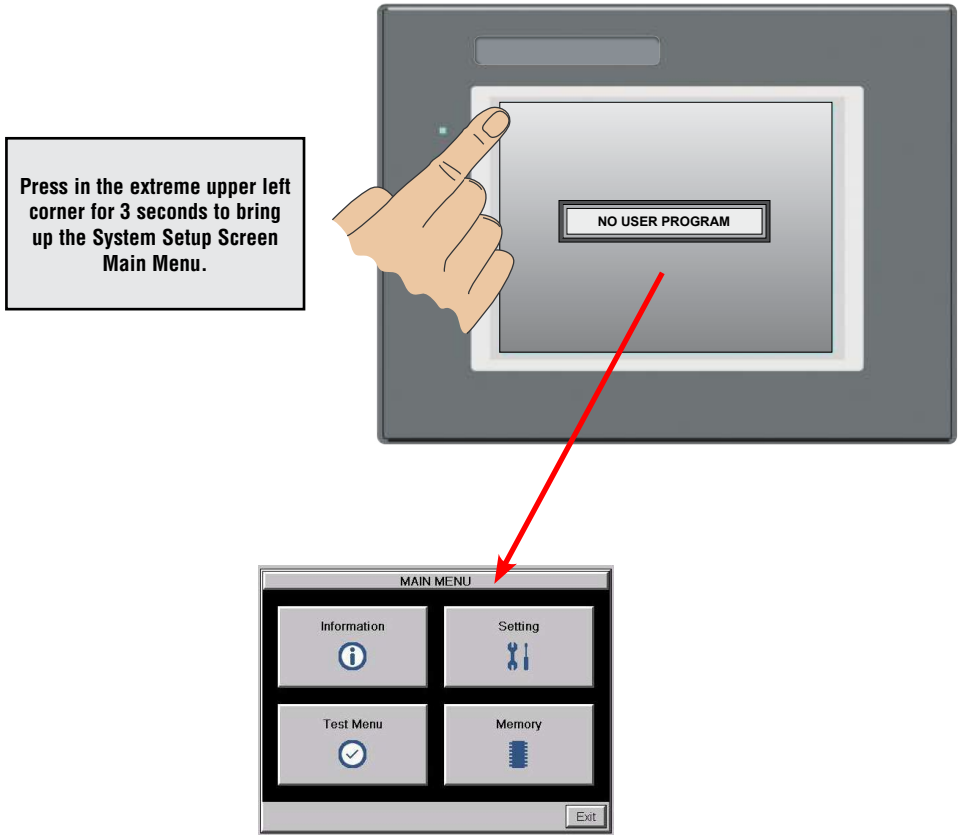
Memory



Select the Memory menu item to either backup or restore your project, log data, recipe data and/or system memory. Selections can be made to backup to optional SD card memory or USB pen drive memory. The menu selections also give the user the ability to clear the memory, and there is also a selection to reset all of the touch panel settings back to the original factory defaults.

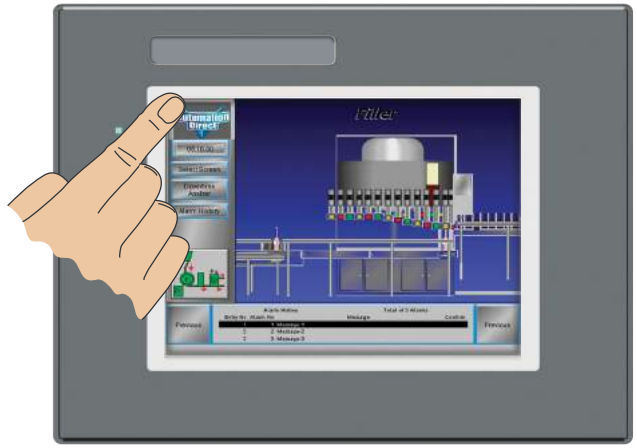
Accessing the System Setup Screens (no project loaded)

To access the Main Menu of the touch panel System Setup Screens prior to downloading a project, press the extreme upper left corner of the panel display area for 3 seconds as shown below. The Main Menu will then be displayed.



Accessing the System Setup Screens (with project loaded)

To access the Main Menu of the touch panel System Setup Screens with a project loaded into memory, press the upper left corner of the panel display area for 3 seconds as shown below.



If no system screen password is enabled, the following WARNING dialog box will appear on the touch screen.:

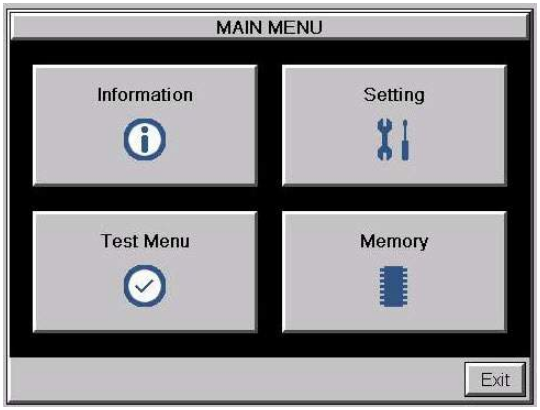


- Pressing OK will display the system setup screen. See the WARNING below!
- Pressing Cancel will take you back to the project screen.
- Communications with the PLC is active while the Warning is displayed.
- The dialog box will close if no action is taken for 60 seconds.
- The dialog box will not display if the touch panel does not have a project loaded.
- The dialog box will display after a valid password is entered if the System Screen password is enabled.

WARNING: Pressing OK at this point will STOP the PLC driver and therefore all communications between the touch panel and PLC will cease. It is strongly recommended that the password system tag "SYS SYSTEMSCREENPW" be enabled to add a safeguard step in accessing the system setup screens. See the next section for an overview for setting the System Tags in the Event Manager Database.

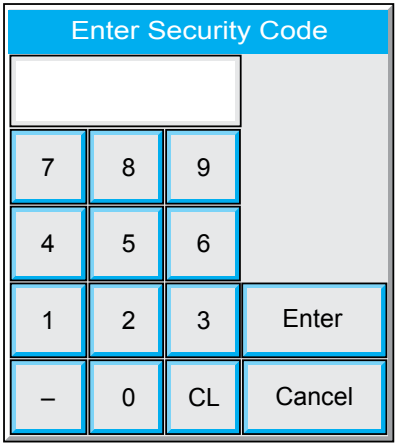
System Setup Screens

The OK button in the Warning dialog box will bring up the Main Menu as shown below. You can then proceed to the other system setup screens.



Password Protecting System Screen Access

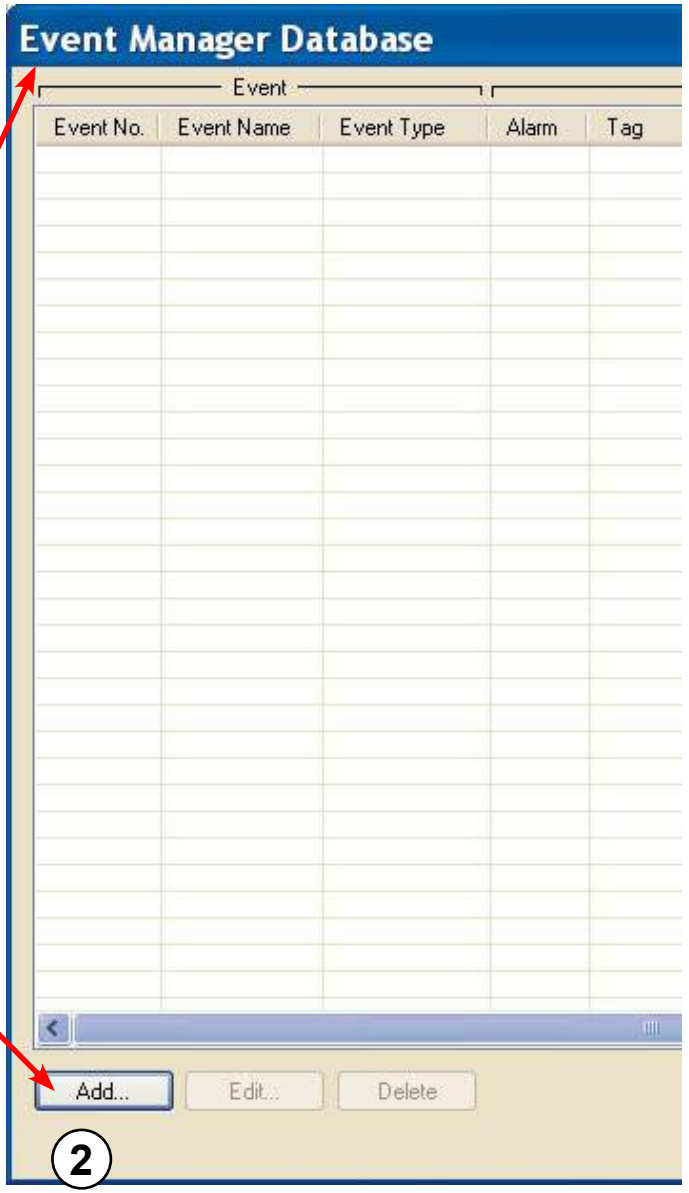
NOTE: *If the password system tag* ***SYS SYSTEMSCREENPW*** *is enabled, the Enter Security Code keypad shown below will open. The procedure to enable the* ***SYS SYSTEMSCREENPW*** *is detailed below.*
Entering the correct password will display the Panel Run Mode warning dialog described previously. PLC communications continue while the keypad is displayed. The keypad will timeout after 60 seconds.



System Setup Screens – Enable Password in Software

Under the ***C-more*** Programming Software's Navigation window, select the Function tab, then double click on "Alarm Action" to display the Event Manager Database shown below:

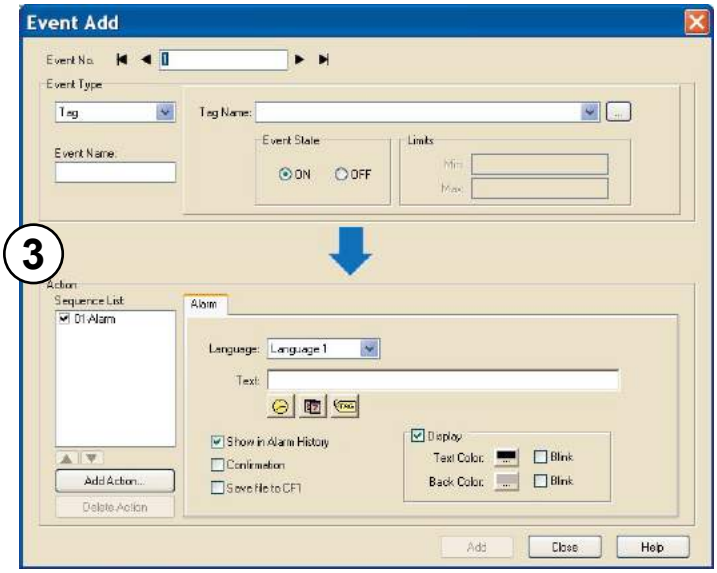




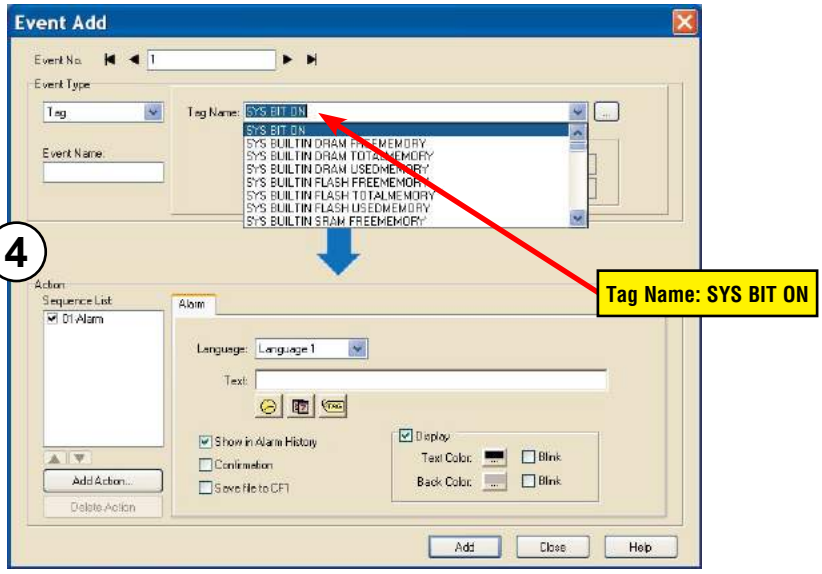
Click on the **Add** button to add an event to the database that will be used to enable the System Screen Password.

System Setup Screens – Enable Password (cont'd)

The **Event Add** dialog box will be displayed as shown.



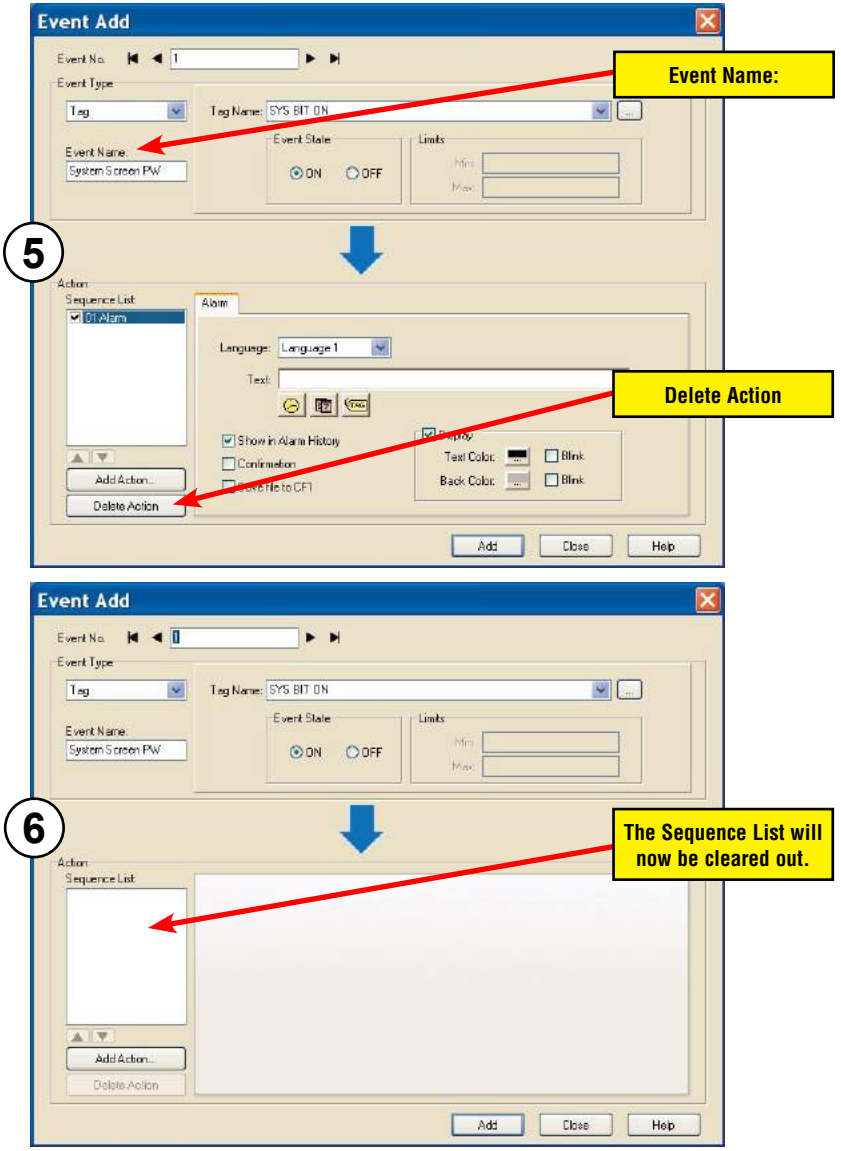
Click on the **Tag Name:** pull down menu and select the internal **System Bit On (SYS BIT ON)** tag as shown. This will force the tag event type to be continuously active.



System Setup Screens – Enable Password (cont'd)

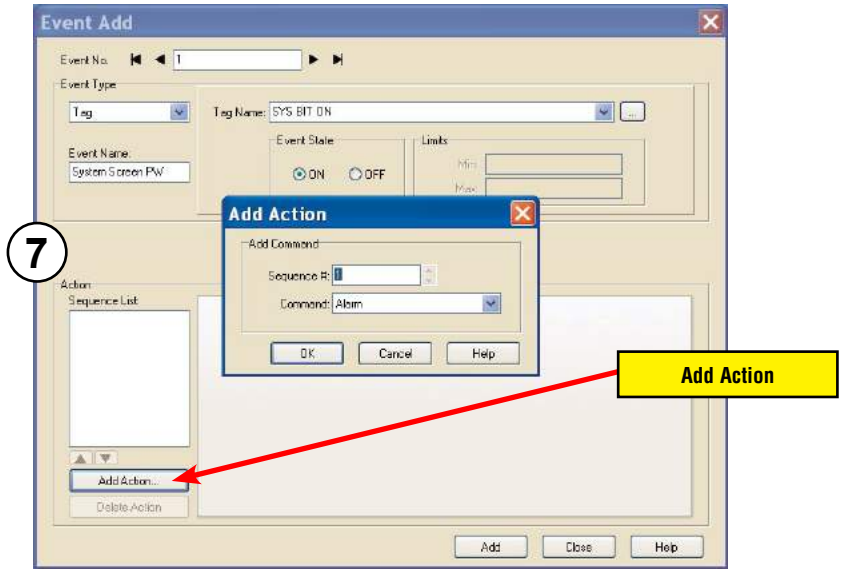
Use the **Eve**nt Name: text box to document the event as "System Screen PW" for record keeping This is optional.

In the Action box, click once on the displayed 01-Alarm under the Sequence List: so that 01-Alarm is highlighted. Then click the **Delete Action** button to remove the **01-Alarm**.

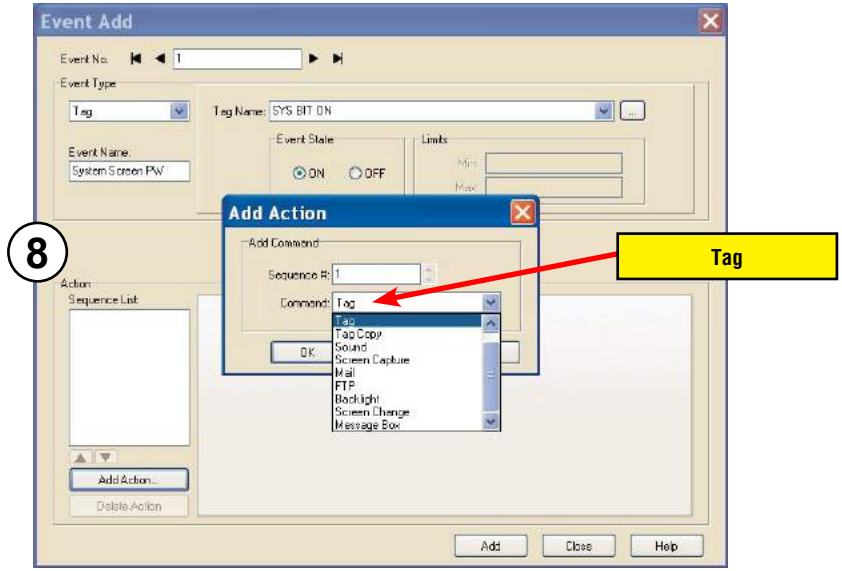


System Setup Screens – Enable Password (cont'd)

In the **Action** box, click on the **Add Action...** button. This will bring up the **Add Action** dialog box as shown below:

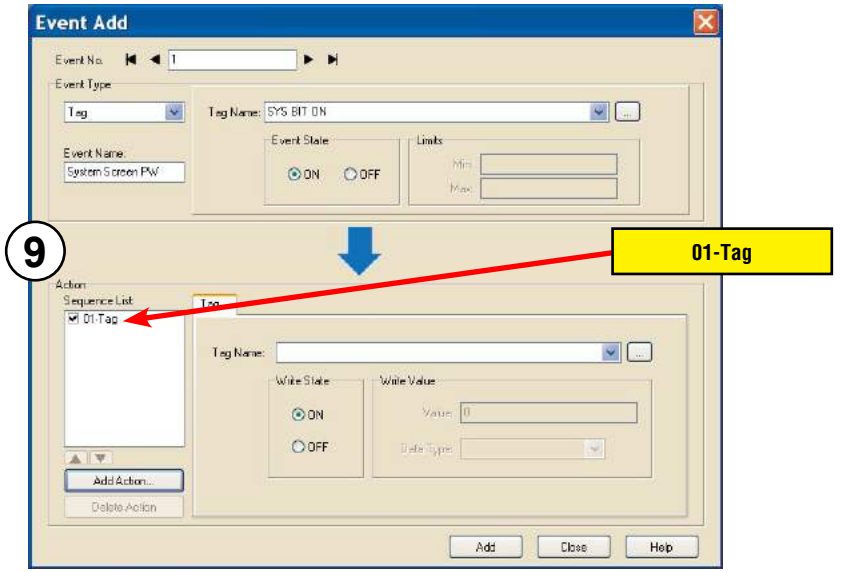


Click on the **Command:** pull down list in the **Add Command** box, select **Tag** from the list, then click **OK**.

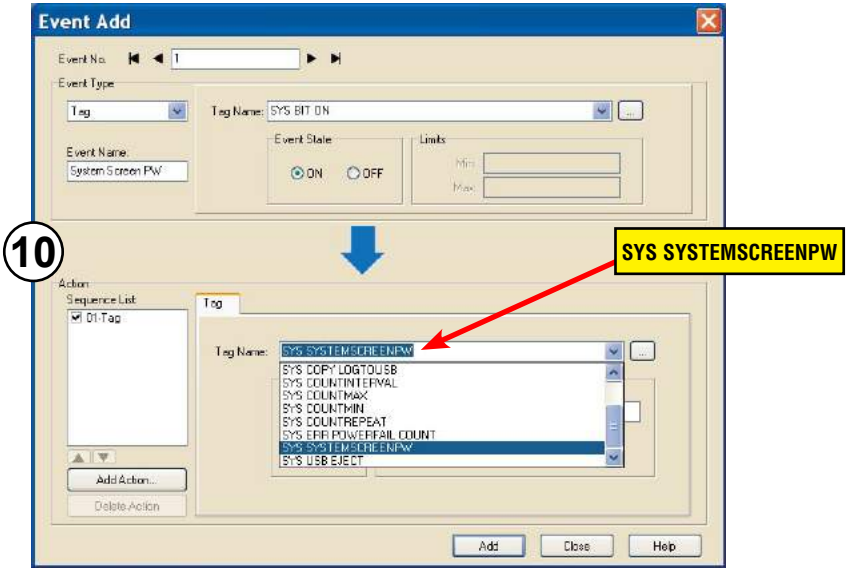


System Setup Screens – Enable Password (cont'd)

A **01-Tag** action item will then be added to the **Sequence List**.

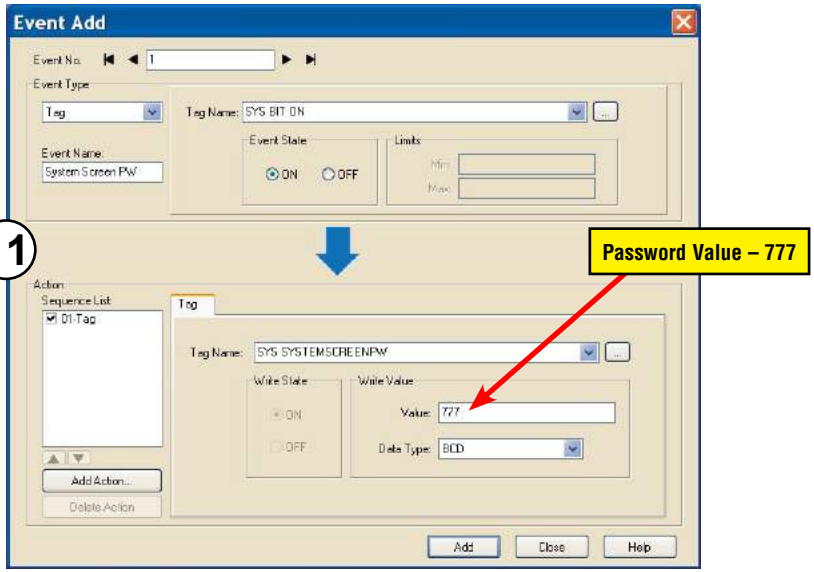


Click on the **Tag Name:** pull down list down arrow in the **Action** box's **Tag** tab, select **SYS SYSTEMSCREENPW** from the list, and click **OK**.

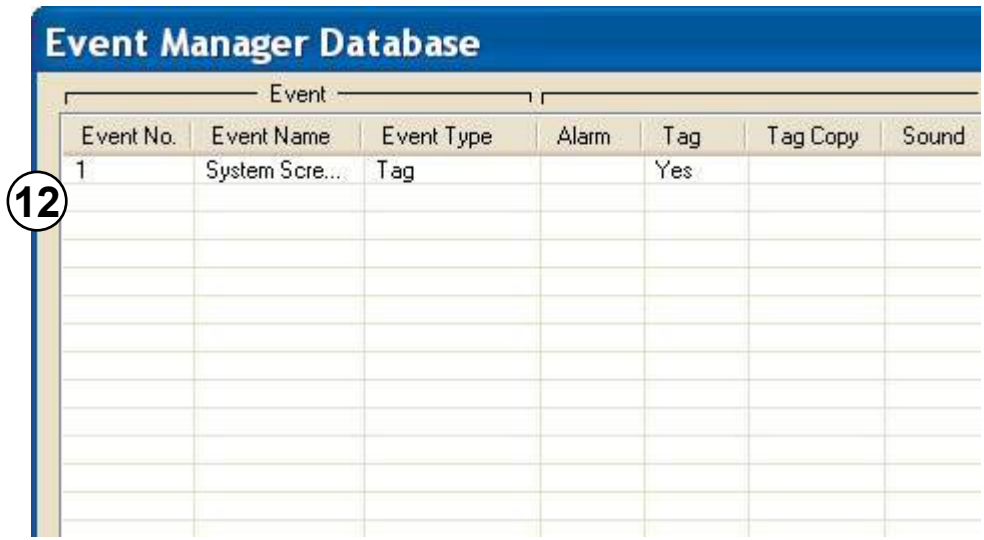


System Setup Screens – Enable Password (cont'd)

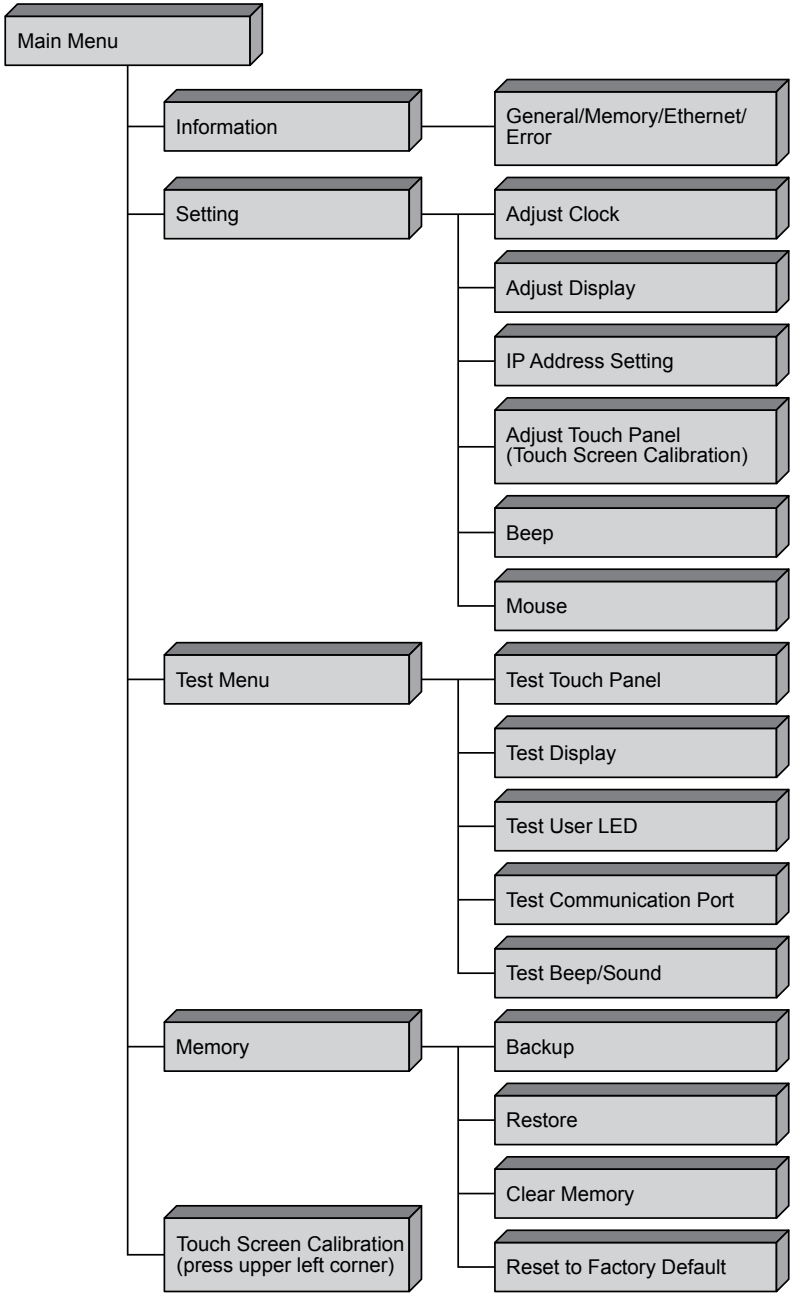
Enter a numeric value into the **Value:** box, such as "777". This value becomes the Password code to access the System Setup Screen's **Main Menu**.



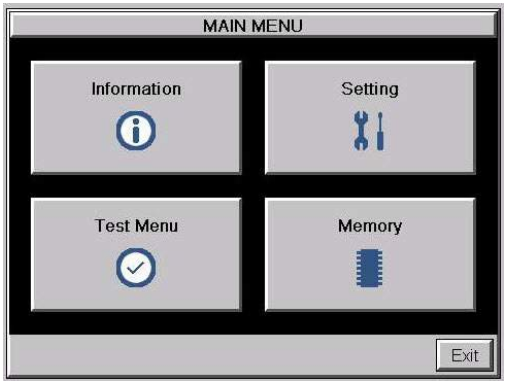
Click the **Apply** button in the Event Add dialog box and then the Close button to return to the Event Manager Database. You now will see that the first event in the database is for the System Screen Password and it is enabled.



System Setup Screens Flowchart



Main Menu



The **Main Menu** system setup screen is the top layer in the menu structure.

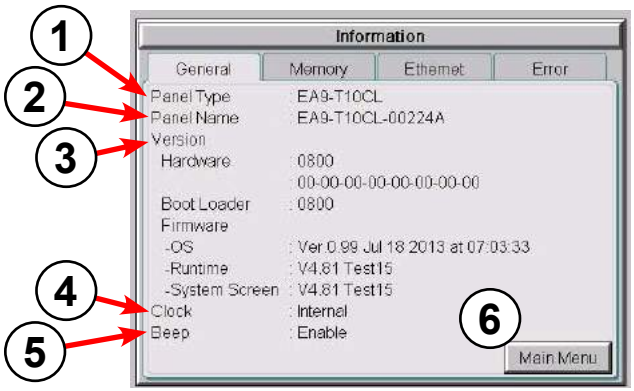
Touch Screen Calibration

While the **Main Menu** system setup screen is being displayed, the extreme upper left corner of the touch panel can be pressed for 3 seconds to access the **Touch Screen Calibration** display. This feature is used if the touch panel data becomes corrupted and touching the **Main Menu** buttons does not work. It allows a shortcut to the touch panel calibration screen



Information Menu

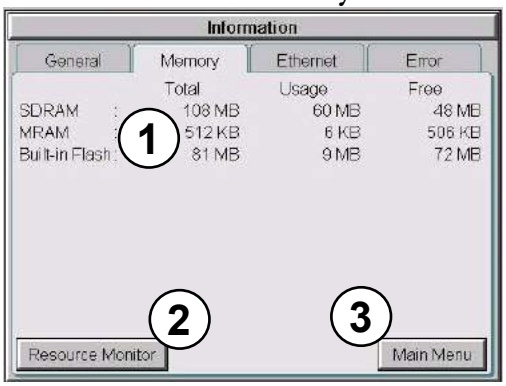
Information - General tab



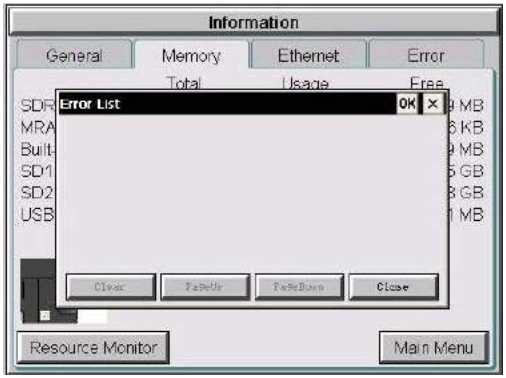
The **General** tab under the Information menu provides detailed information of the ***C-more*** touch panel.

Item No.	Function	Description	Comments
1	**Panel Type**	EA9-T6CL-R EA9-T6CL EA9-T7CL-R EA9-T7CL EA9-T8CL EA9-T10CL EA9-T10WCL EA9-T12CL EA9-T15CL-R EA9-T15CL	Model Number
2	**Panel Name**	The panel name is configured in the programming software and saved with a project.	The default panel name is the model number plus the lower three bytes of the panel MAC address, ie EA9-T8CL-0022C4.
3	**Version**	The version identifications provide information on the components and firmware in the panel	Files reside in the ***C-more*** touch panel's memory.
4	**Clock**	Internal/External clock selection.	Configured in the ***C-more*** Programming Software.
5	**Beep**	Status of the internal beeper.	Configurable in the **Setting Menu – Beeper** shown on page 5-23 or in the ***C-more*** Programming Software.
6	**Main Menu**	Press to return to the **Main Menu** screen.	**Main Menu** shown on previous page.

Information - Memory tab

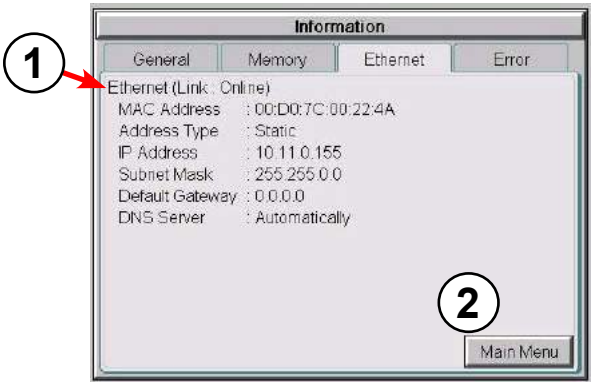


1. **Memory components** - Status of each memory component - SDRAM, MRAM and Built-in Flash are internal memory components. When external memory devices are installed in the panel they will be included in this list : SD1, SD2 (12 and 15 inch panels only) and USB.



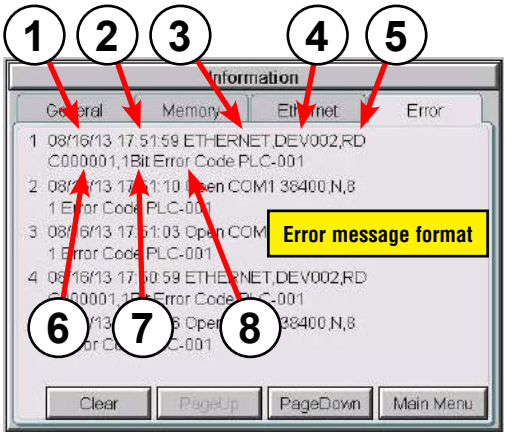
2. **Resource Monitor** - this troubleshooting tool displays CPU and panel internal memory usage. When enabled, the Resource Monitor will display on the panel screen WHILE THE PROJECT IS RUNNING that is, after you click Main Menu then click Exit) - the Resource Monitor also allows access to the Error Tab WITHOUT STOPPING COMMUNICATIONS WITH THE PLC
3. **Main Menu** - Press to return to the Main Menu screen - Main Menu shown previously

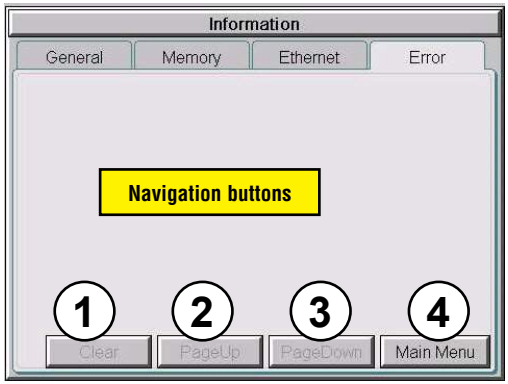
Information - Ethernet tab



Item No.	Function	Description	Comment
1	**Ethernet (Link: Online)**	Ethernet Settings: MAC Address: 00 D0 7C XX XX XX Address Type: DHCP/Static IP Address: Subnet Mask: Default Gateway: DNS: 1.) Automatically 2.) Use Designated Address Note: N/A - not available on reduced featured models (–R)	Configurable in the **Setting Menu – IP Address Setting** shown on in this section or in the ***C-more*** Programming Software.
2	**Main Menu**	Press to return to the **Main Menu** screen.	

Information - Error tab





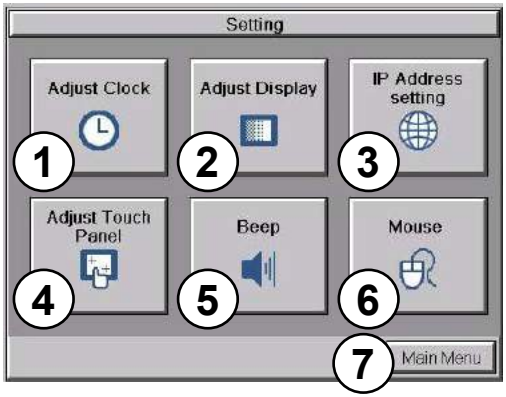
Error Message Format:

Item No.	Function	Description	Comment
Order of error message functions: **Error Number, Date, Time, Error Port, Device Name, Error Type, PLC Device, Access Bytes, Error Message**			
1	**Date**	Format: MM/DD/YY	Date error occurred.
2	**Time**	Format: HH/MM/SS	Time error occurred.
3	**Error Port**	PLC Serial Communications Port: Ethernet:	
4	**Device Name**	The name of the device reporting the error.	Device names are configured in the programming software, Panel Manager
5	**Error Type**	RD: Read WT: Write	
6	**PLC Address**	The assigned address of the PLC that caused the error.	
7	**Access Bytes**	The number of access bytes.	
8	**Error Message**	The error message is the same as the message displayed in the upper left of the ***C-more*** touch panel's display.	A list of Error Massages is shown in Appendix A

Error Message navigation buttons:

Item No.	Function	Description	Comment
1	**Clear**	Press to clear all error messages. This button is grayed out when there are no error messages to display.	Errors are also cleared with firmware is updated on the panel. Errors are not cleared on power cycle or project transfer.
2	**Page Down**	Press to go to to the next page. This button is grayed out when there is no error messages on the next page.	
3	**Page Up**	Press to go to the previous page. This button is grayed out when there is no error messages on the previous page.	
4	**Main Menu**	Press to return to the **Main Menu** screen.	

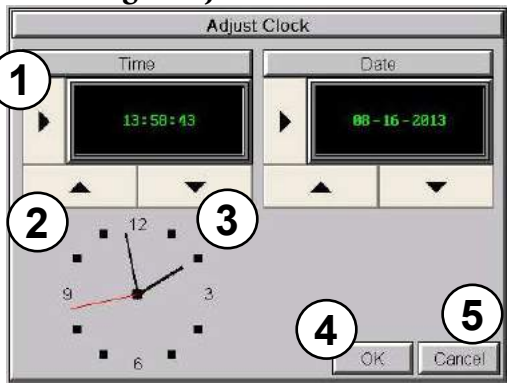
Setting Menu



The **Setting Menu** is used to adjust the time & date, adjust the contrast or brightness of the display, enter the IP address settings, adjust (calibrate) the touch screen, enable or disable the internal beep and turn on and off the mouse cursor .

Item No.	Function	Description	Comments
1	**Adjust Clock**	Press to go to the **Adjust Clock** screen.	
2	**Adjust Display**	Press to go to the **Adjust Display** screen.	
3	**IP Address**	Press to go to the **IP Address** screen	The IP Address can also be set from the programming software or by the project.
4	**Adjust Touch Panel**	Press to go to the **Adjust Touch Panel** screen.	
5	**Beep**	Press to go to the **Beep** screen.	
6	**Mouse**	Press to go to the **Mouse** screen.	
7	**Main Menu**	Press to return to the **Main Menu** screen.	

Setting – Adjust Clock

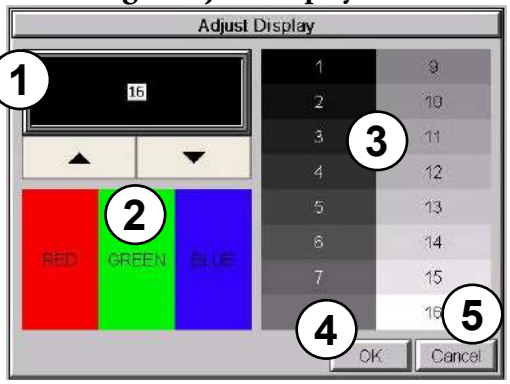


Item No.	Function		Description	Comments
1	**Select**		**Time:** Each press of the **Select** button will cycle thru the following settings. 1.) No Selection to Hours 2.) Hours to Minutes 3.) Minutes to Seconds 4.) Seconds back to Hours **Date:** Each press of the **Select** button will cycle thru the following settings. 1.) Month to Day 2.) Day to Year 3.) Year back to Month	
2	**Up**		Press to increment the value by "1" with each press.	
3	**Down**		Press to decrement the value by "1" with each press.	
4	**OK**		Press to accept the changes.	
5	**Cancel**		Press to return to the **Setting Menu** screen without accepting the changes.	

NOTE: *The function buttons used to adjust the clock settings on the panel's setup screen are* ***disabled*** *if an* ***External*** *clock source is selected in the* ***C-more*** *programming software. The choice of an internal or external clock source is available by selecting* ***Clock Source*** *in the* ***C-more*** *programming software under the* ***Main Menu*** *drop down function* ***Setup.***

NOTE: *The panel's clock can also be adjusted from the* ***C-more*** *programming software. The* ***Adjust Clock*** *function can be accessed in the software by selecting* ***Adjust Clock*** *under the* ***Main Menu*** *drop down function* ***Panel*** *or selecting* ***Adjust Clock*** *under the* ***Panel*** *tab in the software's* ***Navigation*** *window.*

Setting – Adjust Display

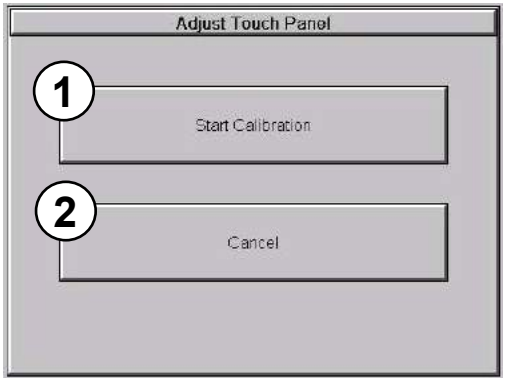


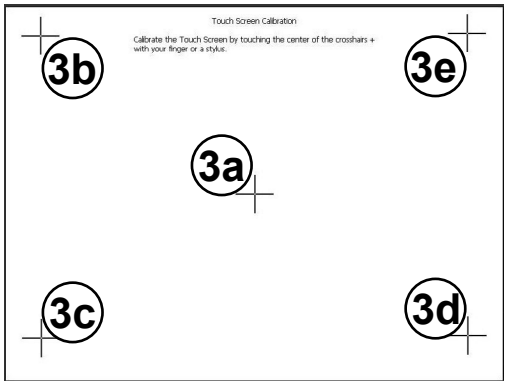
Item No.	Function	Description	Comments
1	**Setting**	Use the Up and Down arrows to change the brightness.	
2	**Color Sample**	Displays a sample of how colors will appear with the new setting.	
3	**Contrast Sample**	Displays a sample of contrast with the new setting	
4	**OK**	Press to accept the changes.	
5	**Cancel**	Press to return to the **Setting Menu** screen without accepting the changes.	

Setting – Adjust Touch Panel

This procedure is used to calibrate the touch screen to ensure accuracy of the touch areas. There are five points on the touch screen that the calibration is based around. The adjustment relies on very narrow areas for the calibration points.

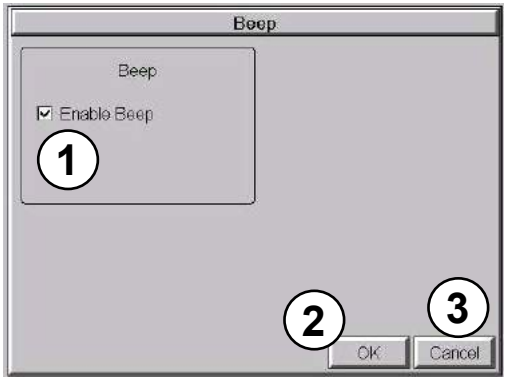
NOTE: *The panel will display the* ***Adjust Touch Panel*** *window on power up until the calibration procedure is completed.*





Item No.	Function	Description	Comment
1	**Start Calibration**	Press to begin the touch screen calibration	
2	**Cancel**	Press to return to the **Setting Menu** screen.	
3	**Points 3a thru 3e**	The touch screen calibration crosshairs will appear individually in the order of point 3a thru 3e respectively as each proceeding crosshair is pressed.	If the touched co-ordinate point is too far off from normal, then the procedure will return to Point 3a.

Setting – Beep

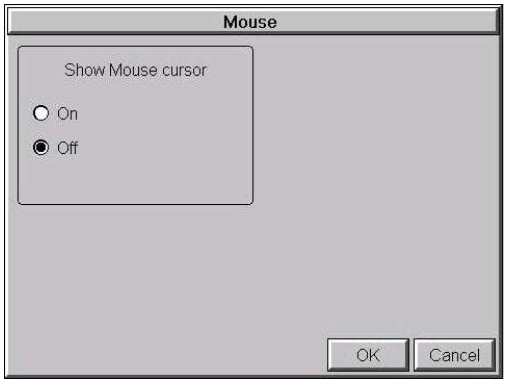


This system setup screen function is used to enable or disable the touch panel's internal beep function.

Item No.	Function	Description	Comments
1	**Enable Beep**	Check to enable the internal beep.	
2	**OK**	Press to accept the changes.	
3	**Cancel**	Press to return to the **Setting Menu** screen without accepting the changes.	

*NOTE: The project settings in the **C-more** programming software **Panel Manager** will override the touch panel's internal setting upon initial download.*

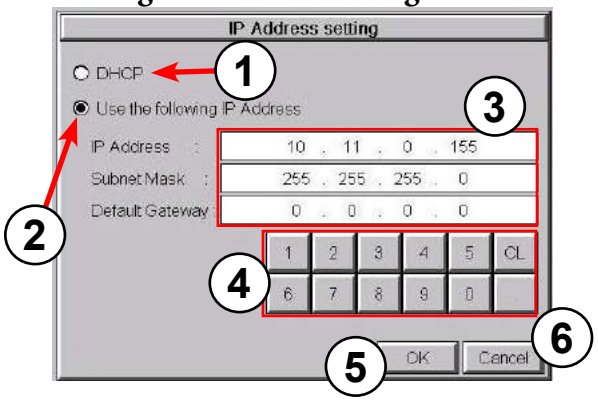
Setting – Mouse



This system setup screen function is used to enable/ disable the arrow mouse cursor on the panel screen. It may be valuable to display the mouse cursor, for example, when an external USB keyboard is connected to the panel..

NOTE: *The project settings in the* ***C-more*** *programming software* ***Panel Manager*** *will override the touch panel's internal setting upon initial download.*

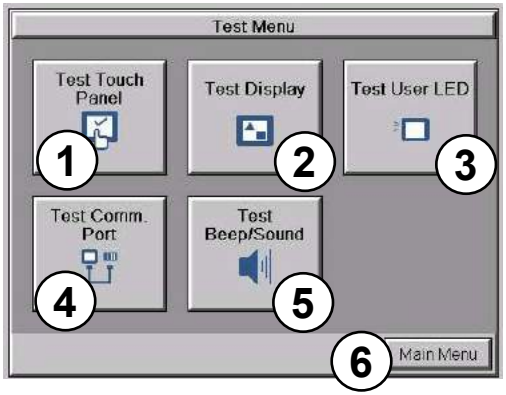
Setting – IP Address Setting



Item No.	Function	Description	Comment
1	**DHCP**	"DHCP" is enabled as the default when this system setup screen is first selected. All of the other selections on this screen are dimmed when "DHCP" is selected and are not available.	
2	**IP Address**	The "Use the following IP Address" setting is selected when its radio button is pressed. Use the numerical keypad to assign the IP address.	Note: If an Ethernet cable is not connected to the touch panel from an active Ethernet device, then the IP Address will show as 0.0.0.0.
3	**IP Address** **Subnet Mask** **Default Gateway**	Select the field that needs to be assigned by touching the entry value and use the keypad to enter the desired address.	Each field can be independently assigned.
4	**Keypad**	The keypad is used to enter the Address: Use the numeric keys to enter the address, e.g: 192.168.10.1 **"CL"** = Clear value entered	
5	**OK**	Press to accept the changes and return to the **Setting Menu** screen.	
6	**Cancel**	Press to return to the **Setting Menu** screen without accepting the changes.	

*NOTE: The project settings in the **C-more** programming software **Panel Manager** will override the touch panel's internal setting upon initial download.*

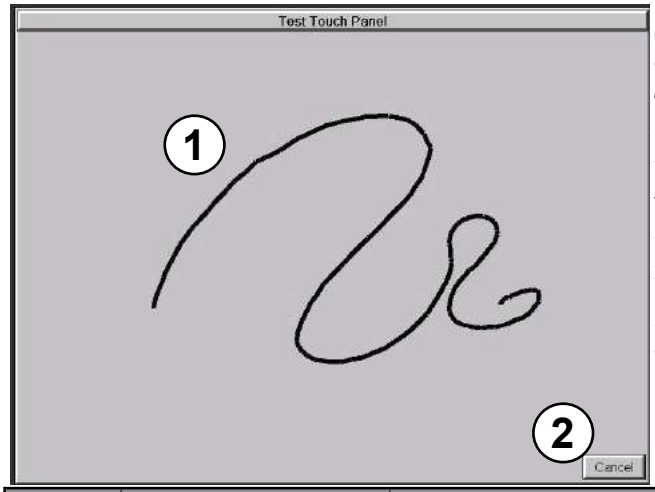
Test Menu



The **Test Menu** gives the user the ability to test the operation of the touch screen, test the LCD display, test the various communication ports, and also test the internal beeper and the audio line out through an user supplied amplified (stereo) speaker(s).

Item No.	Function	Description	Comments
1	**Test Touch Panel**	Press to go to the **Test Touch Panel** screen.	
2	**Test Display**	Press to go to the **Test Display** screen.	
3	**Test User LED**	Tests the user configurable LED on the front of the panel. Refer to the online help file for details on the configuration of this LED.	
4	**Test Communication Port**	Press to go to the **Test Communication Port** screen.	
5	**Test Beep/Sound**	Press to go to the **Test Beep/Sound** screen.	
6	**Main Menu**	Press to return to the **Main Menu** screen.	

Test Menu – Test Touch Panel



Using this test, normal or unusual operation of the analog touch panel can be determined.

Testing:

If an area of the touch screen is suspected to be inoperable, touch that area of the screen while in the **Test Touch Panel** screen mode. The screen pixels should turn black in that area. If the screen pixels do not turn black when touched, then the touch screen is defective or needs to be calibrated. See **Setting - Adjust Touch Screen**

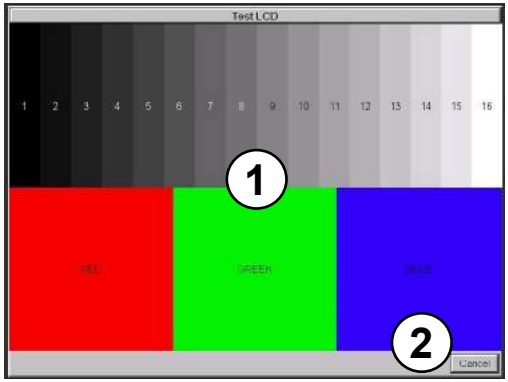
Item No.	Function	Description	Comments
1	**Touch area**	Touch to turn on pixels on the screen.	Both the title bar (Test Touch Panel) and **Cancel** button can be drawn across to test the touch operation.
2	**Cancel**	Press to return to the **Test Menu** screen.	

NOTE: *The Touchscreen is designed to respond to a single touch. If it is touched at multiple points at the same time, an unexpected object may be activated.*

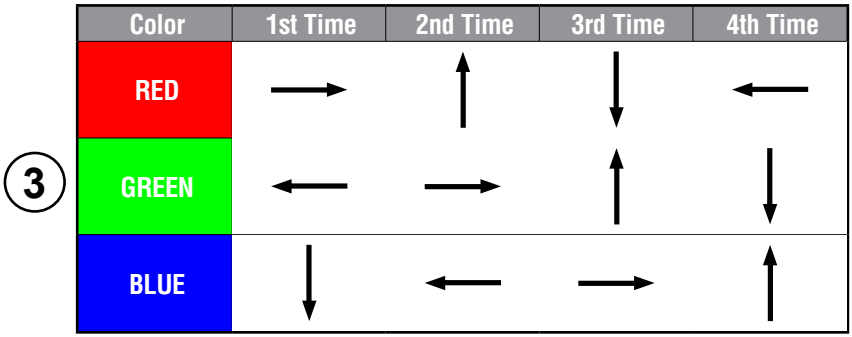
Test Menu – Test Display

There are two different test patterns that may be run on the display to allow the user to check for display screen defects. If the screen is not touched within 3 seconds of **Test Pattern 1** being displayed, then **Test Pattern 2** will be displayed until the screen is touched, otherwise **Test Pattern 1** will remain until cancelled.

Test Pattern 1 displays a test pattern of 16 grayscale graduations and RGB colors.



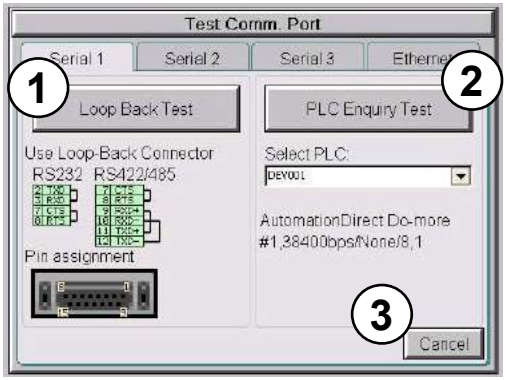
Test Pattern 2 will follow the pattern as shown in the following chart with the color wiping across the screen in the direction indicated by the arrows, then repeats:



Item No.	Function	Description	Comments
1	**Touch the Test Display screen.**	Press the screen anywhere except the **Cancel** button and the shown **Test Pattern 1** remains.	If the **Test Display** screen is not touched, then in three seconds the display will move to **Test Pattern 2**.
2	**Cancel (Test Pattern 1)**	Press to return to the **Test Menu** screen.	
3	**Touch Anywhere (Test Pattern 2)**	Touch the sceen anywhere during **Test Pattern 2** and return to the **Test Menu** screen.	

Test Results: If any pixels on the screen do not appear the same color as the surrounding pixels, the screen may be defective. A single pixel gone bad is relatively common. Surrounding pixels going bad over time is another indication the screen may be defective.

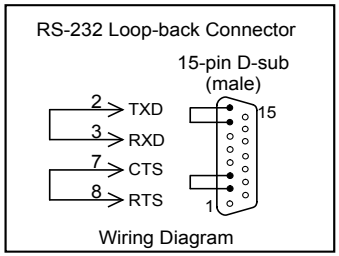
Test Menu – Test Communication Ports: Serial Ports

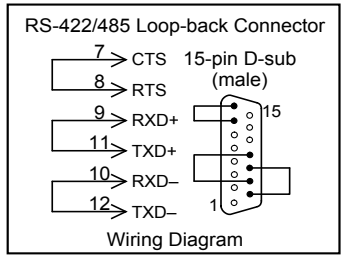


The following test can be used to check the operation of the serial communication ports, with the use of a loop back connector and can also check the serial communications to any connected and configured PLC.

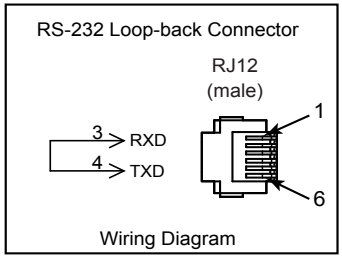
Item No.	Function	Description	Comments
1	**Loop Back Test**	The loop back test checks the hardware components of the selected port for proper operation.	The loop back test may be performed on Serial Port 1 or Serial Port 3. Each tab shows diagrams to assist the user in building the loop back connector..
2	**PLC Enquiry Test**	This function allows the ability to select any PLC that that may be connected to the touch panel via a serial connection and checks to see if the communications are working correctly.	The PLC must be configured for the selected port in the C-more programming software Panel Manager and transferred tot he panel before attempting the PLC Enquiry test.
3	**Cancel**	Press to return to the **Test Menu** screen.	

Serial Port 1





Serial Port 3



Test Menu – PLC Serial Comm Port – Loop Back Test

Test Results

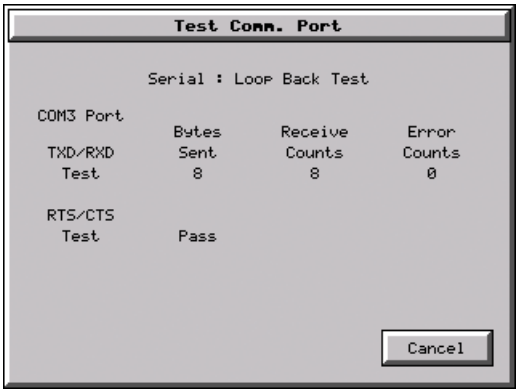
1.) Bytes Sent:
The number of bytes sent after a test is started.

2.) Receive Counts:
The number of bytes which are received after the test is started.

3.) Error Counts:
The number of bytes which have not been received after the test is started.

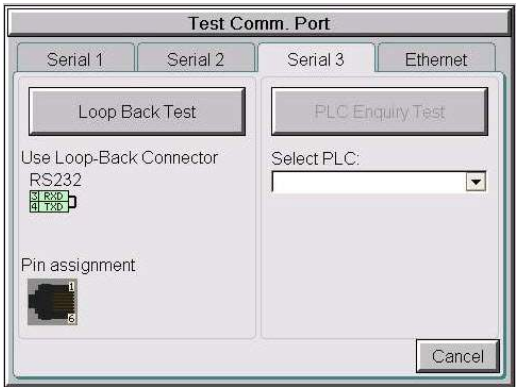
4.) RTS/CTS Test: Pass/Fail
RTS is turned on and if CTS receives the signal then the test shows “Pass”, otherwise the test shows “Fail”.

NOTE: *The test will continue to run until the Cancel button is pressed. If there are any error counts, check the loop back connector.*



]

Test Menu – PLC Enquiry Test: Serial Connection



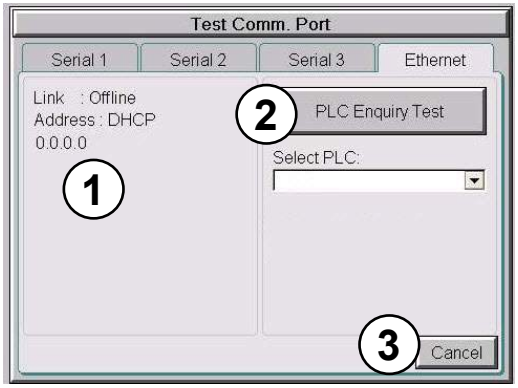
This function allows the ability to select any PLC that may be connected to the touch panel through the selected serial comm. port connection and checks to see if the communications are working correctly.

NOTE: *The communications protocol for the PLC being selected must be configured the same as the* ***C-more*** *touch panel. The touch panel's PLC serial communications are configured using the* ***C-more*** *Programming Software's Panel Manager.*

PLC Enquiry Test

Four test packets are sent to the selected PLC. The test result with return either Pass or Fail.

Test Menu – Test Communication Ports: Ethernet



The following test feature can be used to check the operation of the Ethernet communication port by indicating if an Ethernet link has been established or not, and can also check the status of the Ethernet communications to any connected PLC.

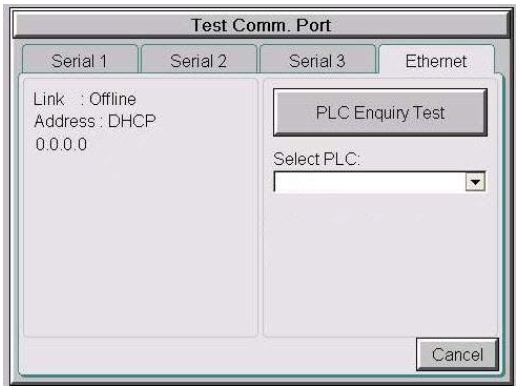
Base featured models (-R) do not include an Ethernet port, therefore this check is not displayed.

NOTE: *The communications protocol for the PLC being selected must be configured the same as the* ***C-more*** *touch panel. The touch panel's PLC serial communications are configured using the* ***C-more*** *Programming Software's Panel Manager.*

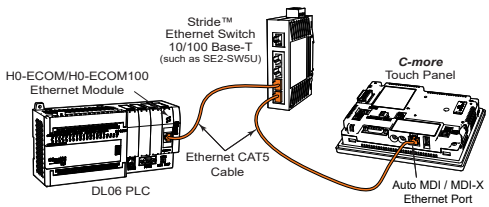
5

Item No.	Function	Description	Comments
1	**Ethernet Connected**	This area displays information to whether an Ethernet link has been established for the touch panel's Ethernet comm port or not. Displays panel's IP address and shows whether it is static or assigned by a DHCP server.	
2	**PLC Enquiry Test**	This function allows the ability to select any PLC configured in the project that may be connected to the touch panel via an Ethernet connection and checks to see if the communications are working correctly.	The PLC must be configured for the selected port in the C-more programming software Panel Manager and transferred to the panel before attempting the PLC Enquiry test.
3	**Cancel**	Press to return to the **Test Menu** screen.	

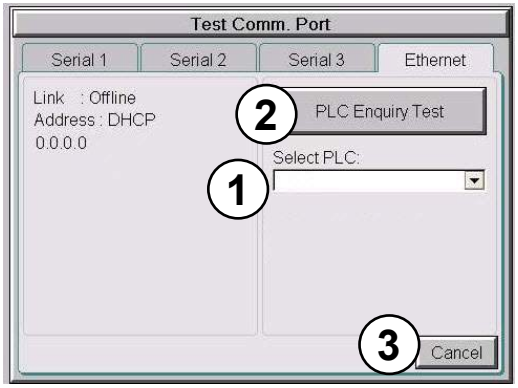
Example of displayed message when the touch panel's Ethernet port is not connected. Note that the address resets to 0.0.0.0 even if it has previously been entered.



Typical Ethernet connection with Ethernet switch.



Test Menu – PLC Enquiry Test: Ethernet Connection



This function allows the ability to select any PLC configured in the project that may be connected to the touch panel through an Ethernet port connection and checks to see if the communications are working correctly.



NOTE: *The communications protocol for the PLC being selected must be configured the same as the* ***C-more*** *touch panel. The touch panel's PLC serial communications are configured using the* ***C-more*** *Programming Software's Panel Manager.*

5

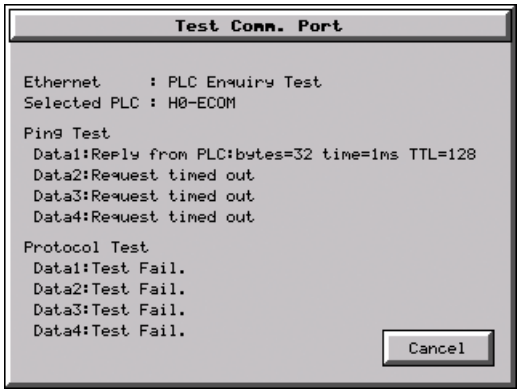
PLC Enquiry Test

Following are the steps that the Ethernet PLC Enquiry Test performs:

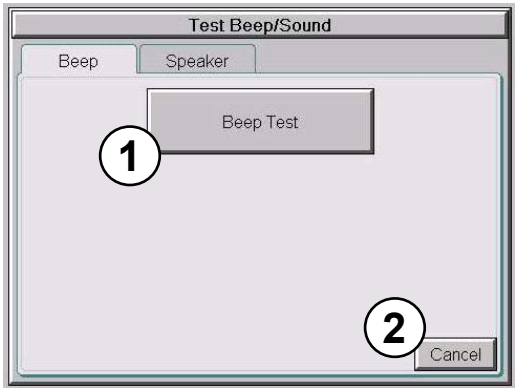
1.) Ping the network 4 times for the PLC selected.

2.) Four of the test read packets are sent to the selected PLC.

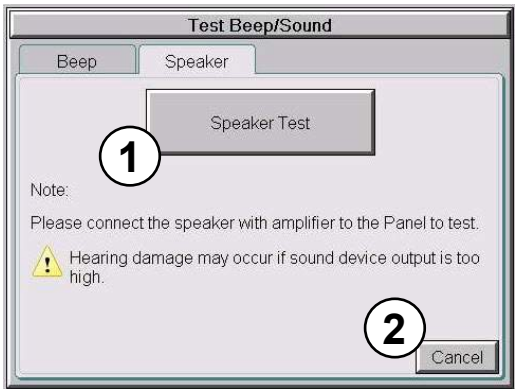
The test result will either be Pass or Fail. However, if the result of pinging the network shows an error, the test is stopped.



Test Menu – Test Beep/Sound



The internal Beeper can be tested from this system setup screen whether the Beeper is enabled or disabled. After the **Beep Test** button is pressed and released, the Beeper will sound for 500 msec.

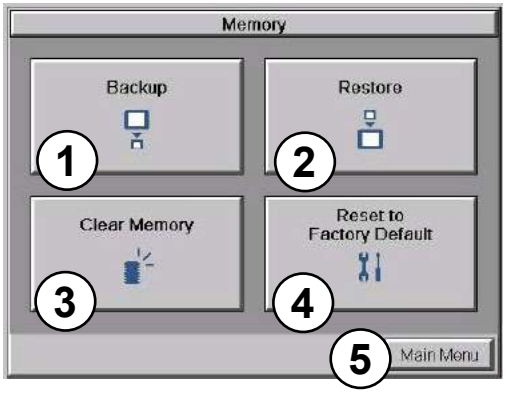


The **Speaker Test** function requires that a speaker(s) with an amplifier (can be stereo) be connected to the Audio Line Out stereo jack on the rear of the touch panel.

After the **Speaker Test** button is pressed then released, a system provided Test.WAV file will play once.

WARNING: Hearing damage may occur if the volume on the user supplied external amplified speaker is set too high.

Memory Menu



The user's project, Firmware and OS, log and recipes files can be backed up to or restored from an SD memory card (SD Card Slot 1 or SD Card Slot 2), or a USB memory device. From this menu the user can also clear the project log files. The user also has the ability to clear the memory within the ***C-more*** touch panel.

Item No.	Function	Description	Comments
1	**Backup**	Backup project, Firmware and OS, log & recipe files to the following memory devices: USB port - Type A: USB pen drive SD Card Slot1 (All panels): SD card SD Card Slot2 (12-inch & 15-inch): SD Card	Any USB 2.0 pen drive. SD formats SD and SDHC are supported. Capacity up to 32 GB. The backup data files are created and copied to a folder on the memory device named "EA_Memory Copy." The project file is named StartupStorage.eas9 "Log" and "Recipe" folders with the appropriate data files are also created on the memory device.
2	**Restore**	Restore project, Firmware and OS, log & recipe files to the internal memory from one of the following memory devices: USB port - Type A: USB pen drive SD Card Slot1 (All panels): SD card SD Card Slot2 (12-inch & 15-inch): SD Card	A folder on the memory device named "EA_Memory Copy" must exist containing a file named "StartupStorage.eas9". The project data file is stored in this file, and if the system data file was backed up, it also will be stored in this file. Any backed up log or recipe data files will be located under the appropriate "Log" or "Recipe" folders.
3	**Clear Memory**	Clear selected data files from the memory of the following internal memory or external memory devices: Built-in FLASH Memory USB port - Type A: USB pen drive SD Card Slot1 (All panels): SD card SD Card Slot2 (12-inch & 15-inch): SD Card	Can only clear project, log and recipe data files of the Built-in FLASH memory. Can clear entire contents or individual data files of external memory devices.
4	**Reset to Factory Default**	The touch panel's internal memory is set to the original factory defaults.	Clears all project memory.
5	**Main Menu**	Press to return to the **Main Menu** screen.	

NOTE: *The Project is RESTORED to the panel from an external memory device. A project can be TRANSFERRED to and SD card or USB memory from the programming software to be RESTORED to a panel that is not connected to the programming software. This file has the .eas9 extension NOT the .eap9 extension of a projects SAVED from the software.*

Project Executed from SD Card Slot 1

If the Project Storage/Boot Location is set to Auto or SD1 in the ***C-more*** software Panel Manager, and an SD memory card is located in the SD Card Slot 1 at the time a project is transferred to the panel, the project will be stored on the SD card, and the Internal Project Memory will be cleared.

If Slot 1 contains an SD memory card with a project and the touch panel's power is cycled, then the project file stored on the SD card is loaded into the touch panel's internal memory and executed. Any project in the internal FLASH memory is cleared.



WARNING: During power up with an SD memory card plugged into an SD card slot, do not remove the memory card from the slot. Damage to the SD memory card and possibly the touch panel may result.

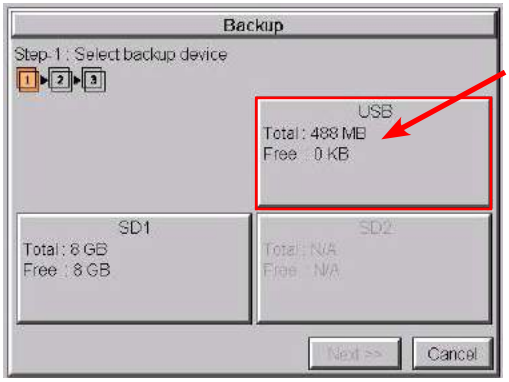


WARNING: After a firmware update, the project files which are located in either the touch panel's internal FLASH memory or an SD memory card plugged into an SD card slot are cleared. The programming software will need to be used to Transfer the project file back into the panel. If you wish to retain the project on the SD memory card, power down the panel and remove the SD card before performing a firmware upgrade.

Increasing Project Memory Size using an SD memory card:

If a project is transferred to the panel with an SD memory card in SD slot 1, the Font and Recipe data files are not included in the 26 MB (82MB for 12" and 15" models) project size. Therefore using an SD memory card can allow a project to be loaded that is larger than 26MB IF the excessive size is caused by Fonts and/or Recipe Sheets.

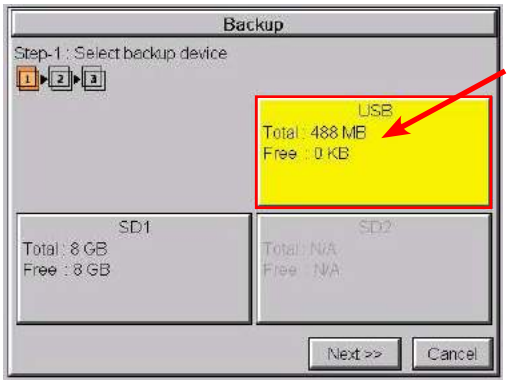
Memory – Backup



The Memory - Backup selection allows you to backup the panel's **Project**, **Log** files, **Recipe** files or even the **Firmware** files to either an SD memory card or **USB** pen drive. The available memory devices will be displayed with their total and free memory.

If the device is not available, it will be grayed out. The **Next** button is grayed out until a device is selected.

The **Cancel** button can be pressed at any time to return to the **Memory Menu** screen.



This is an example of selecting a USB memory device to write the backed up files to.

The selected device is highlighted. Pressing again deselects it.

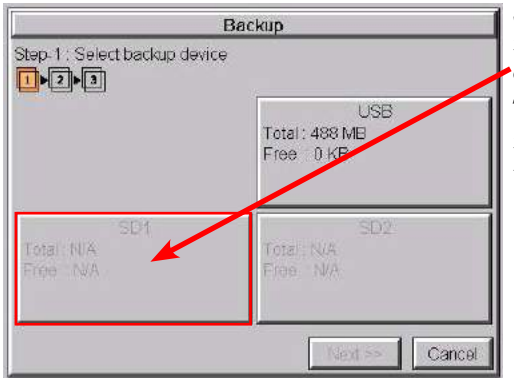
Even if there is only one available memory device, it still needs to be highlighted in order to go to the next step.

Press the Next button to continue to Step 2.

Please read the explanation for the availability of SD1 under different conditions that follow:

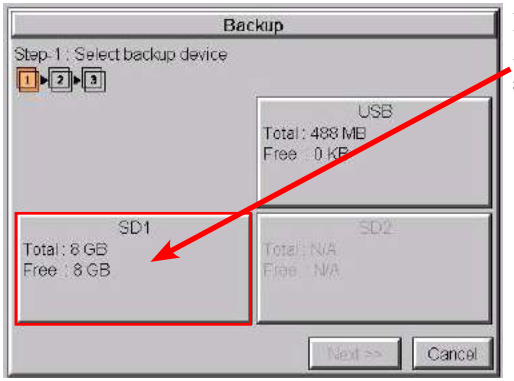
Memory – Backup (cont'd)

SD Card Slot1 Availability Explanation:



SD1 may be unavailable (grayed out) if there is no card in SD Slot 1 or the card in SD slot 1 has the project currently running on the panel stored on it.

The project will exist on SD1 if the SD card was installed in SD1 when the project was TRANSFERRED to the panel by the ***C-more*** programming software.

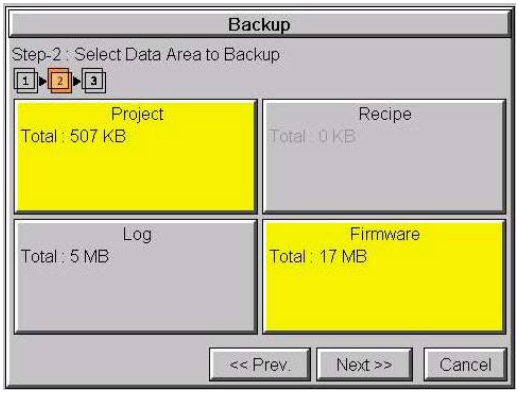


If the panel is powered up or rebooted with an SD card inserted into SD1 Slot, then the SD1 button's Total and Free memory will be displayed.

Memory – Backup (cont'd)

NOTE: *The following definitions are for the various file types that can be backed up:*
Project data – *consists of the actual developed project data that is created in the* ***C-more*** *programming software and includes all functionality, objects, screens, tag names, labels, comments, graphics, etc. Included in backup file name StartupStorage.eas9.*
Recipe data – *consists of all the data values and labels that have been created for the various recipe sheets. Includes all recipe sheets loaded to the panel. Only recipe sheets used in the project are loaded to the panel.*
Firmware – *consists of the operating system, firmware and run time files. Included in backup file name StartupStorage.eas9.*
Log data – *consists of the Alarm Log, Message Log and Trend Data Logging files.*

Select the data file(s) to be backed up by pressing the appropriate data file button. The selection will be highlighted.



Pressing the highlighted data file button again will turn it off.

The Next >> button will stay grayed out until at least one data file is selected.

Any file type not available will be grayed out.

The Next >> button is now enabled.

Pressing Cancel will return to the previous menu.

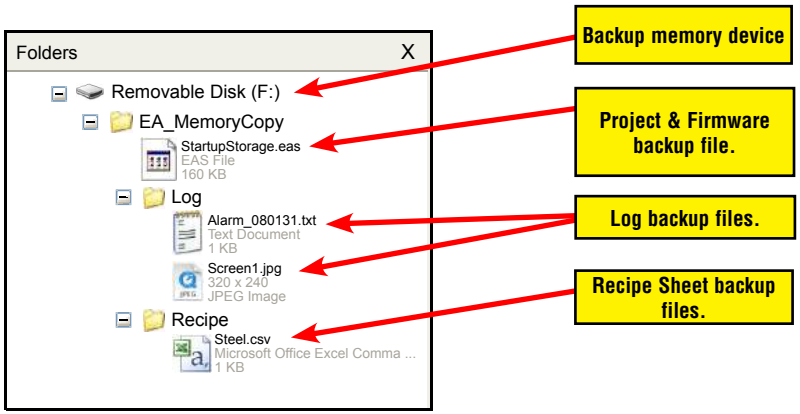
Press the Next button to continue.

NOTE: *In the case of the* ***Project*** *and* ***Firmware*** *files, these can be* ***Restored*** *later to another panel.*
Recipe *files can be edited externally from the panel and then* ***Restored*** *to the panel.*
The ***Log*** *files are for viewing purposes only.*
See ***Memory - Restore*** *later in this chapter for instructions on Restoring the Project, Firmware and or Recipe files to a Panel.*

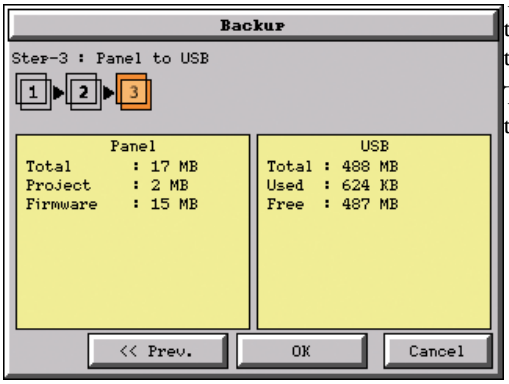
Memory – Backup (cont'd)

Backup Data Files Naming and Organization

The following graphic shows how the various data files are organized on the memory device when doing a **Backup** and also the file naming convention that is used when viewed in Windows® Explorer on a PC.



Memory – Backup (cont'd)



The next system setup screen allows the verification of the data file selections. When the OK button is pressed, the backup begins.

The user can return to the previous screen by pressing the << Prev button.



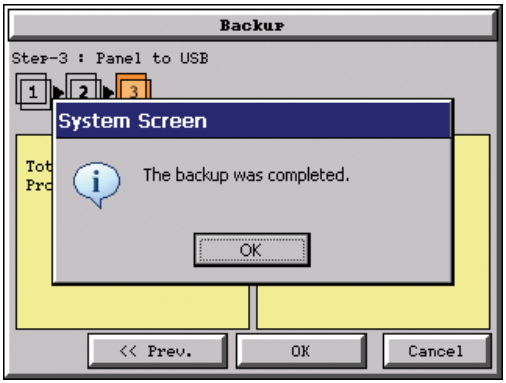
This message is displayed during the **Backup** copying process. Press the **Cancel** button to abort the backup.

The following text is shown in the copying progress message box:

Copy to USB Memory:
"Please do not Power Off and Remove USB"

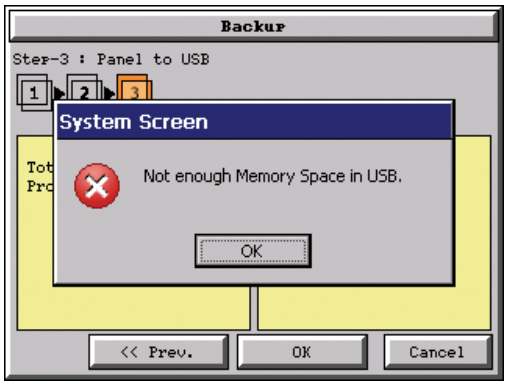
Copy to SD1 or SD2:
"Please do not Power Off and Remove SD"

WARNING: During the copying process do not power off the touch panel or remove the memory device.



This message is displayed to indicate the **Backup** is complete. Press the **OK** button to return to the previous menu selection.

Memory – Backup (cont'd)



Warning Messages

If the destination does not have enough space to store the selected memory size, then the message shown here will be displayed. Press the **OK** button to clear the warning message.

The warning message will read "Not enough Memory Space in %Device%".

%Device% will show either "SD1", "SD2", or "USB".



This warning message will be displayed if the backup Memory device fails or is removed during the backup. Press the OK button to clear the warning message.

The warning message will read "Backup Failed. "%Device% cannot be found".

%Device% will show either "SD1", "SD2", or "USB".

Refer to **Chapter 8: Troubleshooting** for additional help.



For any other reason the backup fails, then this warning message will be displayed. Press the **OK** button to clear the warning message.

The warning message will read "Backup Failed".

Refer to **Chapter 8: Troubleshooting** for additional help.

Memory – Restore



The **Memory - Restore** function is used to:

1.) **Restore** a project previously backed up on an SD card or USB pen drive memory device to the same panel. See **Memory - Backup** previously in this chapter.

2.) Copy a project from one panel to another panel using a memory device to physically transport the data files.

3.) **Restore** a project into the panel that was transferred to an "External Memory Device" using the ***C-more*** Programming Software.

4.) **Restore Recipe Sheet(s)** previously backed up to a memory device or copied to the memory device using a PC.

The available memory devices will be displayed showing the total and free available memory for that device. If the device is not available, it will be grayed out. The **Next** button is grayed out until a device is selected.

The **Cancel** button can be pressed at any time to return to the **Memory Menu** screen.

This is an example of a USB memory device selected to be the source for restoring the data file(s).

The selected device is highlighted. Pressing again deselects it.

Even if there is only one available memory device, it needs to be highlighted in order to go to the next step.

Press the **Next** button to continue to continue to Step 2.

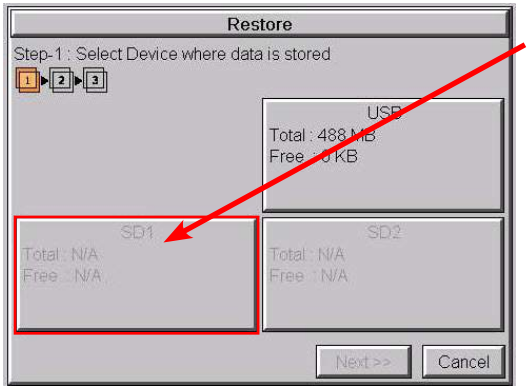


NOTE: *If you have a memory device inserted into the proper port on the touch panel, but it doesn't show up as highlighted in Step 1 of the* ***Backup*** *setup screen, then try a different device to determine if the memory device is defective or if there is a possible problem with the memory device connection. It may not be compatible with the panel. Some USB pen drives are not USB 2.0 compatible and will not work with* ***C-more*** *touch panels. Some USB pen drives may take several minutes before they are recognized by the panel.*
SD cards must be formatted using the SD formatter provided by ***SDcard.org***

Memory – Restore (cont'd)

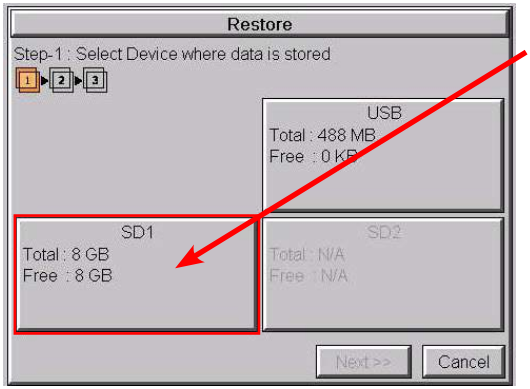
Please read the explanation for the availability of SD1 under different conditions as shown on this page and the next.

SD1 Availability Explanation:



SD1 may be unavailable (grayed out) if there is no card in SD Slot 1 or the card in SD slot 1 has the project currently running on the panel stored on it.

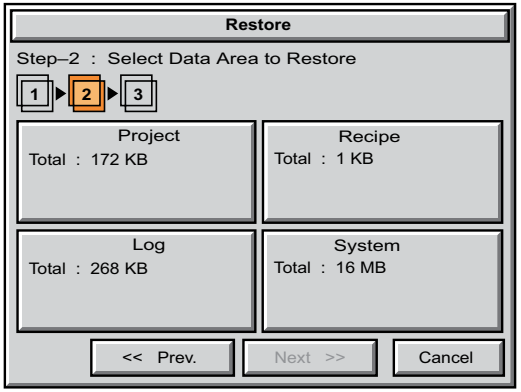
The project will exist on SD1 if the SD card was installed in SD1 when the project was TRANSFERRED to the panel by the ***C-more*** programming software.



If the panel is powered up or rebooted with an SD card inserted into SD1 Slot, then the SD1 button's Total and Free memory will be displayed.

NOTE: *The following definitions are for the various file types that can be restored:*
Project data – *consists of the actual developed project data that is created in the* ***C-more*** *programming software and includes all functionality, objects, screens, tag names, labels, comments, graphics, etc. Included in backup file name StartupStorage.eas9.*
Recipe data – *consists of all the data values and labels that have been created for the various recipe sheets. Includes all recipe sheets loaded to the panel. Only recipe sheets used in the project are loaded to the panel.*
Firmware – *consists of the operating system, firmware and run time files. Included in backup file name StartupStorage.eas9.*
Log data – *consists of the Alarm Log, Message Log and Trend Data Logging files.*

Memory – Restore (cont'd)

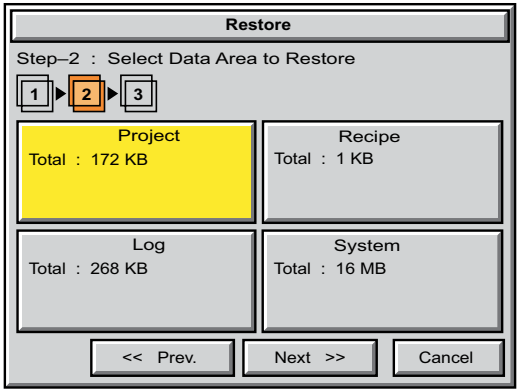


Select the data file(s) to be restored by pressing the appropriate data file button. The selection will be highlighted. The data file can be either the **Project, Firmware** and/or **Recipe files**. The selected data is restored to the internal built-in memory if there is no SD card inserted into the SD1 slot.

Pressing the highlighted data file again will turn it off.

The **Next >>** button will stay grayed out until at least one data file is selected.

Any file type not available will be grayed out.



This is an example of a file selected to restore.

The selected file is highlighted.

The **Next >>** button is now enabled.

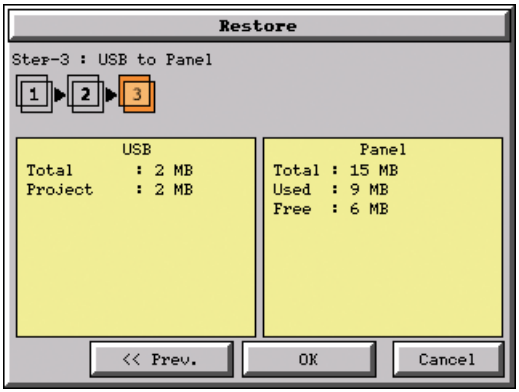
Pressing **Cancel** will return to the previous menu.

Press the **Next** button to continue.



NOTE: *The following definitions are for the various file types that can be restored:*
Project data – *consists of the actual developed project data that is created in the* ***C-more*** *programming software and includes all functionality, objects, screens, tag names, labels, comments, graphics, etc. Included in backup file name StartupStorage.eas9.*
Recipe data – *consists of all the data values and labels that have been created for the various recipe sheets. Includes all recipe sheets loaded to the panel. Only recipe sheets used in the project are loaded to the panel.*
Firmware – *consists of the operating system, firmware and run time files. Included in backup file name StartupStorage.eas9.*
Log data – *consists of the Alarm Log, Message Log and Trend Data Logging files.*

Memory – Restore (cont'd)



The data selected to restore is checked. If the data is good, then the **OK** button can be pressed to start the restore.

If there is a problem with the data, the **OK** button will remain grayed out and the user can return to the previous screen by pressing the **<< Prev** button.

The problem could be caused by a corrupted data file. See **Chapter 8: Troubleshooting** for additional help.



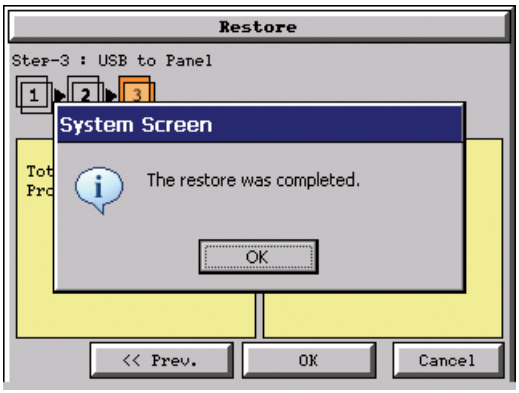
This message is displayed during the **Restore** process. Press the **Cancel** button to abort the backup.

The following text is shown in the copying progress message box:

Copy to USB Memory:
"Please do not Power Off and Remove USB"

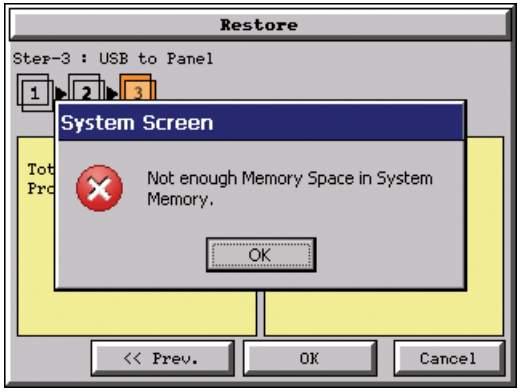
Copy to SD1 or SD2:
"Please do not Power Off and Remove SD card"

WARNING: During the copying process. Do not power off the touch panel or remove the memory device.



This message is displayed to indicate the **Restore** is complete. Press the **OK** button to return to the previous menu selection.

Memory – Restore (cont'd)



Warning Messages:

If the system memory does not have enough space to restore the selected memory size, then the message shown here will be displayed. Press the **OK** button to clear the warning message.

The warning message will read "Not enough Memory Space in System Memory".

The Project size must be less than 10 MByte for 6"-10" panels and less than 40 MByte for 12" & 15" panels.



This warning message will be displayed if the restore Memory device fails or is removed during the backup. Press the **OK** button to clear the warning message.

The warning message will read "Restore Failed. "%Device% cannot be found".

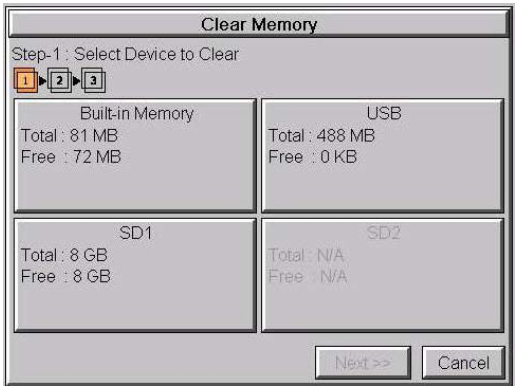
%Device% will show show "SD1", "SD2", or "USB".

Try using a different device with known good data in the same connector or using the device that is causing the error in a different connector.



For any other reason the restore fails, then this warning message will be displayed. Press the **OK** button to clear the warning message.

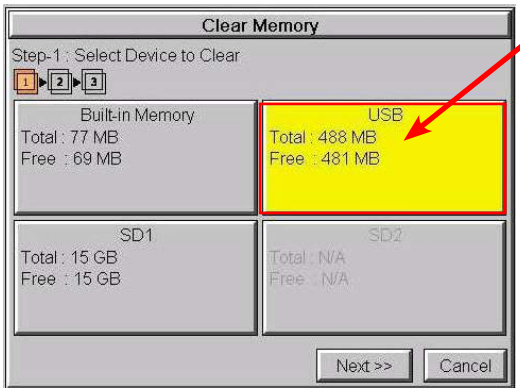
Memory – Clear Memory



This function is used to clear individually selected data files, or all data files, within the panel's **Built-in Memory**, or any installed memory device such as a USB pen drive or an SD card.

Select the memory device to clear. If the device is not available, it will be grayed out.

The Next button is grayed out until a device is selected.

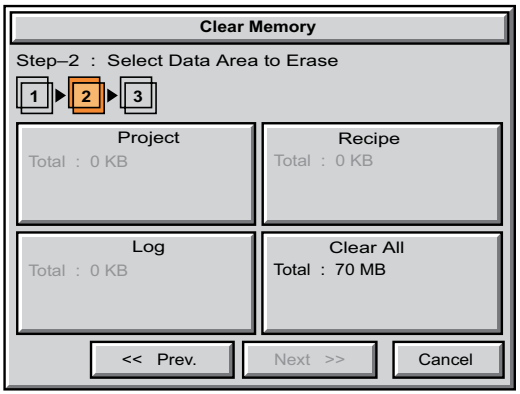


The selected device is highlighted. Pressing again deselects it.

When there are more than two available backup devices, the one selected will be highlighted. If another is selected, then the highlight will change to the last one pressed. Only one device can be selected at a time.

Press the **Next** button to continue.

Memory – Clear Memory (cont'd)



Select the data file(s) to be cleared.

This is an example of an SD card or USB memory that was selected in **Clear Memory - Step-1**.

The selected file will be highlighted. Pressing again deselects it.

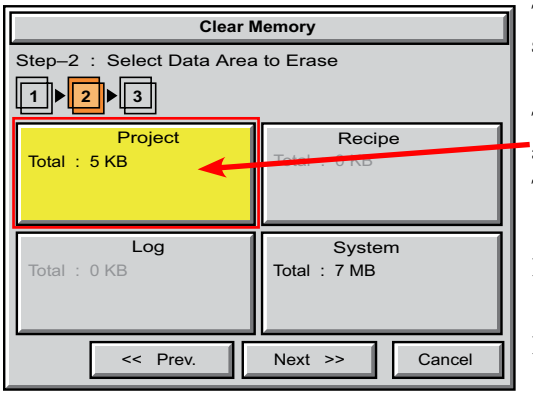
The **Next >>** button will stay grayed out until file(s) are selected.

Selecting **Clear All** will erase all files located on the memory device.

This is an example of **USB Memory** that was selected in **Clear Memory - Step-1**.

Notice the ability to select either the **Project** file, **Log** files, **Recipe** files, or the **System** files.

NOTE: *Firmware files cannot be cleared from internal memory.*



This is an example of the **Project** data file being selected for clearing.

The selected memory area is highlighted. Pressing again deselects it.

The **Next >>** button is now enabled.

Pressing **Cancel** will deselect the file(s).

Press the **Next** button to continue.

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP