



Color-Touch OCS

Products Specifications and Installation Data

For complete information on Color OCS, refer to the *Color-Touch OCS Hardware Manual* (MAN0465).

1 SPECIFICATIONS / PRODUCT DESCRIPTIONS

Table 1 - Color Touch OCS Specifications

Color Touch Models	OCS3xx (6-inch)	OCS451 (8-inch)	OCS551 (10-inch)	OCS651 (12-inch)
Display Type (LCD with backlight)	320 x 240 (TFT and STN models available.)	800 x 600 TFT	800 x 600 TFT	800 x 600 TFT
Display Size	5.7"	8.4"	10.4"	12.1"
Display Screen Dimensions	4.6"W x 3.5"H (117 x 88mm)	6.7"W x 5"H (170 x 128mm)	8.3"W x 6.2"H (211 x 159mm)	9.7"W x 7.3"H (246 x 185mm)
Display Memory	2 MBytes	8 MBytes		
User Keys	5 configurable keys + System Key	7 configurable keys + System Key		
Screens Supported	1,023 screens (50 data fields per screen)	1,023 screens (300 objects per screen)		
Number of Colors	16	32,768		
Primary Power	Steady State Current: 24VDC(+/-10%). 450mA @ 24VDC Inrush Current: (17A @ 24VDC) for 1ms.	Steady State Current: 24VDC(+/-10%). 1.0A @ 24VDC Inrush Current: (17A @ 24VDC) for 400µsec.	Steady State Current: 24VDC(+/-10%). 1.6A @ 24VDC Inrush Current: (17A @ 24VDC) for 400µsec.	Steady State Current: 24VDC(+/-10%). 1.6A @ 24VDC Inrush Current: (17A @ 24VDC) for 400µsec.
Height	5.46" (138.6mm)	7.0" (178mm)	9.09" (231.0mm)	10.22" (259.6mm)
Width	7.12" (180.85mm)	9.17" (233mm)	11.96" (303.8mm)	12.85" (326.4mm)
Mounting Depth	3.00" (76.2 mm)	3.7" (94mm)	3.7" (94mm)	3.7" (94mm)
Keypad Material	Faceplate made of Lexan® HP92 by GE Plastics. The material is resistant to most corrosive substances found in industrial environments. The material also holds up well in most industrial conditions.			
Protocols supported	CsCAN, Modbus Master, Modbus Slave, and ASCII Read and Write			
Serial Ports:	CsCAN (up to 253 drops) or DeviceNet Slave (Explicit Messaging, Polled Connection, Polled Snooping)			
CAN Ports:	3 RS-232 / RS-485 Ports. Software Selectable.			
Serial Ports	1 CAN (DeviceNet slave or CsCAN peer)			
Network Ports	On-board Ethernet 10BaseT supports TCP/IP with EGD and SRTP, CsCAN TCP, Modbus TCP Slave			
Communications Options	EIAJ RC-5720 Plastic Fiber, TX+RX 10m max. host (OCS or hub) to base			
Expansion I/O	SmartStix support			
Remote I/O				

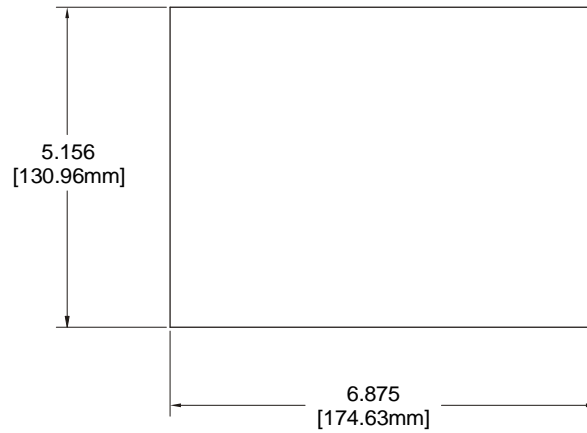
continued					Table 1 - Color Touch OCS Specifications			
Color Touch Models	OCS3xx (6-inch)	OCS451 (8-inch)	OCS551 (10-inch)	OCS651 (12-inch)				
Microprocessor(s)	Dual Processors: Intel80C296 (control); Hitachi SH3 (graphics)		Dual Processors: Intel80C296 (control); Hitachi SH3-DSP (graphics)					
Control Memory	256K Ladder Memory plus 32KB Register Space							
Control Scan Rate	0.7mS / K Ladder Logic (typical)							
Portable Memory	None		Compact FLASH (CF) slot					
Operating Temperature & Humidity	32 to 122°F (0 to +50°C), 5 to 85% Non-condensing							
Storage Temperature	14 to 140°F (-10 to +60°C)							
UL	Please refer to Compliance Table located at http://www.heapg.com/Support/compliance.htm							
CE	OCS301 / 351: To maintain FCC and CE Radiated Emissions limits, you must install a ferrite (part number: 0461164181 available from Fair-Rite Corporation) within 25mm from the OCS end of the Ethernet cable.							

Table 2 - Product Descriptions				
Color Touch OCS	Network			Screen Type
OCS300	CsCAN, DeviceNet			5.7" STN with 16 colors
OCS301	CsCAN, DeviceNet, On-Board Ethernet 10BaseT			5.7" STN with 16 colors
OCS350	CsCAN, DeviceNet			5.7" TFT with 16 colors
OCS351	CsCAN, DeviceNet, On-Board Ethernet 10BaseT			5.7" TFT with 16 colors
OCS451	CsCAN, DeviceNet, On-Board Ethernet 10BaseT			8" TFT with 32,768 colors
OCS551				10" TFT with 32,768 colors
OCS651				12" TFT with 32,768 colors
All Color Touch OCS Models	Functions			
	Control	Display and Keypad	Network	I/O
	Yes	Yes	Yes	Yes
Other Products Commonly Used with Color OCS				
SmartStack Modules	Provides a wide variety of I/O options for the Color Touch OCS. Require little space and are easy to install. Up to <u>four</u> option modules can be connected to a controller.			
Fiber Optic Extension System (FOX104 / 404)	Extends a high-speed Color Touch OCS backplane enabling SmartStack I/O Modules to be mounted several meters from the Color Touch OCS. The FOX, also, significantly increases the number of SmartStack I/O modules supported by one Color Touch OCS.			
SmartStix Modules	Is a family of remote I/O products for the Color Touch OCS.			

2 INSTALLATION

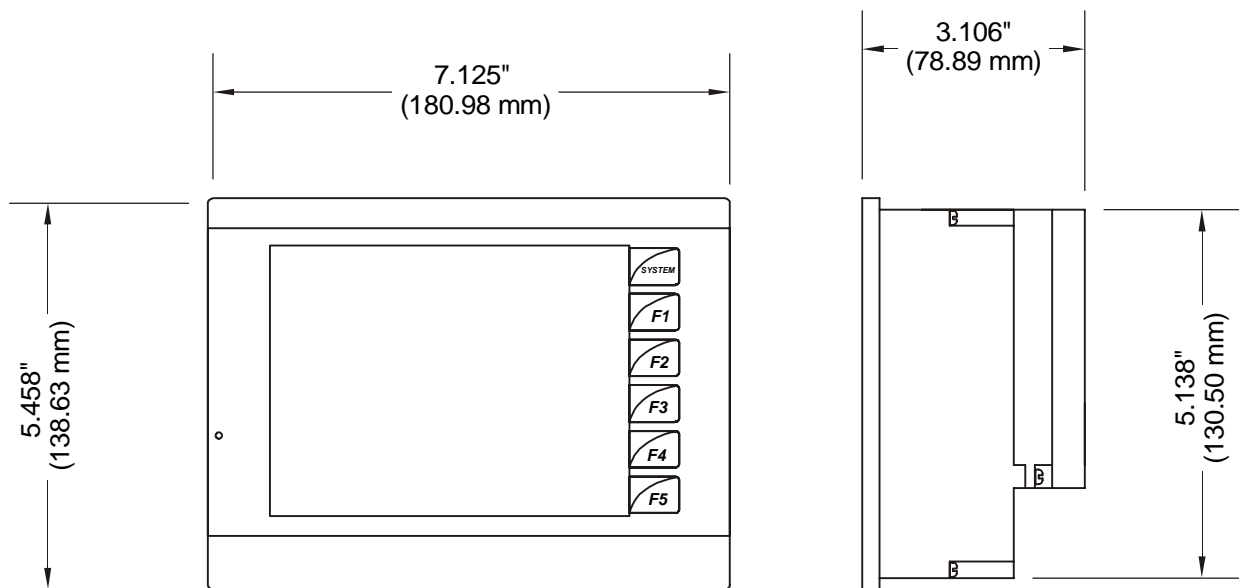
Note: Prior to mounting, observe requirements for the panel layout design and adequate clearances in the *Color-Touch OCS Hardware Manual (MAN0465)*. A checklist is provided in Chapter 2: Installation.

2.1 OCS3xx (6-inch)



001OCS003

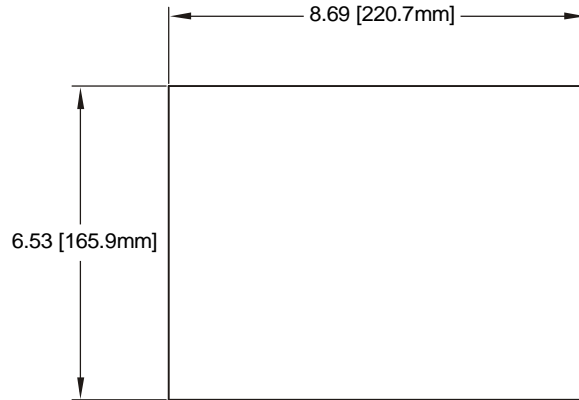
Figure 1 - Panel Cut-out for OCS3xx



001OCS007

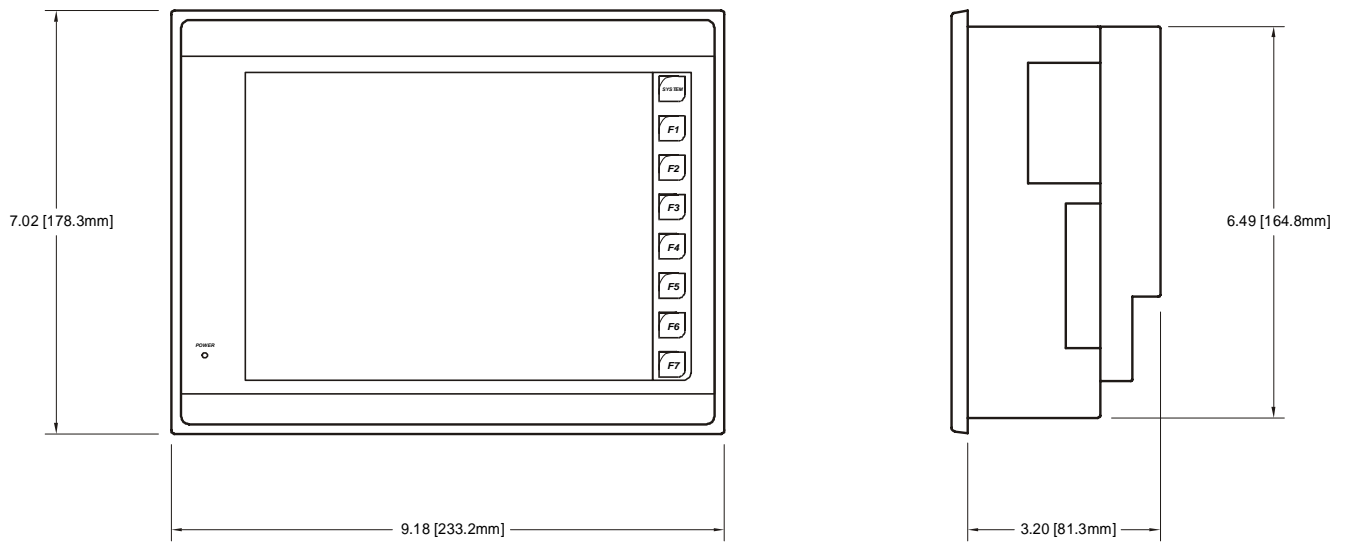
Figure 2 - Dimensions for OCS3xx

2.2 OCS451 (8-inch)



001OCS017

Figure 3 – Panel Cut-out (OCS451)



001OCS018

Figure 4 – Dimensions (OCS451)

2.3 OCS551 (10-inch)

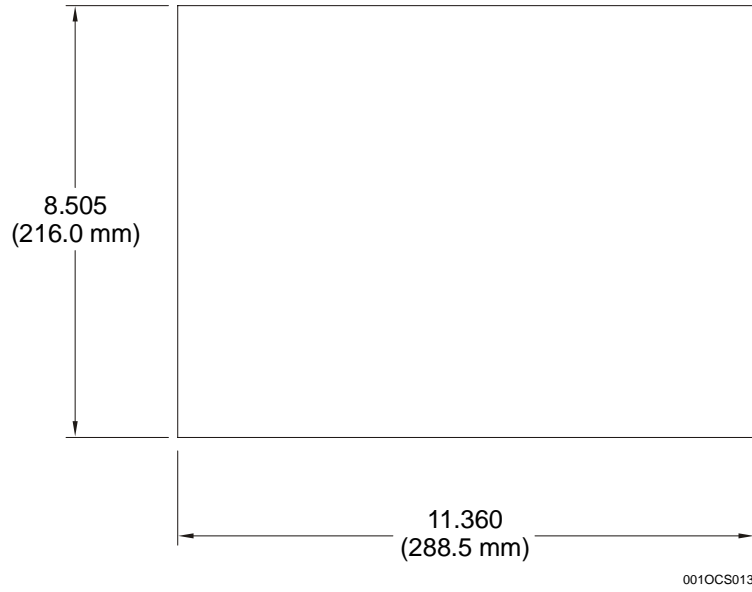


Figure 5 – Panel Cut-out (OCS551)

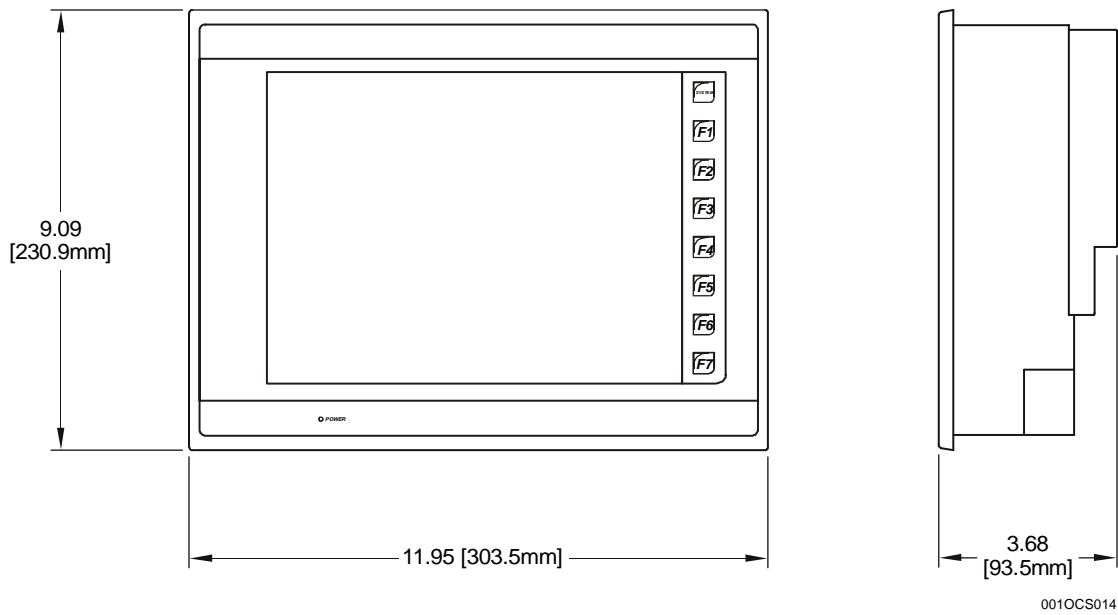
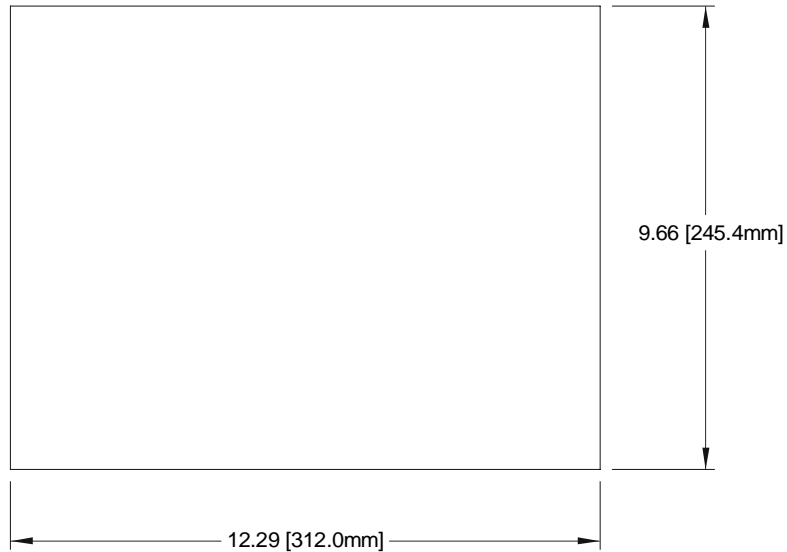


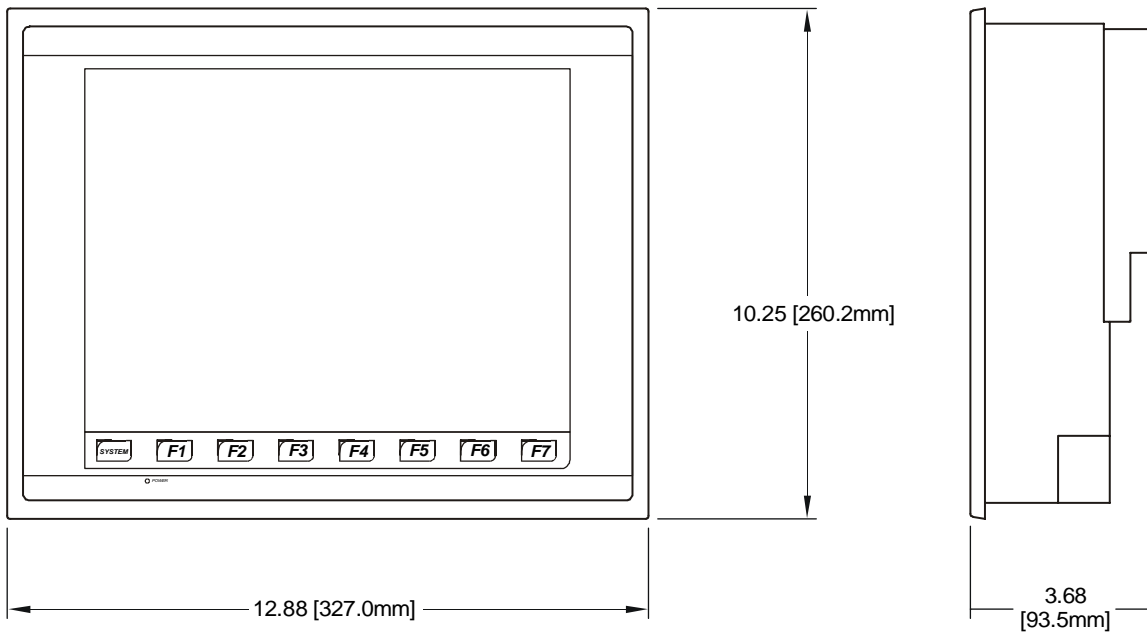
Figure 6 – Dimensions (OCS551)

2.4 OCS651 (12-inch)



001OCS015

Figure 7 – Panel Cut-out (OCS651)



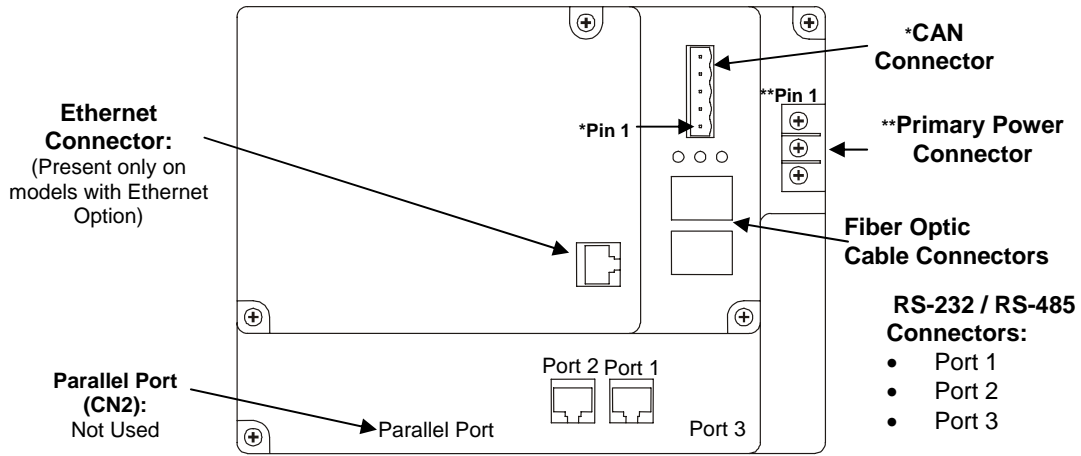
001OCS016

Figure 8 – Dimensions (OCS651)

2.5 Ports and Connectors

The Color Touch OCS has power, network, programming and fiber optic ports. Depending upon the model used, the Color Touch OCS comes equipped either with or without an Ethernet connector. Three RS-232 and RS-485 ports are available.

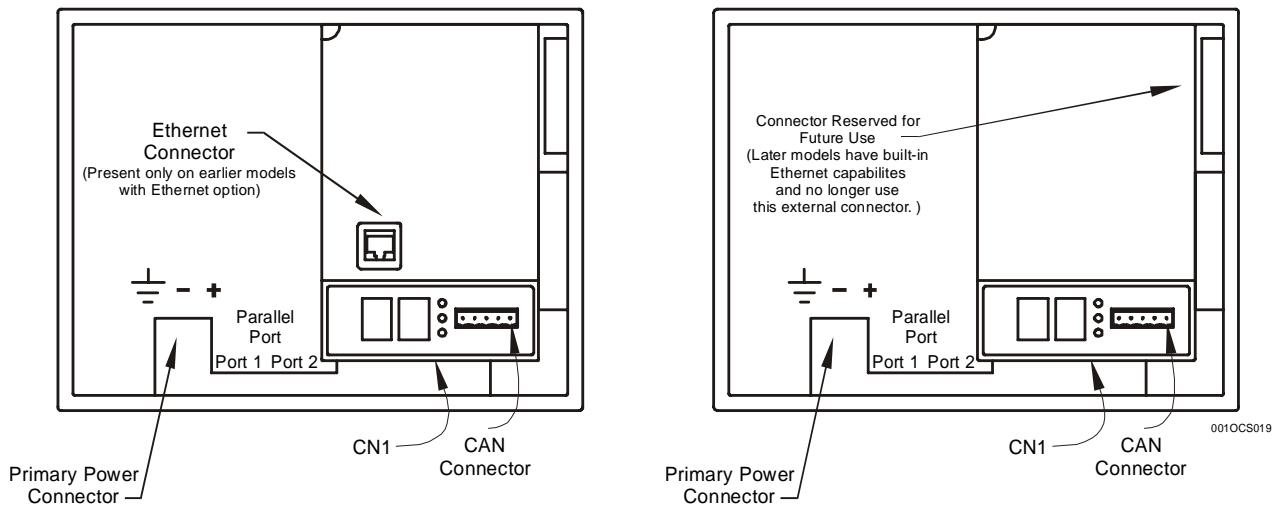
2.5.1 OCS3xx



Note: In the unlikely event that the label is removed, Port 1,2 and 3 correspond with the following markings on the case: Port 1 (MJ1); Port 2 (MJ2); Port 3 (CN1)

Figure 9 – Location of Ports and Connectors (OCS3x1 with Ethernet Option Shown)

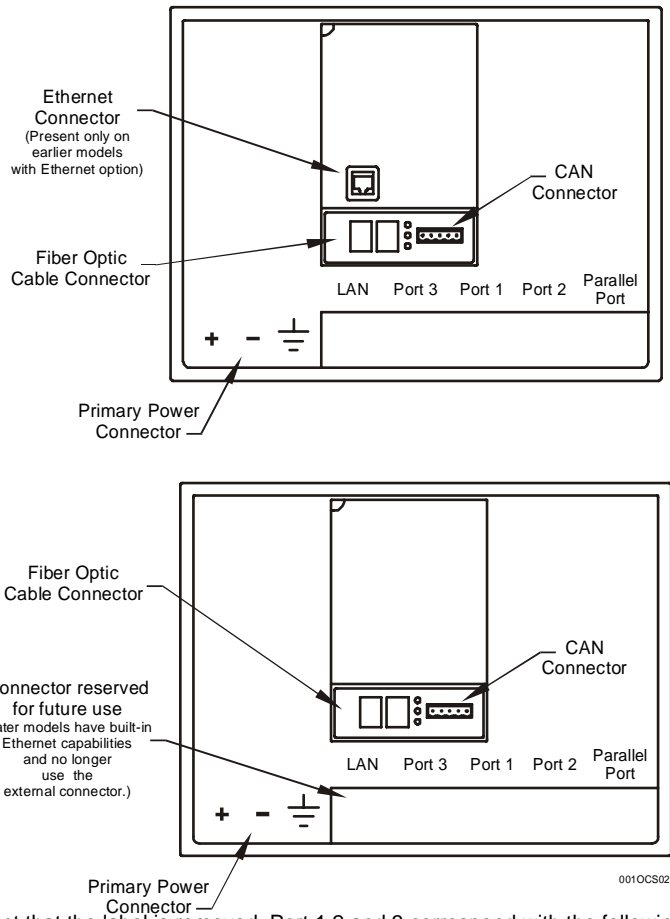
2.5.2 OCS451



Note: In the unlikely event that the label is removed, Port 1,2 and 3 correspond with the following markings on the case: Port 1 (MJ1); Port 2 (MJ2); Port 3 (CN1)

Figure 10 – 8" OCS451 Port and Connector Locations

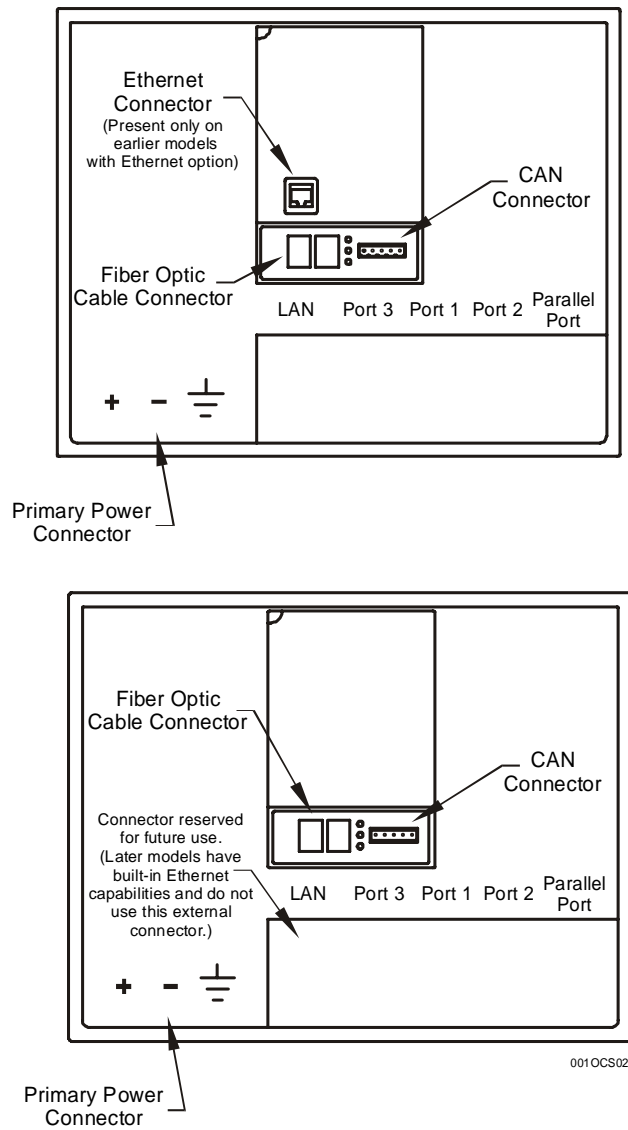
2.5.3 OCS551



Note: In the unlikely event that the label is removed, Port 1,2 and 3 correspond with the following markings on the case: Port 1 (MJ1); Port 2 (MJ2); Port 3 (CN1).

Figure 11 – 10” OCS551 Port and Connector Locations


2.5.4 OCS651



Note: In the unlikely event that the label is removed, Port 1,2 and 3 correspond with the following markings on the case: Port 1 (MJ1); Port 2 (MJ2); Port 3 (CN1).

Figure 12 – 12” OCS651 Port and Connector Locations

2.6 Primary Power Port / Grounding

Table 3 – Primary Power Port Pins	
Signal Pin	Description
V+	Input power supply voltage
V-	Input power supply ground
	Frame Ground

Note: Power Supply Voltage Range is from 24VDC \pm 10%.

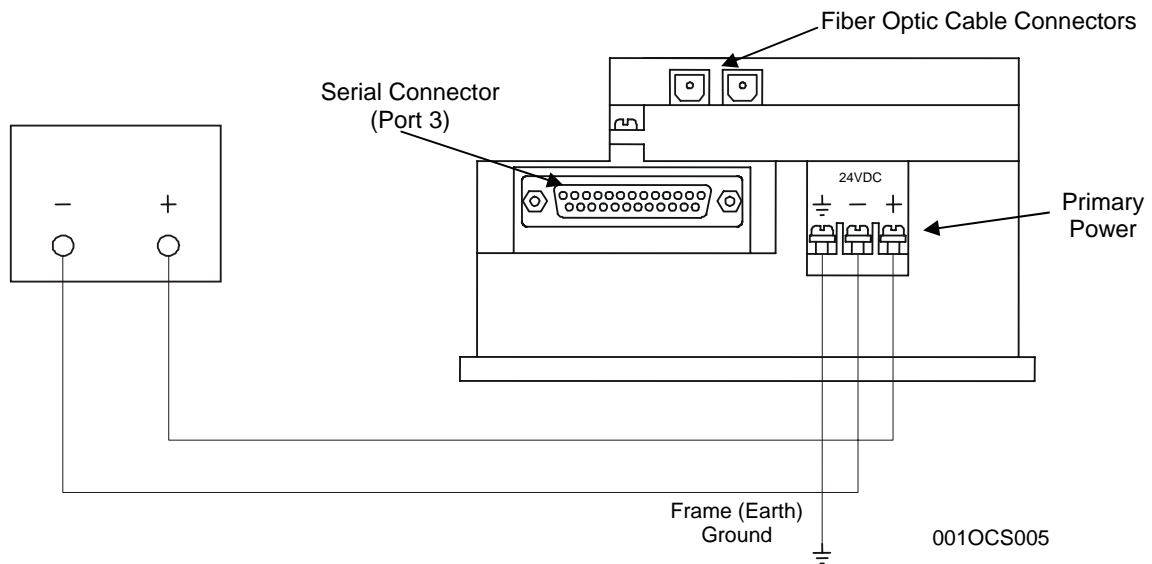
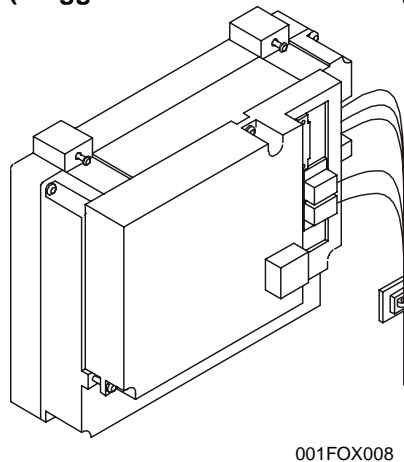


Figure 13 – Grounding (OCS3xx Shown as an Example)

2.7 Using Fiber Optic Cables (Suggested Method of Securing)



Note: Fiber Optic Cables can be bundled with the Power Cable

Figure 14 –Securing Fiber Optic Cables
(OCS3xx Shown as an Example)

2.8 CAN Network / DeviceNet Network Port and Wiring

Pin	Signal	Description
1	V-	Power -
2	CN_L	Signal -
3	SHLD	Shield
4	CN_H	Signal +
5	V+	Power +

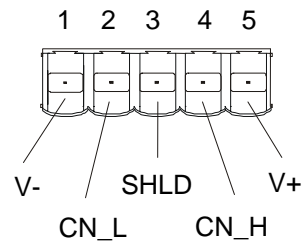
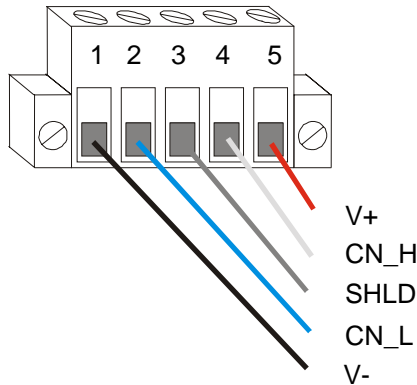


Figure 15– Network Connector (CAN Port)

Figure 16 - Looking at the Color Touch OCS

Note: To optimize CAN network reliability in electrically noisy environments, the CAN power supply needs to be isolated (dedicated) from the primary power.

2.9 RS-232 Port / RS-485 Port

There are a variety of ways to connect to the RS-232 and RS-485 ports; Two modular jacks (MJ1 and MJ2) and a serial connector (CN1) are available for use.

RS-232	RS-485	Functions
Port 1	Port 1	Programming, Debugging Monitoring, Configuring.
Port 1, Port 2, Port 3	Port 1, Port 2, Port 3	Ladder Logic-Controlled Serial Communications (e.g. communications to printers, bar code scanners, terminals, Modbus, and other types of applications.
Port 3	Port 3	Modems

a. Port 1 / Port 2 Modular Jacks

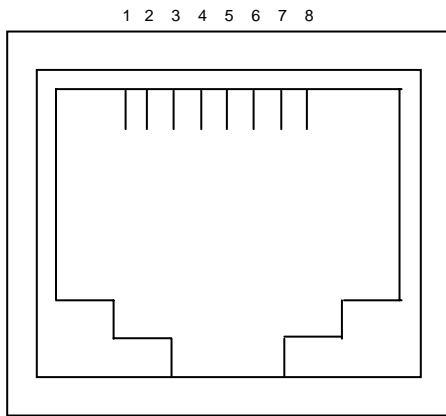


Figure 17– Close-up of Port 1 /Port 2 (RS-232 and RS-485)

Port 1 Port 2 Pin	Signal
1	+SD/RD
2	-SD/RD
3	+5V
4	+5V
5	0V
6	0V
7	RXD
8	TXD

Output power supply: Max. 150mA

b. Port 3 Connector

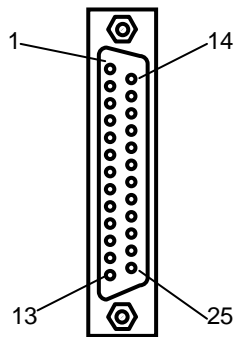


Figure 18 –RS-232 / RS-485 Connector (Port 3)

Pin #	Signal	Pin #	Signal
1	FG	14	OCS3xx -RTS / OCS451, 551, 651 +RTS
2	TXD	15	Not Used
3	RXD	16	Not Used
4	RTS	17	OCS3xx +RTS / OCS451, 551, 651 -RTS
5	CTS	18	-CTS
6	Not Used	19	+CTS
7	SG	20	Not Used
8	Not Used	21	Not Used
9	+5V	22	Not Used
10	0V	23	Not Used
11	Not Used	24	+RD
12	+SD	25	-RD
13	-SD		

Port 3

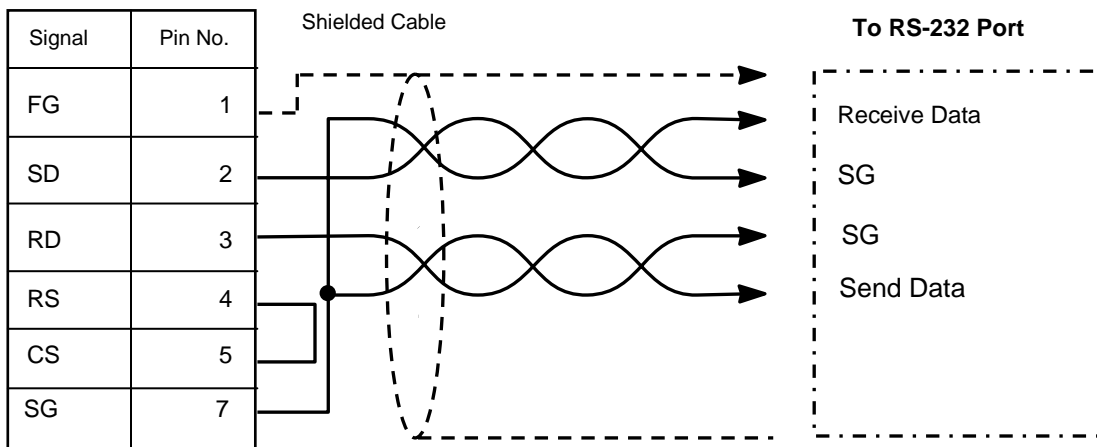


Figure 19 - RS-232 Port (Port 3)

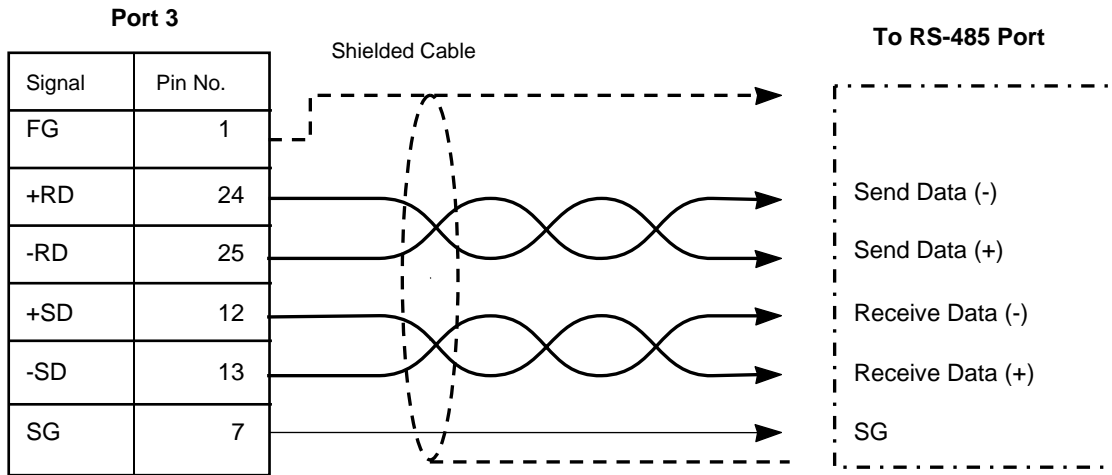


Figure 20 - RS-485 Port (Port 3)

2.10 CE Requirement for Ethernet Modules (OCS301 / OCS351)

To maintain FCC and CE Radiated Emissions limits, you must install a ferrite (part number: 0461164181 available from Fair-Rite Corporation) within 25mm from the OCS end of the Ethernet cable. This requirement applies to Ethernet Modules OCS301 and OCS351.

3 SAFETY

When found on the product, the following symbols specify:



Warning: Consult user documentation.



Warning: Electrical Shock Hazard.

WARNING: To avoid the risk of electric shock or burns, always connect the safety (or earth) ground before making any other connections.

WARNING: To reduce the risk of fire, electrical shock, or physical injury it is strongly recommended to fuse the voltage measurement inputs. Be sure to locate fuses as close to the source as possible.

WARNING: Replace fuse with the same type and rating to provide protection against risk of fire and shock hazards.

WARNING: In the event of repeated failure, do not replace the fuse again as a repeated failure indicates a defective condition that will not clear by replacing the fuse.

WARNING: Only qualified electrical personnel familiar with the construction and operation of this equipment and the hazards involved should install, adjust, operate, or service this equipment. Read and understand this manual and other applicable manuals in their entirety before proceeding. Failure to observe this precaution could result in severe bodily injury or loss of life.

For detailed installation and a handy checklist that covers panel box layout requirements and minimum clearances, refer to the hardware manual of the controller you are using. (See the **Additional References** section in this document.)

- All applicable codes and standards need to be followed in the installation of this product.
- For I/O wiring (discrete), use the following wire type or equivalent: Belden 9918, 18 AWG or larger.

Adhere to the following safety precautions whenever any type of connection is made to the module.

- Connect the green safety (earth) ground first before making any other connections.
- When connecting to electric circuits or pulse-initiating equipment, open their related breakers. Do not make connections to live power lines.
- Make connections to the module first; then connect to the circuit to be monitored.
- Route power wires in a safe manner in accordance with good practice and local codes.
- Wear proper personal protective equipment including safety glasses and insulated gloves when making connections to power circuits.
- Ensure hands, shoes, and floor are dry before making any connection to a power line.
- Make sure the unit is turned OFF before making connection to terminals. Make sure all circuits are de-energized before making connections.
- Before each use, inspect all cables for breaks or cracks in the insulation. Replace immediately if defective.

4 ADDITIONAL REFERENCES

The following table indicates the hardware manual numbers for the controller you are using. Hardware manuals contain detailed installation, configuration and other pertinent information. See the **Technical Support** section in this document for the web site address to download references and obtain revised editions.

Additional References	
Controller	Manual Number
QX Series Hardware e.g. HE-QX451, HE-QX551, HE-QX651, HE-QX500	MAN0798
NX Series Hardware e.g. HE-NX220, HE-NX221, HE-NX250, HE-NX251	MAN0781
Operator Control Station Hardware (OCS, OCX) e.g., OCS1XX / 2XX; Graphic QCS250	MAN0227
Remote Control Station Hardware RCS (except RCS116), RCX (e.g., RCS210, RCS250)	
Color Touch QX Hardware e.g., OCS300, OCS 301, OCS 350, OCS 351 e.g., OCS 451, OCS 551, OCS 651	MAN0465
LX Series Hardware e.g., LX-280 / LX-300; RCS116	MAN0755
MiniQX / MiniRCS / MiniOCX / MiniRCX Hardware e.g., HE500QXxxx	MAN0305
Other Useful References	
CAN Networks	MAN0799
Cscape Programming and Reference	MAN0313
DeviceNet™ Implementation	SUP0326
Wiring Accessories and Spare Parts Manual	MAN0347

5 TECHNICAL SUPPORT

For assistance and manual updates, contact Technical Support at the following locations:

North America:

(317) 916-4274

www.heapg.com

email: techspt@heapg.com

Europe:

(+) 353-21-4321-266

www.horner-apg.com

email: techsupport@hornerirl.ie

NOTES