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	300 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.
Primary Power Terminal Torque	10.6 In-Lb.	10.6 In-Lb.	12.0 In-Lb.	12.0 In-Lb.
Height	6.75" (171.45mm)	7.0" (178mm)	9.09" (231.0mm)	10.22" (259.6mm)
Width	10 3/16" (258.76mm)	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 **Serial Ports:** **CAN Ports:**	CsCAN, Modbus Master, Modbus Slave, and ASCII Read and Write CsCAN (up to 253 drops) or DeviceNet Slave (Explicit Messaging, Polled Connection, Polled Snooping)			
Serial Ports	3 RS-232 / RS-485 Ports. Software Selectable.			
Network Ports	1 CAN (DeviceNet slave or CsCAN peer)			
Communications Options	On-board Ethernet 10BaseT supports TCP/IP with EGD and SRTP, CsCAN TCP, Modbus TCP Slave			
Expansion I/O	EIAJ RC-5720 Plastic Fiber, TX+RX 10m max. host (OCS or hub) to base			
Remote I/O	SmartStix support			

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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	
Temperature & Humidity	32 - 122°F (0 - 50°C), 5 to 95% Non-condensing			
UL	Please refer to Compliance Table located at http://www.heapg.com/Support/compliance.htm			
CE	Please refer to Compliance Table located at http://www.heapg.com/Support/compliance.htm 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.
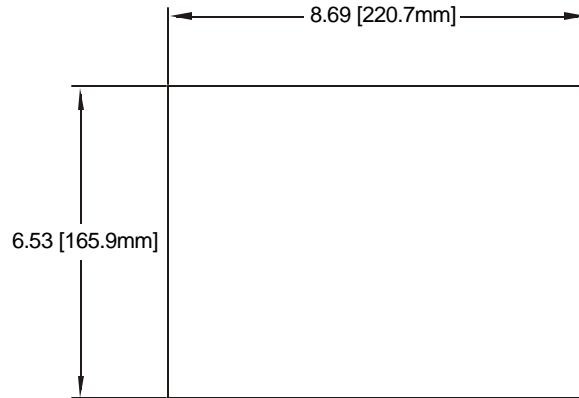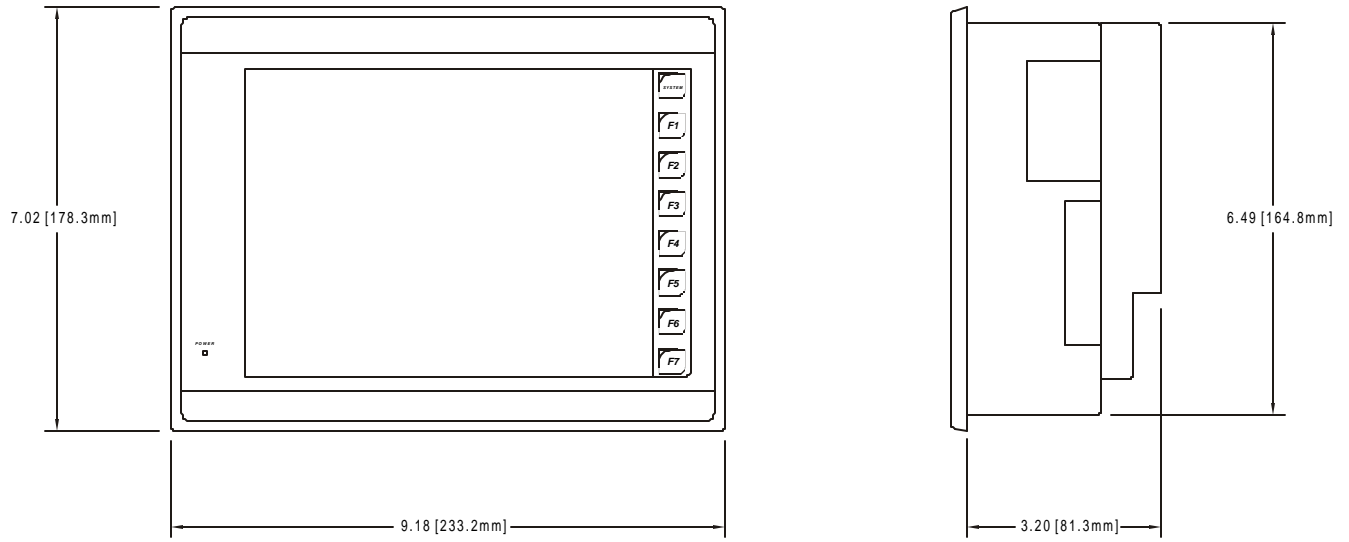
2.1   OCS3xx (6-inch)

5.156
[130.96mm]

6.875
[174.63mm]
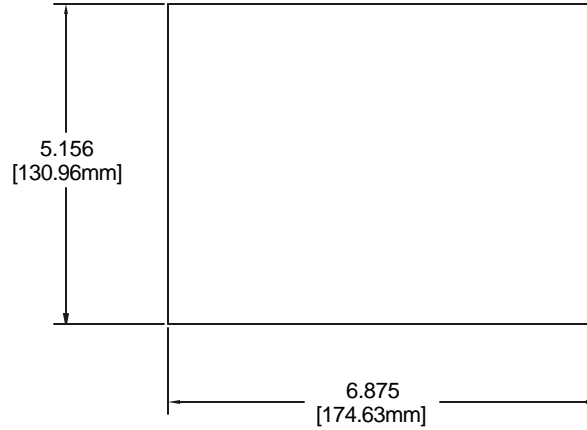
001OCS003

Figure 1 – Panel Cut-out and Dimensions for OCS3xx

2.2   OCS451 (8-inch)

8.69 [220.7mm]

6.53 [165.9mm]

001OCS017

Figure 2 – Panel Cut-out (OCS451)

001OCS018

Figure 3 – Dimensions (OCS451)

2.3   OCS551 (10-inch)
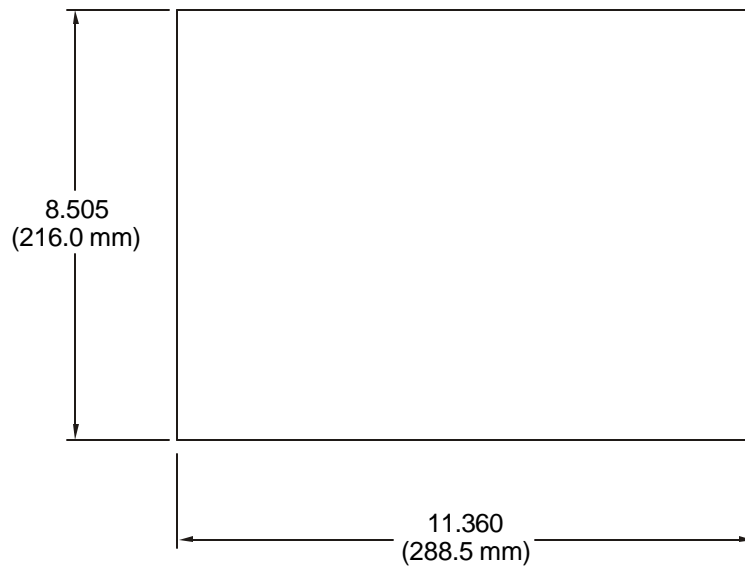
001OCS013

Figure 4 – Panel Cut-out (OCS551)
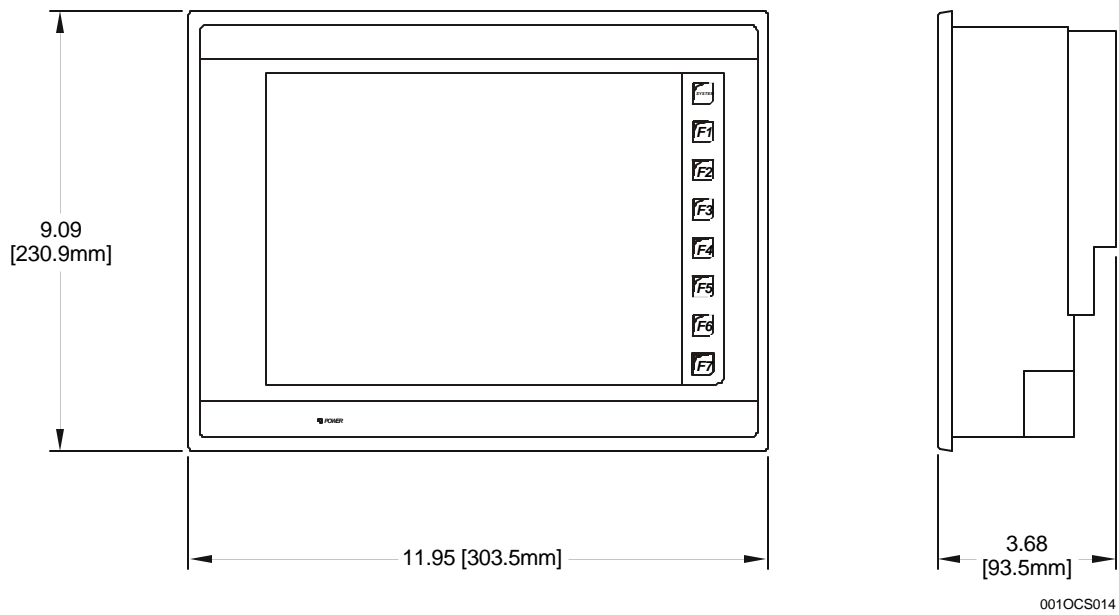
001OCS014

Figure 5 – Dimensions (OCS551)

2.4   OCS651 (12-inch)
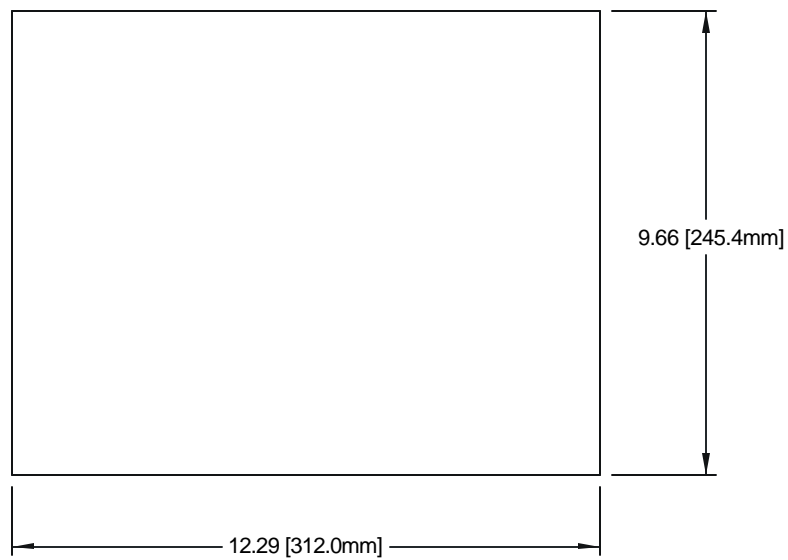
001OCS015

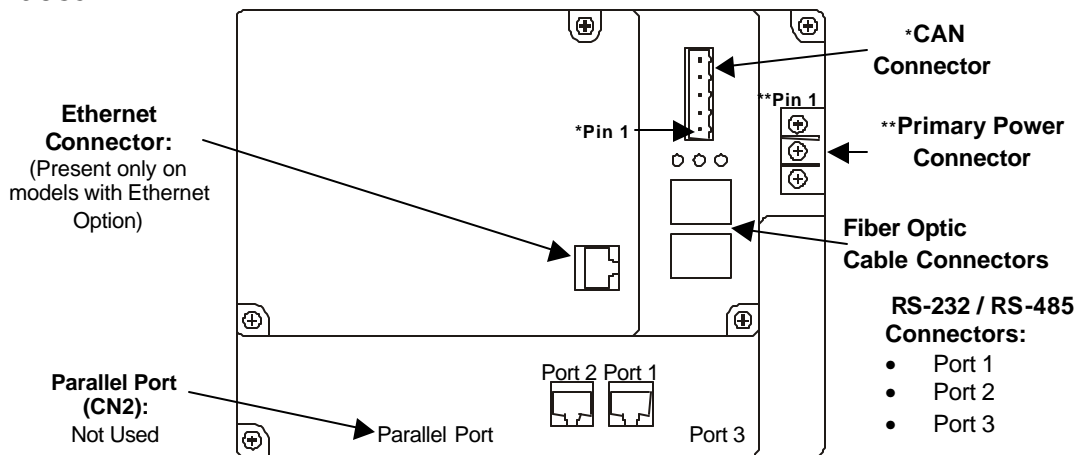**Figure 6 – Panel Cut-out (OCS651)**
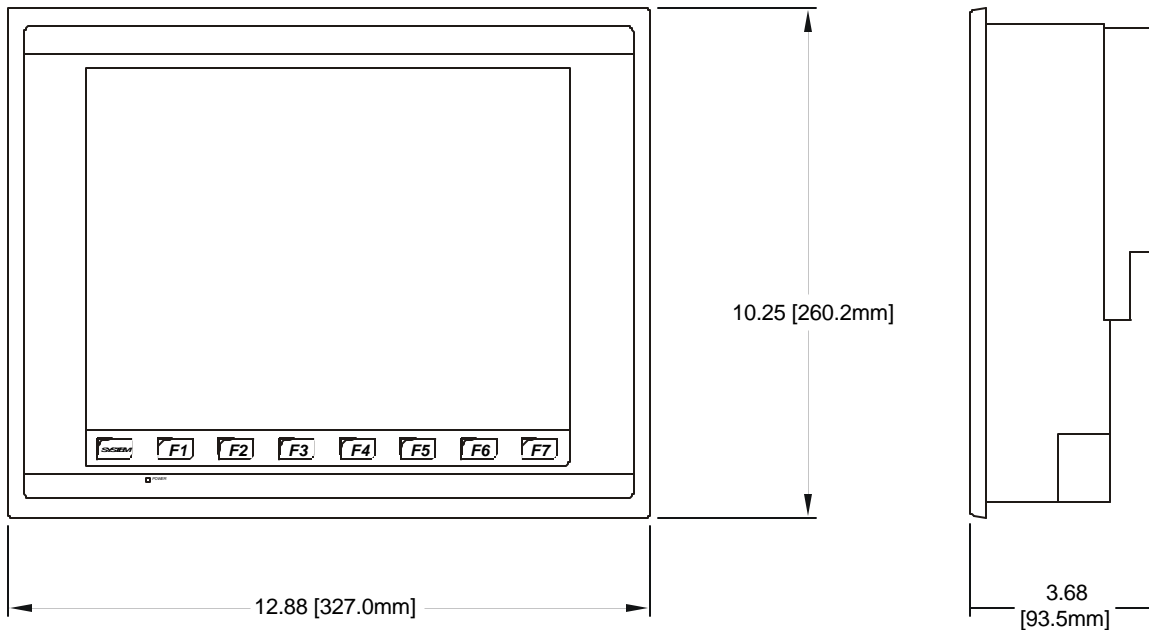
001OCS016

Figure 7 – 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.
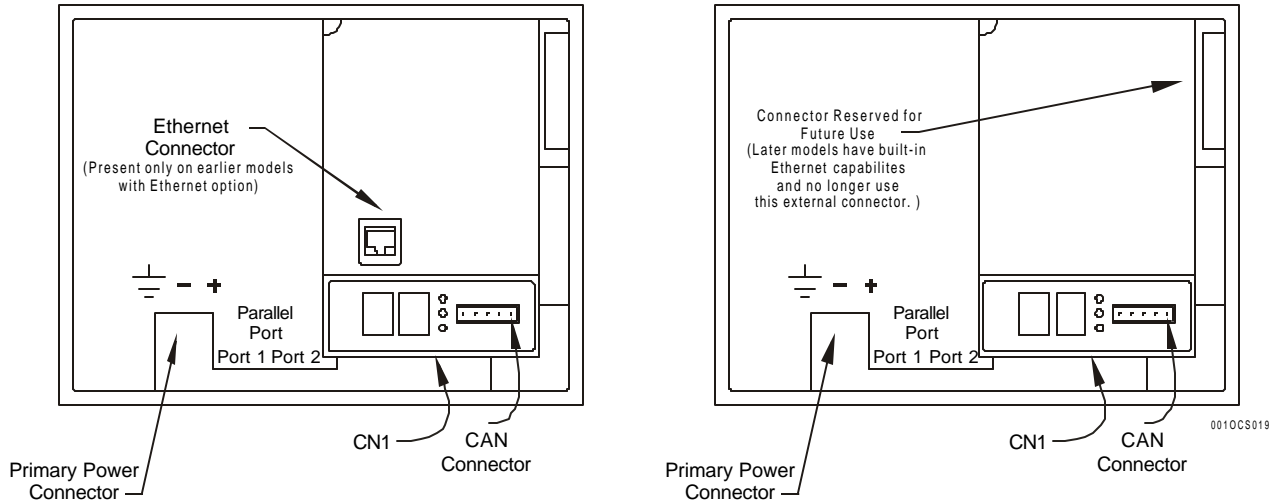
2.5.1 OCS3xx

001OCS006

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)

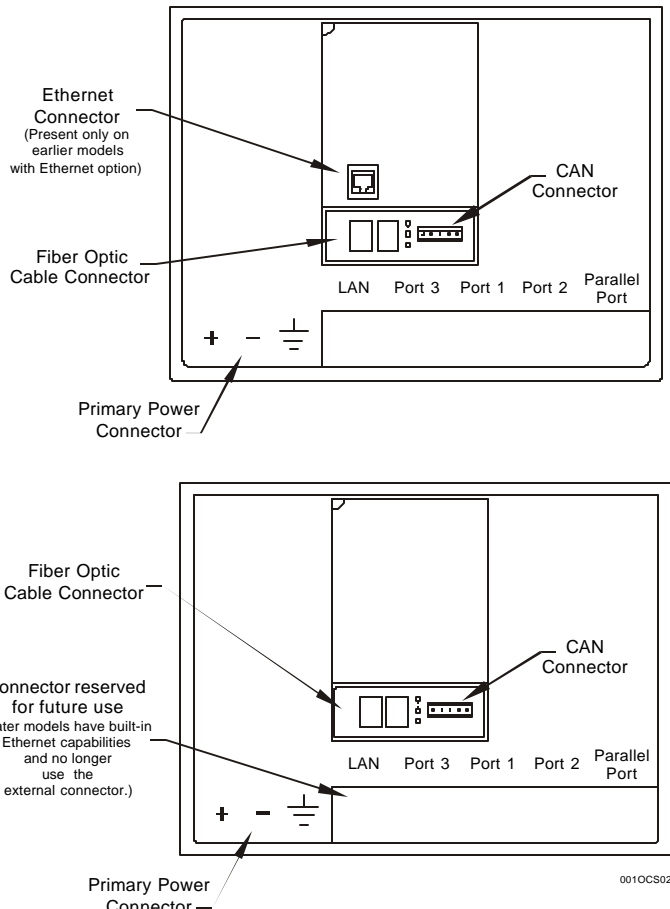**Figure 8 – Location of Ports and Connectors (OCS3x1 with Ethernet Option Shown)**

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)

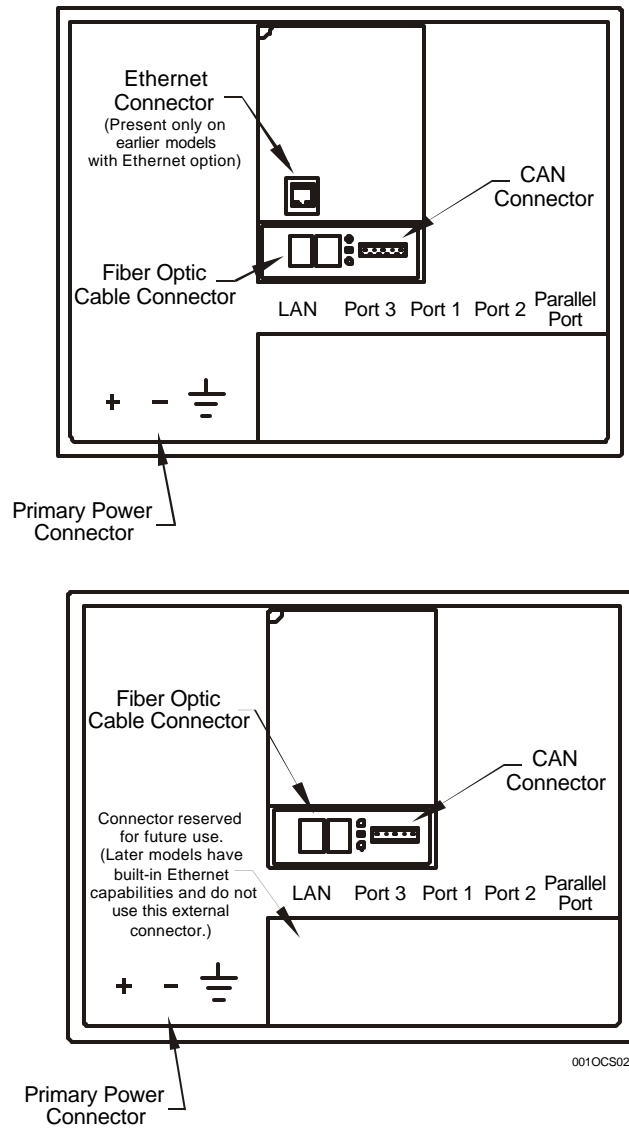**Figure 9 – 8" OCS451 Port and Connector Locations**

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 10 – 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 11 – 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 ±10%.
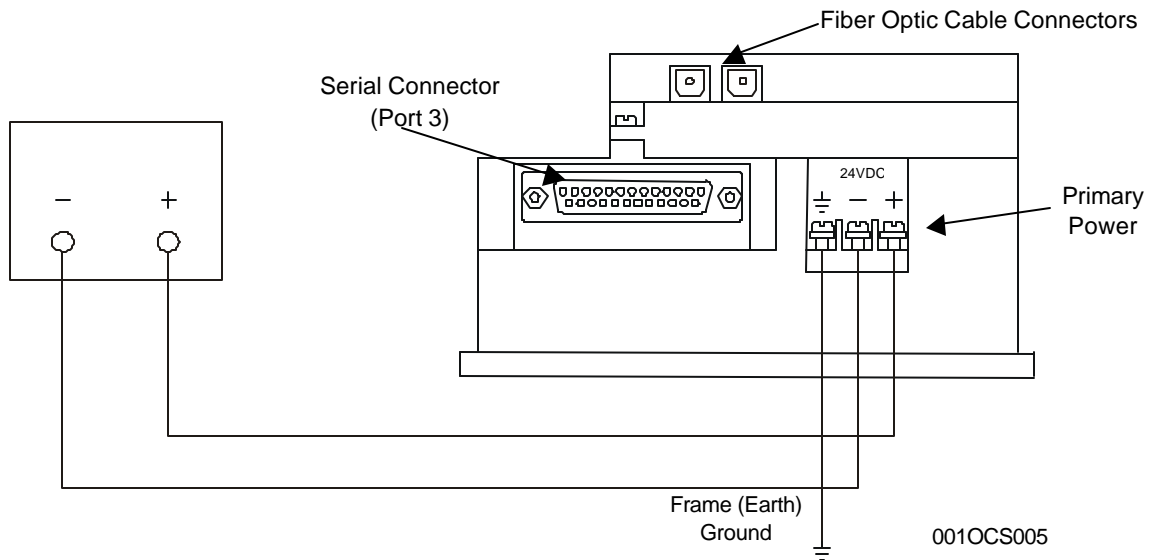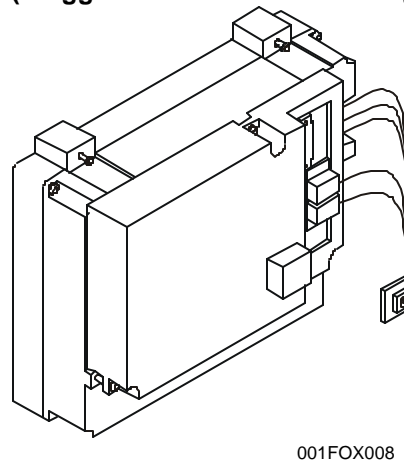

Figure 12 – Grounding (OCS3xx Shown as an Example)

2.7   Using Fiber Optic Cables (Suggested Method of Securing)

001FOX008

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

**Figure 13 –Securing Fiber Optic Cables
(OCS3xx Shown as an Example)**

2.8   CAN Network / DeviceNet Network Port and Wiring

Table 4 – CAN Port Pins		
Pin	Signal	Description
1	V-	Power -
2	CN_L	Signal -
3	SHLD	Shield
4	CN_H	Signal +
5	V+	Power +

V+
CN_H
SHLD
CN_L
V-
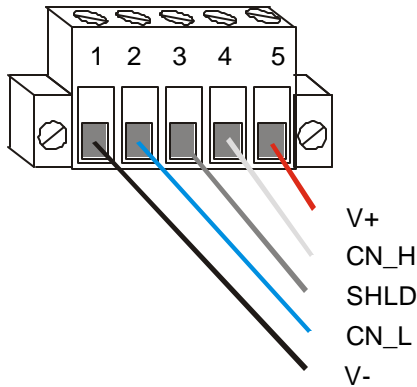
Figure 14 – Network Connector (CAN Port)

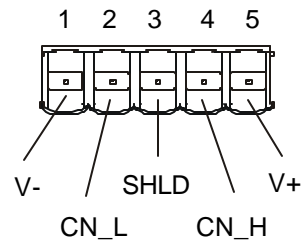
V-   SHLD   V+
CN_L   CN_H

Figure 15 – As viewed 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.

Table 5 – Ports and Functions (Port 1, 2, and 3)		
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. |
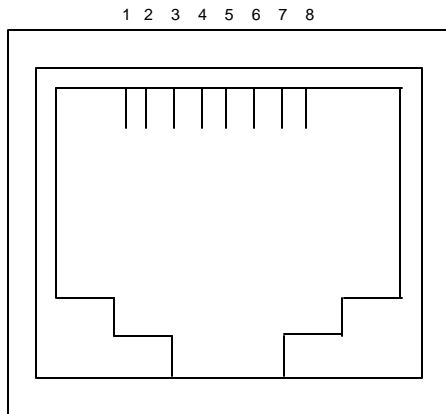| Port 3 | Port 3 | Modems |

a.   Port 1 / Port 2 Modular Jacks

1 2 3 4 5 6 7 8

**Figure 16 – Close-up of Port 1 /Port 2
(RS-232 and RS-485)**

b.   Port 3 Connector

**Figure 17 –RS-232 / RS-485 Connector
(Port 3)**
Port 3

Table 6 – Port 1 / Port 2 Pins	
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	

Table 7– Port 3 Pins				
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			

Figure 18 - RS-232 Port (Port 3)

Port 3

Signal	Pin No.
FG	1
+RD	24
-RD	25
+SD	12
-SD	13
SG	7

Shielded Cable

To RS-485 Port

Send Data (-)

Send Data (+)

Receive Data (-)

Receive Data (+)

SG
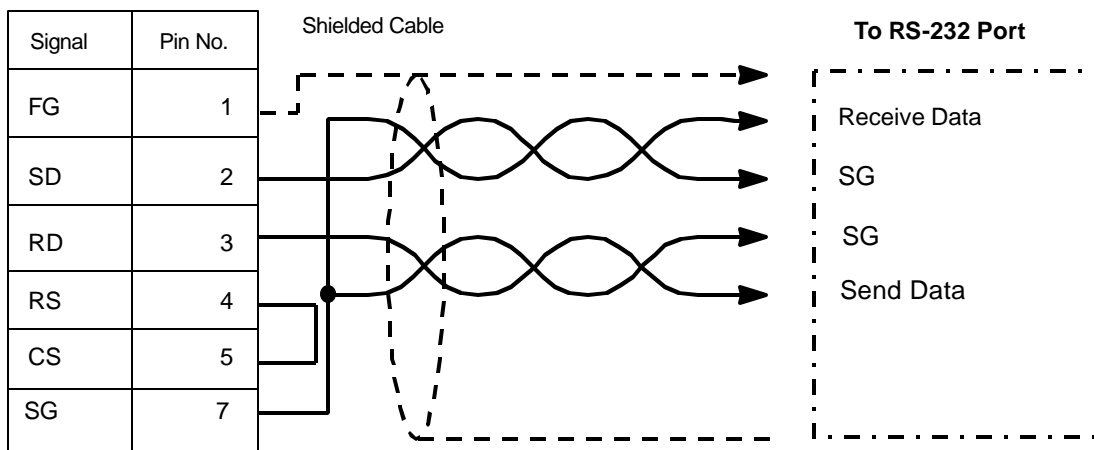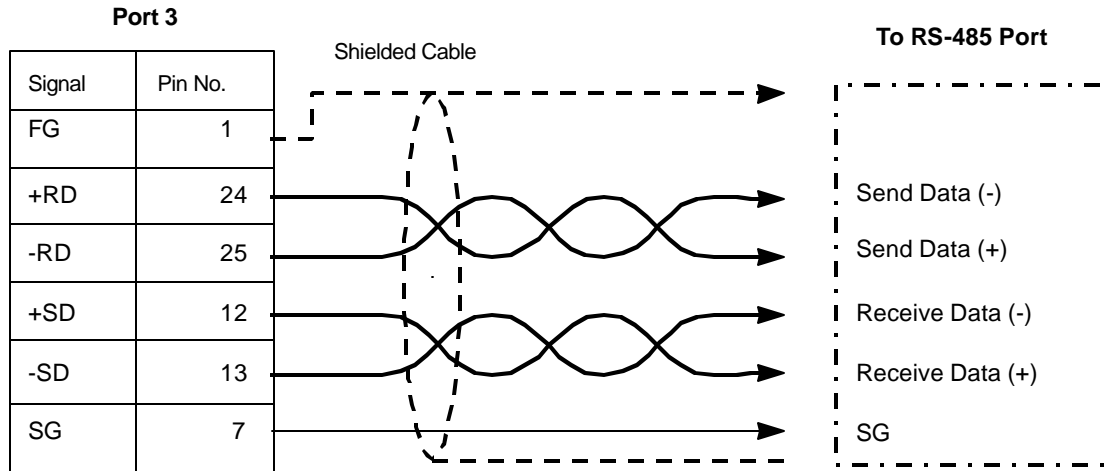
Figure 19 - RS-485 Port (Port 3)

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

All applicable codes and standards need to be followed in the installation of this product.

4   TECHNICAL ASSISTANCE

For assistance, contact Technical Support at the following locations:

North America:
(317) 916-4274
www.heapg.com

Europe:
(+) 353-21-4321-266
www.horner-apg.com