



Graphic Operator Control Station HE500OCS250 Products Specifications and Installation Data

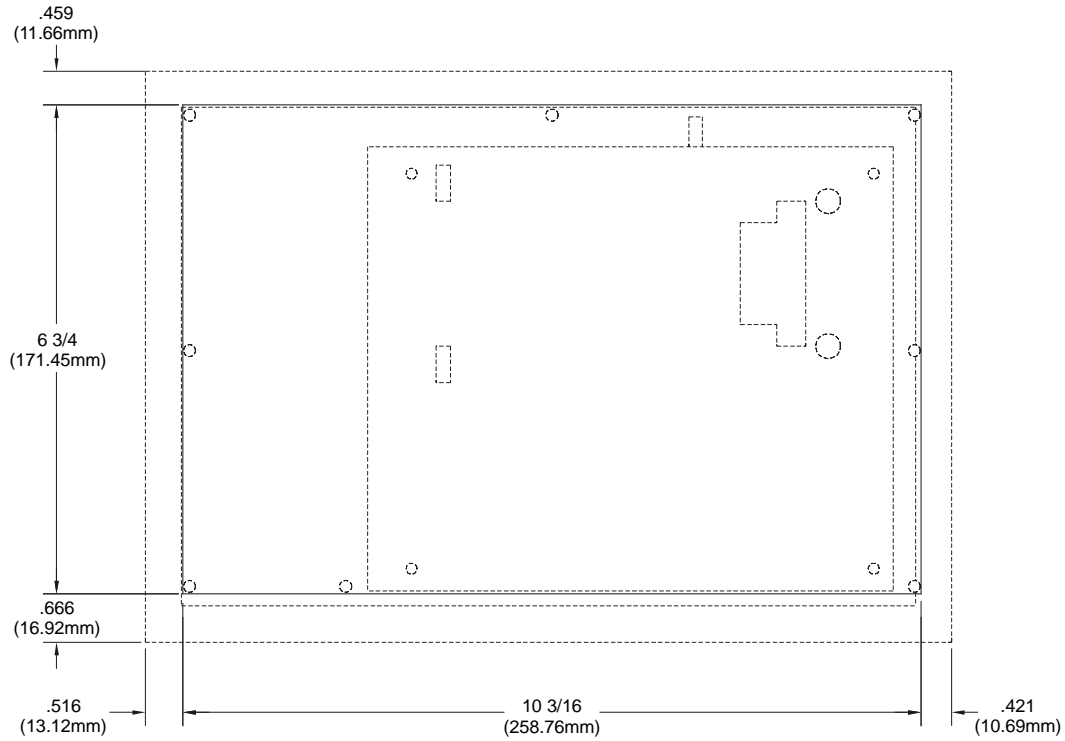
The following information is taken from the *Control Station Hardware Manual* (MAN0227). To obtain user manual updates, visit our web site at www.heapg.com.

1 SPECIFICATIONS

Table 1 – OCS250 Specifications	
Humidity	5% to 95% non-condensing
NEMA Standard	NEMA 4-12
Primary Power Range*	10-30VDC
Ladder Execution	
Typical Execution Speed	0.7 ms. per 1K of boolean logic.
CAN Power Range	12 – 25 VDC
CAN Power Current	75mA maximum
Primary Serial	Standard 9 pin RS-232 for programming, monitoring, and network administration. Modbus/RTU Master, Slave, ASCII Send and Receive, and CsCAN Serial also supported.
CAN Network	CsCAN Network / DeviceNet Slave
Input / Output	<p>Local (All Modules): Maximum of 4 SmartStack Modules per OCS</p> <p>Remote (OCS110 / 210/ 250 / or RCS250 Modules):</p> <p>In addition to 4 local I/O modules, up to 20 remote SmartStack I/O Modules can be connected to an OCS or RCS using five Fiber Optic Bases, which each contain four I/O slots.</p>
Keypad	Faceplate made of Autotex® polyester by Autotype®. The material is resistant to most corrosive substances found in industrial environments. The material also holds up well in most industrial conditions. If used outdoors, the material can yellow or crack.
UL	Class I, Groups A, B, C, D, Division 2
CE	Yes
Operating Temperature	0°C to +60°C **
Typical Power Draw *	350mA @ 24VDC
Inrush Current *	800mA @24VDC for 50mS.
Height	7 7/8" (200.02 mm)
Width	11 1/8" (282.57 mm)
Mounting Depth	5 3/16" (131.76 mm)
User Keys	10 user-programmable keys + Esc, Enter, 4 direction keys and a full numeric keypad + 8 soft keys.
Keypad	36
Display	240 x 128 Graphic LCD w / backlight
<p>* These specifications are for products without any SmartStack I/O Modules attached. The specifications for the SmartStack Modules can be found in the applicable SmartStack Data Sheets.</p> <p>** Although the OCS withstands the temperature range of 0°C to +60°C, such temperatures may decrease the life of the display. The recommended rating is 0°C to +50°C.</p>	

2 INSTALLATION

2.1 Panel Cut-Out



PANEL CUT-OUT DIMENSIONS FOR OCS250 (W/ MOUNTING SCREWS)
(OCS250 SHOWN FROM REAR VIEW)

Figure 1 – Panel Cut-Out for the OCS250

2.2 Panel Retaining Clip / Panel Mounting Clamp

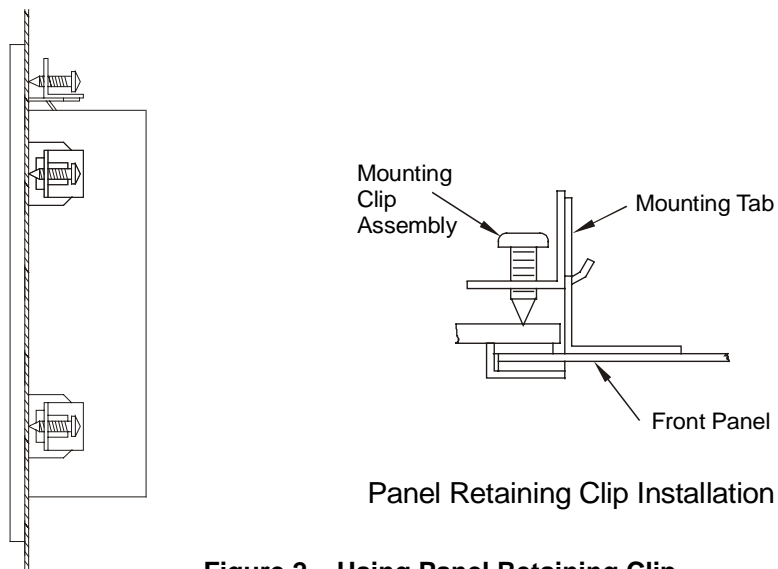


Figure 2 – Using Panel Retaining Clip

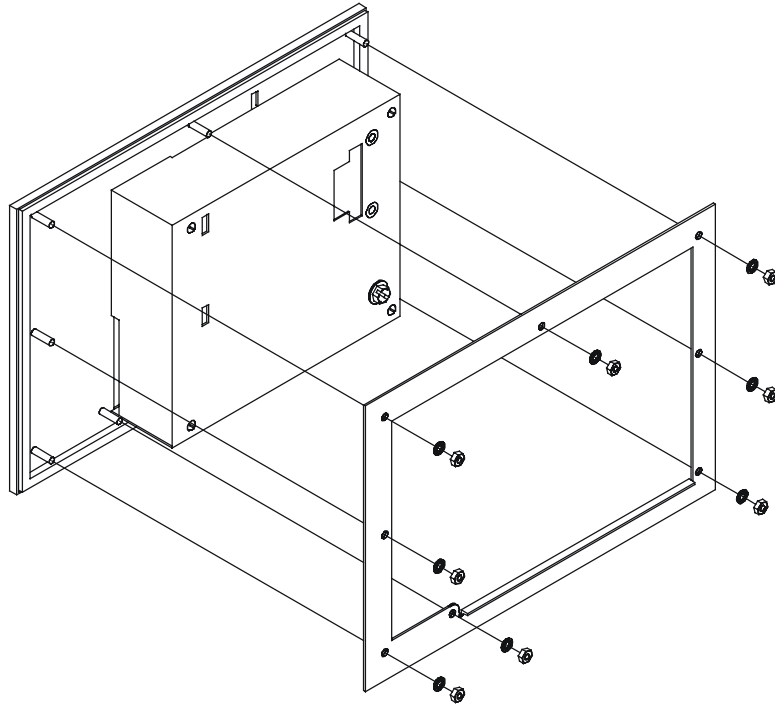


Figure 3 – Using Panel Mounting Clamp

2.3 Ports, Connectors and Wiring

2.3.1 Primary Power Port

Table 2 – Primary Power Port Pins		
Pin	Signal	Description
1	V+	Input power supply voltage
2	V-	Input power supply ground

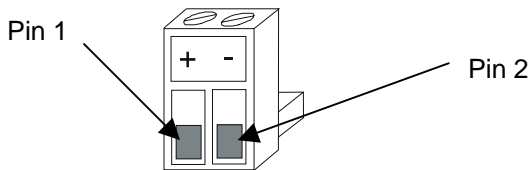


Figure 4 - Power Connector (Primary Power Port)

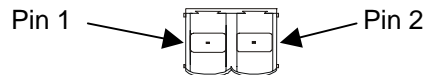


Figure 5 - As viewed looking at the OCS models

Note: Power Supply Voltage Range is from 10-30 VDC.

Warning: To provide maximum noise immunity and to ensure minimum EMI radiation, the V-signal (DC power return) need to be connected to earth ground at the power supply. The user must ensure that the power supply selected is compatible with this method of grounding.

2.3.2 CAN / DeviceNet Network Port and Wiring

a. Network Connector

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

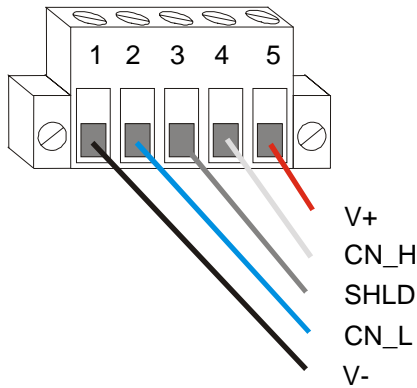


Figure 6 – Network Connector

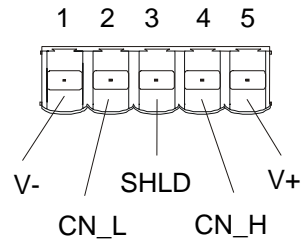


Figure 7 – As viewed at the OCS

Warning: To provide maximum noise immunity and to ensure minimum EMI radiation, the V- signal (DC power return) need to be connected to earth ground at the power supply. The user must ensure that the power supply selected is compatible with this method of grounding.

b. Grounding

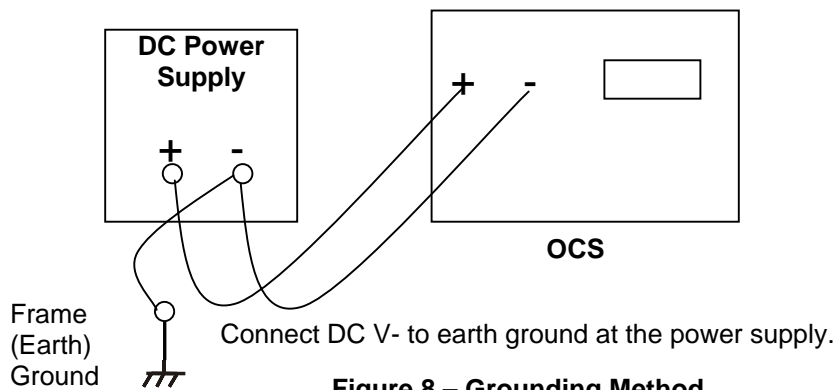


Figure 8 – Grounding Method (OCS shown in this example.)

2.3.3 RS-232 Programming Port and Wiring

Pin	Signal	Description	Direction
1	DCD	Always high	Out
2	RXD	Received Data	Out
3	TXD	Transmitted Data	In
4	DTR	Data Terminal Ready	In
5	GND	Ground	-
6	DSR	Data Set Ready	Out
7	RTS	Request to Send	In
8	CTS	Clear to Send	Out
9	RI	Ring Indicate	Out

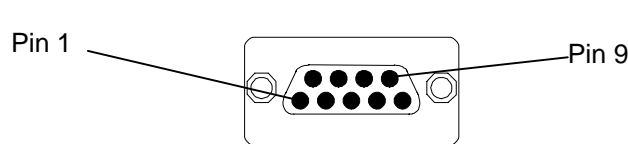


Figure 9 – RS-232 Port

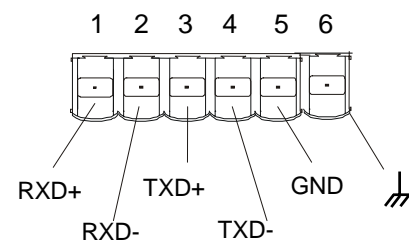


Figure 10 – RS-485 Port

The Graphic OCS features two RS-232 ports (primary and secondary). Both primary and secondary RS-232 port pin-outs are shown in Table 4. The **primary** RS-232 port is the only port that supports programming. The **secondary** serial port is used for application communications such as bar code readers, etc. The secondary port can either be the second RS-232 port or an RS-485 port. **Only one of the secondary port modes can be selected for use at any given time.**

Selecting the Secondary Port Mode: Using the ladder program, choose the secondary port mode by selecting **Comm Operations** from Cscape's main screen. Then, press the **Open Communication Port** button. Double-click the **Open Port Function Block**, select **Port 2**, and then, select the desired port under **Mode**.



Figure 11 – Comm Operations and Open Communication Button

The primary RS-232 port (Programming/Debug) is for connection to a PC as well as application communications. This port is used for the purposes of Graphic OCS programming, configuring, monitoring, and debugging. This port can also be used for general ladder logic controlled serial communications to printers, modems, terminals, etc. When ladder has control of this port, it is not available for programming or debugging. The wiring diagram for the RS-232 ports is shown in **Figure 12**. For connection between the Graphic OCS and the PC, the use of a shielded, multiple conductor wire with a maximum length of 15.24 meters (50 feet) enables proper performance.

Note: A shorter cable may be required when using the port at baud rates above 9600.

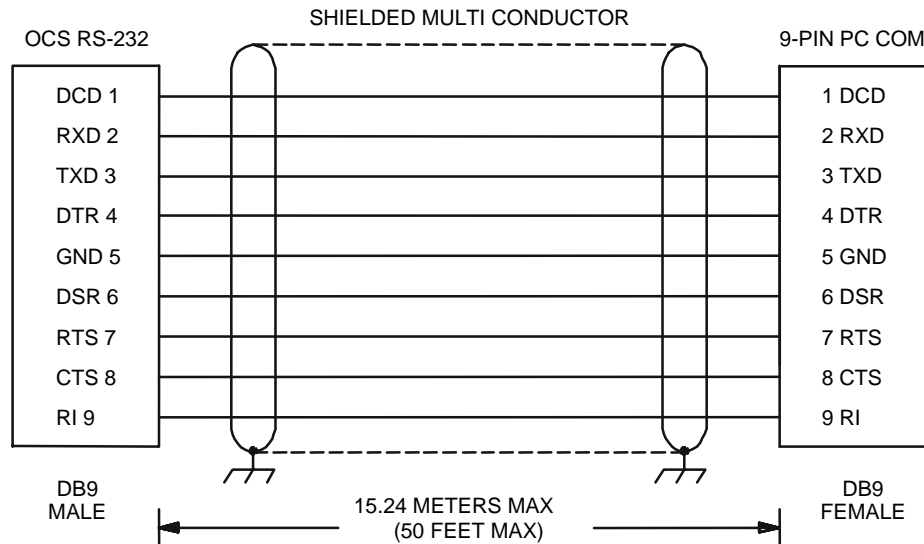


Figure 12 - OCS to PC Wiring Diagram (RS-232 Port)

2.4 Operating OCS250 on Battery Power

It is possible to operate an OCS on Battery Power by using the wide input power range of the OCS product line. The range on most models is from 9 to 30 VDC. This allows both mobile and remote operation and is very easy to set up and maintain.

a. Why use the OCS on Battery Power?

Power lines are not always available.
Mobile operation, such as in a vehicle, is desired.

b. Setting up the Hardware

The actual battery voltage is not significant as long as it is within the input range of 9 to 30 VDC. However operation close to 24 VDC gives wider margin. Check the Power Input requirements for the specific OCS model to determine battery size.

Note: If a DC/DC Converter is used as discussed below, use its input power requirements to determine battery size.

c. Operating considerations

Some OCS models have experienced memory/program loss when powered by a battery that was allowed to slowly drain to a very low voltage level. Therefore we recommend the use of a DC/DC Converter for these applications. A DC/DC Converter maintains a constant voltage when using a battery for power. The HE800PDC250 converts 12 VDC input to 24 VDC output at up to 2.0A and cuts off the power if the incoming voltage drops below 9 VDC. This provides clean power for the OCS, preventing memory/program loss. For 24 VDC battery applications, the HE800PDC250 converts 19-36VDC to 24VDC at up to 2.0 and cuts off the power when the incoming voltage drops below 19VDC.

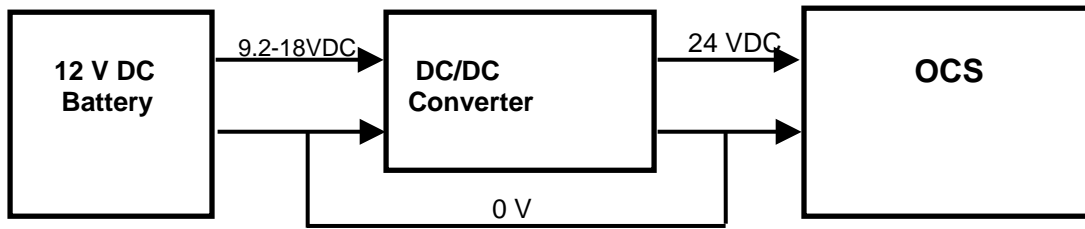


Figure 13 - Typical connection of DC/DC Converter

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 *Control Station Hardware Manual* (MAN0227).

- 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.

6 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