OCS LX Series Hardware

Products Specifications and Installation Data

For complete information on LX products, see the *OCS LX Series Hardware Manual* (MAN0755). Refer to the Technical Assistance section in this document.

1 SPECIFICATIONS / PRODUCT DESCRIPTIONS

Table 1 – LX Specifications

Models	HELX280	HELX300
Display Type (LCD with backlight)	320 x 240 STN Grayscale	320 x 240 STN Color
Display Size	5.7”	
Display Screen Dimensions	4.6”W x 3.5”H (117 x 88mm)	
Display Memory	1 MBytes	
User Keys	5 configurable keys + System Key	
Screens Supported	1023 screens (50 data fields per screen)	
Number of Colors	8 (Grayscale)	16 (Color)
Primary Power	**Steady State Current:** 300mA @ 24VDC **Inrush Current:** (6A @ 24VDC) for 4 ms.	
Primary Power Terminal Torque	10.6 In-Lb.	
Height	6.75” (171.45mm)	
Width	10 3/16” (258.76mm)	
Mounting Depth	3.00” (76.2 mm)	
Keypad Material	Faceplate made of Lexan® HP92 by GE Plastics.	
Protocols supported **Serial Ports:**	CsCAN, Modbus Master, Modbus Slave, and ASCII Read and Write	
CAN Ports:	CsCAN (up to 253 drops)	
Serial Ports	2 RS-232 / RS-485 Ports. Software Selectable.	
Network Ports	1 CAN (CsCAN peer)	
Expansion I/O	SmartStack I/O via RCS116	
Remote I/O	SmartStix support	
Control Memory	128K Ladder Memory plus 32KB Register Space	
Control Scan Rate	0.2mS / K Ladder Logic (typical)	
Portable Memory	None	
Temperature & Humidity	32 - 122°F (0 - 50°C), 5 to 95% Non-condensing	
UL **CE**	Please refer to Compliance Table located at http://www.heapg.com/Support/compliance.htm	

Table 2– Product Descriptions

OCS LX	Network	Screen Type
HELX280	CsCAN	5.7" STN Grayscale with 8 shades
HELX300	CsCAN	5.7" STN with 16 colors

All OCS LX Models	Functions			
	Control	***Display and Keypad***	***Network***	***I/O***
	Yes	Yes	Yes	Yes

CsCAN I/O Expansion (HE800RCS116)	Allows SmartStack I/O to be accessed by LX over CsCAN I/O Network.
SmartStack Modules	Family of expansion I/O products (via RCS116)
SmartStix Modules	Family of remote I/O products

2 INSTALLATION

2.1 Mounting Procedures (Installed in a Panel Door) (Applies to all LX Models)

1. Prior to mounting, observe requirements for the panel layout design and adequate clearances in the *OCS LX Series Hardware Manual* (MAN0755). A checklist is provided in Chapter 2: Installation. Prior to mounting the LX, observe requirements for the panel layout design and adequate clearances.

2. Cut the host panel.

3. Insert the LX through the panel cutout (from the front). The gasket material needs to lie between the host panel and the LX panel.

Caution: Do not force the LX into the panel cutout. An incorrectly sized panel cutout can damage the LX touchscreen.

4. Install and tighten the mounting clips (provided with the LX) until the gasket material forms a tight seal. Refer to Figure 1.

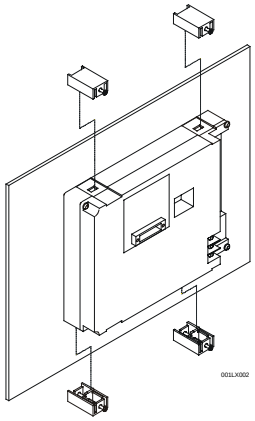


Figure 1 – Side View of LX with Mounting Clip (Shown as an Example)

Note: For 6-inch units (LX280 /LX300): If using a torque wrench, tighten to 80 In/ozs.

Caution: Do not over-tighten. Over-tightening can damage the case.

5. Connect cables as needed such as communications, programming, power and CsCAN cables to the LX ports using the provided connectors.

6. Begin configuration procedures for the LX models.

2.2 LX280 / LX300 (6-inch) Panel Cut-out and Dimensions

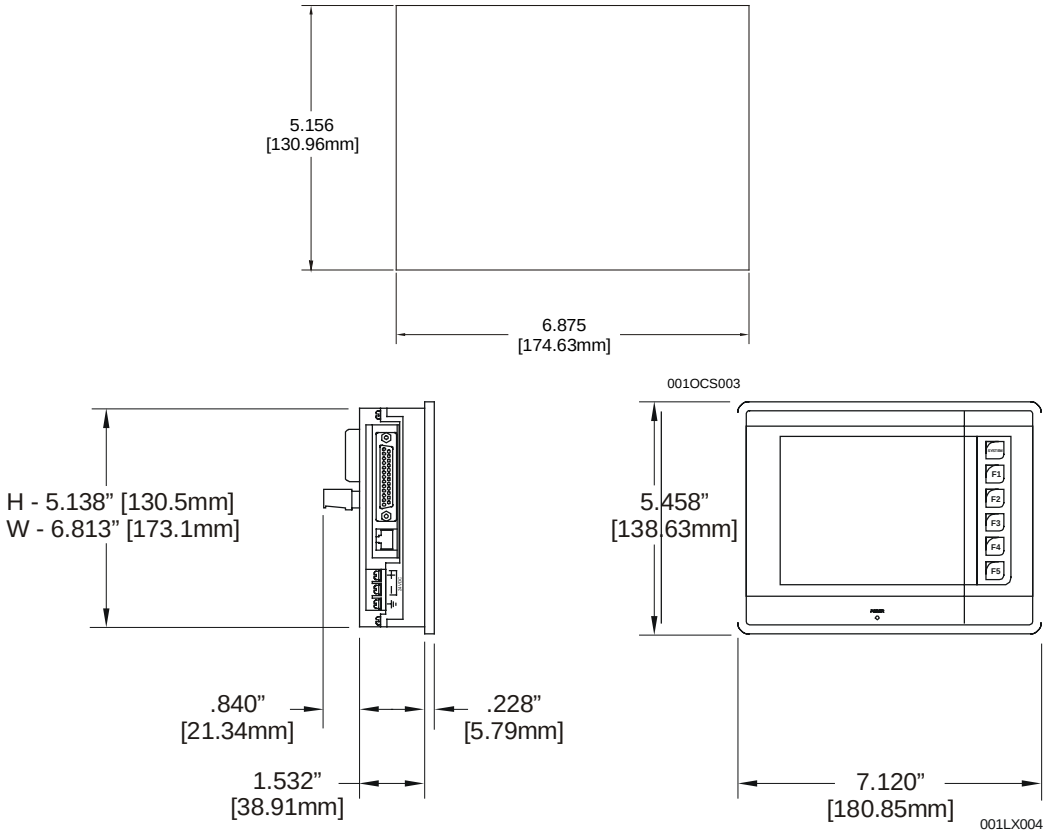


Figure 2 – Panel Cut-out and Dimensions for LX

2.3 Ports and Connectors

The LX has power, network, and programming. Two RS-232 and RS-485 ports are available.

2.3.1 LX280 / LX300

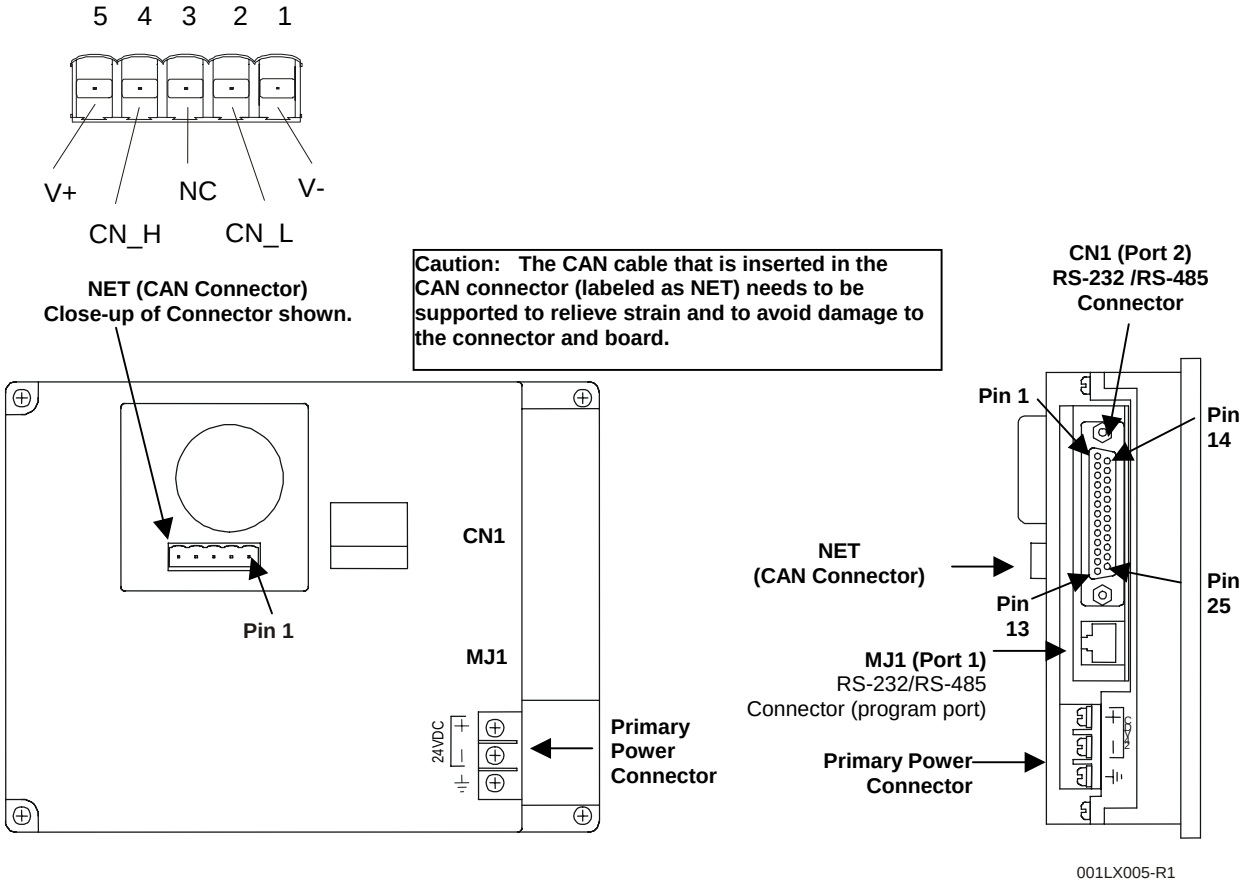


Figure 3 – Location of Ports and Connectors

2.4 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%.

Note:
A Ferrite is provided in the box with the LX. It must be used to meet CE Mark requirements.

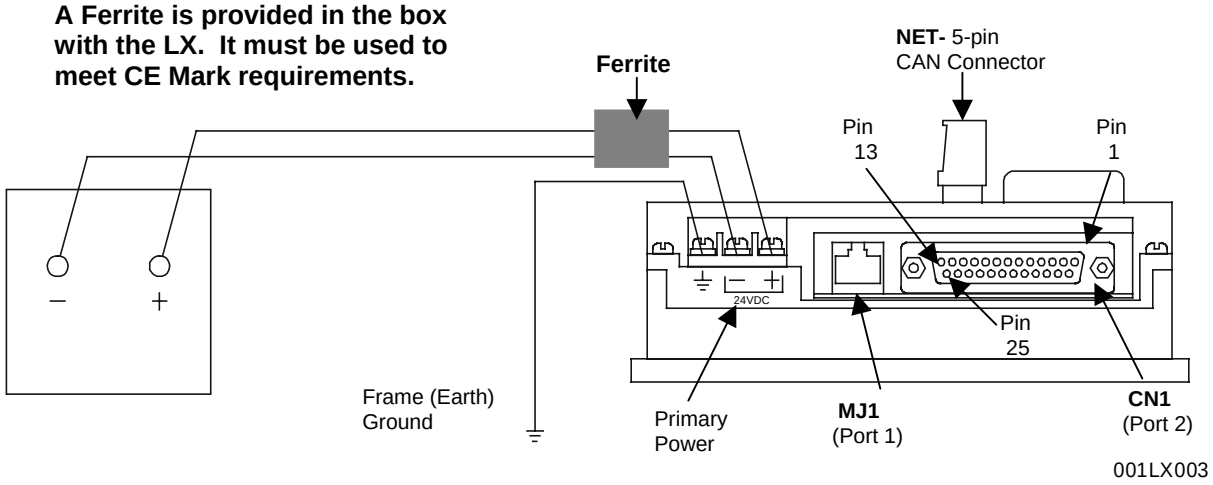
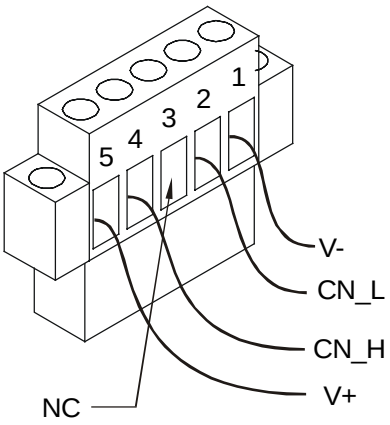


Figure 4 – Grounding

2.5 CAN Network Port and Wiring

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



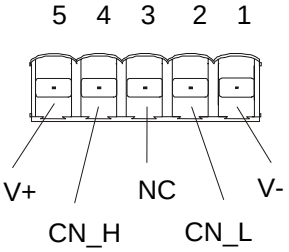


Figure 6 – As viewed looking at the LX.

*** Note:**
Ensure the Shield wire of Network cable is connected to earth ground. It is <u>not</u> connected to the connector.

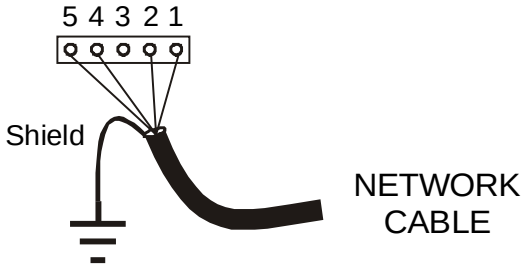


Figure 5 – Network Connector (CAN Port)

Note: To optimize CAN network reliability in electrically noisy environments, the CAN power supply needs to be isolated (dedicated) from the primary power. **The CAN Shield must be attached to the panel as close to the OCS/LX as possible.**

2.9 *RS-232 Port / RS-485 Port*

There are a variety of ways to connect to the RS-232 and RS-485 ports.

Table 5 – Ports and Functions		
Ports Used		**Functions**
RS-232	**RS-485**	
MJ1 (Port 1)	MJ1 (Port 1)	Programming, Debugging, Monitoring, Configuring **(Note: The Modem can be used to perform these functions through MJ1.)**
MJ1 (Port 1) CN1 (Port 2)	MJ1 (Port 1) CN1 (Port 2)	Ladder Logic-Controlled Serial Communications (e.g. communications to printers, bar code scanners, terminals, Modbus, and other types of applications.
CN1 (Port 2)	CN1 (Port 2)	Modems

a. MJ1 (Port 1) Modular Jack

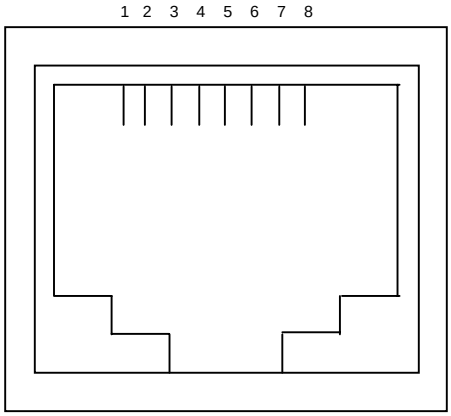


Figure 7 – Close-up of MJ1 (Port 1)

Table 6 – MJ1 (Port 1) Pins	
Port 1	**Signal**
Pin	
1	+SD/RD (RS-485)
2	-SD/RD (RS-485)
3	+5V
4	+5V
5	0V
6	0V
7	RXD (RS-232)
8	TXD (RS-232)
Output power supply: Max. 150mA	

b. CN1 (Port 2) Connector

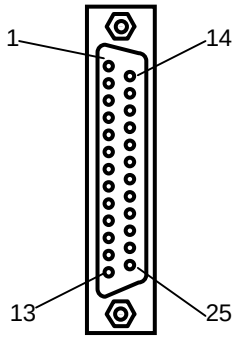


Figure 8 –RS-232 / RS-485 Connector CN1 (Port 2)

Table 7– CN1 (Port 2) Pins			
Pin #	**Signal**	**Pin #**	**Signal**
1	FG	**14**	+RTS (RS-485)
2	TXD (RS-232)	**15**	Not Used
3	RXD (RS-232)	**16**	Not Used
4	RTS (RS-232)	**17**	-RTS (RS-485)
5	CTS (RS-232)	**18**	-CTS (RS-485)
6	Not Used	**19**	+CTS (RS-485)
7	SG	**20**	Not Used
8	Not Used	**21**	Not Used
9	+5V	**22**	Not Used
10	**Do Not Connect**	**23**	Not Used
11	Not Used	**24**	+RD (RS-485)
12	+SD (RS-485)	**25**	-RD (RS-485)
13	-SD (RS-485)		

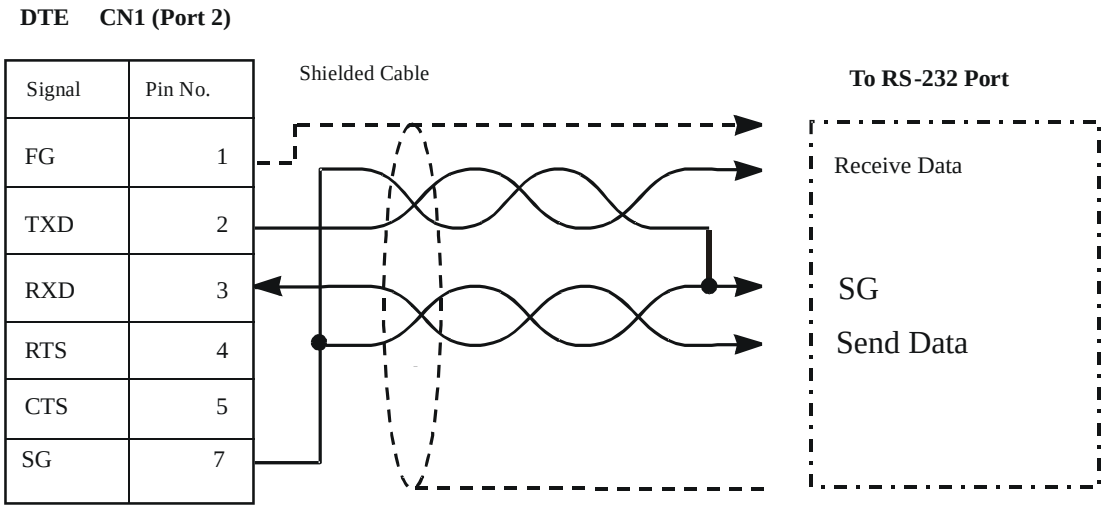


Figure 9 - RS-232 CN1 (Port 2)

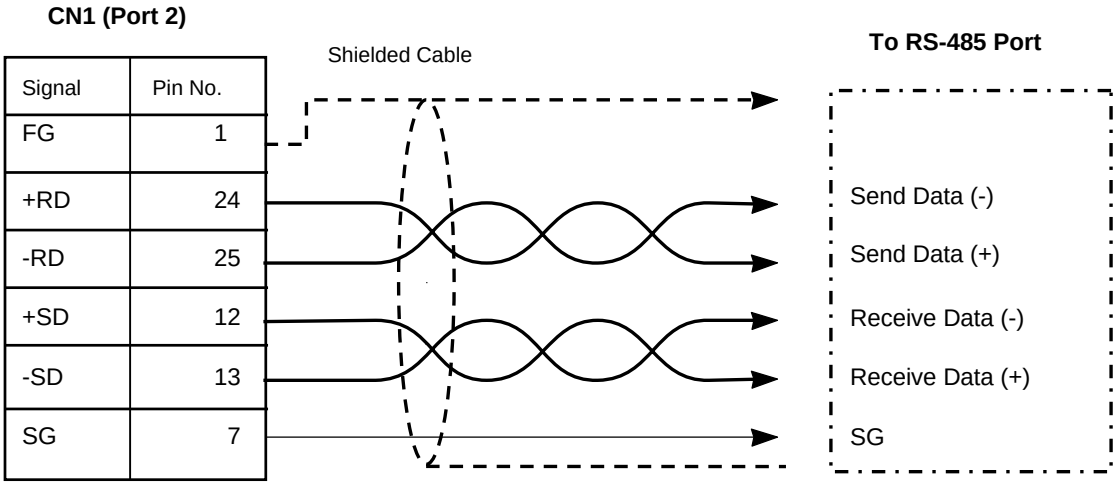


Figure 10 - RS-485 CN1 (Port 2)

3 SAFETY AND INSTALLATION

All applicable codes and standards need to be followed in the installation of this product.
The LX280/LX300 are intended to connect to Listed Industrial Control Equipment or Information Technology Equipment.

4 TECHNICAL ASSISTANCE

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

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

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