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ELX3

Industrial Edge Gateway

October 21, 2026

INSTALLATION GUIDE

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ELX3 Installation Guide
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October 21, 2026

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1 Start Here

1.1 About ELX3

The ELX3 Industrial Edge Gateway is designed to combine OT Protocol Conversion with edge computing capabilities to meet the most demanding Industrial Internet of Things (IIoT) applications.

For industrial protocol conversion, the ELX3 supports the ProSoft ELX-EIP-MB protocol gateway container, allowing the ability to perform protocol gateway conversion for EtherNet/IP™ to Modbus® TCP/RTU/ASCII. Built on the field-proven ProSoft communication gateway solution and as an EtherNet/IP ODVA conformance tested solution, this protocol gateway container solves many OT protocol conversion needs.

The ELX3 provides the ability to run Docker containers providing flexibility to run custom code for advanced applications such as machine learning, predictive maintenance, or custom protocol drivers. With hardware supporting an extended operating temperature range of -40°C to +70°C as well as Class 1 Div 2 ratings, the gateway is designed to withstand harsh industrial environments.

The ELX3 provides OT protocol conversion and the ability to concurrently run custom Docker container applications all in a single hardware platform designed to withstand harsh conditions.

1.1.1 Package Contents

The following components are included with the ELX3 and are required for installation and configuration.

Important: Before beginning the installation, please verify the following items are present.

Qty.	Part Name	ProSoft Part Number	Part Description
1	ELX3	ELX3	Edge Communications Gateway
1	RJ45-DB9M Serial Adapter Cable	CABLE14	RJ45 to DB9 male serial adapter cable
1	10-pin Power Connector	350-1016	Power Connector
1	Quick Start Guide	ELX3_QSG.pdf	Quick Start Guide

If any of these components are missing, please contact ProSoft Technology Support for replacement parts.

1.1.2 Dimensions

Height x **Width** x **Depth:** 137 mm x 48 mm x 105 mm

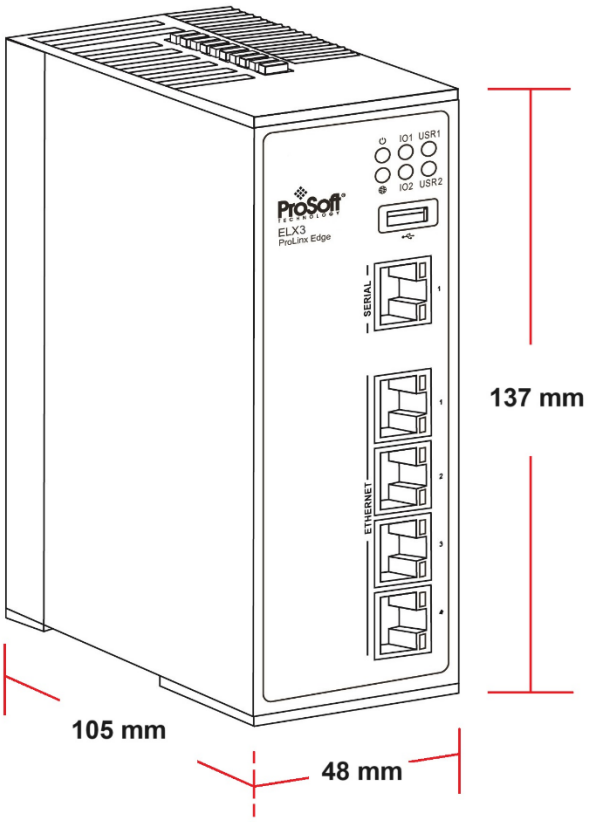


Figure 1.1: Dimensions

1.1.3 Device Views

1.1.3.1 Front View

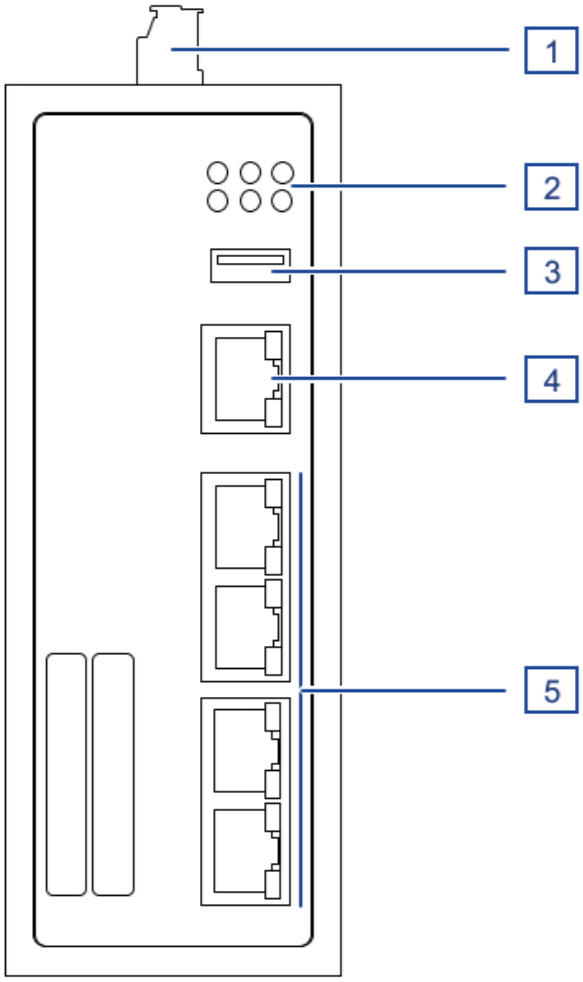


Figure 1.2: Front View

Label	Description
1	10-pin terminal block for power supply and digital input/output (I/O) interface *
2	LED display element
3	USB interface (Not functional in the current release)
4	Serial port (RS-232/422/485)
5	4 × Gigabit Ethernet ports (RJ45) for 10/100/1000 Mbit/s Twisted pair connections

* The digital input/output (I/O) interface has no functionality in the current release.

1.1.3.2 Top View

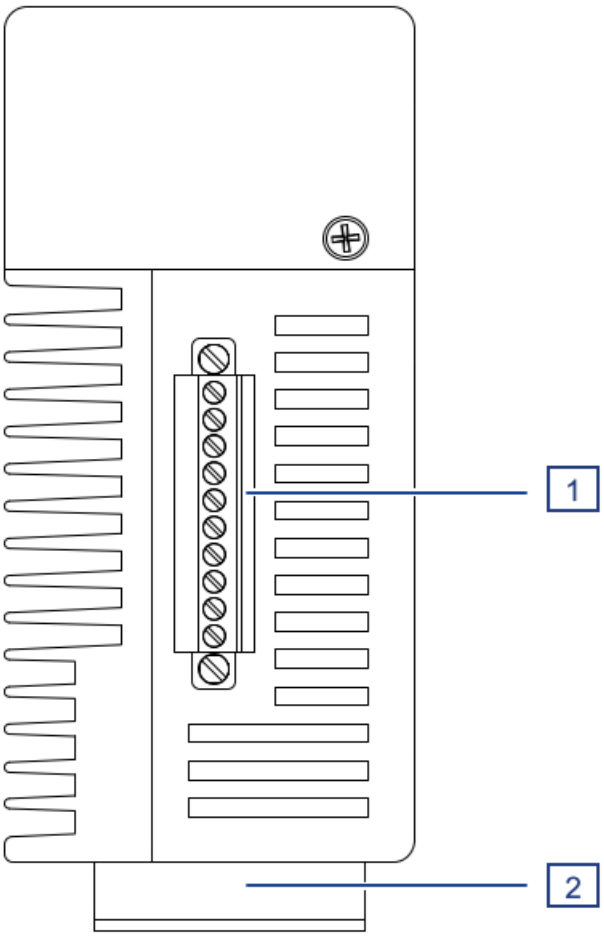


Figure 1.3: Top View

Label	Description
1	10-pin terminal block connection for power supply and digital input/output (I/O) interface*
2	DIN rail clip

* The digital input/output (I/O) interface has no functionality in the current release.

1.1.3.3 Bottom View

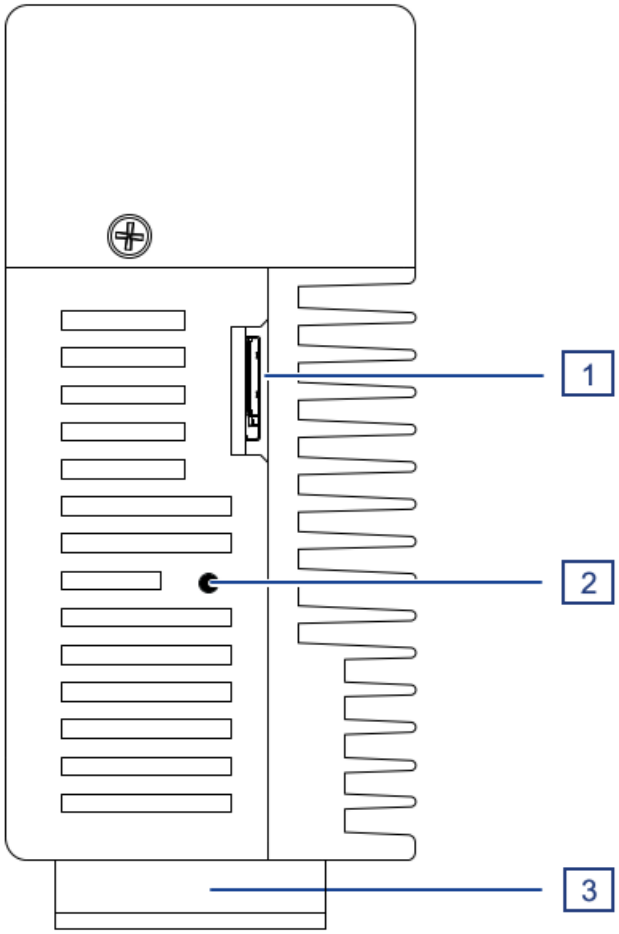


Figure 1.4: Bottom View

Label	Description
1	microSD card interface (Not functional in the current release)
2	Reset button
3	DIN rail clip

1.2 Ethernet Ports

Connect end devices and other segments to the device ports using twisted pair cables. For additional information, please see section *2.4 Ethernet Cable*.

1.3 Serial Port

The ELX3 has one serial port that supports RS-232, RS-422, and RS-485 connections. For additional information, please see section *2.5 Serial Port*.

Using the RJ45 serial port, the user can use a Minimal CLI to check the assigned IP addresses of the ELX3 LAN Interfaces, reboot, and factory reset. For additional information, please see the *ELX3 User Manual* at www.prosoft-technology.com

1.4 USB Interface

The USB interface has no functionality in the current release.

2 Installation

2.1 Installation Considerations

- The ELX3 should be mounted inside a suitable enclosure providing safety and environmental protection as required. The enclosure should be made from metal or other material with a flammability rating of V-0 or better, in accordance with the requirements of the IEC 60950-1 standard for a fire enclosure. An enclosure is not required to prevent a fire hazard if the gateway is installed above concrete or other non-combustible surfaces.
- The ELX3 has an ingress protection rating of IP30.
- The ELX3 should be mounted upright with the cooling slots positioned at the top and bottom of the gateway. The connected cables should not be bent, constricted, near high amperage, or exposed to extreme temperatures.
- Module Clearances: 50.8 mm (2 in) above/below, 12.7 mm (0.5 in) sides
- The LEDs on the front panel should be visible for ease of operational verification.
- Ensure that there is adequate airflow around the device, but kept free from direct exposure to the elements, such as sun, rain, dust, etc.

2.2 Installing the ELX3 on DIN Rail

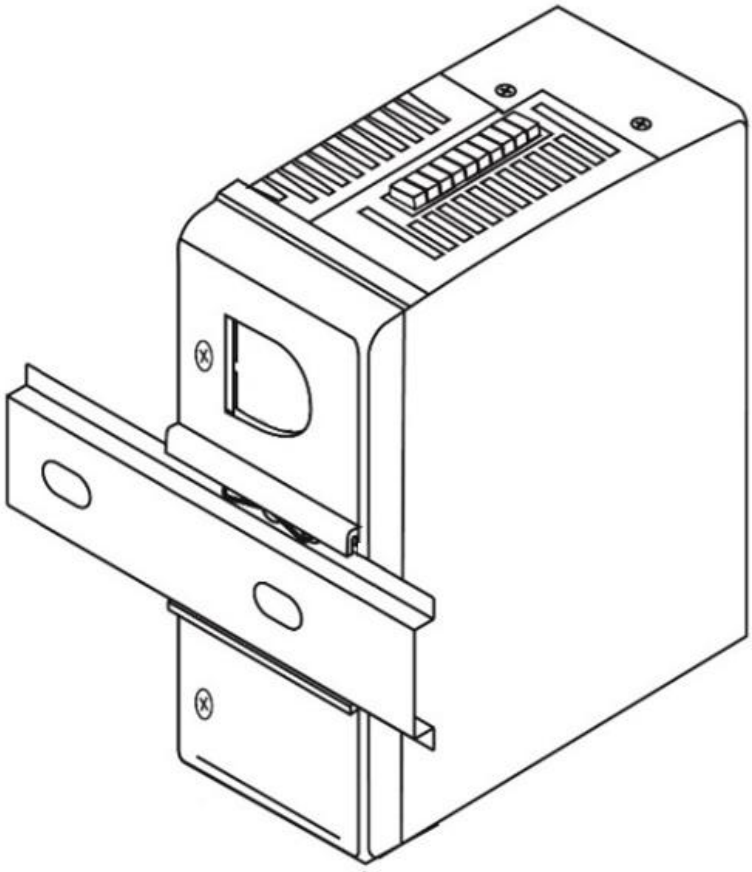


Figure 2.1: DIN-rail mounting

To mount the ELX3 on a DIN-rail:

1. Position the ELX3 on the DIN-rail B.
2. Hook the lip on the rear of the adapter onto the top of the DIN-rail, and rotate the adapter onto the rail.
3. Press the adapter down onto the DIN-rail until flush. The locking tab snaps into position and locks the gateway to the DIN-rail.

Note: Verify there is at least 5 cm (2 in) of space above and below the ELX3.

Note: Verify there is at least 1 cm (0.4 in) of space on each side of the ELX3.

2.3 Wiring the Power and I/O

The 10-pin terminal block is located at the top of the ELX3 and is used for power connections. The *Power Input 1* or *Power Input 2* terminals are used to supply power to the device. The maximum input current is 3 A.

Remove the 10-pin terminal block from the device. Connect the wires with the clamps according to the following pin assignment of the 10-pin terminal block.

Please note following:

- Torque range: 0.22 to 0.25 Nm (32 to 35 oz-in.)
- Size of conductors permitted: 0.14 mm^2 to 1.5 mm^2 (30 AWG to 14 AWG)
- Insulation stripping requirement: 7mm
- All unused terminal screws must be tightened.

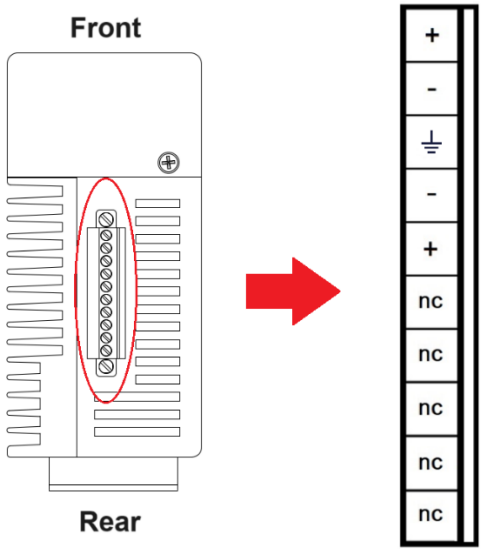


Figure 2.2: ELX3 Top View – Terminal Block

Pin	Description
+	Power Input 1 (12 to 24 VDC)
-	Power 1 Ground
⏚	Earth Connection
-	Power 2 Ground
+	Power Input 2 (12 to 24 VDC)
nc	NC Reserved
nc	NC Reserved
nc	NC Reserved
nc	NC Reserved
nc	NC Reserved

Important: Wiring the connector incorrectly can cause serious damage to the ELX3, which will not be covered under the ProSoft warranty.

2.3.1 Grounding

The ELX3 has a functional ground connection via the 10-pin terminal block that is located at the top of the ELX3.

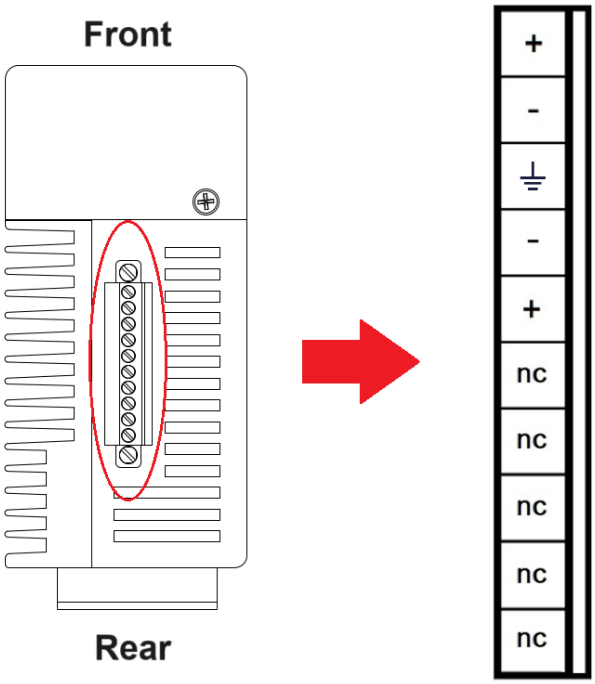


Figure 2.3: ELX3 Top View – Terminal Block

Pin	Description
+	Power Input 1 (12 to 24 VDC)
-	Power 1 Ground
⏚	Earth Connection
-	Power 2 Ground
+	Power Input 2 (12 to 24 VDC)
nc	NC Reserved
nc	NC Reserved
nc	NC Reserved
nc	NC Reserved
nc	NC Reserved

2.3.2 Power

The ELX3 must be installed by qualified and trained personnel. Power must be connected in accordance with the local wiring rules and regulations.

The ELX3 has two power inputs of 12 to 24 VDC, with a max power draw of 12W. Power the ELX3 using either of the two inputs or use both for redundancy.

Note: The power supply should use a dedicated power source. Additionally, the earth connection derived from the AC side of the main system power supply should not be connected to either negative or any other power terminal of the ELX3.

Note: The power supply should be separated from the power supplies used to drive motors, pumps, or other noisy equipment. The control and communication equipment should be on a separate power rail.

Note: For North America: The torque for tightening the supply voltage terminal block is 0.3 Nm (2.7 lb-in).

- Mount the 10-pin terminal block on the device using screws.
- Enable the supply voltage.

2.4 Ethernet Cable

Connect the Ethernet port on the ELX3 using a shielded category 6 Ethernet cable (recommended). Use a standard Ethernet straight-through cable or a crossover cable when connecting the ELX3 to an Ethernet hub, a 10/100/1000 Base-T Ethernet switch, or directly to a PC.

Note the following general recommendations for data cable connections in environments with high electrical interference levels:

- Keep the length of the data cables as short as possible.
- Use optical data cables for data transmission between buildings.
- When using copper cables, provide a sufficient separation between the power supply cables and the data cables. Ideally, install the cables in separate cable channels.
- Verify that power supply cables and data cables do not run parallel over long distances. To reduce inductive coupling, verify that the power supply cables and data cables cross at a 90° angle.
- Use shielded data cables for gigabit transmission via copper cables, for example SF/UTP cables according to ISO/IEC 11801. To meet EN 50121-4 and marine application requirements, use shielded data cables at all transmission rates.
- Connect the data cables according to your requirements. For more information, see section *2.4.1 10/100/1000 Mbit/s Twisted Pair Port*.

2.4.1 10/100/1000 Mbit/s Twisted Pair Port

The RJ45-socketed 10/100/1000 Mbit/s twisted pair port offers the ability to connect network components according to the IEEE 802.3 10BASE-T/100BASE-TX/1000BASE-TX standard.

This port supports:

- Auto-negotiation
- Auto-polarity
- Auto-crossing (if auto-negotiation is activated)
- 1000 Mbit/s half-duplex mode, 1000 Mbit/s full duplex mode
- 100 Mbit/s half-duplex mode, 100 Mbit/s full duplex mode
- 10 Mbit/s half-duplex mode, 10 Mbit/s full duplex mode

Delivery state: Auto-negotiation activated.

The socket housing is electrically connected with the front panel.

2.4.2 Pin Assignments

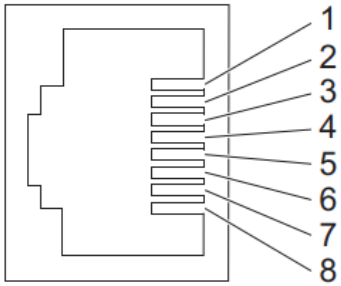


Figure 2.4: Ethernet port pin assignments

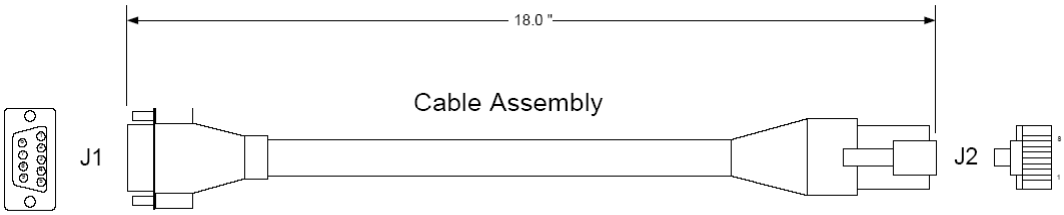
Pin	10/100 Mbit/s	1000 Mbit/s
MDI Mode		
1	TX+	BI_DA+
2	TX−	BI_DA−
3	RX+	BI_DB+
4	—	BI_DC+
5	—	BI_DC-
6	RX−	BI_DB−
7	—	BI_DD+
8	—	BI_DD-
MDI-X Mode		
1	RX+	BI_DB+
2	RX-	BI_DB−
3	TX+	BI_DA+
4	—	BI_DD+
5	—	BI_DD−
6	TX-	BI_DA−
7	—	BI_DC+
8	—	BI_DC−

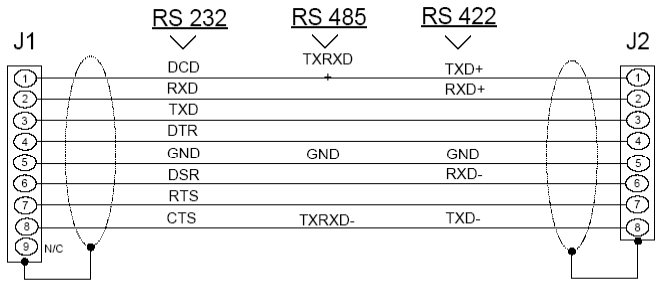
2.5 Serial Port

This section contains information on the cable and pinout assignments for the ELX3 gateway serial port (RS-232/422/485).

The serial port has a RJ45 jack connector. A six-inch RJ45 to DB9 Male adapter cable is provided for the serial port. The DB9 Male adapter cable provides connections for RS-232, wired as Data Terminal Equipment (DTE), RS-422 and RS-485.

2.5.1 DB9 to RJ45 Adapter (Cable 14)

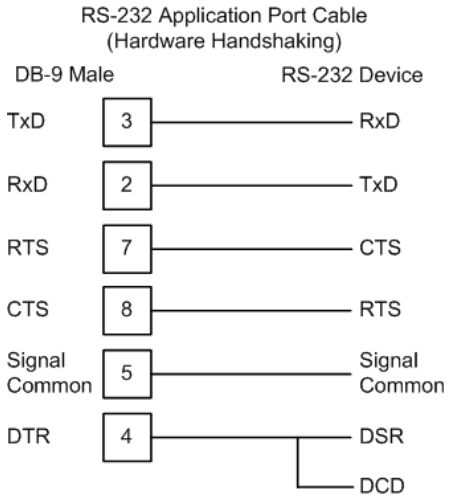




Wiring Diagram

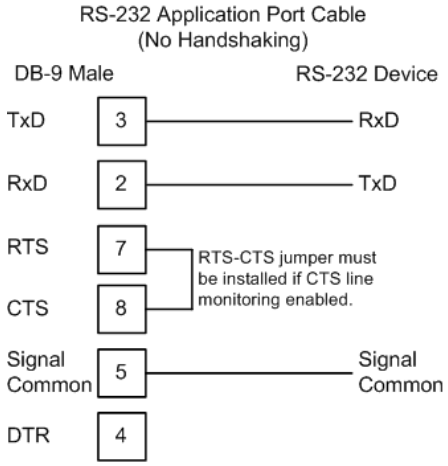
2.5.2 RS-232 Interface

This type of connection is used when the device connected to the gateway requires hardware handshaking (control and monitoring of modem signal lines). To enable hardware handshaking, set the port configuration to use RTS/CTS handshaking. (For MBS protocol, set the *Use CTS Line* parameter to **Yes**)



2.5.2.1 RS-232 - Null Modem (DTE without Hardware Handshaking)

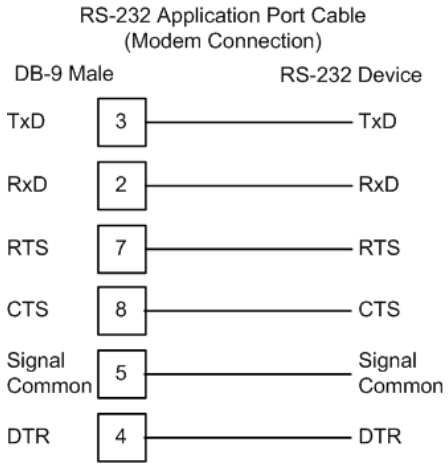
This type of connection can be used to connect the gateway to a computer or field device communication port.



Note: If the port is configured to use RTS/CTS handshaking, then a jumper is required between the RTS and the CTS line on the gateway connection.

2.5.2.2 RS-232 - DTE to DCE Modem Connection

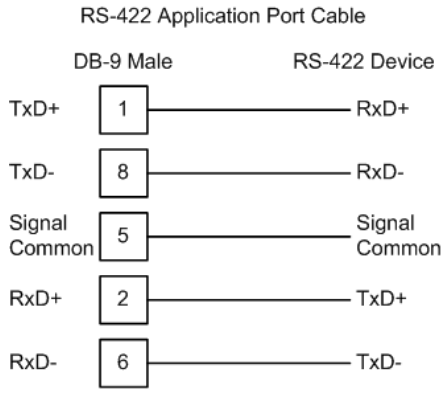
This type of connection is required between the gateway and a modem or other communication device.



For most modem applications, RTS/CTS handshaking should be enabled in the port configuration.

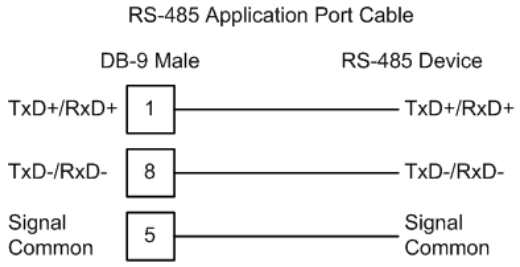
2.5.3 RS-422 Interface

The following illustration applies when the RS-422 interface is selected.



2.5.4 RS-485 Interface

The following illustration applies when the RS-485 interface is selected.



Note: This type of connection is commonly called a RS-485 half-duplex, 2-wire connection. If you have RS-485 4-wire, full-duplex devices, they can be connected to the gateway's serial port by wiring together the TxD+ and RxD+ from the two pins of the full-duplex device to Pin 1 on the gateway and wiring together the TxD- and RxD- from the two pins of the full-duplex device to Pin 8 on the gateway. As an alternative, you can set the gateway to use the RS-422 interface and connect the full-duplex device according to the RS-422 wiring diagram. For additional assistance, please contact ProSoft Technical Support.

Note: Depending upon devices on the network, if there are problems in RS-485 communication that can be attributed to the signal echoes or reflections, then consider adding 120 OHM terminating resistors at both ends of the RS-485 line.

3 LEDs

The LEDs express the existence and possible cause of a problem. The LEDs provide valuable diagnostic information such as:

- The state of each port
- System configuration errors
- Application errors
- Fault indications

3.1 Main LEDs

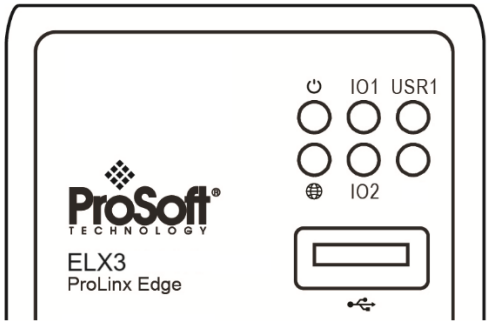


Figure 3.1: Main LEDs

The following table describes the main ELX3 LEDs:

LED	Function	State	Description
⏻	System Status	Off	The ELX3 is not powered up.
		Solid Green	The ELX3 is operational.
		Flashing Green	The ELX3 is unconfigured.
		Solid Red	An unrecoverable error has occurred. A reset or power cycle may clear the error. Call tech support if the problem persists.
		Flashing Red	Indicates a major recoverable fault such as a power input error.
		Alternating Red & Green	Firmware update is underway. It will remain in this state until update is complete.
🌐	Internet Status	Off	Belden Horizon is disabled **or** OpenVPN is not configured.
		Solid Green	The gateway is managed by a Belden Horizon account.
		Flashing Green	A Belden Horizon tunnel is connected.
		Solid Amber	IPSec or OpenVPN is configured but Belden Horizon is not.
		Solid Red	Belden Horizon is enabled but internet has failed. **or** Belden Horizon is disabled and OpenVPN has failed.
		Flashing Red	Belden Horizon is disconnected but DNS and Internet are working. **or** IPSec and OpenVPN are unable to discover the server.
IO1	Digital I/O 1	-	Function is not available yet.
IO2	Digital I/O 2	-	Function is not available yet.
USR1	N/A	N/A	Reserved for future use.

3.2 Ethernet Port LEDs

The following table describes the Ethernet port LEDs:

LED	State	Description
Green	Solid	100mbps link with no activity.
	Flashing	100mbps link with activity.
Yellow	Solid	GbE link with no activity.
	Flashing	GbE link with activity.
Green and Yellow	Both off	10mbps link/activity.

3.3 Serial Port LEDs

LED	State	Description
Green (Rx)	Off	No activity on the port.
	Flashing Green	The port is actively receiving data.
Yellow (Tx)	Off	No activity on the port.
	Flashing Amber	The port is actively transmitting data.

4 Support, Service, and Warranty

4.1 Contacting Technical Support

ProSoft Technology, Inc. is committed to providing the most efficient and effective support possible. Before calling, please gather the following information to assist in expediting this process:

1. Product Version Number
2. System architecture
3. Network details

If the issue is hardware related, we will also need information regarding:

1. Module configuration and associated ladder files, if any
2. Module operation and any unusual behavior
3. Configuration/Debug status information
4. LED patterns
5. Details about the interfaced serial, Ethernet or Fieldbus devices

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