Figure 1: COM terminal pinouts (XIO-04 and XIO-08)
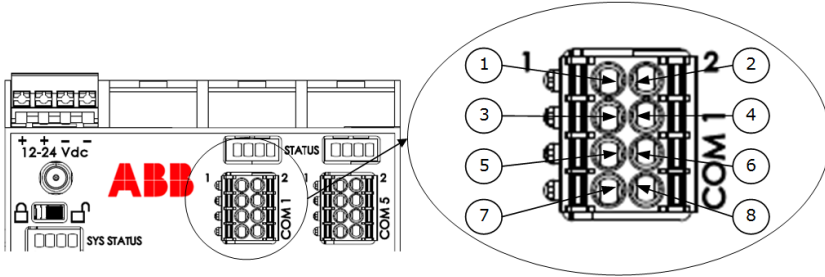

Legend: COM terminal pinouts

| PIN	RS-232	RS-485	RS-422
1	Voltage out (VOUT)	Voltage out (VOUT)	Voltage out (VOUT)
2	Ground (GND)	Ground (GND)	Ground (GND)
3	Switched voltage (SW VOUT)	Switched voltage (SW VOUT)	Switched voltage (SW VOUT)
4	Ground (GND)	Ground (GND)	Ground (GND)
5	Request to send (RTS)	Transmit/Receive (BUS+)	Transmit bus + (TBUS+)
6	Transmit data (TX)	Transmit/Receive (BUS-)	Transmit bus – (TBUS-)
7	Request to send (RX)	Not used	Receive bus + (RBUS+)
8	Clear to send (CTS)	Not used	Receive bus– (RBUS-)

XIO power-on sequence

The SYS STATUS LEDs light up in the following sequence at start up:

Figure 2: SYS STATUS LEDs

a. Initial Power On

b. Loading bootloader

c. Loading OS

d. Loading TotalFlow (application)
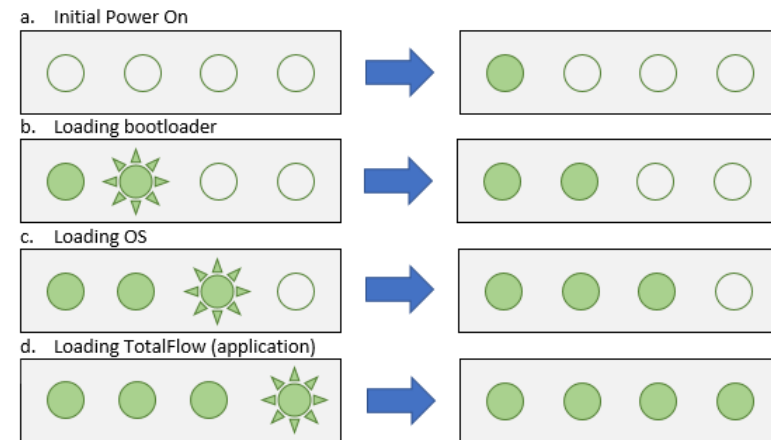
The XIO design has a super capacitor (Super CAP) that is a short-term power reservoir. The first time the unit powers on, or if the XIO is left powered off for several hours, the boot time is approximately two minutes to allow charging of the super capacitor. The boot time is considerably less once the capacitor is fully charged.

Figure 3: XIO housing cover
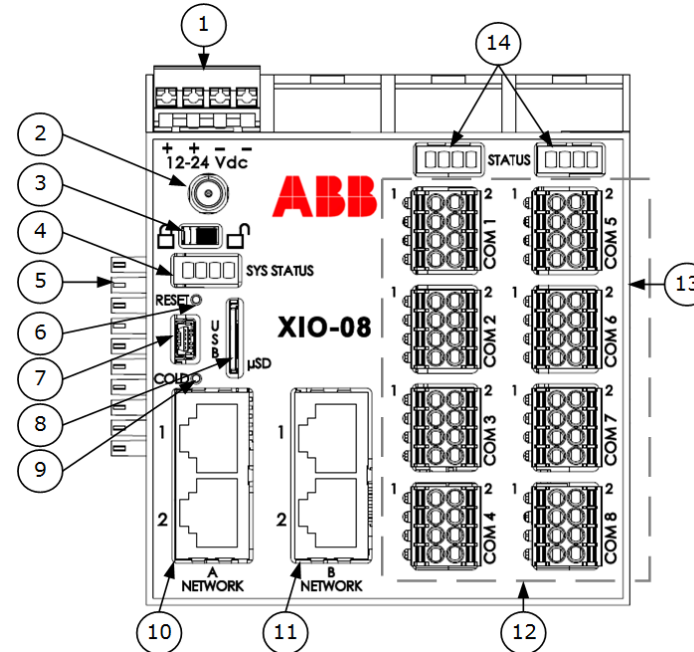
Legend: XIO housing cover

| ID	Description	ID	Description
1	External power supply input (12 or 24 Vdc)	8	Micro SD holder
2	Wi-Fi antenna connector	9	Cold reset button (paperclip actuated)
3	Security switch	10	A Network Ethernet ports 1 and 2
4	System status LEDs	11	B Network Ethernet ports 1 and 2
5	TFIO Module interface (male)	12	Serial communication ports: COM1 – COM8 (XIO-08), COM1 – COM4 (XIO-04), None (XIO-00)
6	Reset button (paperclip actuated)	13	TFIO Module interface (female) on the side
7	USB mini port	14	Communication card status LEDs (XIO-04, XIO-08 only)

Contact us

ABB Inc., Measurement & Analytics

Quotes: US-IAMA.inquiry@us.abb.com
Orders: US-IAMA.order@us.abb.com
Training: US-IAMA.training@us.abb.com
Support: upstream.support@us.abb.com
+1 800 442 3097 (opt. 2) www.abb.com/upstream

Extendable IO: XIO-00, XIO-04, XIO-08
Quick Start Guide
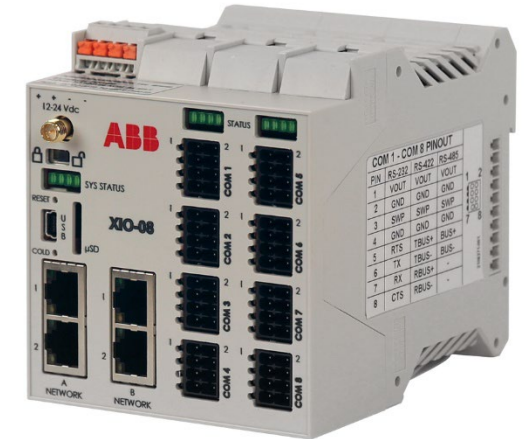
Smart, extendable IO
Measurement made easy

Additional information

Scan the code for related publications:

XIO Product page

Safety and compliance information is included with the device in the shipping packaging.

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XIO Quick Start

IMPORTANT NOTE: This guide covers basic information for XIO startup and communication with ABB Totalflow remote controllers. It assumes the XIO factory default configuration is intact. See the XIO User Manual for detailed instructions. Wi-Fi and Bluetooth® are optional features and may not be included in every model.

Power requirements

The XIO has a single port for connection to an external power source. This is a removable terminal connector (4 POS), spring cage termination, wire gauge 12 AWG to 22 AWG. The external power supply is the sole source of power to the XIO.

Wire and power the device

For wiring, refer to Figure 1 on the reverse side of this guide. Power on the XIO. All the SYS STATUS LEDs display green when the XIO completes startup (Figure 2).

Local communication with the device

Connect the laptop to the USB or Ethernet ports to establish initial local communication using PCCU. These ports are configured at the factory for local operator access. Configure PCCU to use any of these ports.
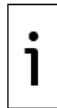
IMPORTANT NOTE: Do not use external enclosure connectors for permanent field connections. These connectors are only for local access during configuration or maintenance.

When connecting to a new system for the first time, PCCU requests date/time synchronization between the laptop and the XIO. Date and time must agree with the collection equipment. Click **Yes** when prompted.

Local connection on USB Port

1. Connect the laptop to the USB port.
2. Launch PCCU.
3. Click **Setup** on the PCCU32 toolbar menu. The System Setup window displays.
4. Under PCCU Connect Method, select **Serial port**.
5. From the **PCCU Com. Port** drop-down list, select the computer USB port where the cable connects.
6. Click **Close**.
7. Click **Entry** on the PCCU32 toolbar to connect to the device.
8. Verify that the connection is successful when the PCCU32 Entry screen displays.
9. Change to Expert view.
10. Proceed to configure the XIO.

Local connection on Ethernet

The XIO is configured as a 4-port switch from the factory. A default IP address (169.254.0.13) is ready for initial local communication using any of the 4 ports. All ports are enabled by default.

IMPORTANT NOTE: Connect to any of the 4 ports. (Recommended: reserve A-1 port for network connection.) Use the factory default address when the XIO is configured in 4-port switch mode.

1. Connect the laptop to any of the XIO Ethernet ports.
2. Launch PCCU.
3. Click **Setup** on the PCCU32 toolbar menu. The System Setup window displays.
4. Click **TCP/IP**.
5. Under Connection Parameters in the Network ID or IP field, type the default IP address (**169.254.0.13**). Then click **Close**.
6. Click **Entry** on the PCCU32 toolbar to connect to the device.
7. Verify that the connection is successful when the PCCU32 Entry screen displays.
8. Change to Expert view.
9. Proceed to configure the XIO.

Configure basic XIO parameters

Always use a unique Station ID for each XIO. It is recommended to limit special characters to spaces or underscores.

1. Click the station ID (default name is TOTALFLOW) at the top of the navigation tree. The Station Setup tab displays.
2. Set up the basic settings identified in the following table:

Required XIO setup

Entry	Format	Description
Station ID	10-digit alphanumeric	Name that uniquely identifies each installed XIO. This name is detected by remote controllers (using Auto Discovery) and must be unique. We recommend to not leave the factory default name even when installing a single XIO.
Location	24-digit alphanumeric	Describes the physical location of the device, such as the county name or road number.

3. Click **Send**. Take note of the XIO ID.

Configure for network communication

Configure IP parameters that are valid for the network connecting the XIO and the remote controller. This procedure assumes that the XIO remains in its 4-port switch mode, which requires only one IP address. Use any of the Ethernet ports to connect to the network (port A-1 recommended).

1. On the navigation tree, select **Communications**.
2. Select the **Networking** tab.
3. In the Ethernet section, configure IP parameters:
   a. For automatic IP addressing (**DHCP**), select **Enable**.
   b. For static IP addressing, type parameters manually.
4. Click **Send**.
5. Connect one of the XIO Ethernet ports to the field network equipment (star topology) or RMC/XIOs (daisy-chain topology).
6. Click **Restart**.
7. Click **Yes** to confirm restart.

If you have used an Ethernet local connection to complete these steps, the connection is lost when Ethernet restarts. Reconnect with the XIO using IP parameters compatible with the new XIO IP address or continue configuration using USB.

Add/Export communication applications

The XIO supports all communication applications and the IO system. Add applications on the XIO as required. Then export to make applications visible on the remote controller. Exported application limit, including the System app, is 16.

1. Click the XIO ID at the top of the navigation tree.
2. Select the **Application/License Management** tab.
3. Click **Add App**.
4. Select the desired application from the **Application to Add** drop-down list, then click **OK**. The new application displays in the application table.
5. Click **Send**.
6. Select the checkbox in the **Exported** column. Then click **Send**.
7. Configure all added applications as required and ensure the XIO communicates to the attached devices.

Configure XIO Interface (on the RMC)

Add the XIO Interface application on the RMC to detect and establish connection with the XIO.

1. Connect to the RMC using PCCU Entry mode.
2. On the navigation tree, select **Communications**. The Communications Setup tab displays.
3. Click **Add New Device/Application**.
4. Select **XIO Interface** from the **Application** drop-down list.
5. Select **Network** from the **Port** drop-down list.
6. Leave the **XIO Client** (default) on the **Protocol** drop-down list.
7. Click the **Remote Service** drop-down list. The RMC displays all detected XIOs (XIO Server [XIO ID]).
8. Select the desired XIO (based on its unique ID). Click **OK.**
9. Click **Send changes to device**.
10. On the navigation tree, select **XIO Interface**. The Overview screen displays. The Connection indicator may be red.
11. Select **Scan Enabled**. Then click **Send**.
12. Verify the Connection status indicator is green.
13. On the navigation tree, expand **XIO Interface**. Verify that the exported XIO applications display.
14. Configure RMC applications to use measurement data from remote applications or drive TFIO modules.