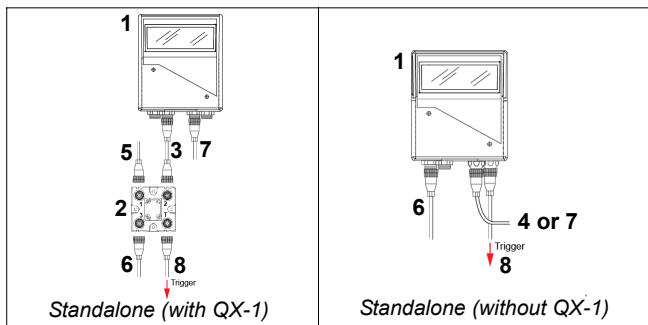


A red and black Microscan QX-870 barcode reader. The device has a red upper section with the 'MICROSCAN' logo and a black lower section with 'QX-870' printed on it. A small screen displays a barcode. On the left side, there is a yellow label with a warning symbol. At the bottom, there are several metal connectors.



P/N 83-110870-04 Rev B

Step 1 — Check Hardware



Hardware Required

Caution: Be sure that all connections are secure **BEFORE** applying power. Always power down **BEFORE** disconnecting any cables.

Item	Description	Part Number
1	QX-870 Industrial Raster Scanner	FIS-0870-XXXX
2	QX-1 Interface Device	98-000103-02
3	QX Cordset, Common, M12 12-pin Socket to M12 12-pin Plug, 1 m	61-000162-02
4	QX Cordset, Host, Serial, M12 12-pin Plug to DB9 Socket, 1 m	61-000152-02
5	QX Cordset, Host, Serial, M12 12-pin Socket to DB9 Socket, 1 m	61-000153-02
6	QX Power Supply, 100-240VAC, +24VDC, M12 12-pin Socket	97-000012-01
7	QX Cordset, Host, Ethernet, M12 8-pin Plug (Screw-On) to RJ45, 1 m	61-000160-02
8	Photo Sensor, VIS, NPN, Light On/Dark On	99-9000016-01

Note: Additional cordsets and accessories are available in the Omron Microscan Product Pricing Catalog.

Step 2 — Connect the System

Important: If you are connecting Ultra-Lock cordsets to the QX-870 and QX-1, align the pins first and then push the connector into place. Do not twist the connectors, as this will bend the pins.

Important: Do not attempt to power more than four scanners with a single power supply in a daisy chain configuration. Add a QX-1 and one power supply for every four additional scanner in the daisy chain.

Note: The configuration instructions below are for simple, direct connections to an RS-232 or Ethernet host. The QX-1 can be added to RS-232 or Ethernet configurations in which greater flexibility and complexity are required. The first diagram in Step 1 shows a standalone configuration that includes the QX-1.

RS-232 Standalone (without QX-1)

1. Connect the Serial Communication Cable from "B" on the QX-870 to the host.
2. Connect the photo sensor (if required) to "T" on the QX-870.
3. Connect the power supply to "P/M" on the QX-870.
4. Plug in the power supply.

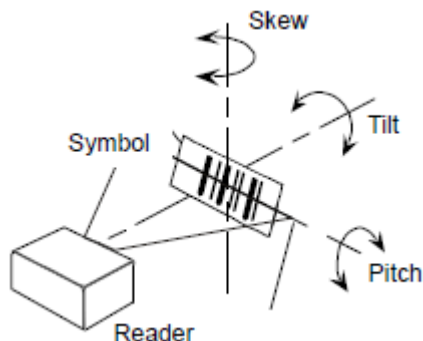
Ethernet Standalone (without QX-1)

Important: Configure Ethernet-enabled scanners off-line and then connect to the network when ready for dynamic use.

1. Connect the Ethernet Communication Cable from "B" on the QX-870 to the host network.
2. Connect the power supply to "P/M" on the QX-870.
3. Plug in the power supply.

Step 3 — Position Scanner

1. Place a test symbol in a location with as little ambient light as possible.
2. Position the scanner at the focal distance used in your application.
3. Align the test symbol with the scanner's field of view.
4. Tip the scanner relative to the test symbol to avoid glare from specular reflection.



Maximum skew, tilt, and pitch: $\pm 30^\circ$

Step 4 — Install ESP

ESP Software can be found on the Omron Microscan Tools Drive that is packaged with the QX-870.

1. Follow the prompts to install ESP from the Tools Drive.
2. Click on the ESP icon to run the program.



Note: ESP can also be installed from the **Download Center** at www.microscan.com.

Refer to the *QX-870 Industrial Raster Scanner User Manual* for detailed information about using ESP to configure the QX-870.

Minimum System Requirements

- 233 MHz Pentium PC
- Windows 8, 7, Vista, or XP operating system (32-bit or 64-bit)
- Internet Explorer 6.0 or higher
- 128 MB RAM or greater
- 160 MB free disk space
- 800 x 600 256 color display (1024 x 768 32-bit color recommended)

Step 5 — Select Model

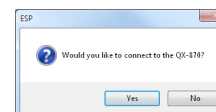
When you start ESP, the model menu will appear:



1. Click the button showing the QX-870.
2. Click **OK**.

Note: You can also simply double-click the button showing your scanner to make your selection.

3. Click **Yes** when this dialog appears:



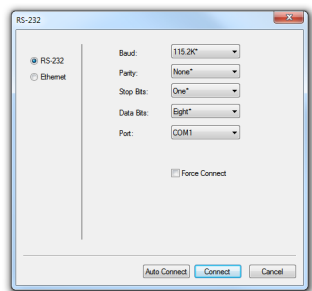
Note: If you need to select another model later, click the **Switch Model** button near the top of the screen or use **Model > New Model** in the menu toolbar.

Step 6 — Connect

RS-232

To connect using the Connection Wizard:

- Click **Connect** on the menu toolbar, and then select **Connection Wizard**.
- Select **RS-232**.
- Configure RS-232 settings as required by the application, and click **Connect**.



- When a connection is established, the green indicator in the status bar at the bottom right of the screen will be visible:



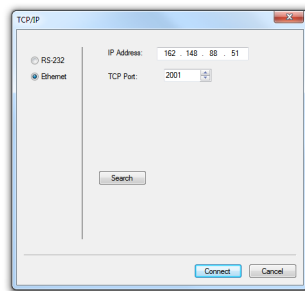
Important: The scanner is in **Continuous Read Mode** by default. For best connection results, be sure that no decodable symbols are within the scanner's field of view while attempting to connect.

Step 6 — Connect (cont.)

Ethernet TCP/IP

To connect using the Connection Wizard:

- Click **Connect** on the menu toolbar, and then select **Connection Wizard**.
- Select **Ethernet**.
- Configure Ethernet settings as required by the application, and click **Connect**.



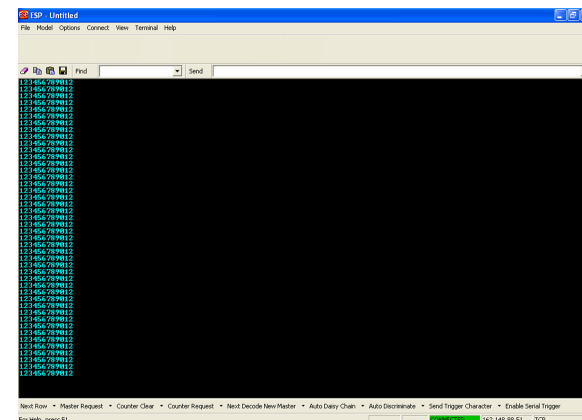
- When a connection is established, the green indicator in the status bar at the bottom right of the screen will be visible.

Important: The scanner is in **Continuous Read Mode** by default. For best connection results, be sure that no decodable symbols are within the scanner's field of view while attempting to connect.

Step 6 — Connect (cont.)

Ethernet TCP/IP (cont.)

When the QX-870 is connected, incoming symbol data can be displayed in the **Terminal**, as shown below.



Step 7 — Test Read Rate

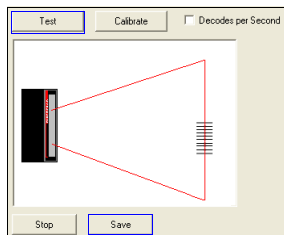
Read Rate indicates the number or percentage of successful decodes per second achieved by the scanner.

1. Click the **Test** button in ESP's **EZ Mode** to start the Read Rate test.

Symbol data and read rate percentage information should appear in the **Symbol Information** table. The Read Rate LEDs on the side of the QX-870 will indicate the percentage of successful decodes per second.

2. Click **Stop** to end the Read Rate test.

Note: Read Rate can also be tested using the **Read Rate** interface in **Utilities**.



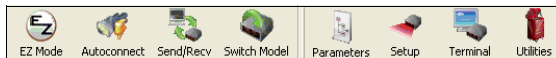
Refer to the *QX-870 Industrial Raster Scanner User Manual* for information about how to test read rate using serial commands or the scanner's EZ button.

Step 8 — Configure and Save

Click the **App Mode** button to make configuration changes to the scanner.



The following modes are accessible by clicking the buttons at the top of the screen:



- Click the **EZ Mode** button to return to EZ Mode.
- Click the **Autoconnect** button to establish communications.
- Click the **Send/Recv** button to send or receive commands.
- Click the **Switch Model** button to open the model menu, or to return to the previous model.
- Click the **Parameters** button to show the tabbed tree control views.
- Click the **Setup** button to show the tabbed interface views.
- Click the **Terminal** button to display decoded symbol data and to send serial commands.
- Click the **Utilities** button to access Read Rate, Counters, Device Control, Differences from Default, Master Database, Digital Bar Code, and Firmware.

For further details, see **ESP Help** in the Help dropdown menu.