

# *Ethernet*

*Interface for 520 and 920i™ Indicators*

## Installation and Configuration Manual





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# About this Manual

This manual is intended for use by service technicians responsible for installing the Ethernet card option in the 920i programmable and 520 indicators.



Authorized distributors and their employees can view or download this manual from the Rice Lake Weighing Systems distributor site at [www.rlws.com](http://www.rlws.com).

## 1.0 Introduction

The Ethernet option (PN 71986), comes with an Ethernet interface card and the Ethernet module. When ordered at the same time as the indicator, the Ethernet card can be factory installed by Rice Lake Weighing Systems if requested. If an indicator is received with the Ethernet option already installed, please proceed directly to Section 3 on page 6 to begin configuring the scale's IP address, gateway IP address, netmask, and Telnet configuration password.

## 2.0 Installation



**Warning**

The 920i and 520 have no on/off switch. Before opening the unit, ensure the power cord is disconnected from the power outlet.



**Caution**

Use a wrist strap to ground yourself and protect components from electrostatic discharge (ESD) when working inside the indicator enclosure.

These units use double pole/neutral fusing which could create an electric shock hazard. Procedures requiring work inside the indicators must be performed by qualified service personnel only.

The indicator enclosure must be opened to install the Ethernet card.

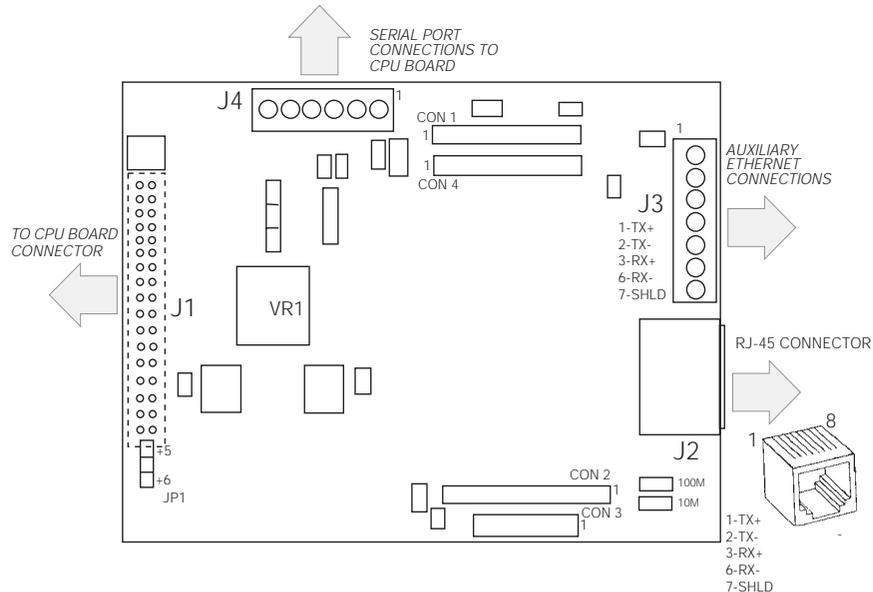


Figure 2-1. Ethernet Interface Card

## 2.1 Ethernet Card Installation

1. Disconnect the 920i or the 520 indicator from power source.
2. Place indicator on an antistatic work mat. Remove screws that hold the backplate or cover to the enclosure body, then lift the backplate or cover away from the enclosure and set it aside.
3. A 56", three-pin cable and a grounding clamp is provided in the Ethernet parts kit. Remove plug from cord grip on the indicator that will be used to run the Ethernet cabling.

### 2.1.1 920i Ethernet Card Installation

1. Carefully align the large option card connector (J1) with connector J5 or J6 on the 920i CPU board. Press down to seat the option card in the CPU board connector.
2. Use the screws provided in the option kit to secure the other end of the option card to the threaded standoffs on the 920i CPU board serial connectors.
3. Ensure jumper JP1 is in the +6 position on the Ethernet interface board for installation in the 920i.

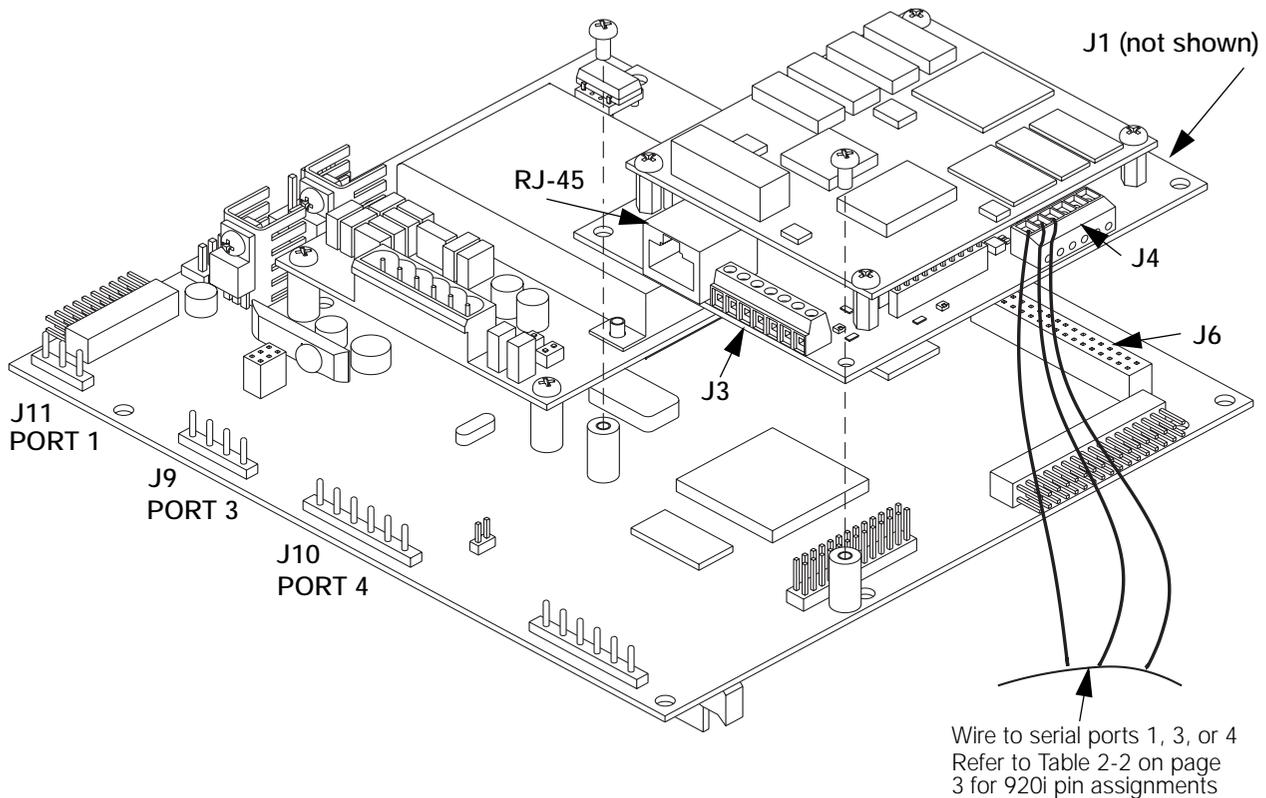


Figure 2-2. Installing Option Card onto 920i CPU Board

Pin	Signal
1	TXD
2	RXD
3	GND
4 & 5	Not Used

Table 2-1. Ethernet Card J4 Pin Assignments

### 2.1.2 920i Ethernet Card Wiring

The Ethernet card requires an RS-232 duplex serial connection to the 920i. RS-232 communications are available on ports 1, 3, or 4. These ports support full duplex RS-232 at up to 115200 bps. (The 920i default baud rate is 9600. The Ethernet card and indicator must be set to the same baud rate).

1. To attach the Ethernet communications cable directly to the 920i, remove the serial connector from the CPU board (Port 1, 3, or 4).
2. Cut the necessary cable length to run from J4 on the Ethernet interface board and wire to the 920i connector.
3. Once cables are attached, plug the connector into the header on the board. Table 2-1 shows the Ethernet pin assignments.

Connector	Pin	Signal	Port
J11	1	GND	1
	2	RS-232 RXD	
	3	RS-232 TXD	
J9	1	GND	3
	2	RS-232 RXD	
	3	RS-232 TXD	
J10	1	GND	4
	2	RS-232 RXD	
	3	RS-232 TXD	

Table 2-2. 920i Pin Assignments

Figure 2-3 shows the required connections between connector J4 on the Ethernet card and the indicator serial port.

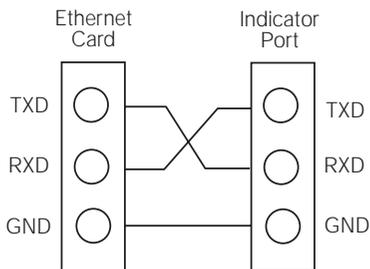


Figure 2-3. Ethernet Wiring

4. Use cable ties to secure loose cables inside the enclosure. Cabling must be secured away from the high voltage circuits.

5. Once cabling is complete, position the backplate over the enclosure and reinstall the backplate screws. Use the torque pattern shown in Figure 2-4, to prevent distorting the backplate gasket. Torque screws to 15 in-lb (1.7 N-m) or refer to the installation instructions for your particular enclosure.

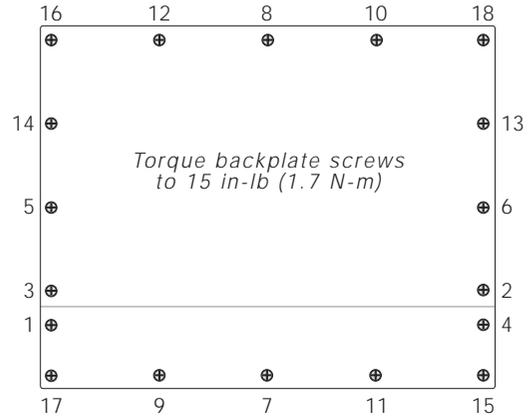


Figure 2-4. 920i Enclosure Backplate

6. Ensure no excess cable is left inside the enclosure and tighten cord grips.
7. Reconnect power to the indicator.

### 2.1.3 520 Ethernet Card Installation

1. Carefully align the large option card connector (J1) with connector J2 on the 520 CPU board. Press down to seat the option card in the CPU board connector.

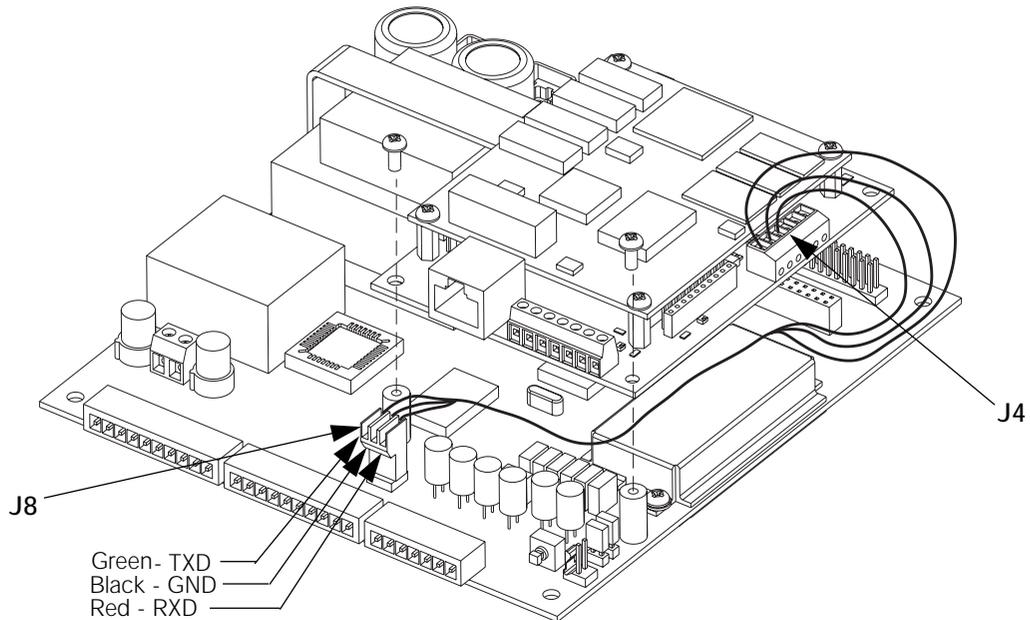


Figure 2-5. Ethernet Card Installation onto 520 CPU Board

2. Use the screws provided in the option kit to secure the other end of the option card to the threaded standoffs on the 520 CPU board.
3. Ensure jumper JP1 is in the +6 position for installation in the 520.

### 2.1.4 520 Ethernet Card Wiring

Communications port J8 on the 520 CPU board is a special internal connection to the EDP port for RS-232 communications at up to 19200 bps. (The 520 default baud rate is 9600. The Ethernet card and indicator must be set to the same baud rates). The Ethernet baud rate can be changed, please refer to the *Lantronix* manual for further instructions.

1. To attach the Ethernet communications cable, cut the necessary cable length to run from J4 on the Ethernet interface board to J8 on the 520 CPU board.

**Note:** The external EDP port connections can not be used when the Ethernet card is plugged into J-8.

2. Wire cables to the connector using the information shown in Table 2-3 and Table 2-4.
3. Once cables are attached, plug the connector J8 into the header on the board.

Connector	Pin	Wire Color	Signal
J8	1	Green	TXD
	2	Black	GND
	3	Red	RXD

Table 2-3. 520 J8 Pin Assignments

Pin	Signal
1	TXD
2	RXD
3	GND

Table 2-4. Ethernet Card J4 Pin Assignments

4. Reconnect power to the indicator.

## 2.2 Parts Kits Contents

Table 2-5 lists the parts kit contents for the Ethernet option.

PN	Description
14626	Kep nut, 8-32 NC hex (1)
14822	Machine screws, 4-40NC x 1/4 (2)
15631	Cable tie, 3 IN nylon (1)
53075	Ground cable shield clamp (1)
72696	3-pin Cable, FEM Mas-con (1)
72763	Ethernet CD for 920i and 520 (1)

*Table 2-5. Parts Kit Contents*

## 3.0 Assigning an IP Address

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The following section covers the steps required to assign an IP address. The IP address must be assigned and configured before a network connection is available. The two easiest ways to assign an IP address include:

- Device installer
- Network port login

Both of these installer tools are located on the Ethernet Configuration CD, PN 72763.

Refer to the *Lantronix User's Guide* found on the Ethernet Configuration CD for further information on the Ethernet configuration procedures.

### 3.1 Device Installer

The device installer utility provides the preferred method for setting up an IP address for the Ethernet card.

The device installer runs on a personal computer to help assign an IP address. To use the device installer, use the following steps:

1. Insert the Ethernet Configuration CD into the hard drive of your IBM-compatible personal computer running Windows® 95, 98, ME, 2000, and XP computers.
2. Install device installer per on-screen instructions.
3. Start the device installer program and follow the on screen instructions.

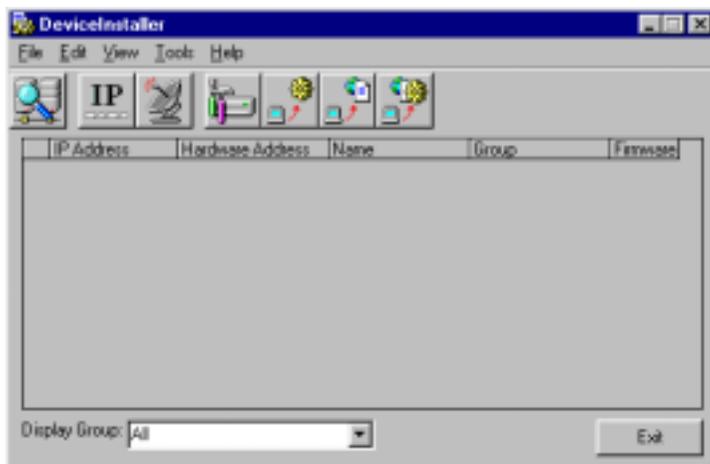
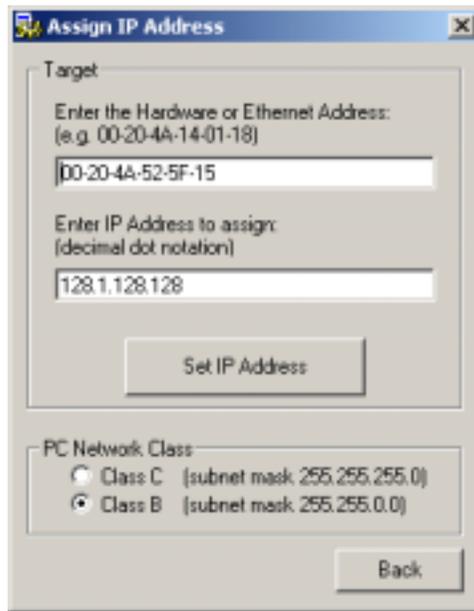


Figure 3-1. Device Installer Main Menu Screen

The 920i and 520 units come supplied with a pre-configured IP address which automatically enables DHCP within the device installer.

Click *Tools / Assign IP Address* to assign a new IP address. The following screen appears.



*Figure 3-2. IP Address Assign Screen*

1. Enter the Ethernet card number found on the serial tag on the option board.
2. It is recommended that you assign your own IP address to the card. Enter a chosen IP address in the *Enter IP* field. Record the configured IP address for future reference.
3. Press *Set IP* to assign a new IP address.

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## 3.2 Network Port Login

The network port login provides a way to make a telnet connection to the network port (9999). This ARP method is available under UNIX and Windows-based systems. To utilize network port login, use the following steps:

1. Set a static ARP with the desired IP address using the hardware address of the scale. The address is printed on a label attached to the Ethernet card.

*NOTE: In order for the ARP command to work in Windows®, the ARP table on the PC must have at least one IP address defined other than its own. Type "ARP - A" at the DOS prompt (or from Run) to verify that there is at least one entry in the ARP table. If there is no entry other than the local machine, ping another IP machine on your network to build the ARP table. This has to be a host other than the machine on which you are working. Once there is at least one entry in the ARP table, use the following commands to ARP an IP address to the scale.*

```
arp -s 191.12.3.77 00-20-4a-xx-xx-xx
```

2. Open a Telnet connection to port 1. The connection will fail quickly but the device server temporarily changes its IP address to the one designated in this step and sets all required parameters.

```
Telnet 191.12.3.77 1
```

3. Open a Telnet connection to port 9999 and set all required parameters.

```
Telnet 191.12.3.77 9999
```

*NOTE: The temporary IP address by ARP clears after every power reset of the card. Be sure to log into the card and store the parameters to make the changes permanent.*

## 3.3 Configuration Parameters

Refer to the *Lantronix User's Guide* for instructions on Ethernet configuration by Telnet.