

## Model 353 Process Automation Controller Direct Entry<sup>1</sup> Rear Connectors

### INVOLVED MANUALS

*User's Manual, Model 353 Process Automation Controller, UM353-1, Rev. 8 and earlier.*

### DISCUSSION

Direct entry rear connectors will begin shipping in March 2001. Direct entry connectors are described in this Addendum and all power, ground, station common, and signal terminals are identified.

Consult the nameplate on the case to determine whether direct entry connectors have been installed.

Model 353\_2\_----- Side entry<sup>1</sup> connectors are installed

Model 353\_4\_----- Direct entry connectors with Ethernet connector are installed

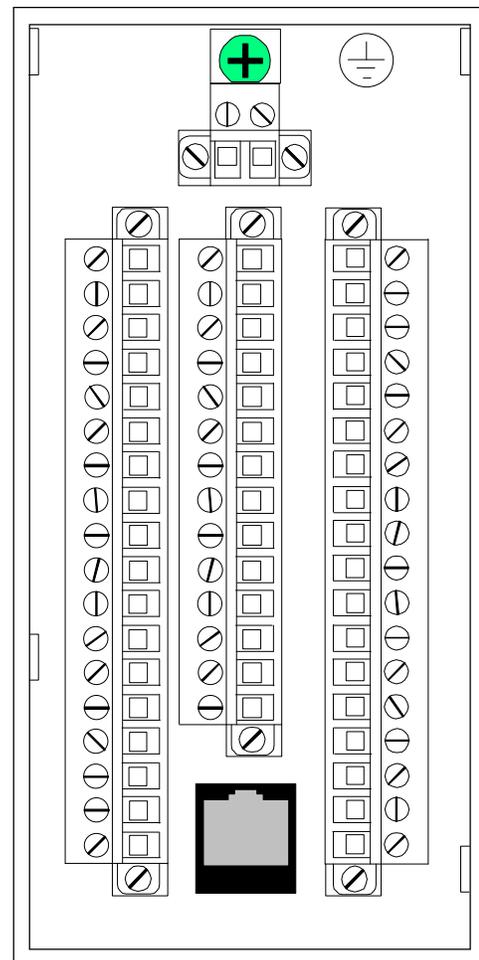
Section 6 Installation, in UM353-1, describes the black side entry connectors and the connections to be made to them. In the following, the direct entry connectors will be described and illustrated.

Direct entry connectors are shown in the adjacent figure. There are four connectors with 52 screw-clamping terminal connections. Each connector consists of a case mounted portion and a plug-in portion. The plug-in portion of each connector is securely fastened to the case mounted portion by a screw at each end of the plug-in. The plug-in portion can be completely wired and then plugged into the case mounted portion.

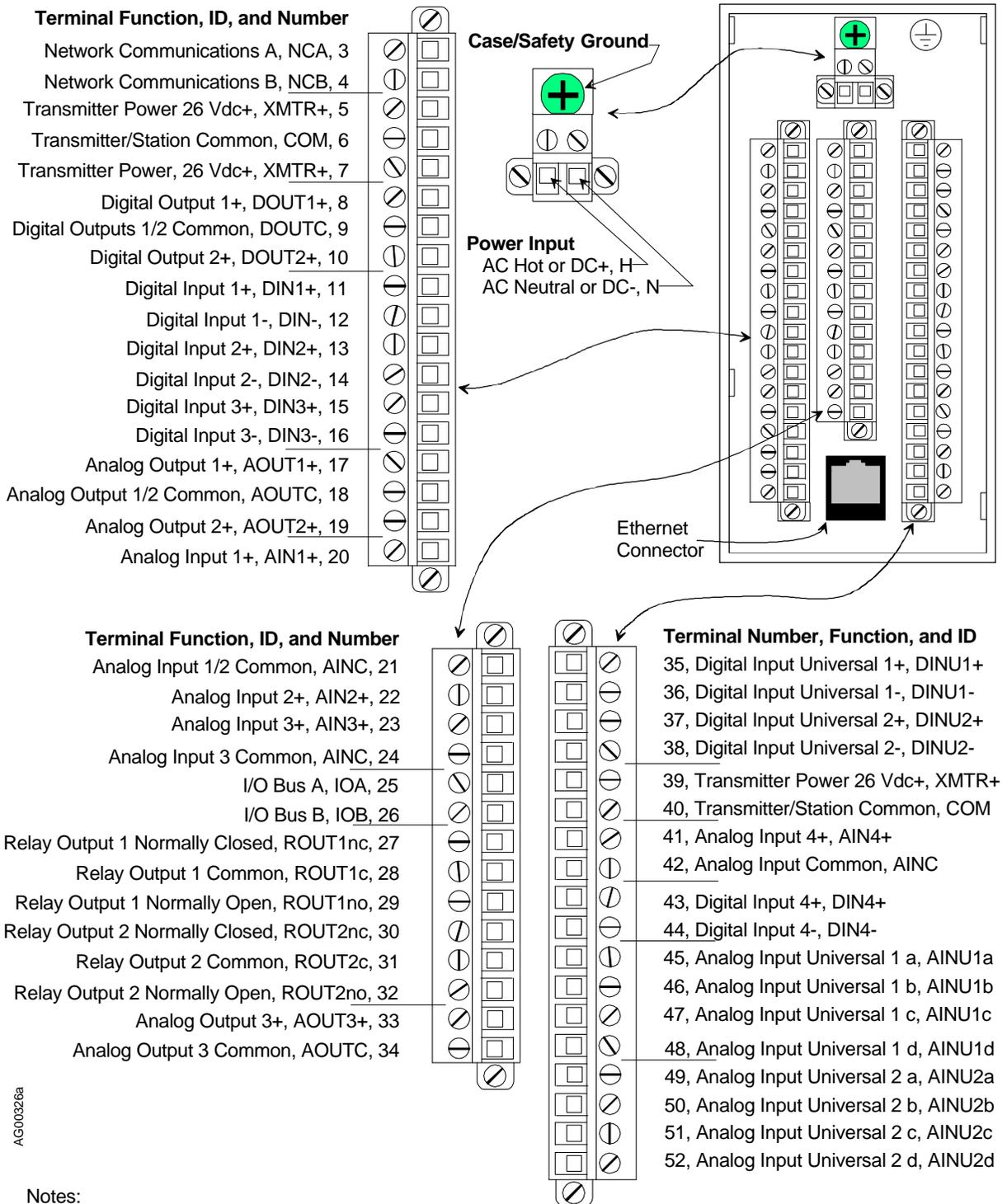
Terminal functions and numbers have not changed. For example, Station/Transmitter Common is terminal 6 on the side entry and direct entry connectors.

A standard 8-wire Ethernet connector is provided near the bottom of the assembly. A case ground screw is provided near the top of the assembly, as in the side entry connectors.

The next page contains an illustration that states the connections to the direct entry connectors.



<sup>1</sup> Side entry and direct entry refer to the entry of wires into terminals installed on a rear connector assembly.



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- Notes:
1. Terminal numbers are shown on each connector. The plug-in portions of the connectors are packed with a case. The connectors are keyed.
  2. Case/Safety Ground - Connect to green screw at top center of rear terminal area.
  3. NCA and NCB - Connect LIL Twinaxial Cable or twisted pair wiring. Refer to Section 6.5 for additional details.
  4. IOA and IOB - LonWorks bus connections. Twisted pair wiring is typical.
  5. Ground Bus - An external, user-supplied ground bus can ease connection of multiple grounds, particularly when twinaxial cable shields are to be grounded.

### Rear Terminal Layout and Terminal Assignments

## Wiring Guidelines

Wire Size - Each terminal can accept:

- one 12-24 AWG (2.5-0.2 mm<sup>2</sup>)
- two 16 AWG (1.3 mm<sup>2</sup>)
- three 18 AWG (0.96 mm<sup>2</sup>)

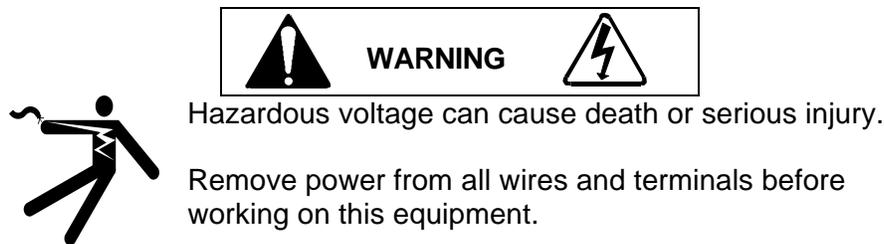
Wire stripping length - 1/4" (6 mm) typical, 9/32" (7 mm) maximum.

Terminal and ground screw torque:

- connector terminals - 4.4-5.3 in. lbs (0.5-0.6 N-m)
- green ground screw - 20 in. lbs (2.26 N-m)

## Making Connections to the Direct Entry Terminals

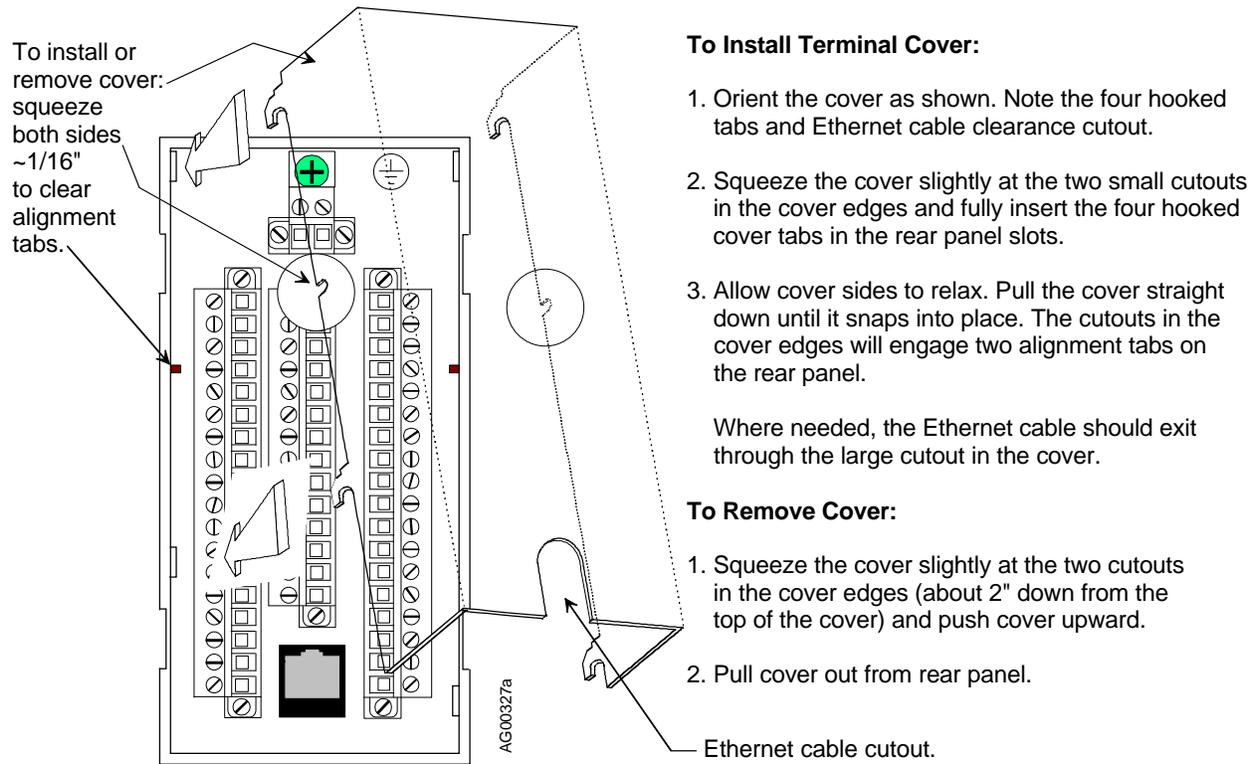
The plug-in portions of the connectors are supplied in a kit that accompanies the case. Terminal functions and numbers have not changed. For example, Station/Transmitter Common is terminal 6 on the side entry and direct entry connectors.



For each terminal:

1. Refer to the body of the User's Manual, particularly Section 6 Installation, for details concerning the connections to the terminal to be wired.
2. Refer to the figure on the previous page and determine the location of the target terminal.
3. Loosen the captive screw adjacent to the target terminal.
4. Strip the end of a wire 1/4" (6 mm). Component leads should be insulated with sleeving leaving a bare lead of 1/4" (6 mm).
5. Insert the wire or component lead into the square terminal opening.
6. Tighten the adjacent screw to 4.4-5.3 in. lbs (0.5-0.6 N-m) to clamp the wire or lead. Do not over tighten.
7. When the connector is completely wired, plug it into the mating connector on the back of the case. The connectors are keyed. Gently tighten the screw at each end of the connector. Do not over tighten.
8. The Ethernet connector accepts a standard 8-wire Ethernet cable. Insert the cable-mounted connector until the locking tab engages.
9. When all wiring is complete, check each connection to be sure that the proper wire(s) or component is connected and that the inserted leads are securely clamped.

10. Install the supplied cover as described in the illustration below. Use of larger gauge wires or wires with very thick or very stiff insulation may prevent installation of the cover, or cause the cover to pop off, unless the cable bundle is securely laced or tie wrapped.



**To Install Terminal Cover:**

1. Orient the cover as shown. Note the four hooked tabs and Ethernet cable clearance cutout.
2. Squeeze the cover slightly at the two small cutouts in the cover edges and fully insert the four hooked cover tabs in the rear panel slots.
3. Allow cover sides to relax. Pull the cover straight down until it snaps into place. The cutouts in the cover edges will engage two alignment tabs on the rear panel.

Where needed, the Ethernet cable should exit through the large cutout in the cover.

**To Remove Cover:**

1. Squeeze the cover slightly at the two cutouts in the cover edges (about 2" down from the top of the cover) and push cover upward.
2. Pull cover out from rear panel.

Ethernet cable cutout.

**Installing the Cover**

**Servicing Note**

A Model 353 case with side entry connectors can be upgraded with direct entry connectors. Order the Rear Terminal Upgrade Kit below.

Rear Terminal Upgrade Kit - PN16353-230

Includes:

- Connector Socket Assembly
- Connectors
- Cover



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