Terminal Block Quick Connect Components

This appendix describes the optional terminal block components for Series 90-30 discrete I/O modules. This system is referred to as the Terminal Block Quick Connect (TBQC) system. The advantage of this system, is that it allows the listed discrete I/O modules to be quickly connected to TBQC terminal blocks. In this system, the TBQC terminal block (shown below) is snapped onto a standard DIN-rail. Then, a factory-made cable is connected between the terminal block's connector and the I/O module's connector. An I/O module that has a terminal board instead of a connector is converted into a connector type using an adapter faceplate.

The TBQC system is not recommended for use with Analog modules because it does not meet the shielding recommendations for Analog module connections. (See the Series 90-30 PLC I/O Module Specifications Manual, GFK-0898, for Analog module wiring information.)

This appendix contains two sections, one for discrete 16-point I/O modules and one for discrete 32-point I/O modules.
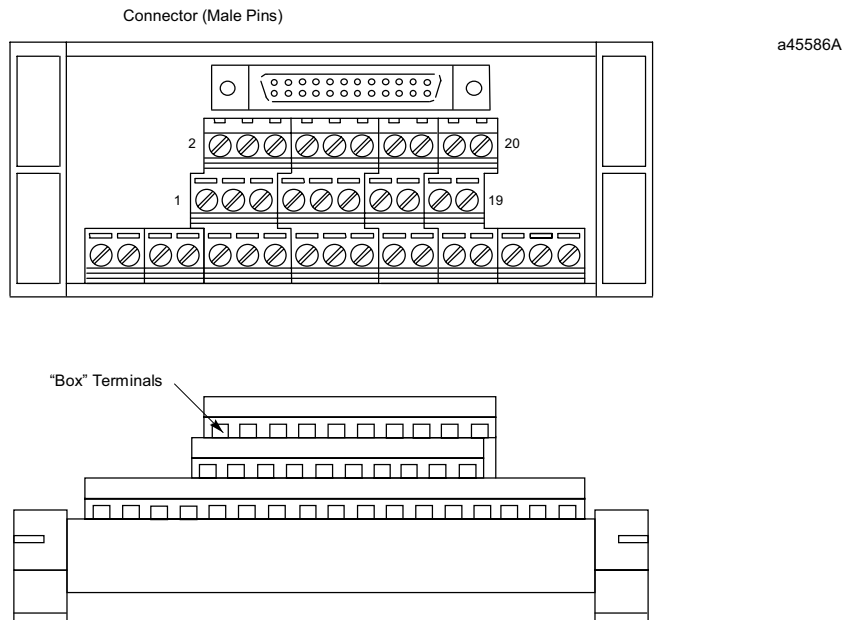

Figure H-1. Typical TBQC Terminal Block

Terminal Block Quick Connect Components for 16-Point Modules

Installing a 16 point module typically takes 2 1/2 hours to wire from a PLC to a terminal blocks or strip. With the TBQC, you simply snap the terminal block onto a DIN rail, remove the I/O module's terminal assembly, snap in the I/O faceplate, and connect the cable. This reduces wiring time to about two minutes, thereby reducing wiring costs and errors. A complete assembly consists of a terminal block, an I/O Face Plate, and a cable.

Terminal Blocks

Terminal blocks have three rows of terminals, arranged in three levels, as shown in Figure H-1. These terminal blocks feature an easy to use captive-screw, "rising cage" type connection system. Catalog numbers for the terminal blocks and the modules they can be used with are listed below.

Table H-1. TBQC Terminal Block Selection Table

Catalog Number	Use With These Modules	Module Description
IC693ACC329*	IC693MDL240	Input, 120 VAC - 16 points
	IC693MDL645	Input, 24 VDC Pos./Neg. Logic- 16 points
	IC693MDL646	Input, 24 VDC Pos./Neg, Logic, FAST - 16 points
IC693ACC330	IC693MDL740	Output, 12/24 VDC Pos Logic, 0.5A - 16 points
	IC693MDL742	Output, 12/24 VDC Pos Logic ESCP, 1A- 16 points
IC693ACC331	IC693MDL741	Output, 12/24 VDC Neg Logic, 0.5A- 16 points
IC693ACC332	IC693MDL940	Output, Relay, N.O. - 16 points
IC693ACC333	IC693MDL340	Output, 120 VAC, 0.5A - 16 points

* This Terminal Block may be used with most I/O modules that have up to 16 I/O points (can not be used with 32 point modules). Jumpers may have to be added; for details of required wiring connections, refer to module specifications in GFK-0898.

Cable Current Rating

Each conductor in these 24-conductor cables has a current rating of 1.2 Amps. If using these cables with a 16-point Output module with a higher output current rating, you must use the lower value of 1.2 Amps for the maximum load current rating . If you have field devices that require more than 1.2 Amps, do not use a TBQC assembly - use the standard Terminal Board that comes with the module instead.

Cable Selection and Cross-Reference

Three cables are available for connecting between the module's faceplate connector and the terminal block. The only difference in these cables is their length. These cables have right-angle connectors on the module end to minimize the space required in front of the modules. These three cables replace three obsolete cables that had straight connectors. Use the following table to select the correct cable.

| Cable Catalog Number	Description	Replaces Obsolete Cable Number
IC693CBL330	CBL Assembly, 24-pin, 90 Deg, Right Side, 1.0 Meter length	IC693CBL321
IC693CBL332	CBL Assembly, 24-pin, 90 Deg, Right Side, 2.0 Meter length	IC693CBL322
IC693CBL334	CBL Assembly, 24-pin, 90 Deg, Right Side, 0.5 Meter length	IC693CBL323

I/O Face Plate for 16-Point Modules

The I/O Face Plate (catalog number **IC693ACC334**) has a 24-pin connector, which provides the connection to the applicable terminal block through a 0.5, 1, or 2 meter cable. This face plate replaces the standard terminal board on the listed modules.

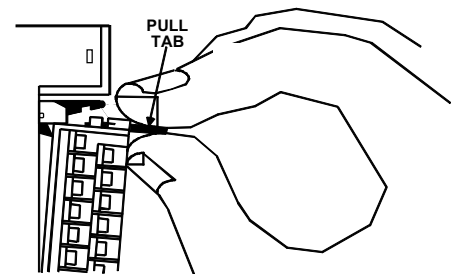# I/O Face Plate Installation

Step 1: Install terminal block assembly on DIN rail

Place the terminal block over the desired location on the DIN rail and snap into place.

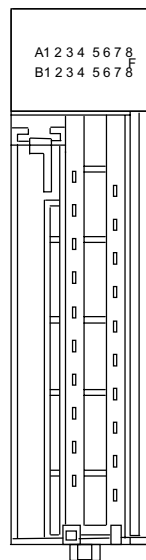### Step 2: Remove 20-pin terminal assembly from module
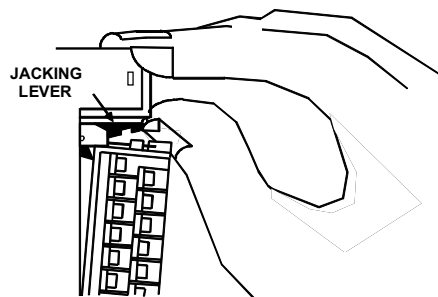
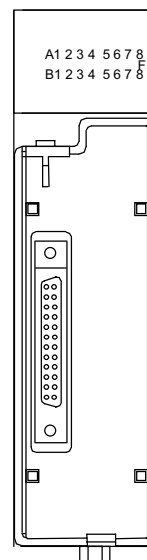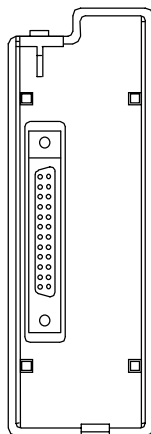1. **Open the plastic terminal board Push up on the jacking lever to release the terminal block.**

2. **Grasp pull-tab towards you until contacts separated from module housing and hook disengaged for full removal.**

Step 3: Snap I/O Face Plate assembly on module

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Installing the I/O Face Plate   Module with I/O Face Plate Installed

Step 4: Connect cable to connector on terminal block

Finally, connect the selected length cable from the connector on the I/O Face Plate to the connector on the interposing terminal block.
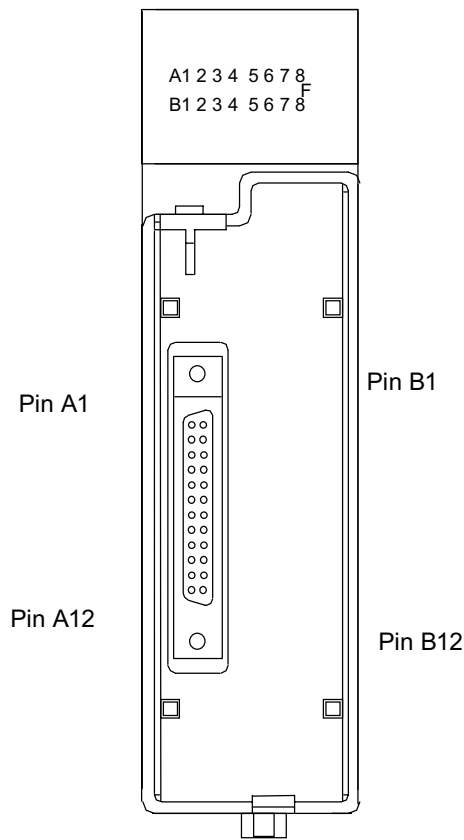
Module Wiring Information

Refer to GFK-0898, *Series 90-30 PLC I/O Module Specifications Manual* for wiring connections for each module.

Cable Information

Data sheets for the cables are found in the "Cables" chapter of this manual.

Connector Pin Orientation and Connection to Module Terminal

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Module Terminal #	Connector Pin#
1	B1
2	A1
3	B2
4	A2
5	B3
6	A3
7	B4
8	A4
9	B5
10	A5
	B6 (N.C.)
	A6 (N.C.)
	B7 (N.C.)
	A7 (N.C.)
11	B8
12	A8
13	B9
14	A9
15	B10
16	A10
17	B11
18	A11
19	B12
20	A12

Connector Pin Orientation

Figure H-2. TBQC Faceplate

Terminal Block Information

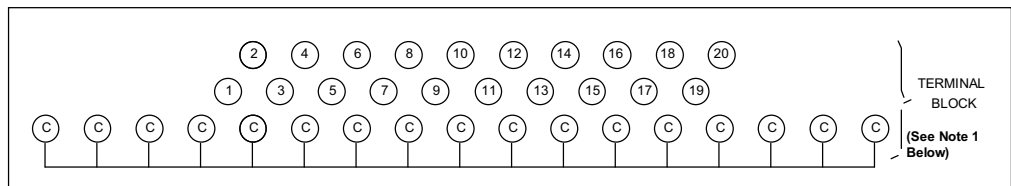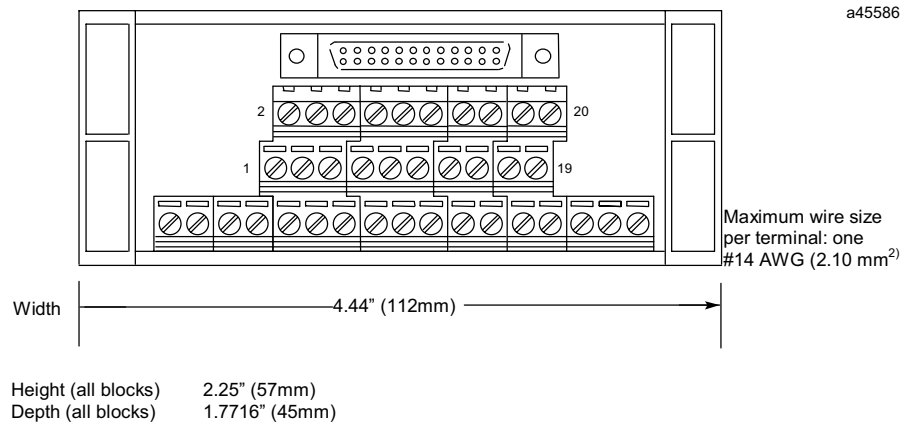Terminal block data sheets are found on the next several pages.

IC693ACC329 TBQC Terminal Block

Use with the following 16-point I/O modules:
 IC693MDL240
 IC693MDL645
 IC693MDL646

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Width ⟶ 4.44" (112mm)

Maximum wire size per terminal: one #14 AWG (2.10 mm^2)

Height (all blocks)   2.25" (57mm)
Depth (all blocks)   1.7716" (45mm)

Figure H-3. IC693ACC329 TBQC Terminal Block

Note

The common row terminals (labeled with the letter C) are provided for wiring convenience. Their use is optional. They are electrically isolated from the numbered terminals. You may use them as is, or jumper them to a numbered terminal. Refer to GFK-0898, *Series 90-30 PLC I/O Module Specifications Manual* for wiring diagrams of the modules.

Mounting

These terminal blocks are mounted on a standard, user-supplied 35 mm DIN-rail.

IC693ACC330 TBQC Terminal Block

Use with the following 16-point I/O modules:
        IC693MDL740
        IC693MDL742

a45587

Maximum wire size per terminal: one #14 AWG (2.10 mm^2)

Width   —— 4.64" (117.86mm) ——

Height (all blocks)   2.25" (57mm)
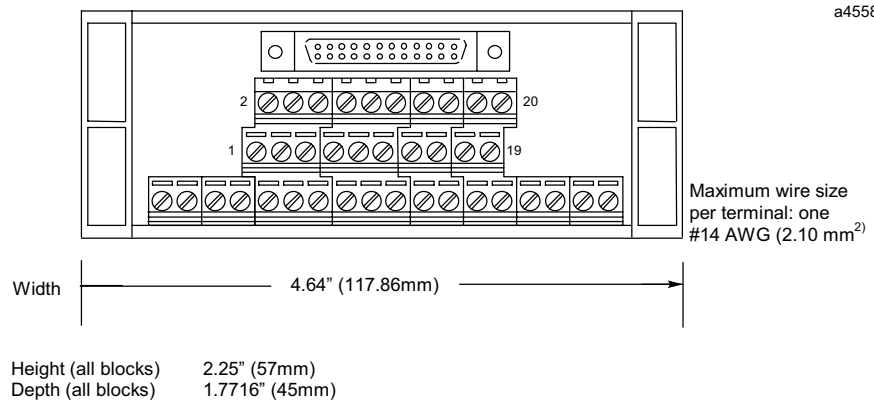Depth (all blocks)   1.7716" (45mm)

Figure H-4. IC693ACC330 TBQC Terminal Block

Note

Refer to GFK-0898, *Series 90-30 PLC I/O Module Specifications Manual* for required wiring connections.

Mounting

These terminal blocks are mounted on a standard, user-supplied 35 mm DIN-rail.