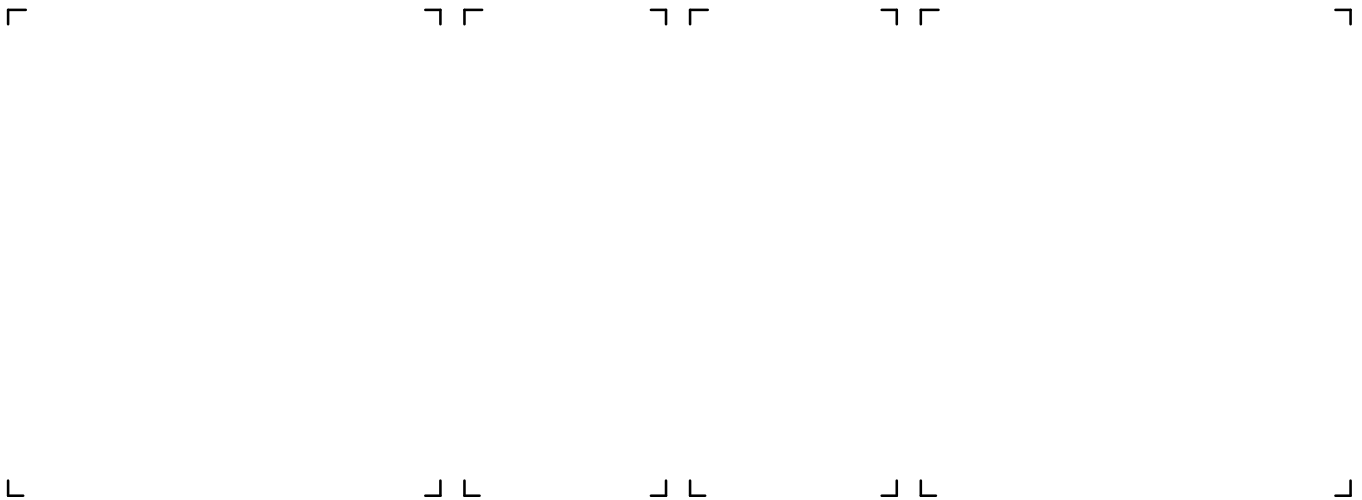




Allen-Bradley IMC 120 Termination Panel

(Cat. No. 1771-HT)

Product Data



Introduction

The optional IMC 120 termination panel provides an easy and convenient means for you to make connections between IMC 120 modules and the motion control devices in your application. One termination panel serves the connection needs of one IMC 120 servo controller module. The termination panel comes with a DIN-type mounting rail.

Contents

This publication describes the functions and features of the IMC 120 termination panel. We arrange this information in the following order:

AB PLCs

Section	Page
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Termination Panel Features

The termination panel features:

- D-Shell connectors for connecting cables from IMC 120 modules
- pluggable, screw-type connectors for connecting motion control devices.
- eight LEDs that provide status for fast inputs FI[1]-FI[4] and fast outputs FO[1] – FO[4]
- a socketed on-board relay for E-Stop functions that provides relay contacts to enable the drives and lets you daisy-chain up to 3 servo controllers onto a single E-Stop string

Separate pluggable connectors are provided for both resolvers and encoders, so you can use the termination panel in either encoder or resolver systems.

All user connections of the IMC 120 system (except the RS-232 port and user power from the 1771-PS7 supply) are routed through the termination panel. User voltages of + 5VDC and + 15VDC for encoder power and + 24VDC for fast I/O is available on-board. All connections are clearly marked on the termination panel (see figure 1).

Mounting the Termination Panel

The termination panel is shipped:

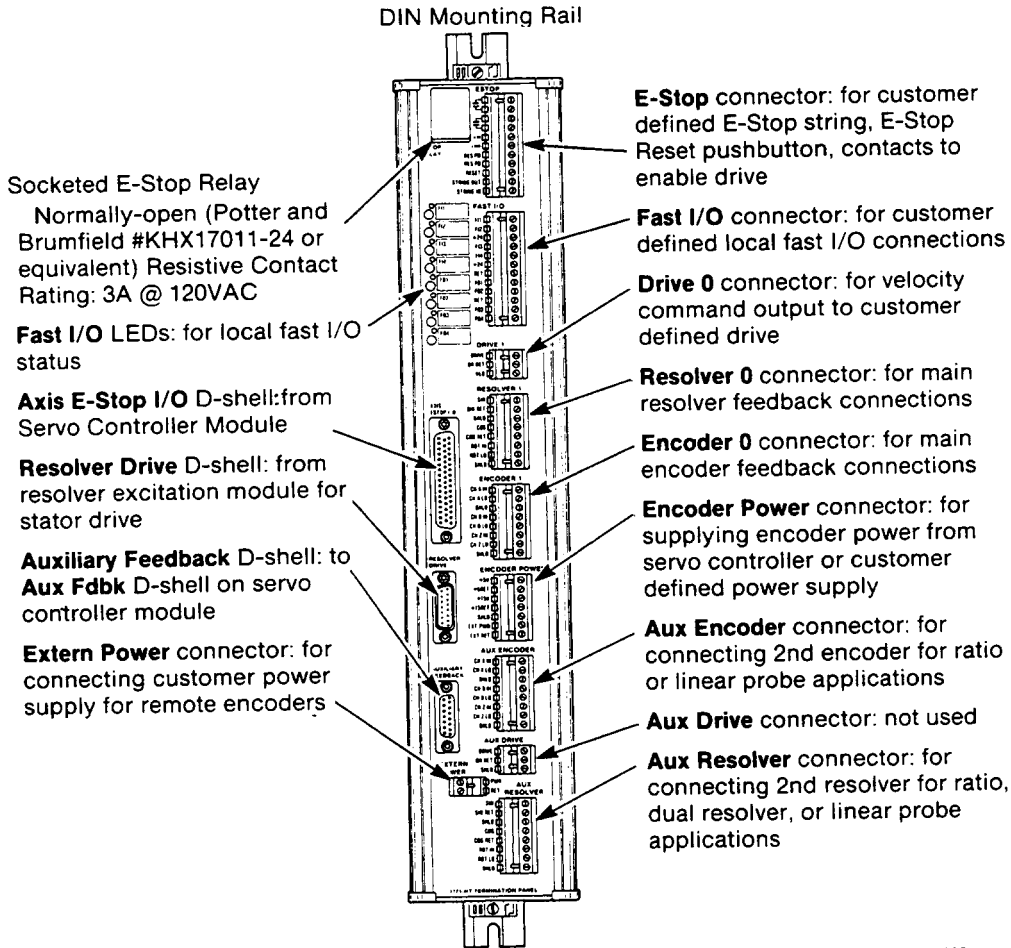
- with the E-STOP Relay and all connectors installed.
- mounted to the DIN type # 46277-1 mounting rail

A screwdriver and wire strippers are the only tools required to set up the termination panel.

Fasten the termination panel and its rail either horizontally, one orientation only, or vertically (see figure 2) to the enclosure wall with two screws.

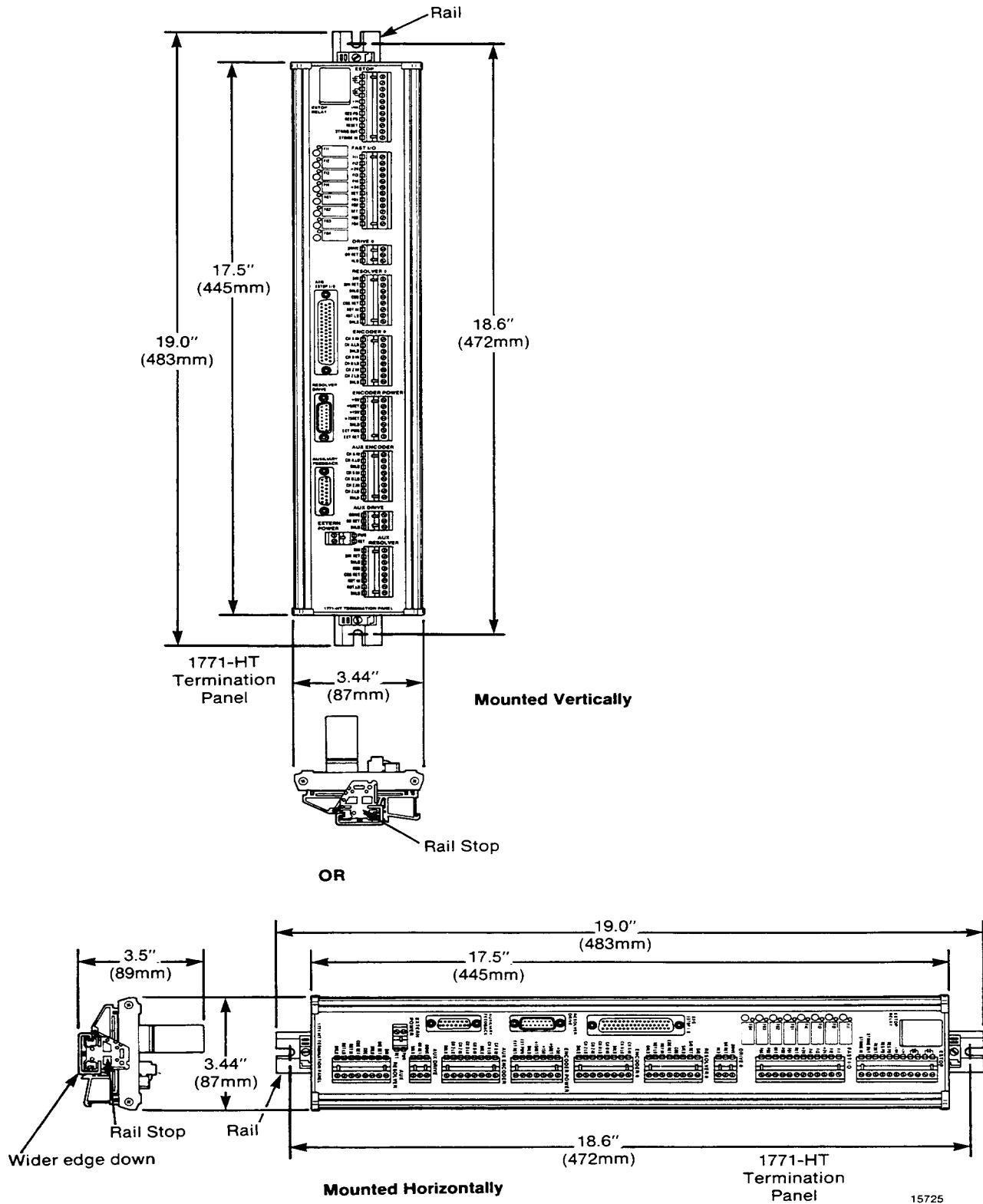
Important: If you install the termination panel horizontally, the wider edge of the mounting rail should be down (see figure 2).

Figure 1
IMC 120 Termination Panel



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Figure 2
Termination Panel Mounting Considerations



Cable Routing and Shielding Practices

Keep low-level signal conductors separate from highlevel power conductors. This is particularly important for cable connections to encoders and resolvers. Read Chapter 3, “Planning Your Hardware Installation” in the IMC 120 Motion Control Installation Manual (Publication 1771-6.5.45) to route conductor category 2 wires and cables connected to IMC 120 modules.

Follow the practices outlined in publication 1770-4.1, entitled “Programmable Controller Wiring and Grounding Guidelines” to route other conductor categories.

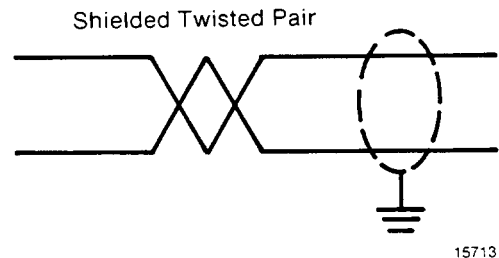
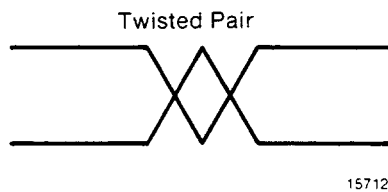
For many connections, we tell you to use shielded cable. Using shielded cables that properly connect their shields to ground protects against electromagnetic noise interfering with the signals transmitted through the cables.



WARNING: Use shielded cable as directed in this data sheet. If you do not, the axis motion in your motion control system could be unpredictable. This could result in damage to equipment and/or injury to personnel.

Within a cable, pairs of wires are sometimes twisted together. Using a twisted pair for a signal and its return path provides further protection against noise.

We distinguish twisted pairs from shielded twisted pairs like this:



Connecting Cables and Wiring the Termination Panel

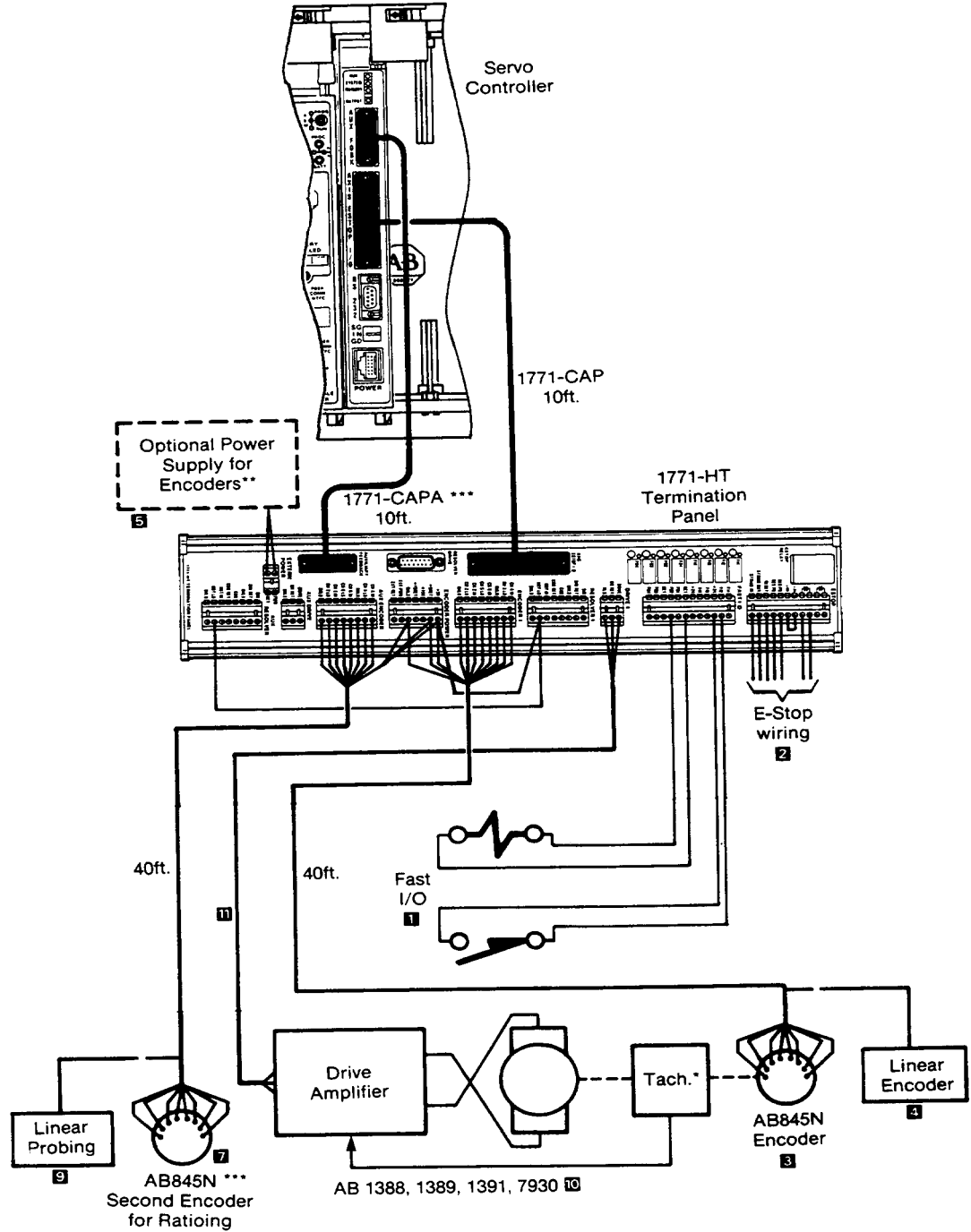
Figures 3 and 4 show block diagrams of the cabling for single axis encoder and resolver systems.

Use the IMC 120 Installation Manual (publication 1771-6.5.45) to wire your devices to the termination panel. Refer to figures 3 and 4 depending on whether you are using an encoder or resolver feedback system. Table 1 directs you to the section of the installation manual that describes how to perform each task.

Table 1
Task Directory

Footnotes from Figures 3 & 4	Task	Section
1	Wiring Fast Inputs and Outputs	7.1
2	Wiring E-Stop	7.2
3	Connecting Differential Encoders	8.1.2
4	Wiring Linear Scales	8.1.3
5	Connecting Optional Power Supplies	8.1.4
6	Connecting Resolvers	8.1.5
7	Wiring Ratioed Axes	8.2.1
8	Wiring Dual Resolver Feedback	8.2.3
9	Wiring Linear Probing	8.2.2
10	Wiring A-B Drive Connectors	8.3
11	Connecting the Velocity Command	8.4
12	Connecting Cables Between Chassis and Termination Panel	9.1

Figure 3
Single Axis Encoder System



* AC drives do not require tach..

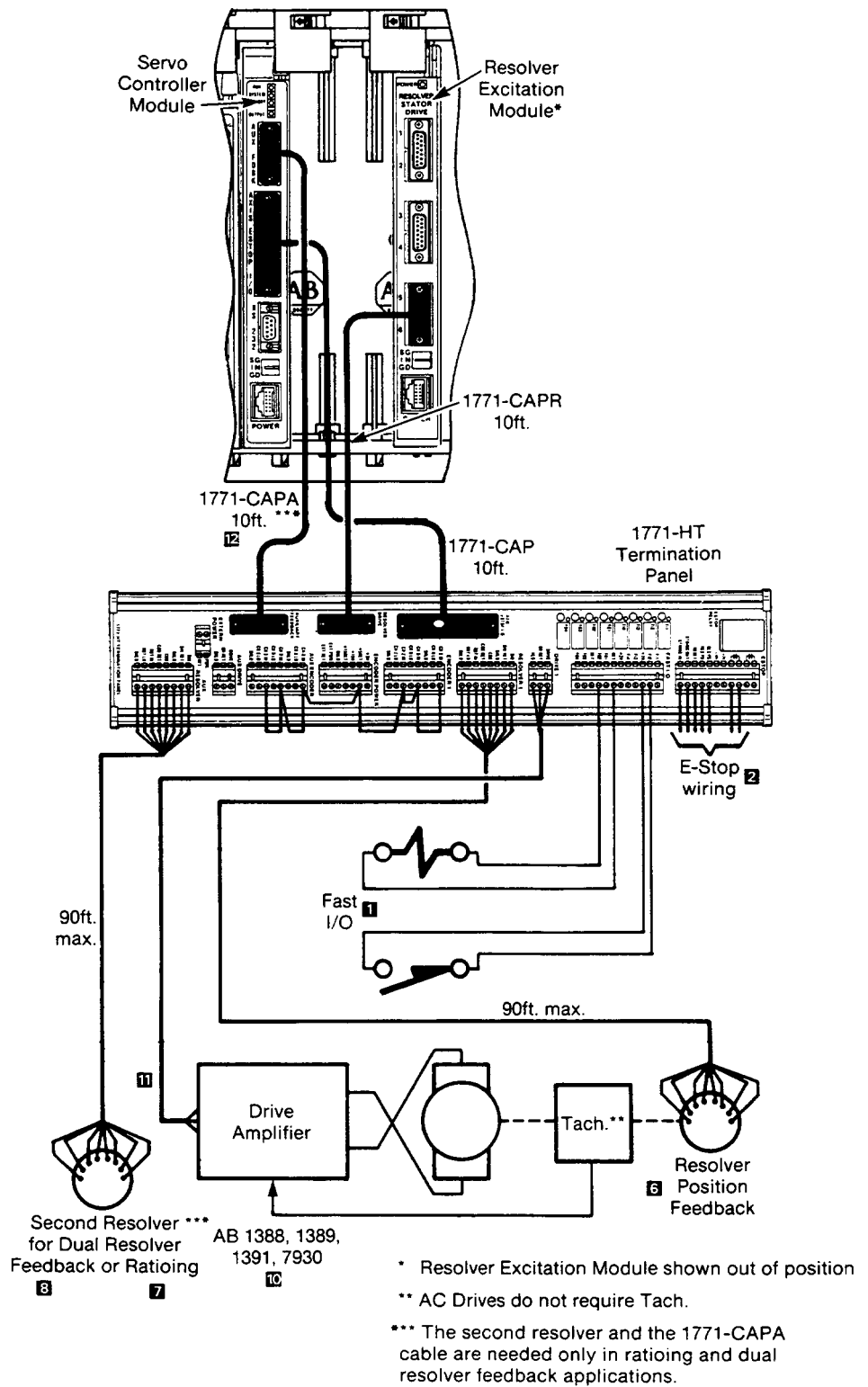
** 40 cable feet maximum for +5V encoders without optional power (90 feet maximum with optional power).
 90 cable feet maximum for +15V encoders.

*** The second encoder and the 1771-CAPA cable are needed only in ratioring and probing applications.

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AB PLCs

Figure 4
Single Axis Resolver System

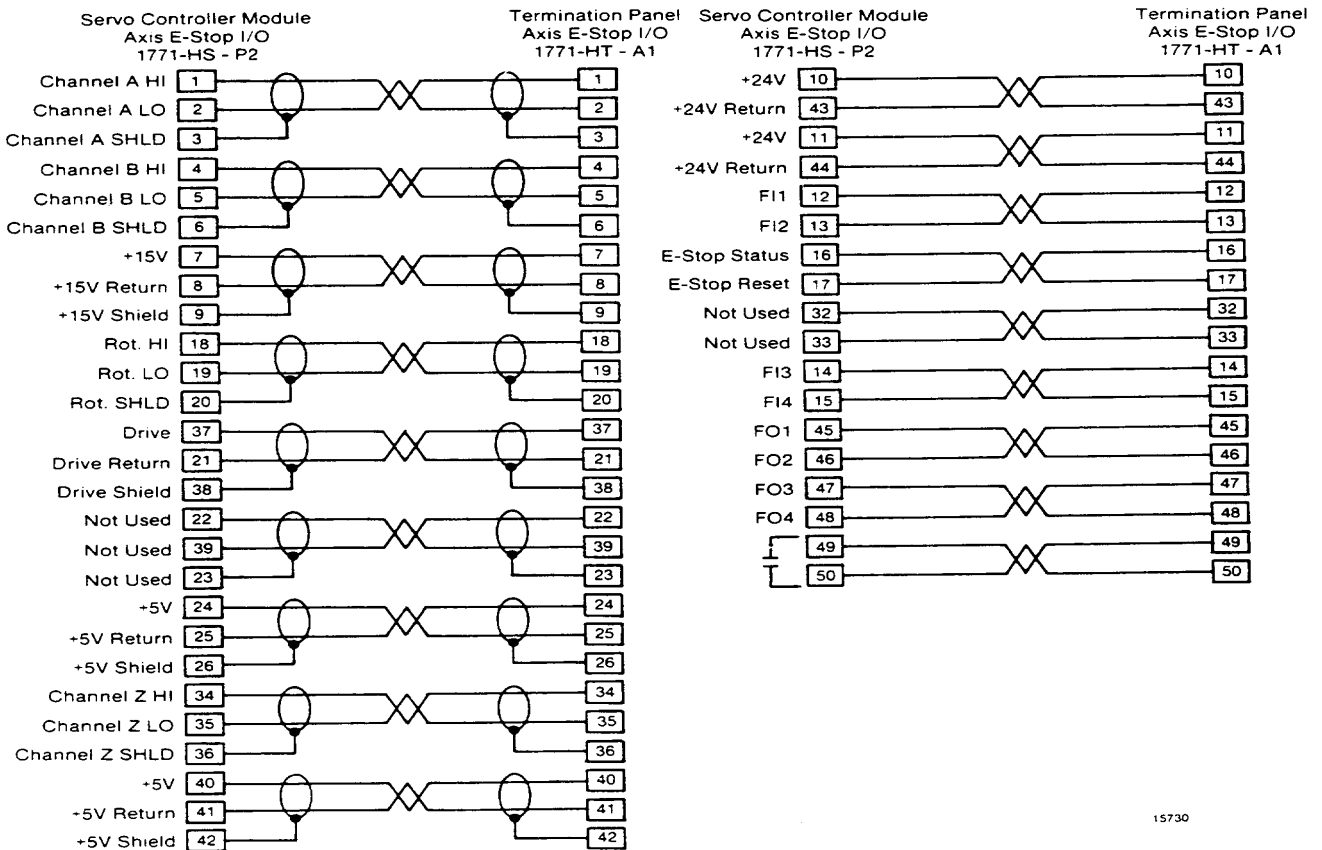
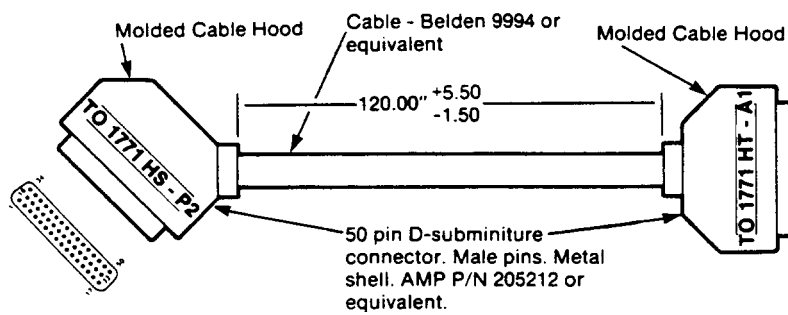


Making Your Own Cables

You can order the cables between the IMC 120 modules and the 1771-HT termination panel (see figures 3 and 4). If you want to make these cables, use the following drawings that show the cable, wiring diagram, and specifications for making the cable:

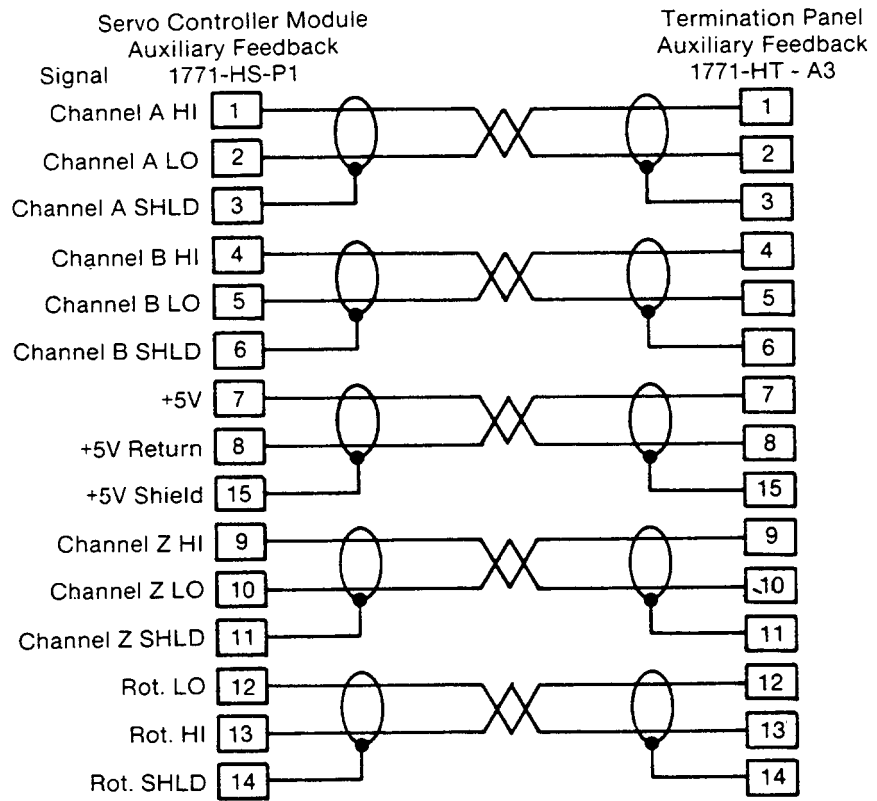
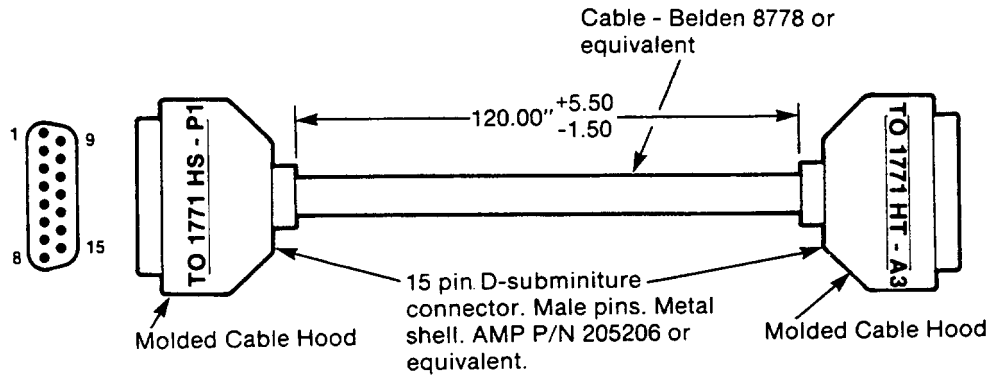
- 1771-CAP (figure 5)
- 1771-CAPA (figure 6)
- 1771-CAPR (figure 7)

Figure 5
 1771-CAP Cable Specifications and Wiring Diagram



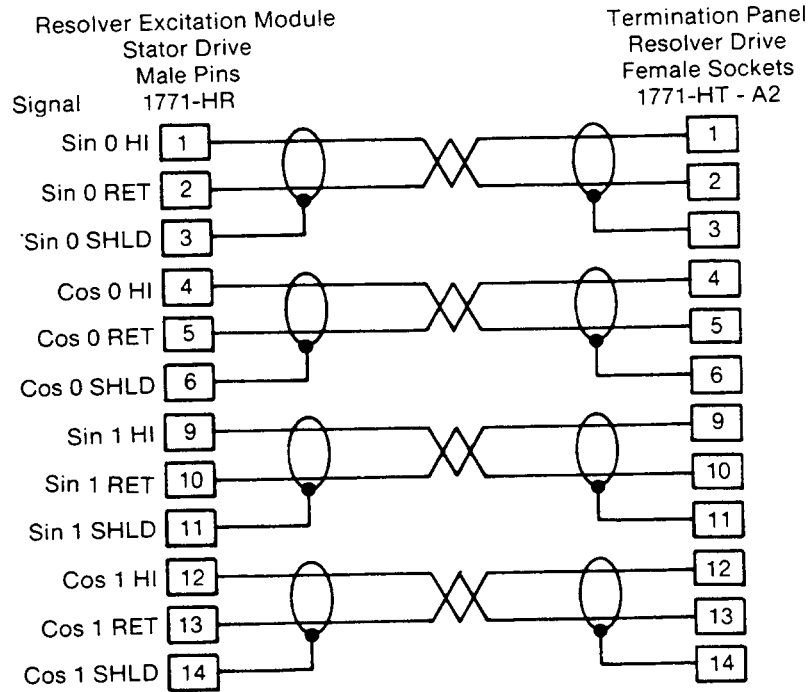
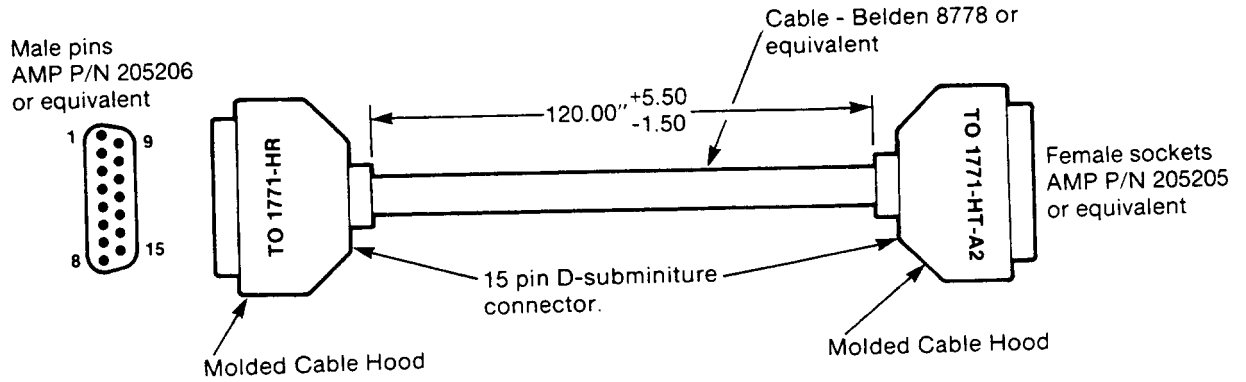
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Figure 6
1771-CAPA Cable Specifications and Wiring Diagram



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Figure 7
1771-CAPR Cable Specifications and Wiring Diagram



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Termination Panel Specifications

Mounting

- DIN 46277-1 type mounting rail supplied (A-B cat. no. 1492DR2)
- mount up to 10 cable feet from IMC 120 servo controller and resolver excitation modules
- easy connection and troubleshooting

Dimensions (including DIN rail)

- 19.0 x 3.44 x 3.50 in.
(495 x 87 x 89 mm)

Connectors and Indicators

- For 1 IMC 120 servo controller, all connections except RS-232 port and user power
- 3 D-shell connectors for cables from servo controller and resolver excitation modules
- pluggable connectors for user wiring – easy installation, screwdriver and wire stripper are the only tools required
- Connections for E-Stop, fast I/O axis drive, master and slave encoder or resolver, encoder power

Cable Lengths

- 40 cable feet max from +5V encoders without external power (90 feet max with external power)
- 90 cable feet max to + 15V encoders
- 90 cable feet max to resolvers

E-Stop Relay AB# 71452423

- 120V AC @ 3A; 15 us average operating time

Related Publications

For more detailed information on the IMC 120 motion control system, please refer to these related publications:

Catalog Number	Publication Title	Number
1771-HS	IMC 120 Motion Control System Installation Manual	1771-6.5.45
1771-PS7	120/220V AC Power Supply With User Power Product Data	1775-2.123
1771-HM	IMC 120 Plug In Memory Product Data	1771-2.124
1771-HR	IMC 120 Resolver Excitation Module Product Data	1771-2.125
1771-HD	IMC 120 Handheld Pendant Operation Manual	1771-6.5.50
8100-HSKAR	IMC 120 Motion Control System Programming Manual	1771-6.5.51
1771-HCDOC	IMC 120 Motion Control System Installation Manual	1771-6.5.45
	IMC 120 Handheld Pendant Operation Manual	1771-6.5.50
	IMC 120 Motion Control System Programming Manual	1771-6.5.51



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**WORLD
HEADQUARTERS**
Allen-Bradley
1201 South Second Street
Milwaukee, WI 53204 USA
Tel: (1) 414 382-2000
Telex: 43 11 016
FAX: (1) 414 382-4444

**EUROPE/MIDDLE
EAST/AFRICA
HEADQUARTERS**
Allen-Bradley Europe B.V.
Amsterdamseweg 15
1422 AC Uithoorn
The Netherlands
Tel: (31) 2975/43500
Telex: (844) 18042
FAX: (31) 2975/60222

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HEADQUARTERS**
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Hong Kong
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HEADQUARTERS**
Allen-Bradley Canada
Limited
135 Dundas Street
Cambridge, Ontario N1R
5X1
Canada
Tel: (1) 519 623-1810
FAX: (1) 519 623-8930

**LATIN AMERICA
HEADQUARTERS**
Allen-Bradley
1201 South Second Street
Milwaukee, WI 53204 USA
Tel: (1) 414 382-2000
Telex: 43 11 016
FAX: (1) 414 382-2400