Allen-Bradley
Hardware Interface Cable Information for Personal/Industrial Computer Systems
(Cat. Nos. 1784-CAK, -CAS, -CXK, -CYK, -CYS)

Product Data

Introduction

This document shows you how to install the cables needed to upload/download control programs developed with the 6200 Series Software using personal/industrial computer systems. You transfer these programs from the RS-232-C serial port (COM1 or COM2) to a PLC-2 family programmable controller through a:

- 1771-KE/KF module to a 1771-KA or 1771-KA2 in a Data Highway network
- 1771-KG module
- 1770-SB Data Cartridge Recorder
- Hayes external modem to a Data Highway network
### Cable Description and Usage

Tables A, B, and C present information for connecting the above listed components to a computer. Each table:

- lists the applicable cables
- describes the connection points
- identifies the compatible programming devices (personal/industrial computers)
- refers to the applicable pinout schematic

#### Table A
**Connection to a Data Highway Network Using a 1771-KE/KF or 1771-KG Module**

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Cable Description</th>
<th>Connection Points</th>
<th>Programming Device Used With</th>
<th>Refer to in Figure:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1784-CAK</td>
<td>RS-232C Null Modem Cable (10ft/3m) — for 9-pin serial port connections</td>
<td>RS-232C socket on 1771-KE/KF or -KG module to serial port COM1 or COM2 on the programming device</td>
<td>IBM PC/AT, Allen-Bradley 6121 Series or compatible programming devices</td>
<td>1</td>
</tr>
<tr>
<td>1784-CXK</td>
<td>RS-232C Null Modem Cable (10ft/3m) — for 25-pin serial port connections</td>
<td>RS-232C socket on 1771-KE/KF or -KG module to serial port COM1 or COM2 on the programming device</td>
<td>IBM PC/XT or compatible programming devices&lt;sup&gt;1&lt;/sup&gt;</td>
<td>2</td>
</tr>
<tr>
<td>1784-CYK</td>
<td>RS-232C Null Modem Cable (10ft/3m) — for 9-pin serial port connections</td>
<td>RS-232C socket on 1771-KE/KF or -KG module to serial port COM1 or COM2 on the programming device</td>
<td>IBM 5531, Allen-Bradley 6120 Series or compatible programming devices</td>
<td>3</td>
</tr>
</tbody>
</table>

<sup>1</sup> These programming devices may contain a 9-pin serial port. Verify your port connection requirements before ordering cables.

#### Table B
**Connection to the 1770-SB Data Cartridge Recorder**

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Cable Description</th>
<th>Connection Points</th>
<th>Programming Device Used With</th>
<th>Refer to Pinout in Figure:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1784-CAS</td>
<td>RS-232C Interface Cable (10ft/3m) — for 9-pin serial port connections</td>
<td>socket on recorder to serial port COM1 or COM2 on the programming device</td>
<td>IBM PC/AT, Allen-Bradley 6121 Series or compatible programming devices</td>
<td>4</td>
</tr>
<tr>
<td>1784-CXS</td>
<td>RS-232C Interface Cable (10ft/3m) — for 25-pin serial port connections</td>
<td>socket on recorder to serial port COM1 or COM2 on the programming device</td>
<td>IBM PC/XT or compatible programming devices&lt;sup&gt;1&lt;/sup&gt;</td>
<td>5</td>
</tr>
<tr>
<td>1784-CYS</td>
<td>RS-232C Interface Cable (10ft/3m) — for 9-pin serial port connections</td>
<td>socket on recorder to serial port COM1 or COM2 on the programming device</td>
<td>IBM 5531, Allen-Bradley 6120 Series or compatible programming devices&lt;sup&gt;1&lt;/sup&gt;</td>
<td>6</td>
</tr>
</tbody>
</table>

<sup>1</sup> These programming devices may contain a 9-pin serial port. Verify your port connection requirements before ordering cables.
### Table C
**Connection to the Hayes External Modem**

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Cable Description</th>
<th>Connection Points</th>
<th>Programming Device Used With</th>
<th>Refer to Pinout in Figure:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1784-CAS</td>
<td>RS-252-C Interface Cable (10ft/3m) — for 9-pin serial port connections</td>
<td>socket on modem to serial port COM1 or COM2 on the programming device</td>
<td>IBM PC/AT, Allen-Bradley 6121 Series or compatible programming devices</td>
<td>4</td>
</tr>
<tr>
<td>1784-CXS</td>
<td>RS-232-C Interface Cable (10ft/3m) — for 25-pin serial port connections</td>
<td>socket on modem to serial port COM1 or COM2 on the programming device</td>
<td>IBM PC/XT or compatible programming devices¹</td>
<td>5</td>
</tr>
<tr>
<td>1784-CYS</td>
<td>RS-232-C Interface Cable (10ft/3m) — for 9-pin serial port connections</td>
<td>socket on modem to serial port COM1 or COM2 on the programming device</td>
<td>IBM 5531, Allen-Bradley 6120 Series or compatible programming devices</td>
<td>6</td>
</tr>
</tbody>
</table>

¹ These programming devices may contain a 9-pin serial port. Verify your port connection requirements before ordering cables.

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**Figure 1**
Pinout for Cat. No. 1784-CAK RS-232-C Null Modem Cable — for 9-pin Serial Port Connections to IBM PC/AT, Allen-Bradley 6121 Series or Compatible Programming Devices

![Pinout Diagram](image-url)
Figure 2
Pinout for Cat. No. 1784-CXK RS-232-C Null Modem Cable — for 25-pin Serial Port Connections to IBM PC/XT or Compatible Programming Devices

Figure 3
Pinout for Cat. No. 1784-CYK RS-232-C Null Modem Cable — for 9-pin Serial Port Connections to IBM 5531, Allen-Bradley 6120 Series or Compatible Programming Devices
Figure 4
Pinout for Cat. No. 1784-CAS RS-232-C Interface Cable — for 9-pin Serial Port Connections to IBM PC/AT, Allen-Bradley 6121 Series or Compatible Programming Devices

Data Cartridge Recorder/
Hayes Smartmodem 25-pin male "D" shell connector with metal hood

<table>
<thead>
<tr>
<th></th>
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<th>3</th>
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</tr>
</thead>
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<td>CF</td>
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<td>CA</td>
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</tr>
</tbody>
</table>

Metal Foil Shield terminated at both ends of cable. Drain wire to pin no 1 of recorder/modem end of cable only

Programming Device
9-pin female "D" shell connector with metal hood
Figure 5
Pinout for Cat. No. 1784-CXS RS-232-C Interface Cable — for 25-pin Serial Port Connections to IBM PC/XT or Compatible Programming Devices

Data Cartridge Recorder/Hayes Smartmodem 25-pin Male "D" Shell Connector with Metal Hood

Programming Device 25-pin Female "D" Shell Connector with Metal Hood

Metal Foil Shield terminated at both ends of cable
Figure 6
Pinout for Cat. No. 1784-CYS RS-232-C Interface Cable — for 9-pin Serial Port Connections to IBM 5531, Allen-Bradley 6120 Series or Compatible Programming Devices

Typical Cable Applications

The figures that follow show you how the cables are connected to various hardware products for uploading/downloading programs. If you use a:

- Data Cartridge Recorder Configuration, see Figure 7
- 1771-KE/KF and 1771-KA/KA2 Data Highway Network Configuration with One Serial Port Connection, see Figure 8
- 1771-KE/KF and 1771-KA/KA2 Data Highway Network Configuration with Two Serial Port Connections, see Figure 9
- 1771-KG Configuration with One Serial Port Connection see Figure 10
- 1771-KG Configuration with Two Serial Port Connections, see Figure 11
- Hayes External Modem Used in a Data Highway Network Configuration, see Figure 12
Figure 7
Data Cartridge Recorder Configuration

Figure 8
1771-KE/KF and 1771-KA/KA2 Data Highway Network Configuration with One Serial Port Connection
Figure 9
1771-KE/KF and 1771-KA/KA2 Data Highway Network Configuration with Two Serial Port Connections
Figure 10
1771-KG Configuration with One Serial Port Connection
Figure 11
1771-KG Configuration with Two Serial Port Connections
As a subsidiary of Rockwell International, one of the world’s largest technology companies — Allen-Bradley meets today’s challenges of industrial automation with over 85 years of practical plant-floor experience. More than 11,000 employees throughout the world design, manufacture and apply a wide range of control and automation products and supporting services to help our customers continuously improve quality, productivity and time to market. These products and services not only control individual machines but integrate the manufacturing process, while providing access to vital plant floor data that can be used to support decision-making throughout the enterprise.