Adaptive®
Cables, Adapters, and Interfaces

ADAPTIVE®

NOTE: Due to continuing product innovation, specifications in this manual are subject to change without notice.

Sign Connector Pinouts

Connection	Pinout	Sign type (CM = Character Matrix, FM = Full Matrix)								
		AlphaVision™ 2.1" (CM)	AlphaVision™ 3.2" (CM)	AlphaVision (FM)	Alpha® 200, 300, 4000 and 7000 series	BetaBrite®	Big Dot®	Director™	PPD	Solar™
RS485	**Pinouts**: 1 = no connect 2 = RS485 (+) 3 = no connect 4 = no connect 5 = RS485 (-) 6 = no connect **RJ12 (female)** 1——6	●	●	●	●		●	●	●	
	This connector is inside the sign. RS485 (-) RS485 (+) SHIELD									●

Connection	Pinout	Sign type (CM = Character Matrix, FM = Full Matrix)								
		AlphaVision™ 2.1" (CM)	AlphaVision™ 3.2" (CM)	AlphaVision (FM)	Alpha® 200, 300, 4000 and 7000 series	BetaBrite®	Big Dot®	Director™	PPD	Solar™
RS232	**Pinouts**: 1 = GND 2 = no connect 3 = RXD 4 = TXD (TTL) 5 = no connect 6 = +5V (200 mA max) **RJ12 (female)** 1——6					●				
	This connector is inside the sign. Fused ISO +5V TXD RXD RS232 GND									●
RS232/ RS485/TTL	**Pinouts**: 1 = GND 2 = RS485 (+) 3 = RXD 4 = TXD 5 = RS485 (-) 6 = +5V (200 mA max) **RJ12 (female)** 1——6	●	●	●	●		●	●	●	

Part number: 1036-9010

Description

25-foot RS232 cable:

Left jack
RJ12 (male)

Right plug
DB9 (female)

Typical use

Used as part of an RS232 connection between a computer with a DB9 (9-pin) COM port and a sign so that messages can be sent to the sign from the computer:

| Alpha® or Betabrite® sign | To sign's RS232 jack. | 6-connector RS232 data cable (pn **1036-9010**) | To RS232 COM port | Computer running sign messaging software like AlphaNet plus™ for Windows®. |

This cable takes the place of:
pn 1088-8625 and pn 1088-9108.

Pinouts

RJ12
(male)

6 —— 1

DB9
(female)

5 4 3 2 1

9 8 7 6

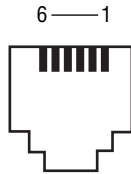| Pin	Signal
1	Signal GND
2	not connected
3	RXD
4	TXD
5	not connected
6	not connected
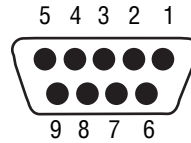
Pin	Signal
1	DCD
2	RXD
3	TXD
4	DTR
5	Signal GND
6	DSR
7	RTS
8	CTS
9	not connected

RJ12
(male)

DB9
(female)

RXD	PIN 3	◄—— Green ——	PIN 3	TXD
TXD	PIN 4	—— Red ——►	PIN 2	RXD
			PIN 7	RTS
			PIN 8	CTS
GND	PIN 1	◄—— Blue ——►	PIN 5	GND
			PIN 6	DSR
			PIN 1	DCD
			PIN 4	DTR

Part number: 1088-1111

Description

RS232-to-RS485 Converter Box III:
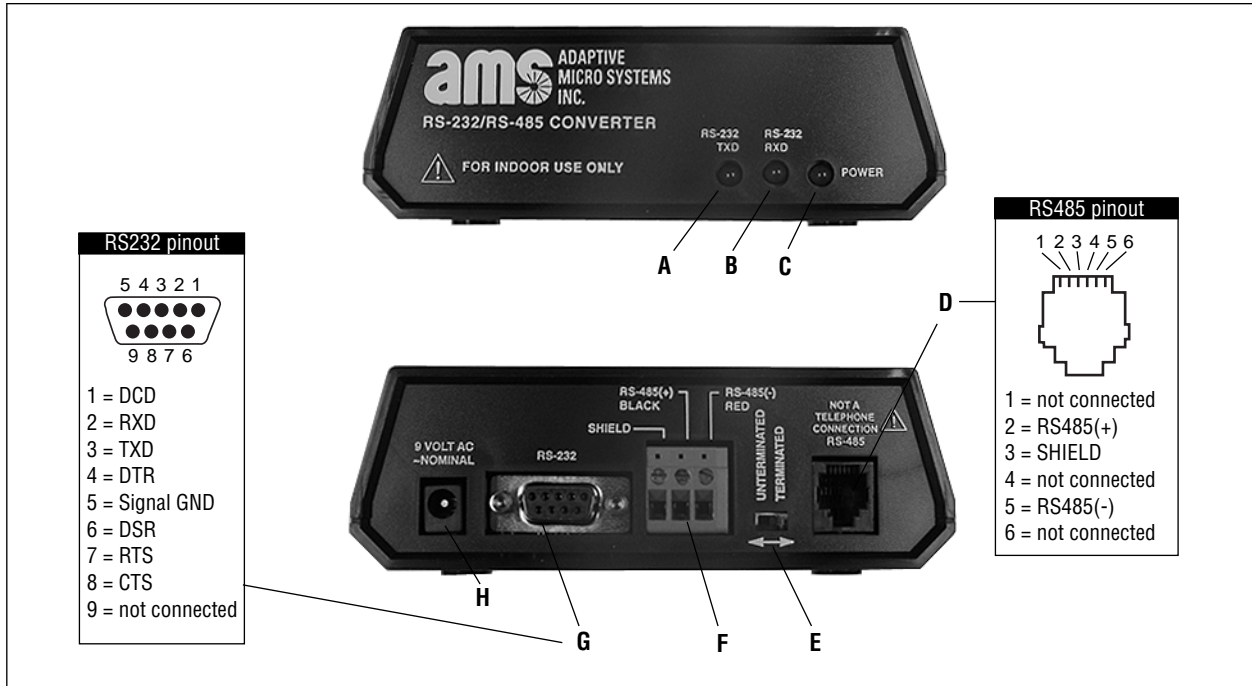
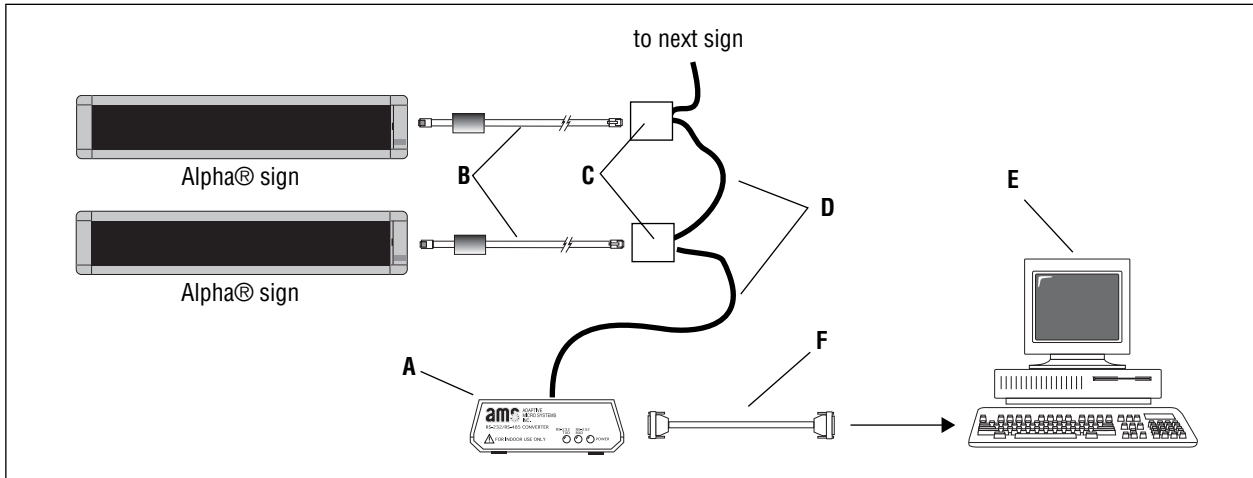| Item	Name	Description
A	RS232 TXD indicator	When lit, indicates that the unit is <u>transmitting</u> data through the RS232 plug and receiving data though one of the RS485 connections.
B	RS232 TXD indicator	When lit, indicates that the unit is <u>receiving</u> data through the RS232 plug and transmitting data though one of the RS485 connections.
C	POWER indicator	When lit, indicates that the unit has power.
D	RS485 jack	Connects a <u>single</u> Alpha® sign to the unit. For <u>multiple</u> sign networking, use the RS485 connector block.
E	termination selector	Set to *Terminated* or *Unterminated* depending on how signs are networked.
F	RS485 connector block	Connects multiple Alpha® signs to a network.
G	RS232 plug	Connects to a computer's COM (RS232) port.
H	power plug	Supplies 9 VAC to the unit.

Typical use

Used to connect a computer to a Converter Box III as part of an RS485 network:

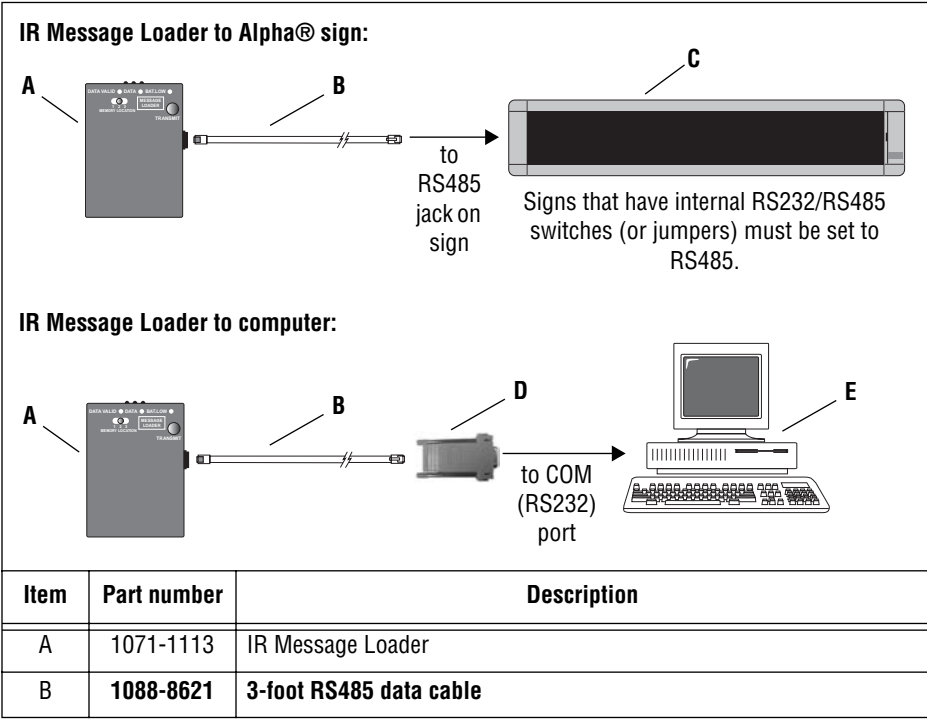| Item	Part number	Description
A	**1088-1111**	**Converter Box III**
B	1088-8624	8-foot RS485 cable
	1086-8636	1-foot RS485 cable
C	4331-0602	Modular Network Adapter
D	1088-8002	RS485 wire, 22AWG, 1000-foot spool
	7122-0283	RS485 wire, 22AWG, in 100-foot lengths
	7122-0284	RS485 wire, 22AWG, rated for outdoor use at -20° to 150°C
E	-	Computer running sign messaging software like AlphaNet plus™ for Windows®
F	1088-8634	10-foot computer-to-Converter Box Type A9 RS232 cable

Part number: 1088-8621

Description

3-foot 6-conductor cable:

Left jack
RJ12 (male)

Right jack
RJ12 (male)

Typical use

Used to connect an IR Message Loader to an Alpha® sign or to a computer:

IR Message Loader to Alpha® sign:

A

B

C

to
RS485
jack on
sign

Signs that have internal RS232/RS485
switches (or jumpers) must be set to
RS485.

IR Message Loader to computer:

A

B

D

E

to COM
(RS232)
port

Item	Part number	Description
A	1071-1113	IR Message Loader
B	**1088-8621**	**3-foot RS485 data cable**

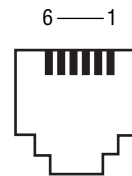| C	-	Alpha® sign
D	1088-9108	RJ11-to-DB9 connector
E	-	Computer running AlphaNet plus™ for Windows® software

Pinouts

RJ12
(male)

RJ12
(male)

6 —— 1

6 —— 1
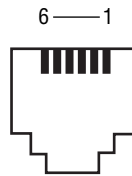
RJ12
(to IR Message Loader)

RJ12
(to Alpha® sign or computer)

GND	PIN 1	—— White ——	PIN 1	GND
RS485(+)	PIN 2	—— Black ——	PIN 2	RS485(+)
RXD	PIN 3	—— Red ——	PIN 3	RXD
TXD	PIN 4	—— Green ——	PIN 4	TXD
RS485(-)	PIN 5	—— Yellow ——	PIN 5	RS485(-)
+5V	PIN 6	—— Blue ——	PIN 6	+5V

Part number: 1088-8624

Description

8-foot RS485 cable:

Left side
RJ11 (male)

Right side
RJ11 (male)

Typical use

Used to connect an Alpha® sign to Modular Network Adapter as part of an RS485 network:

to next sign

Alpha® sign

Alpha® sign

B

C

D

E

A

F
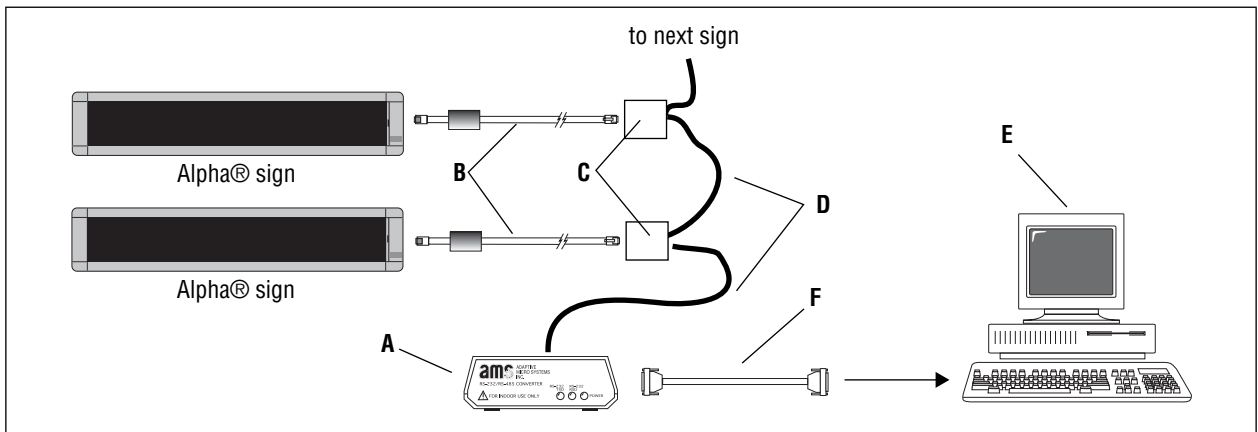
RS232/RS485 CONVERTER
ADAPTIVE MICRO SYSTEMS INC.
FOR INDOOR USE ONLY

Item	Part number	Description
A	1088-1111	Converter Box III

B	**1088-8624**	**8-foot RS485 cable**
	1086-8636	1-foot RS485 cable
C	4331-0602	Modular Network Adapter
D	1088-8002	RS485 wire, 22AWG, 1000-foot spool
	7122-0283	RS485 wire, 22AWG, in 100-foot lengths
	7122-0284	RS485 wire, 22AWG, rated for outdoor use at -20° to 150°C
E	-	Computer running sign messaging software like AlphaNet plus™ for Windows®
F	1088-8634	10-foot computer-to-Converter Box Type A9 RS232 cable

Pinouts

RJ11
(male)

4—1

RJ11
(male)

4—1

RJ11
(to sign)

RJ11
(to Modular Network Adapter)

RS485(+) PIN 1 ——— Black* ——— PIN 1 RS485(+)

PIN 2 ——— Red* ——— PIN 2 SHIELD

PIN 3 ——— Green* ——— PIN 3

RS485(-) PIN 4 ——— Yellow* ——— PIN 4 RS485(-)

*These are also the wire colors in the Modular Network Adapter.
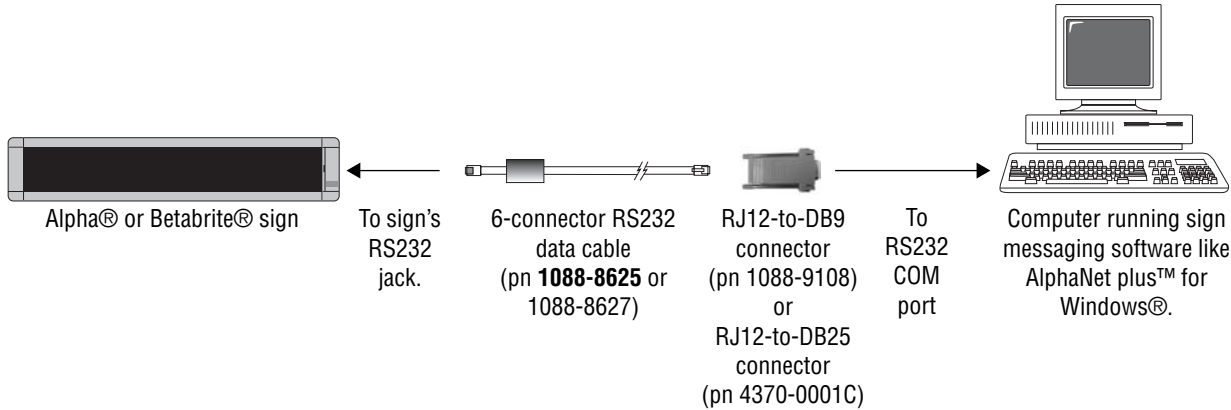
Part number: 1088-8625

Description

25-foot RS232 cable:

Left jack
RJ12 (male)

Right jack
RJ12 (male)

Typical use

Used as part of an RS232 connection between a computer with a DB25 (25-pin) or DB9 (9-pin) COM port and a sign so that messages can be sent to the sign from the computer:

| Alpha® or Betabrite® sign | To sign's RS232 jack. | 6-connector RS232 data cable (pn **1088-8625** or 1088-8627) | RJ12-to-DB9 connector (pn 1088-9108) or RJ12-to-DB25 connector (pn 4370-0001C) | To RS232 COM port | Computer running sign messaging software like AlphaNet plus™ for Windows®. |

Pinouts

	RJ12 (male)			RJ12 (male)

```
        6 —— 1                    6 —— 1
        ▐▌▌▌▌                     ▐▌▌▌▌
```

	RJ12 (from sign)			**RJ12** (to computer)

GND	PIN 1	— Blue —	PIN 1	GND
RS485(+)*	PIN 2	— Yellow —	PIN 2	RS485(+)*
RXD	PIN 3	— Green —	PIN 3	RXD
TXD	PIN 4	— Red —	PIN 4	TXD
RS485(-)*	PIN 5	— Black —	PIN 5	RS485(-)*
+5V	PIN 6	— White —	PIN 6	+5V

* Not available on BetaBrite® sign

14

Part number: 1088-8626

Description

8-foot RS485 back-to-back cable:

Left jack
RJ11 (male)

Right jack
RJ11 (male)

Typical use

Used to connect two Alpha® signs together into a RS485 network:

Alpha® 4000/7000 signs:
(RS485 jacks on sign's back)

AlphaPremiere™ 9000 signs:
(RS485 jacks on sign's side)

Alpha® sign

RS-485 OUT
OR
RS-485 IN
WARNING–NOT A TELEPHONE CONNECTION.
RS-485 IN
OR
RS-232 IN

RS232/Aux
RS485

Alpha® sign

RS-485 OUT
OR
RS-485 IN
WARNING–NOT A TELEPHONE CONNECTION.
RS-485 IN
OR
RS-232 IN

RS232/Aux
RS485

Pinouts

RJ11
(male)

RJ11
(male)

4—1

4—1

RJ11

RJ11

RS485(+) PIN 1 ——————— Black ——————— PIN 1 RS485(+)

PIN 2 ——————— Red ——————— PIN 2

PIN 3 ——————— Green ——————— PIN 3

RS485(-) PIN 4 ——————— Yellow ——————— PIN 4 RS485(-)

Part number: 1088-8627

Description

50-foot RS232 cable:

Left jack
RJ12 (male)

Right jack
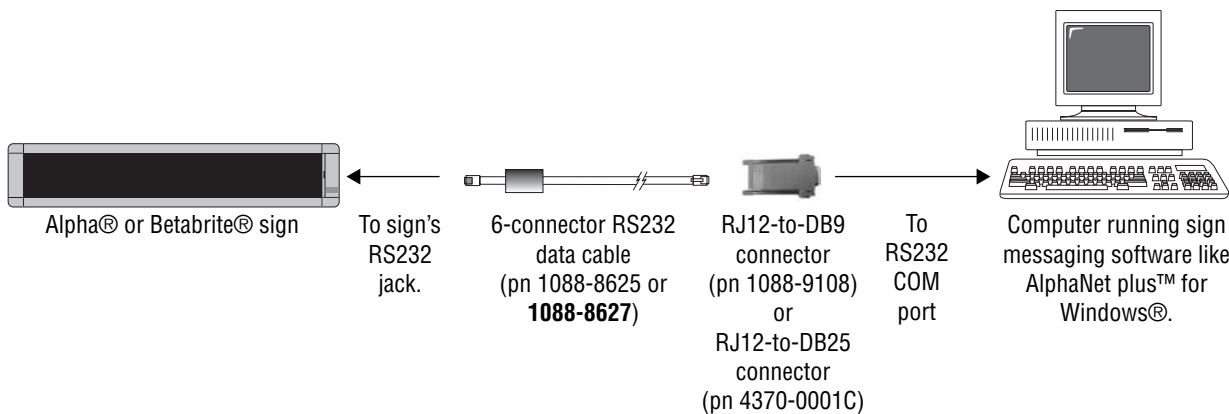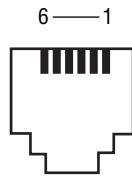RJ12 (male)

Typical use

Used as part of an RS232 connection between a computer with a DB25 (25-pin) or DB9 (9-pin) COM port and a sign so that messages can be sent to the sign from the computer:
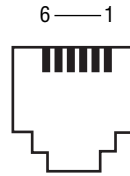

| Alpha® or Betabrite® sign | To sign's RS232 jack. | 6-connector RS232 data cable (pn 1088-8625 or **1088-8627**) | RJ12-to-DB9 connector (pn 1088-9108) or RJ12-to-DB25 connector (pn 4370-0001C) | To RS232 COM port | Computer running sign messaging software like AlphaNet plus™ for Windows®. |

Pinouts

RJ12
(male)

6 —— 1

RJ12
(male)

6 —— 1

RJ12 (from sign)				**RJ12** (to computer)	
GND	PIN 1	Blue		PIN 1	GND
RS485(+)*	PIN 2	Yellow		PIN 2	RS485(+)*
RXD	PIN 3	Green		PIN 3	RXD
TXD	PIN 4	Red		PIN 4	TXD
RS485(-)*	PIN 5	Black		PIN 5	RS485(-)*
+5V	PIN 6	White		PIN 6	+5V

* Not available on BetaBrite® sign

Part number: 1088-8628

Description

3-foot BetaBrite® sign-to-IR Message Loader cable:

Left jack
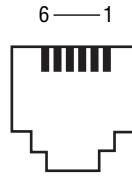RJ12 (male)

Right jack
RJ12 (male)

Typical use

Used to connect an IR Message Loader to a BetaBrite® sign:

to
RS232
jack on
sign

Item	Part number	Description
A	1071-1113	IR Message Loader
B	**1088-8628**	**3-foot BetaBrite® sign-to-IR Message Loader cable**
C	-	BetaBrite® sign

Pinouts

RJ12
(male)

6 —— 1

RJ12
(male)

6 —— 1

RJ12
(to IR Message Loader)

RJ12
(to BetaBrite® sign)

GND	PIN 1	—— Blue ——	PIN 1	GND
RS485(+)*	PIN 2	—— Yellow ——	PIN 2	RS485(+)*
RXD	PIN 3	—— Green ——	PIN 4	TXD
TXD	PIN 4	—— Red ——	PIN 3	RXD
RS485(-)*	PIN 5	—— Black ——	PIN 5	RS485(-)*
+5V	PIN 6	—— White ——	PIN 6	+5V

* Not used by BetaBrite® sign

Part number: 1088-8634

Description

10-foot computer-to-Converter Box III Type A9 RS232 cable:

Left side
DB9 (male)

Right side
DB9 (female)

Typical use

Used to connect a computer to a Converter Box III as part of a RS485 network:

to next sign

Alpha® sign

Alpha® sign

B   C   D   E

A   F

Item	Part number	Description
A	1088-1111	Converter Box III

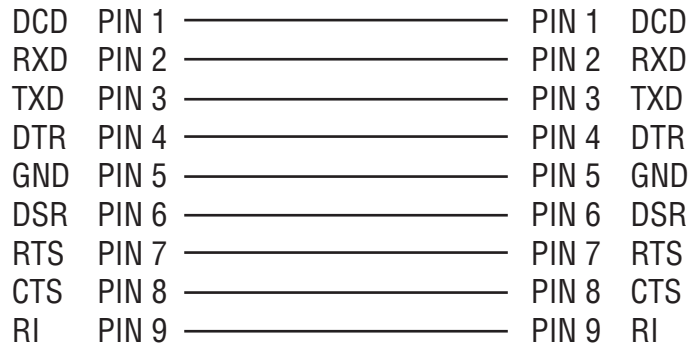| B	1088-8624	8-foot RS485 cable
	1086-8636	1-foot RS485 cable
C	4331-0602	Modular Network Adapter
D	1088-8002	RS485 wire, 22AWG, 1000-foot spool
	7122-0283	RS485 wire, 22AWG, in 100-foot lengths
	7122-0284	RS485 wire, 22AWG, rated for outdoor use at -20° to 150°C
E	-	Computer running sign messaging software like AlphaNet plus™ for Windows®
F	**1088-8634**	**10-foot computer-to-Converter Box Type A9 RS232 cable**

Pinouts

DB9
(male)

1 2 3 4 5

6 7 8 9

DB9
(female)

5 4 3 2 1

9 8 7 6
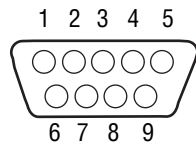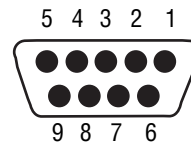
DB9
(male - to Converter Box III)

DB9
(female - to computer)

DCD   PIN 1 ———————————— PIN 1   DCD
RXD   PIN 2 ———————————— PIN 2   RXD
TXD   PIN 3 ———————————— PIN 3   TXD
DTR   PIN 4 ———————————— PIN 4   DTR
GND   PIN 5 ———————————— PIN 5   GND
DSR   PIN 6 ———————————— PIN 6   DSR
RTS   PIN 7 ———————————— PIN 7   RTS
CTS   PIN 8 ———————————— PIN 8   CTS
RI   PIN 9 ———————————— PIN 9   RI

Description

10-foot modem-to-Converter Box III Type B9 RS232 cable:

Left side
DB9 (male)

Right side
DB25 (male)

Typical use

Used to connect an Alpha® sign to Modular Network Adapter as part of an RS485 network:
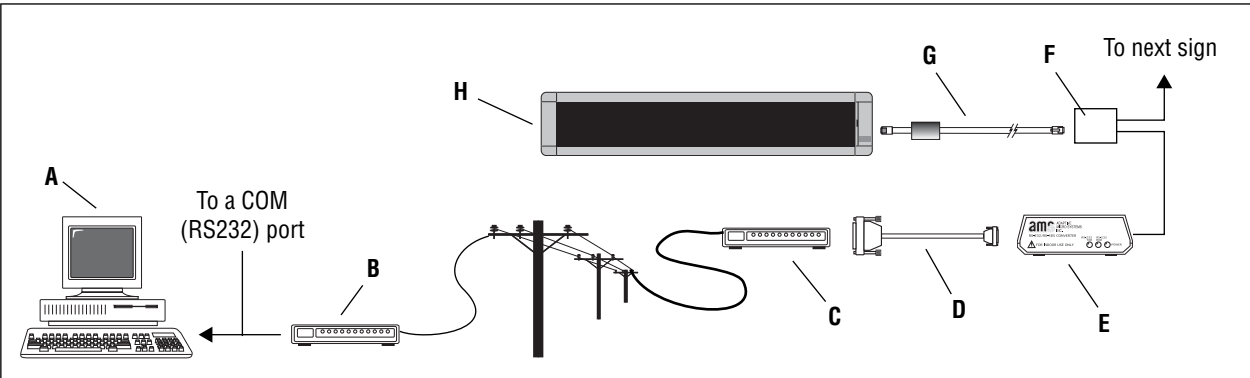
Item	Part number	Description
A	-	Computer running sign messaging software like AlphaNet plus™ for Windows®

B	-	Transmitting modem
C	-	Receiving modem
D	1088-8635	10-foot modem-to-Converter Box II Type B9 RS232 cable
E	1088-111	Converter Box III
F	4331-0602	Modular Network Adapter
G	1088-8624	8-foot RS485 cable
	1086-8636	1-foot RS485 cable
H	-	Alpha® sign

Pinouts

DB9
(male)

1 2 3 4 5

6 7 8 9

DB25
(male)

1 2 3 4 5 6 7 8 9 10 11 12 13

14 15 16 17 18 19 20 21 22 23 24 25
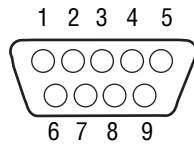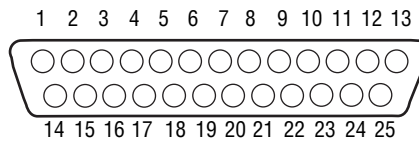
DB9
(male - to Converter Box III)

DB25
(male - to modem)

DCD	PIN 1	————————	PIN 8	DCD
RXD	PIN 2	————————	PIN 2	RXD
TXD	PIN 3	————————	PIN 3	TXD
DTR	PIN 4	————————	PIN 20	DTR
GND	PIN 5	————————	PIN 7	GND
DSR	PIN 6	not connected		
RTS	PIN 7	not connected		
CTS	PIN 8	not connected		
	PIN 9	not connected		

Part number: 1088-8636

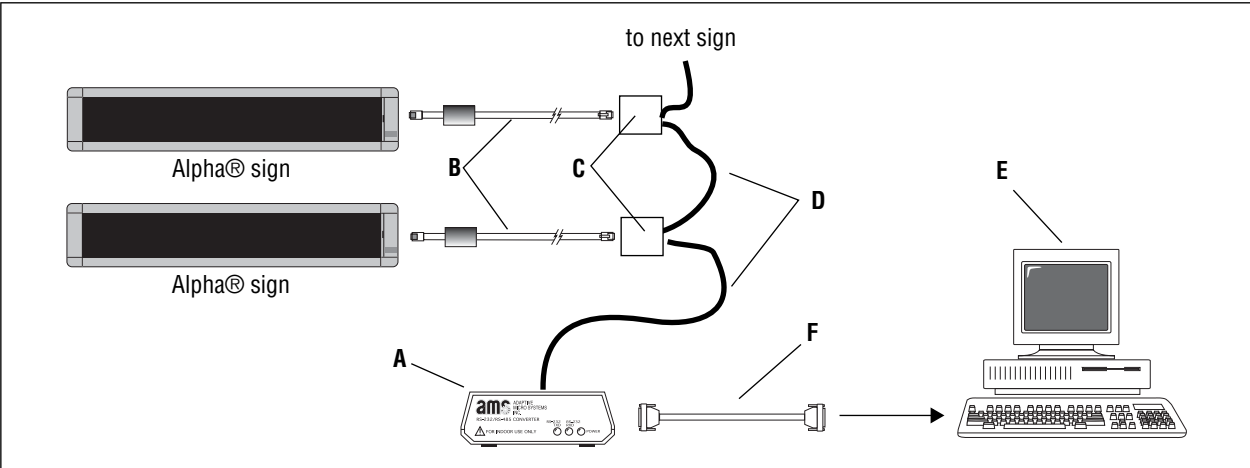## Description

1-foot RS485 cable:

Left side
RJ11 (male)

Right side
RJ11 (male)

Typical use

Used to connect an Alpha® sign to Modular Network Adapter as part of an RS485 network:

Item	Part number	Description
A	1088-1111	Converter Box III

B	1088-8624	8-foot RS485 cable
	1086-8636	**1-foot RS485 cable**
C	4331-0602	Modular Network Adapter
D	1088-8002	RS485 wire, 22AWG, 1000-foot spool
	7122-0283	RS485 wire, 22AWG, in 100-foot lengths
	7122-0284	RS485 wire, 22AWG, rated for outdoor use at -20° to 150°C
E	-	Computer running sign messaging software like AlphaNet plus™ for Windows®
F	1088-8634	10-foot computer-to-Converter Box Type A9 RS232 cable

Pinouts

RJ11
(male)

4 — 1

RJ11
(male)

4 — 1

RJ11
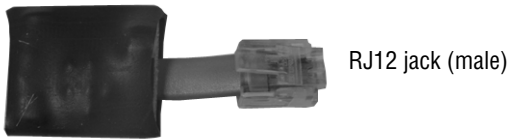(to sign)

RJ11
(to Modular Network Adapter)

RS485(+) PIN 1 ——— Black* ——— PIN 1 RS485(+)
          PIN 2 ——— Red* ——— PIN 2 SHIELD
          PIN 3 ——— Green* ——— PIN 3
RS485(-) PIN 4 ——— Yellow* ——— PIN 4 RS485(-)

*These are also the wire colors in Modular Network Adapter.

Part number: 1088-9107
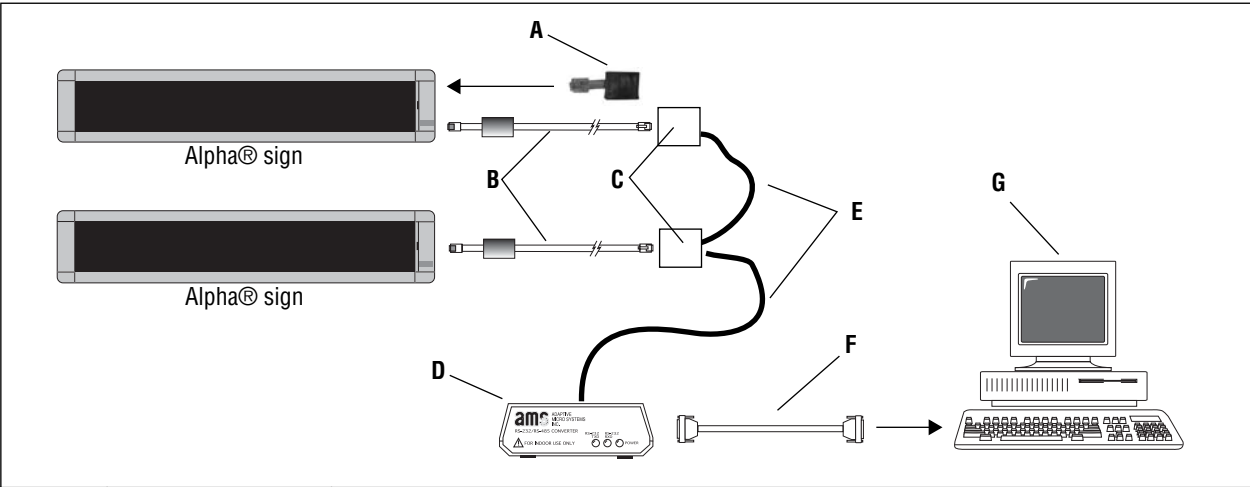
Description

EOL (End-Of-Line) terminator:

RJ12 jack (male)

Typical use

Connected to the RS232 (or TTL) plug of the last Alpha® sign on an RS485 network:

Item	Part number	Description
A	**1088-9107**	**EOL (End-Of-Line) terminator**
B	1088-8624	8-foot RS485 cable
	1086-8636	1-foot RS485 cable
C	4331-0602	Modular Network Adapter
D	1088-1111	Converter Box III

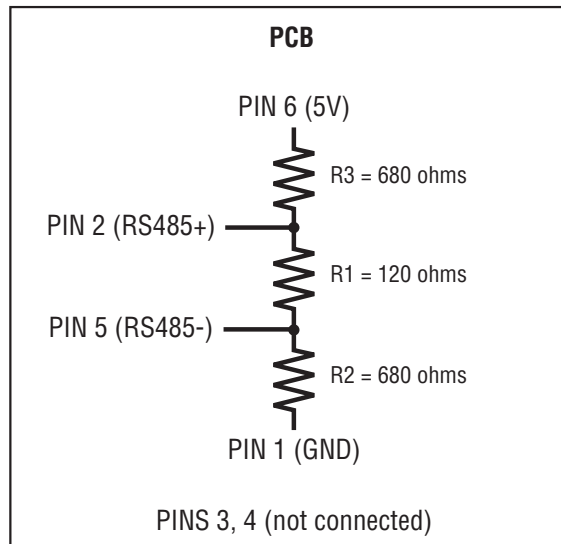|	1088-8002	RS485 wire, 22AWG, 1000-foot spool
E	7122-0283	RS485 wire, 22AWG, in 100-foot lengths
	7122-0284	RS485 wire, 22AWG, rated for outdoor use at -20° to 150°C
F	1088-8634	10-foot computer-to-Converter Box Type A9 RS232 cable
G	-	Computer running sign messaging software like AlphaNet plus™ for Windows®

Pinouts

RJ12
(male)

6 —— 1

RJ12   **PCB**
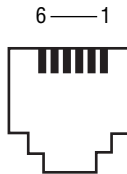
PIN 1 —— Blue —— PIN 6
PIN 2 —— Yellow —— PIN 5
PIN 3 —— Green —— PIN 4
PIN 4 —— Red —— PIN 3
PIN 5 —— Black —— PIN 2
PIN 6 —— White —— PIN 1

PCB

PIN 6 (5V)

R3 = 680 ohms

PIN 2 (RS485+)

R1 = 120 ohms

PIN 5 (RS485-)

R2 = 680 ohms

PIN 1 (GND)

PINS 3, 4 (not connected)

Part number: 1088-9108

Description

RJ12-to-DB9 connector:

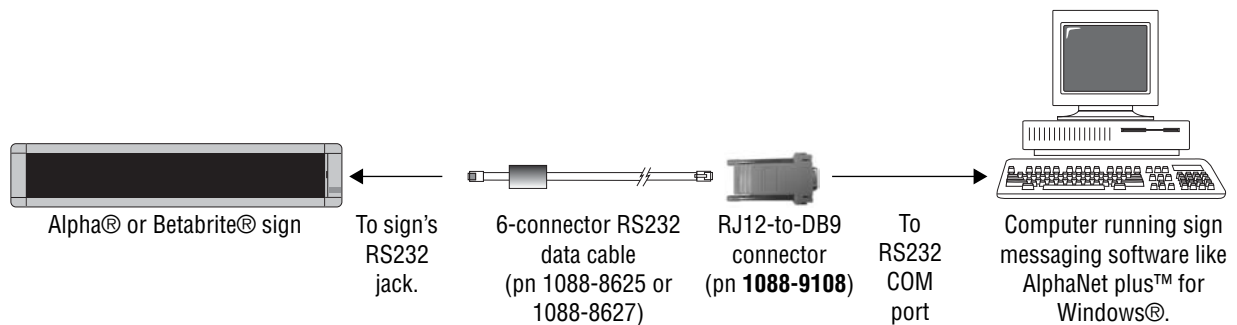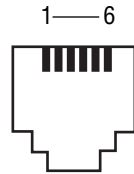| Left side
RJ12 (female) | Top | Right side
DB9 (female) |

Typical use

Used as part of an RS232 connection between a computer with a DB9 (9-pin) COM port and a sign so that messages can be sent to the sign from the computer:
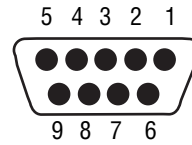

| Alpha® or Betabrite® sign | To sign's RS232 jack. | 6-connector RS232 data cable (pn 1088-8625 or 1088-8627) | RJ12-to-DB9 connector (pn **1088-9108**) | To RS232 COM port | Computer running sign messaging software like AlphaNet plus™ for Windows®. |

Pinouts

RJ12
(female)

DB9
(female)

1——6

5 4 3 2 1

9 8 7 6

RJ12
(female)

DB9
(female)

RXD   PIN 3 ◄——————————————— PIN 3   TXD
TXD   PIN 4 ———————————————► PIN 2   RXD
                            ┌► PIN 7   RTS
                            └► PIN 8   CTS

GND   PIN 1 ◄——————————————► PIN 5   GND
                            ┌► PIN 6   DSR
                            ├► PIN 1   DCD
                            └► PIN 4   DTR

Part number: 4331-0602
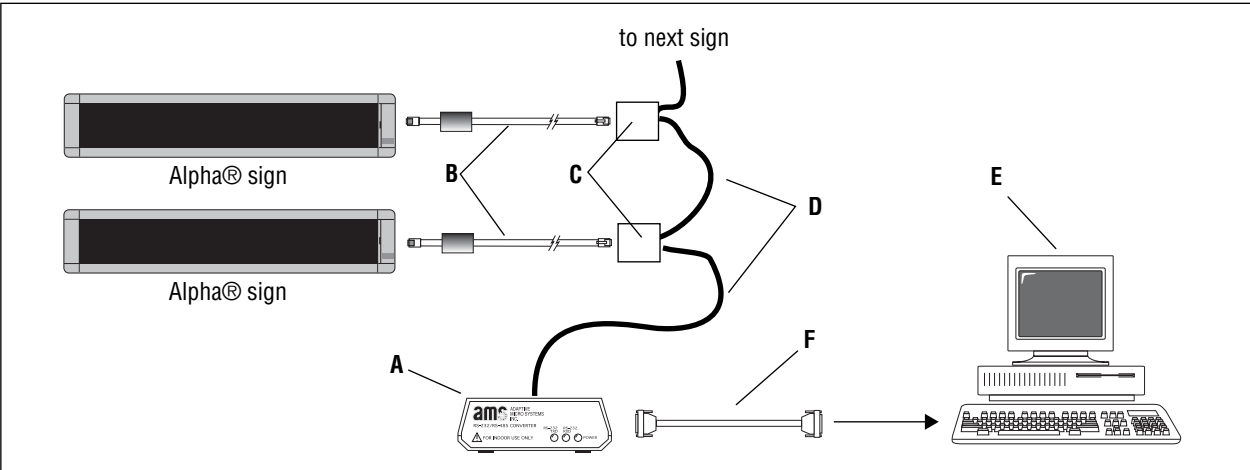
Description

Modular Network Adapter:

Left side
RJ11 (female)

Right side

Typical use

Used to connect a computer to a Converter Box III as part of a RS485 network:

Item	Part number	Description
A	1088-1111	Converter Box III

B	1088-8624	8-foot RS485 cable
	1086-8636	1-foot RS485 cable
C	**4331-0602**	**Modular Network Adapter**
D	1088-8002	RS485 wire, 22AWG, 1000-foot spool
	7122-0283	RS485 wire, 22AWG, in 100-foot lengths
	7122-0284	RS485 wire, 22AWG, rated for outdoor use at -20° to 150°C
E	-	Computer running sign messaging software like AlphaNet plus™ for Windows®
F	1088-8634	10-foot computer-to-Converter Box Type A9 RS232 cable

Pinouts

RJ11
(female)

1 — 4
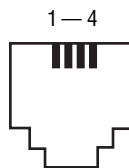
Pin	Signal
1	RS485 +
2	SHIELD
3	not connected (Green terminal)
4	RS485 –

(Black terminal) **RS485 +**   **RS485 –** (Yellow terminal)

(Red terminal) **SHIELD**   Green
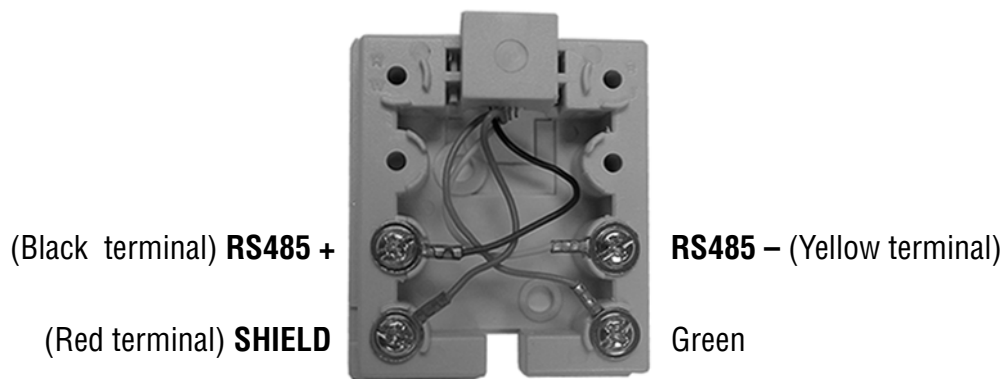
NOTE: If a Modular Network Adapter is connected to an Alpha® Personal Priority Display sign, then connect the two SHIELD wires together from each RS485 cable. However, do NOT connect the connected SHIELD wires to the Red terminal

Part number: 4331-0603

Description

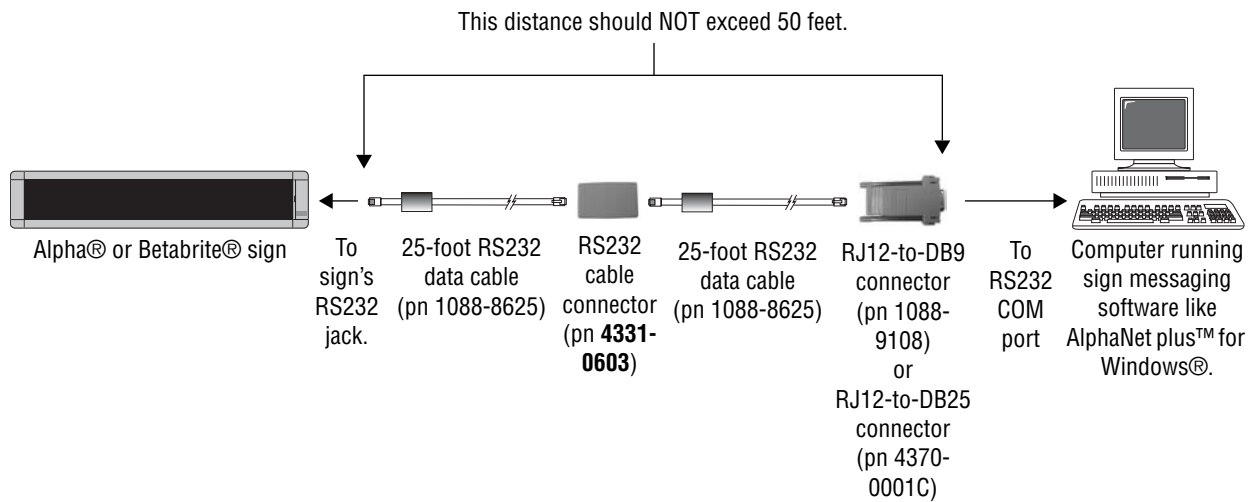RS232 cable connector:

| Left jack
RJ12 (female) | Top | Right jack
RJ12 (female) |

Typical use

Used as part of an RS232 sign network to connect two lengths of 25-foot RS232 cable:

This distance should NOT exceed 50 feet.

| Alpha® or Betabrite® sign | To sign's RS232 jack. | 25-foot RS232 data cable (pn 1088-8625) | RS232 cable connector (pn **4331-0603**) | 25-foot RS232 data cable (pn 1088-8625) | RJ12-to-DB9 connector (pn 1088-9108) or RJ12-to-DB25 connector (pn 4370-0001C) | To RS232 COM port | Computer running sign messaging software like AlphaNet plus™ for Windows®. |

Pinouts

RJ12
(female)

1 —— 6

RJ12
(female)

RJ12
(female)

PIN 1 ——————————— PIN 1
PIN 2 ——————————— PIN 2
PIN 3 ——————————— PIN 3
PIN 4 ——————————— PIN 4
PIN 5 ——————————— PIN 5
PIN 6 ——————————— PIN 6

Part number: 4370-0001C

Description

RJ12-to-DB25 connector:

Left side
RJ12 (female)

Top

Right side
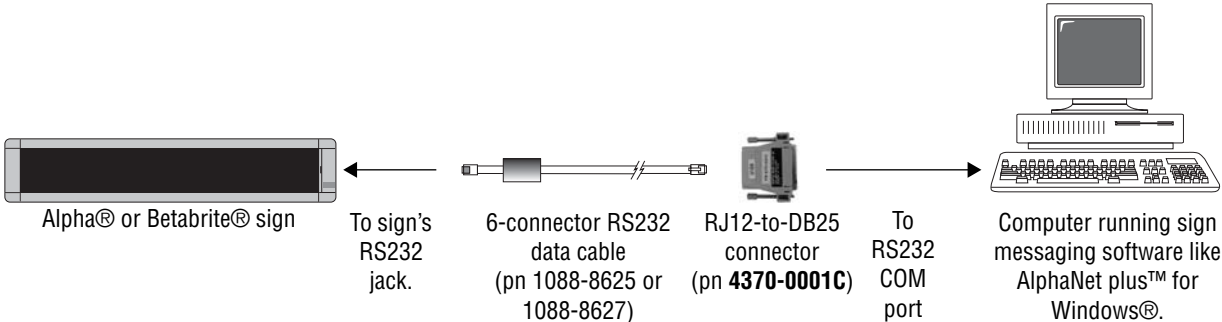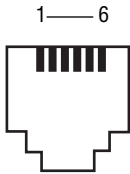DB25 (female)

Typical use

Used as part of an RS232 connection between a computer with a DB25 (25-pin) COM port and a sign so that messages can be sent to the sign from the computer:
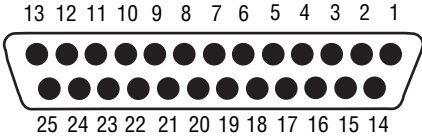

| Alpha® or Betabrite® sign | To sign's RS232 jack. | 6-connector RS232 data cable (pn 1088-8625 or 1088-8627) | RJ12-to-DB25 connector (pn **4370-0001C**) | To RS232 COM port | Computer running sign messaging software like AlphaNet plus™ for Windows®. |

Pinouts

RJ12
(female)

DB25
(female)

1 —— 6

13 12 11 10 9 8 7 6 5 4 3 2 1

25 24 23 22 21 20 19 18 17 16 15 14

RJ12			**DB25**	
(female)			(female)	
RXD	PIN 3	← →	PIN 2	TXD
TXD	PIN 4	→	PIN 3	RXD
		→	PIN 4	RTS
		→	PIN 5	CTS
GND	PIN 1	← →	PIN 7	GND
		→	PIN 6	DSR
		→	PIN 8	DCD
		→	PIN 20	DTR