

# RS-232 to SAE J1708 Converter $\text{C}\epsilon$

## Model J1708D15



### Description

The Model J1708D15 will allow any device with an RS-232 port to communicate with vehicles using the SAE J1708 specification. SAE J1708 is the specification for serial communications between microcomputer systems in heavy-duty vehicle applications.

The J1708D15 converts half-duplex RS-232 transmit and receive data signals to the SAE J1708 differential communications specification. The converter is powered from the vehicle, allowing it to be used with low-power terminal devices. The RS-232 side of the J1708D15 converter is a DB9 female, and is configured as a DCE device. The J1708D15 has a jumper to select priority. Two values can be set: priority one (1.25ms)--which is reserved for immediate access to the bus; and priority 8 (2.5ms)--used to connect service tools to the bus. The J1708D15 is set to priority 1 when shipped.

The Model J1708D15 is connected to the vehicle with cable D6D15M (sold separately) for 6-pin Deutsch, or D9D15M (sold separately) for 9-pin Deutsch connection.

### Installation

The RS-232 side of the J1708D15 will connect directly to a computer RS-232 port, or any other DTE RS-232 port. The J1708D15 has a female DB9 and is configured as a DCE RS-232 device. Pinouts for the RS-232 port are given in Table 1 and pinouts for the J1708 side are given in Table 2.

### Operation

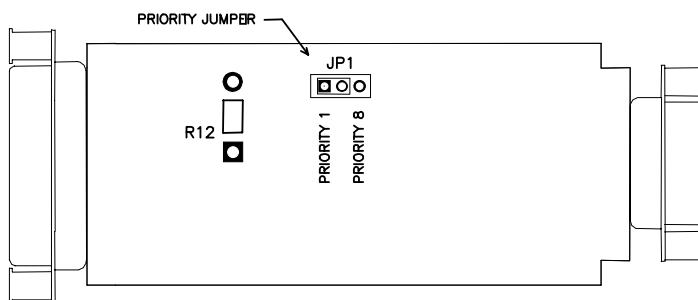
In addition to converting signal levels to and from the SAEJ1708 specification, the J1708D15 provides timing information through the RS-232 CTS line. The SAEJ1708 specification requires the transmitter to verify that the network idle state continues to exist to within 1/2 bit time prior to transmission. The CTS line on the J1708D15 provides a method for the host software to monitor the network with this resolution. If the network has been idle, the CTS line goes high. Each bit transmitted on the network will cause the CTS line to go low for 1.25ms priority 1 or 2.5 ms priority 8. By checking the CTS line before transmitting the host software can avoid network collisions.

### Jumper Setting

The Model J1708D15 provides a simple method of selecting priority. A two-position jumper is located on the bottom of the circuit board. To access the jumper disconnect the device from the vehicle (DB15) and the terminal (DB9). Open the case by inserting a small screwdriver in the notch located along the side of the device and prying the two halves apart. The jumper is clearly marked on the bottom of the circuit board. The jumper connects the center pin to either priority 1 or priority 8. Select the desired priority and close the case.

**Table 1. DB9 RS-232 Connection**

Female DB9	Function	Direction
1	Connected to pins 4 and 6	
2	Receive data	Output
3	Transmit data	Input
4	Connected to pins 6 and 1	
5	Signal ground	
6	Connected to pins 1 and 4	
7	No connection	
8	CTS	Output
9	No connection	



**Table 2. DB15 Vehicle Connection**

Vehicle Side DB15 Pins	Function	Direction
6	Power -	Input
8	Power +	Input
14	J1708 -	Input/output
15	J1708 +	Input/output

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**Specifications**

Dimensions: 4.25 x 1.7 x .9 in (10.5 x 4.3 x 2.1 cm)  
Connectors: RS-232: DB-9 female (DCE)  
J1708: DB15 female  
Power Requirement: Voltage 12 to 24VDC  
Power Consumption: 15mA @ 12VDC  
Temperature: 0 to +70°C operating

**Models**

J1708D15..... RS-232 to J1708 converter  
D6D15M ..... 6-pin round connector cable with DB15 male connector, 40 in. (1.0 m)  
D9D15M ..... 9-pin round connector cable with DB15 male connector, 40 in. (1.0 m)

DECLARATION OF CONFORMITY	
Manufacturer's Name:	B&B Electronics Manufacturing Company
Manufacturer's Address:	P.O. Box 1040 707 Dayton Road Ottawa, IL 61350 USA
Model Numbers:	J1708D15
Description:	PDA to SAE J1708 Converter
Type:	Light industrial equipment
Application of Council Directive:	89/336/EEC
Standards:	EN 50082-1: 1998 EN 61000 (-4-2, -4-3, -4-4, -4-6, -4-8) ENV 50204
	
William H. Franklin III, Director of Engineering	
	

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