WMA-039 ASYNCHRONOUS SERIAL INTERFACE BOARD BUS CONNECTIONS

BUS CONNECTIONS

The connections from the WMA-039 to the asynchronous bus are different for the three versions of the unit. In each case, data direction and/or polarity can be easily interchanged, so careful attention (and perhaps some trial and error) are required to successfully set up a communications link. A description for each follows:

RS-232:

There are two standard connectors for the RS-232 interface: DB-9 and DB-25. The interface is made somewhat complicated by the fact that there are two kinds of RS-232 equipment, and the wiring for each is different. We are assuming that the unit will be connected to DCE equipment, and the pinout is shown accordingly. If connecting to DTE equipment, the TD and RD lines must be interchanged.

SIGNAL NAME	WMA-039	DB-9 PIN #	DB-25 PIN #
SG (signal ground)	GND	5	7
TD or SD (transmit data)	IN	3	2
RD (receive data)	OUT	2	3

RS-485:

The RS-485 signals are transmitted and received through one differential pair. Systems are in use that use either polarity, so that for a particular system, the two signal lines may have to be interchanged from that listed below.

SYSTEM SIGNAL NAME	WMA-039
Signal ground	GND
Data (A)	(-)
Data (B)	(+)

RS-422:

The RS-422 signals are transmitted through a differential pair and received through a differential pair. It is important to know which pair is transmitting from the system controller and which is receiving. The Transmit Data signal from the controller becomes the data IN for the WMA-039, and the Receive Data from the controller is from the data OUT of the WMA-039. Systems are in use that use either polarity, so that for a particular system, the two (+/-) lines may have to be interchanged from that listed below.

CONTROLLER SIGNAL NAME	WMA-039
Signal ground	GND
Transmit Data (A)	IN(-)
Transmit Data (B)	IN(+)
Receive Data (A)	OUT(-)
Receive Data (B)	OUT(+)

TROUBLESHOOTING

If the above instructions do not result in a successful data link, troubleshooting with a scope is suggested.

To resolve the data direction issue, disconnect the WMA-039 from the controller and monitor one of the leads of the controller while issuing a command. A lead that shows a data burst is a transmit lead that should be connected to an IN terminal on the WMA-039. A lead that does not show activity is a receive lead and should be connected to an OUT terminal on the WMA-039.

To definitively resolve the polarity issue, disconnect the WMA-039 from the controller and monitor the transmit leads of the controller while issuing a command. The WMA-039 (+) terminal (IN or OUT) exchanges positive pulses and remains low between data blocks. The (-) terminal on the WMA-039 remains high between data blocks and exchanges negative pulses. Connect to the controller accordingly. Systems will use the same nomenclature for both transmit and receive, so the receive leads should be connected similarly to the transmit leads (RS-422 systems).