

# SERIAL INTERFACE ADAPTERS

## SIN-10 / SIN-11 OVERVIEW

With the complexity of today's computer operating systems, and the security built into the operating systems shell, it is becoming increasingly difficult for programmers to perform the direct interface with hardware such as UARTS, i.e., Windows NT.

The SIN-10 and SIN-11 solve this problem by making it simple to send one, or a block of commands using the I/O built into any software that is capable of output to a COM port. With these device there is no need for special echoed character handshake software.

The SIN-10 and SIN-11 are intelligent serial line converters that simplify application software development and improves overall performance.

The SIN-10 operates at 9600, 38.4k or the special 470k baud speeds. The lower cost SIN-11 operates at 9600 baud only. The integral microprocessor buffers command strings of 250 characters. A second 250 character buffer receives data through a "Party Line" serial communications protocol.

## FEATURES

- Performs all handshake operations
- Simple to use
- Diagnostic LED's
- Powered from motor controllers
- Scans for one to 52 axis
- Built in macros
- Mates to USB serial adapters
- Replacement for serial adapters
- 256 character receive buffer
- 256 character "Party Line" buffer
- RS-232 connection to host computer
- RS-422 connection to AMS controllers

SIN-7



SIN-10



BLC-51



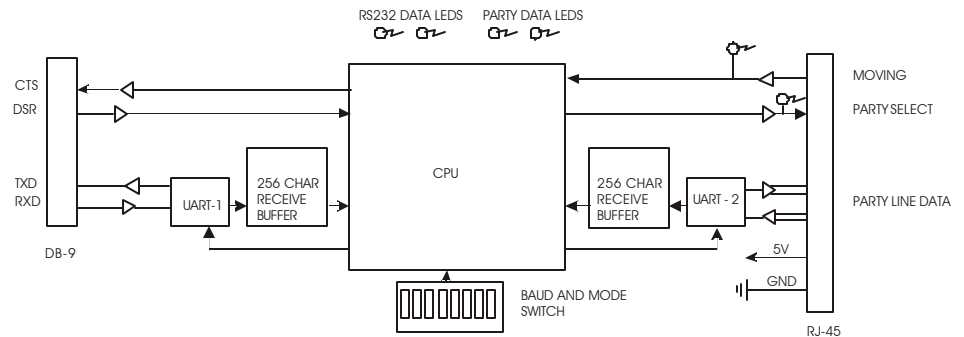
TERM-2



SIN-8

## SIN-10 BLOCK DIAGRAM

### SIN-10 BLOCK DIAGRAM



The SIN-10 or SIN-11 is attached to the host computer via a free COM port. A 9 pin "D" connector plugs directly into a standard PC RS-232 serial port. With an adapter, the USB port can also be utilized. Input to the first axis is through an RJ-45 connector. Power (5 volts) is obtained from the serial input of the first axis.

## LOCAL COMMANDS

Special commands can be executed by the SIN-10 and SIN-11. These commands set the mode, enable or disable echo's, and perform functions such as scan for axis, wait while moving, etc.

## PRODUCT SELECTION/BAUD RATE GUIDE

Core Controller	AMS Product Family	Available Baud Rates		
		9600	38.4k	470k
SMC-C24	SAX/DAX, MCB-24	Yes	Yes	Yes
SMC-C24	DCB-241	Yes	No	No
SMC-50	MCB-50	Yes	Yes	Yes
SMC-2000	MAX, CMAX	Yes	No	Yes
SMC-25	CCB-25	Yes	Yes	Yes
SMC-26	CCB-26, DCB-261, DCB-264	Yes	Yes	Yes

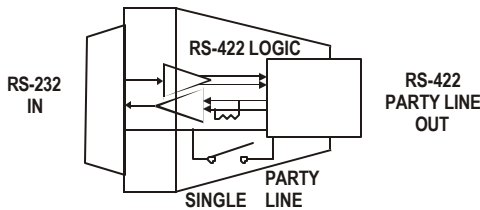
## SIN-8 OVERVIEW

The SIN-8 is an RS-232 to RS-422 serial data converter that can be used with "Party Line" designs. Any number between one and thirty two axis can be connected in a mini-drop network system using the SIN-8.

## FEATURES

- Connects computer or terminal to one or more axis
- Standard 25 pin serial connector for Com port
- RS-422 differential drivers and receivers
- 5 volts powered by AMS drive products
- Includes CAT-5 cable and terminator plug

The bidirectional adapter is powered from the AMS controller. A convenient switch is provided on the SIN-8 to select the single or Party Line mode. Single line mode is used to assign the required axis "name" character. Once the names are saved in NV memory, switching to Party Line provides efficient "parallel communications between multiple axis.



This serial communications protocol requires a "character by character" handshake that may, or may not, be practical with all computer operating systems. For more advanced programming and communication protocol techniques the SIN-10 is recommended.

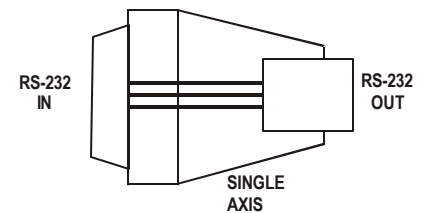
## SIN-7/SIN-9 OVERVIEW

The SIN-7 (DB-25) and SIN-9 (DB-9) to RJ-45 adapters are for single axis, RS-232 communications applications. These converters facilitate connection between a standard computer "D" connector output and AMS' RJ-45 connector inputs.

## FEATURES

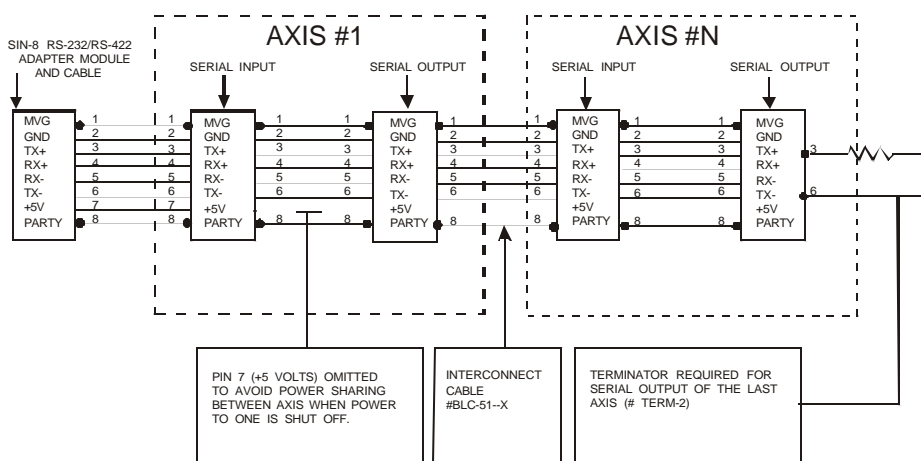
- Connects computer or terminal to axis
- 25 pin or 9 pin connector to COM port
- Passive - no power required

In general, the SIN-7/9 will operate with either RS-232 or RS-422 products in single axis mode. The adapter is passive, connecting TXD, RXD and GND signals to the appropriate pins. Multiple axis can be implemented using the SIN-7/9 with some AMS products.



This serial communications protocol requires a "character by character" handshake that may, or may not, be practical with all computer operating systems. For more advanced programming and communication protocol techniques the SIN-10 or SIN-11 is recommended.

## RS-422/485 BUS DROP



A complete "Party Line" RS-422 communication network requires:

1. Serial adapter; SIN-8 or SIN-10 or SIN-11
2. BLC-51-X; CAT-5 interconnect cable, 1 per axis
3. A TERM-2; terminator plug in the last axis of system.

## ORDERING INFORMATION

Model #	Description
SIN-10/11	Intelligent Serial Line Adapter with BLC-51-7 and Term-2
SIN-8	RS-232/RS-422 Serial Line Adapter with BLC-51-7 and Term-2
SIN-7/9	RS-232 Serial Line Adapter with BLC-51-7
TERM-2	Terminator Plug
BLC-51-(X)	CAT-5 Patch Cable -1 (1 ft.) -3 (3 ft.) -7 (7 ft.)
USB-1	Universal Serial Bus Adapter (for use with SIN-10/11)