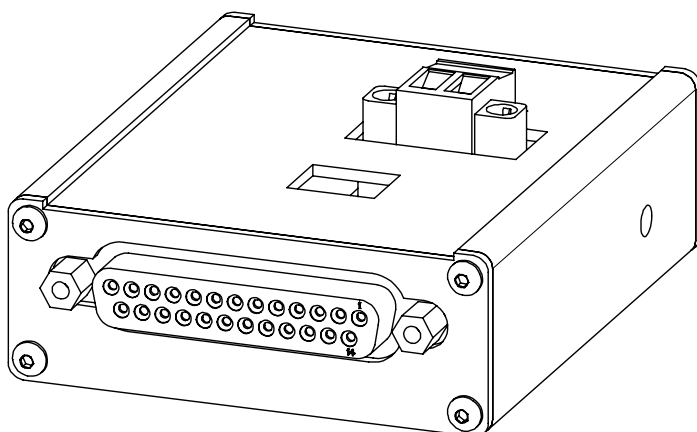




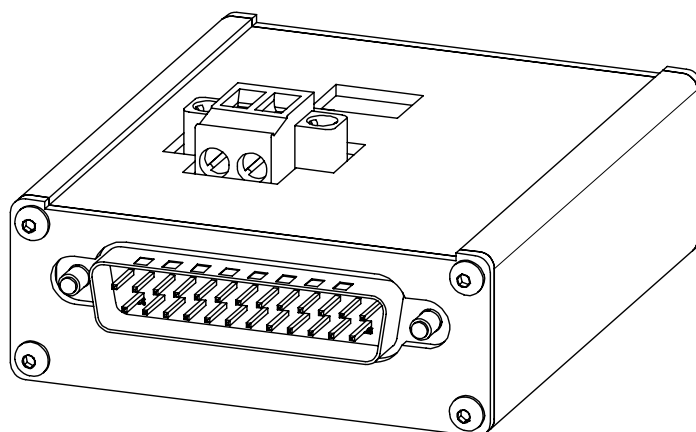
SA-2-MM

Serial asynchronous multi-mode adapter converts RS-232 circuits to V.35, V.36, RS-422, RS-449, EIA-530, or EIA-530A standards; operates stand-alone or powered by CBM's 20 port PP20A/SYNC-DTE/DCEP patch panel.

FRONT VIEW:



REAR VIEW:



DESCRIPTION

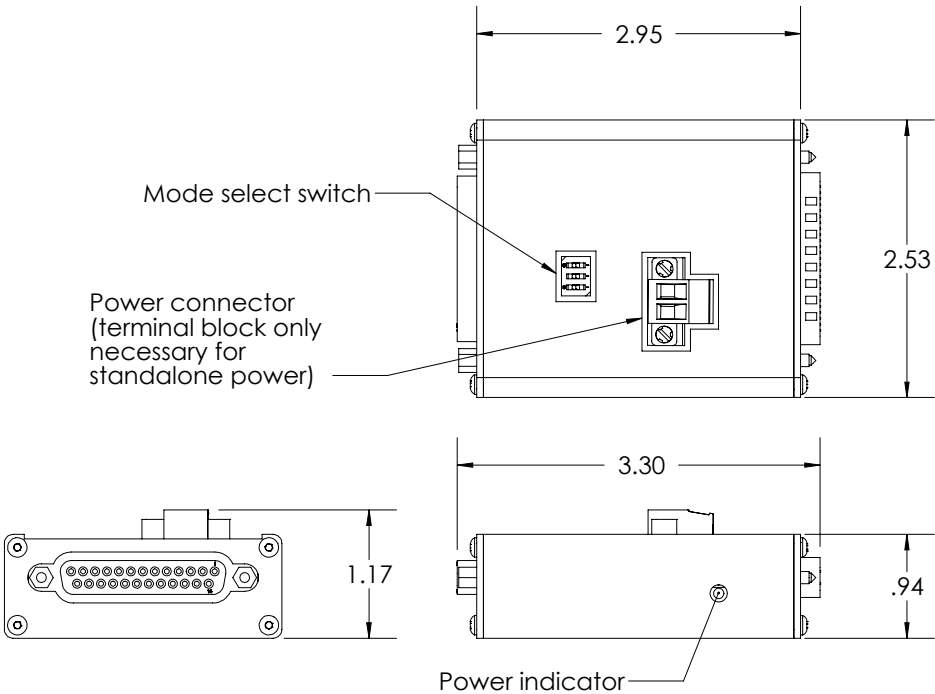
CBM of America's SA-2-MM is a single-port serial adapter that converts RS-232 to a variety of serial standards. It can be used inline between male and female DB-25 connectors; the male end of the SA-2-MM is RS-232 DTE (refer to the pinout tables in this document) and the female DB-25 has a pinout dependent on the selected serial mode.

SA-2-MM adapters are powered by -48 V DC, supplied directly through a two-pin header as a standalone device (suitable for single-port applications), or through unused pins of the male DB-25 connector. This method of supplying power is designed for use with CBM's PP20A/SYNC-DTE/DCEP, a 20-port RS-232 patch panel with power distribution features, which can be fully loaded with SA-2-MM adapters for a complete 20-circuit RS-232 to multi-mode conversion solution.

ELECTRICAL CHARACTERISTICS

Power inlet voltage	36-72 V	Fuse rating, stand-alone power	0.5 A
Absolute maximum current.....	57 mA		

PHYSICAL LAYOUT AND DIMENSIONS



OPERATION

Mode select: use the three-position DIP switch to select serial modes according to the following table (or refer to the pinout section for diagrams of the switch status). The on position is toward the female end of the SA-2-MM.

Serial Standard	Mode select switch channel		
	1	2	3
V.35	On	Off	Off
V.36	On	Off	On
RS-422 with termination	On	On	On
RS-422 without termination	Off	On	On
RS-449	On	On	Off
EIA-530	Off	On	Off
EIA-530A	Off	Off	Off

Stand-alone power: connect 48V DC power to the two-pin terminal block connector provided in the SA-2-MM kit. The device will accept either polarity. Remove the label covering the power inlet of the SA-2-MM, if any, and plug the connector into the header found there. Confirm the power indicator is lit.

Patch panel power: connect the male end of the SA-2-MM to the appropriate port of the PP20A/SYNC-DTE/DCEP. Confirm the power indicator is lit and use the jackscrews on the adapter to secure it to the patch panel.

PINOUT

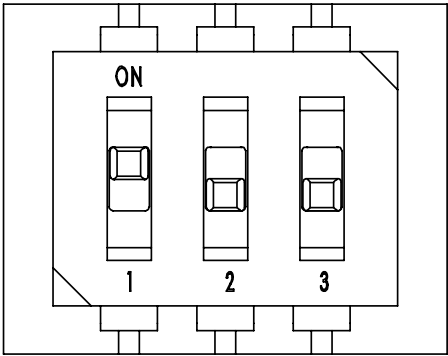
The following table contains pinout information for the male, DTE DB-25 connector, which is always RS-232. DC power at 48 V can be supplied across pins 11 and 25 of each DB-25 connector; CBM patch panels set pin 11 as positive and pin 25 as return, although the SA-2-MM is insensitive to polarity.

RS-232 DTE connector:

DB-25 Pin Number	RS-232 Signal Name
2	TxD
3	RxD
4	RTS
5	CTS
6	DSR
7	Signal GND
8	DCD
11	DC Positive
15	TxC
17	RxC
20	DTR
25	DC Common

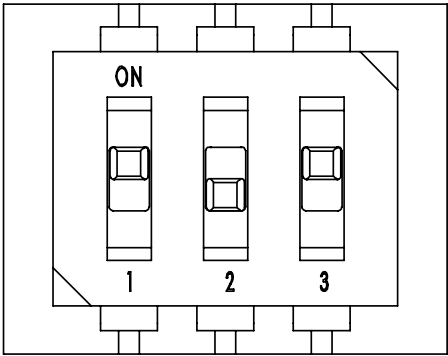
Pinout for the female DB-25 connector is dependent on the selected mode. Tables to follow contain this information for each supported serial standard, next to an diagram of the necessary switch configuration.

V.35 mode:

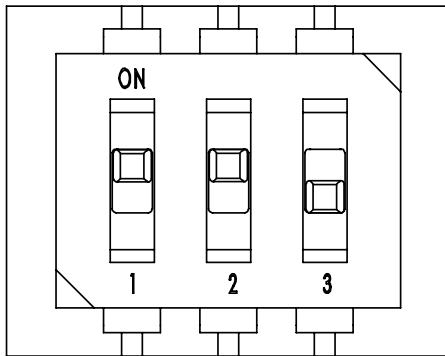


DB-25 Pin Number	V.35 Signal Name
2	TxD
3	RxD
4	RTS
5	CTS
6	DSR
7	Signal GND
8	DCD
9	RxC
12	TxC
14	TxD
15	TxC
16	RxD
17	RxC
20	DTR

V.36 mode:

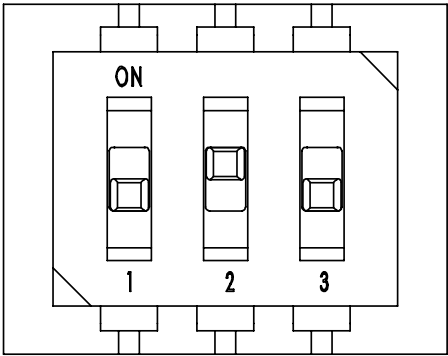


DB-25 Pin Number	V.36 Signal Name
2	RxD+
3	TxD+
4	RTS+
5	CTS+
6	Data Mode +
7	Send Common
8	Receiver Ready +
9	Receive Timing -
10	Receiver Ready -
12	Send Timing -
13	CTS-
14	TxD-
15	Send Timing +
16	RxD-
17	Receive Timing +
19	RTS-
20	Terminal Ready +
22	Data Mode -
23	Terminal Ready -

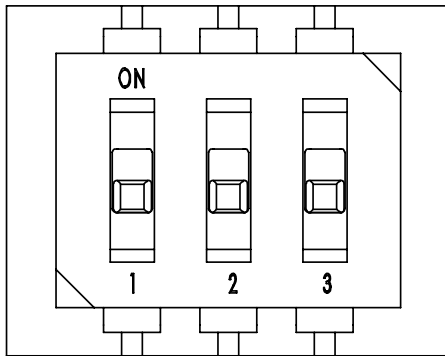
RS-449 mode:

DB-25 Pin Number	RS-449 Signal Name
2	RxD+
3	TxD+
4	RTS+
5	CTS+
6	Data Mode +
7	Send Common
8	Receiver Ready +
9	Receive Timing -
10	Receiver Ready -
12	Send Timing -
13	CTS-
14	TxD-
15	Send Timing +
16	RxD-
17	Receive Timing +
19	RTS-
20	Terminal Ready +
22	Data Mode -
23	Terminal Ready -

EIA-530 mode:



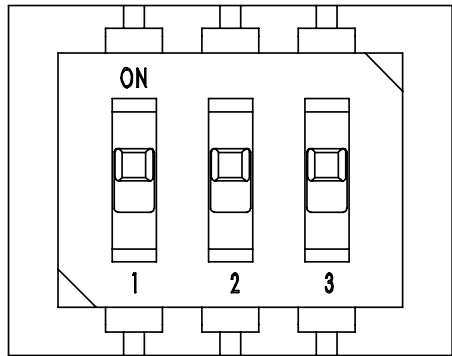
DB-25 Pin Number	EIA-530 Signal Name
2	TxD
3	RxD
4	RTS
5	CTS
6	DSR
7	Signal GND
8	DCD
9	Return Receive Signal Element Timing
10	Return DCD
12	Return Transmit Signal Element Timing
13	Return CTS
14	Return TxD
15	Transmit Signal Element Timing
16	Return RxD
17	Receive Signal Element Timing
19	Return RTS
20	DTR
22	Return DSR
23	Return DTR

EIA-530A mode:

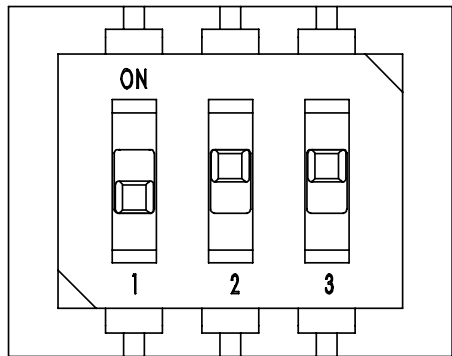
DB-25 Pin Number	EIA-530A Signal Name
2	TxD
3	RxD
4	RTS
5	CTS
6	DSR
7	Signal GND
8	DCD
9	Return Receive Signal Element Timing
10	Return DCD
12	Return Transmit Signal Element Timing
13	Return CTS
14	Return TxD
15	Transmit Signal Element Timing
16	Return RxD
17	Receive Signal Element Timing
19	Return RTS
20	DTR
22	Return DSR
23	Return DTR

RS-422 modes are available with or without 120 ohm termination resistors across the receive data and receive clock pairs, selectable with the switch configurations shown below.

RS-422 mode:



(with termination)



(without termination)

DB-25 Pin Number	RS-422 Signal Name
2	TxD+
3	RxD+
4	RTS+
5	CTS+
6	DSR+
7	Signal GND
8	DCD+
9	RxC-
10	DCD-
12	TxC-
13	CTS-
14	TxD-
15	TxC+
16	RxD-
17	RxC+
19	RTS-
20	DTR+
22	DSR-
23	DTR-