RS232/RS485 Translators - Quick Start Guide

Standard Device Configuration

SBS RS232/RS485 Translators come in two basic versions: Master & Slave. The Slave device has a DCE type RS232 EIA/TIA-561 port for direct connection to the default EDMI RS232 meter communication ports. The Master device is wired as a DTE RS232 device for direct connection to Modems and other concentrator devices offered by SBS. This use can be seen in the example network diagram (Figure 2). In 4-wire configurations the Master version also has the necessary switched Tx/Rx Pairs for direct connection. Both Master & Slave devices have the following default configurations:

RS485 Port: 4-Wire, 9600bps, no parity, 1 stop bit
RS232 Port: 9600bps, no parity, 1 stop bit.

Alternate configurations are available on request. SBS will use an additional label on devices to indicate any non-default parameters. The above settings are currently configurable at time of purchase only. RS232 & RS485 baud rates are able to be set independently if required.

Power Supply Considerations

SBS Translator devices must be supplied with 6 - 18V. Typically this is provided by the EDMI Meters "Modem Power Supply" rated at 12V. The default SBS Translator configuration connects the power supply lines between the RS232 Port and RS485 Ports. This allows the Master Translator to be attached using power over the bus rather than requiring an external power source. This power configuration requires the following considerations:

- Power supply from the network bus is limited by cable resistance. SBS recommends that a single bus powered device on a large RS485 network (40+ devices) operating on a 12V bus should not be positioned further than 20m from the nearest power source using Cat5 cable.
- Since all power supplies connected to these default Translators are injected onto the network bus, the supply voltages must match. SBS can provide "No Connect" and "Diode Protected" alternate supply line connection configurations where necessary. In some cases the use of external power supplies may be necessary.

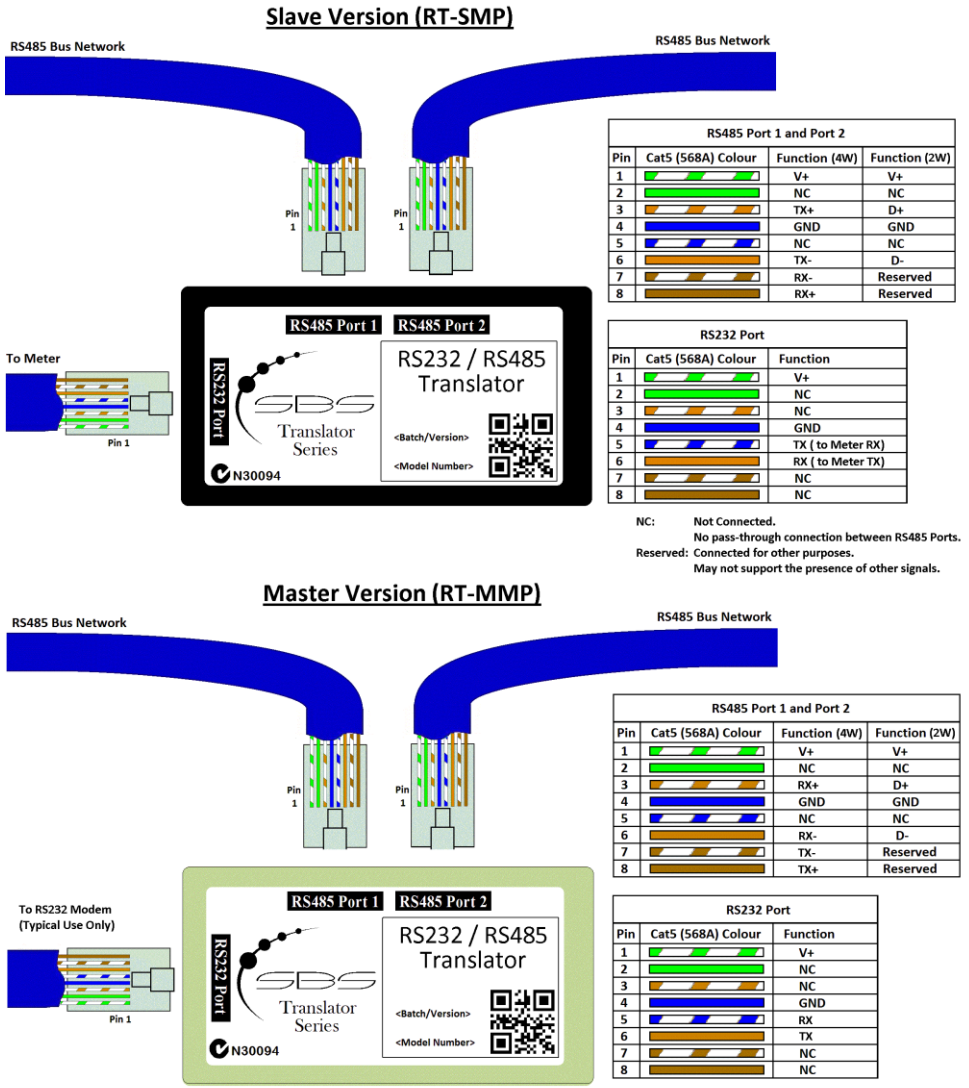

Figure 1: SBS RS232/RS485 Translator Wiring Diagrams

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Example Network

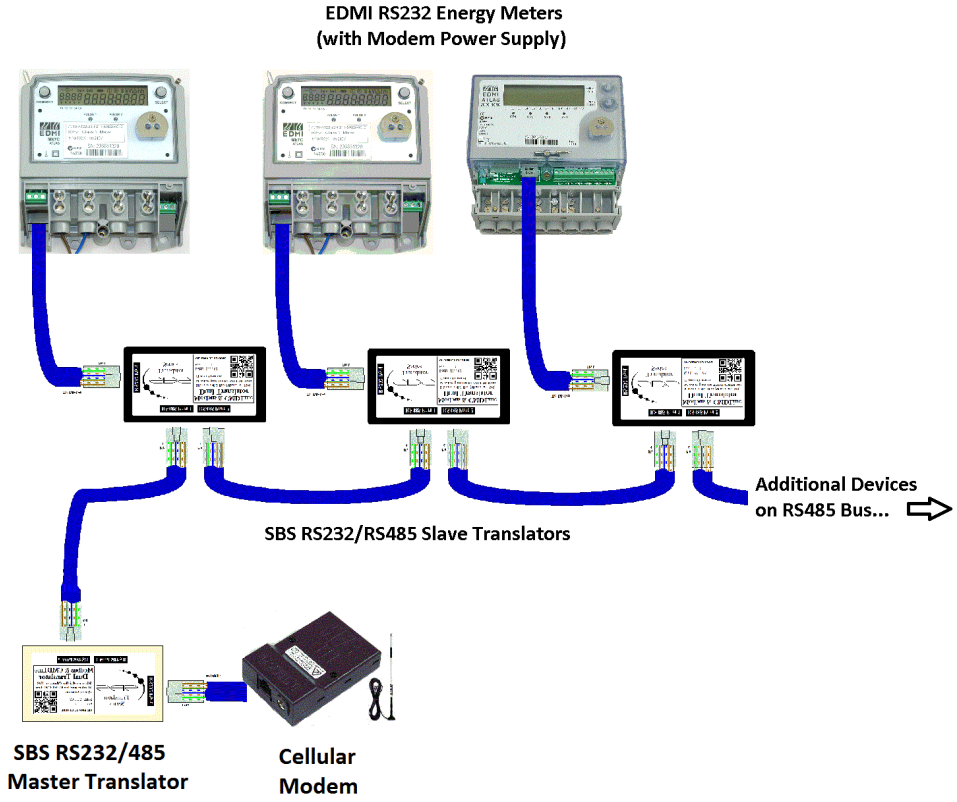

Figure 2: SBS RS232/RS485 Translator example network

Modbus Duo Specific Network Considerations

When a Master RS232/RS485 Translator is used on a SBS Modbus Duo device network the following issues must be considered. These considerations relate to versions prior to V2.20 which includes the current V2.1x units (as of Feb 2013).

- Master RS232/RS485 Translators prior to V2.20 require Pull-Resistors on the RS485 lines to ensure reliable communication with the Modbus Duos. This will be provided internally (Config Label: PR) either on request or if SBS is aware of the inteded use.
- Master RS232/RS485 Translators prior to V2.20 will echo the data coming from the attached RS232 device back to that device when in the default 4-Wire configuration mode. This is due to both the 4-Wire pairs (TX & RX) being shorted onto the 2-Wire Modbus Duo bus. EDMI applications (EziView & MultiDrive) support this echo behaviour however other 3rd party applications may not. If you are using 3rd party applications you may need to order the non-default 2-Wire RS485 configuration (Config Label: 2W).

EDMI Meter Support & Configuration

The default SBS RS232/RS485 Slave Translator supports all EDMI Mk6, Mk7, and Mk10 RS232 Meters. All EDMI Mk6, Mk7 and Mk10 RS485 Meters can also be connected directly onto the same RS485 Bus.

The default SBS RS232/RS485 Master Translator can also be used to convert an EDMI RS485 meter over to RS232. This is simply a single-device RS485 network.

Not all MK6 meters (particularly older versions) use the same connector wiring or supply voltage so custom wiring may be necessary in those cases. The EDMI meters connected to Translators should be configured with matching baud rate and have their communications protocol set to the raw “EDMICommand Line” mode.

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