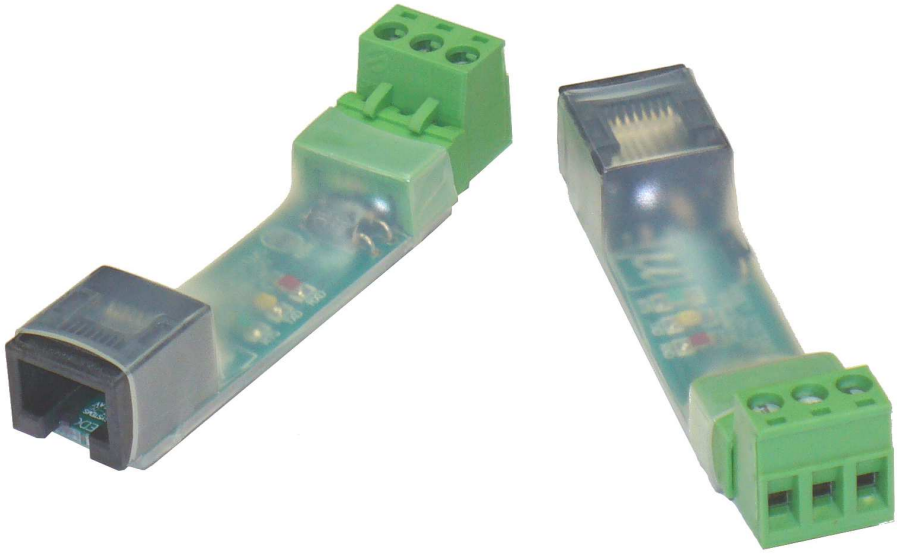
RS232 to RS485 Converter

Model B06-071

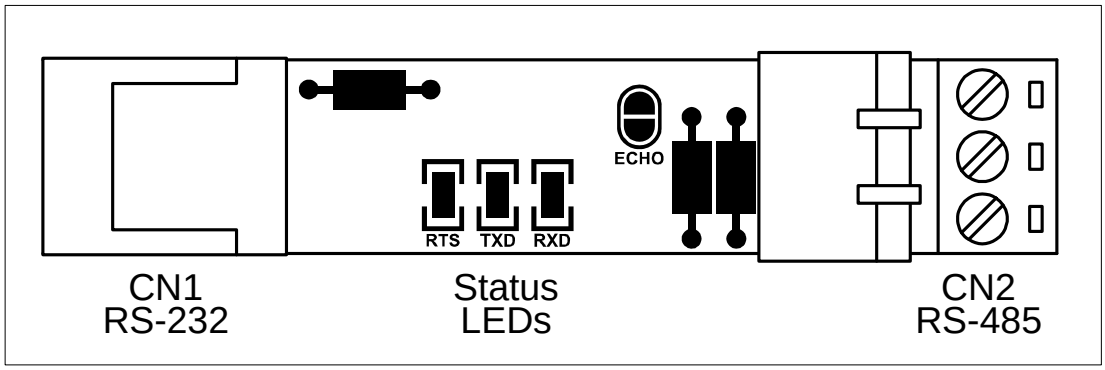
Installation Guide



µAbbey SYSTEMS

Introduction

The B06-071 converts RS-232 serial data to and from RS-485. It is designed for use with the Topcat and Swampfox RTUs to allow communication with one or more IEDs with isolated RS485 interfaces.

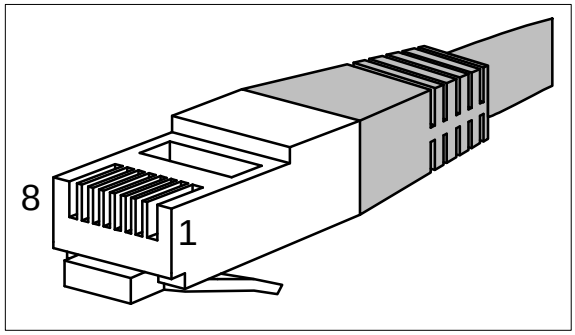


B06-071 Layout

Connection to Abbey Systems RTUs

Use an RJ-45 patch cable to connect CN1 to the appropriate serial port on the RTU.

Pin	Function	Dir
1	Power (8-27.6V DC)	-
2	NC	-
3	CTS to RTU (Linked to PIN 4)	Out
4	RTS from RTU	In
5	Flow Control Out (Always Idle)	Out
6	Transmitted Data from RTU	In
7	Received Data to RTU	Out
8	GND	-



The status LEDs provide an indication on the control and data signals between the RTU and converter:

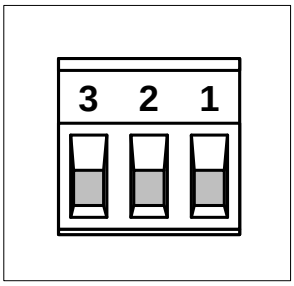
LED	Indicates
RTS	RTS signal from the RTU: Green
TXD	Data received from RTU: Yellow
RXD	Data sent to RTU: Red

Connection to Non-Abbey Equipment

The converter requires the RTS signal to control the RS-485 transmitter. The signal must be active during RS-485 transmission, and inactive during reception.

Power is supplied via PIN 1 and can range from +8 to +27.6V DC, which is normally supplied from the Abbey Systems RTU. A splitter cable can be used to power the converter from a suitable supply if this not available on the equipment's serial port.

RS-485 Connection and Termination



CN2

Looking at the end of CN2, the pin configuration is as follows:

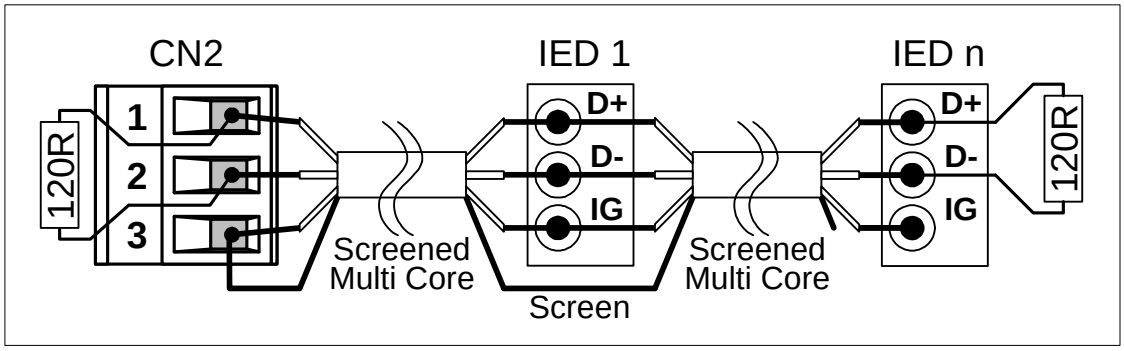
Pin	Function
1	Data+ or A
2	Data- or B
3	GND

Some manufacturers also refer to Data+ as 'Data A', 'True Data', or 'non-Inverted Data' and Data- as "Data B' or 'Inverted Data'.

We recommend the use of three-core screened cable for linking the converter to any IED(Intelligent Electronic Device), with the screen connected to the GND pin of the converter only.

If the cable is of the two-core screened type, use the screen as the GND wire.

The use of 120Ω termination resistors at each end of a long cable run is also recommended to reduce signal reflections. RS-485 communication at low data rates and short cable lengths will normally work without them, but their presence causes no problems so they are always recommended.



RS-485 Connection and Termination

If two or more IEDs are used, make sure they are set to different addresses. Also check the IED documentation to confirm that the IEDs can be multi-dropped, and to find the maximum allowable number and recommended cable length for each IED.

Isolation

The converter does not provide electrical isolation. Isolation is recommended and should be provided by the RS-485 interface in each IED.

Stand-alone products can also provide isolation if there is none present on the IED.

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