

Model ATC-107
RS-232 to RS-422/485 Isolated Interface Converter
User's Manual



1.0 General Description

The ATC-107 is a series of a bi-directional interface converters, Models ATC-107 optically isolate and convert unbalanced, full or half-duplex RS-232 signals to optically isolated, balanced, full or halfduplex RS-422 or RS-485 signals at baud rates up to 115.2 kbps. These units also surge suppress the RS-422/485 lines. They feature Send Data Control circuitry so no software control of handshake lines is required in RS-485 mode. ATC -107 has built-in isolators for high voltage (2500V) protection. It provides Point-to-Point, Multidrop and Simplex Operations. The ATC-107 can be powered from the DC 9V, 200mA power adapter, One slide switches are used to configure its operation mode.

2.0 Specifications

2.1 Interface

Conforms to EIA /RS-232 and RS-422/485 standards.

2.2 Connectors and signals

The ATC-107 has a DB-25 female connector on the RS-232 side and a terminal block connector on the RS-485 side.

RS-232 Side:

Connector: DB-25 Female.

Signals: ATC-107 will be connected into a DTE interface. Use Pins 3 (RXD)、2 (TXD) and 7 (Near side ground) .

Use Pin 2、4、 20 to power from ATC-107 RS-232 side.

RS-422/485 Side:

RS-422 Connector: 4 position terminal block : (1)T+ , (2)T-、 (3)R-、 (4)R+.

RS-485 Connector: 4 position terminal block: (1)485+ , (2)485-.

Signals: Dual-duplex or Half-duplex two-wire/four-wire operation only.

2.3 Data Rate :

300 to 115.2 KBPS, up to 1.2km at 38.4 KBPS.

2.4 Sending Control

The ATC-107 can use handshake lines to power the converter, no handshaking is required to control the RS-422/RS-485 driver. the RS-485 driver is automatically enabled during each spacing state on the RS-232 side. During the marking or idle state, the RS-485 driver is disabled and the data lines are held in the marking state by the 4.7K Ohm pull-up and pull-down resistors.

2.5 Operating Distance

Data Rate (KBPS):	38.4	19.2	9.6	4.8
Maximum Distance (km):	1.2	2.0	2.5	3.5

(using 24 AWG wire)

2.6 Power

At the RS-422/485 side, ATC-107 is powered by an external power supply (+9VDC to +12VDC@200mA) by a AC/DC adapter. At the RS-232 side It powered by RS-232 signals TXD,RTS or DTR ,We only need one of these signals, the ground signals in two sides are different.

2.7 Switches:

RS-422/RS-485 switch selectable for RS-422/485 operation mode.If you set ATC-107 to RS-422 mode , ATC-107 can convert the TD and RD signals of RS-232 into balanced Dual –duplex RS-422 signals.If you set ATC-107 to RS-485 mode, ATC-107 can convert the TD and RD signals of RS-232 into balanced Half –duplex RS-485 signals.

2.8 LED light

One LED indicates sending data to (RED) or receiving data from (GREEN) RS-422/485 bus.

2.9 Isolation :

Optical Isolation is rated at 2500V.

2.10 Dimensions :

8mm × 75mm × 20mm

2.11 Environment :

0* to 50* C, 5% to 95% relative humidity.

3.0 Installation

3.1 RS-232 and RS-485 Interface

In the RS-232 side:

The RS-232 interface is a DB-25 female connector, It can be plug into a DTE interface.

In the RS-422/485 side:

Screw Terminals-The ATC-107 is supplied with 4 screw terminals marked 1(T+)/(485+)、2(T-)/(485-)、3(R-)、4(R+)、.

3.2 Connection Diagram

3.21 ATC-107 connecting RS-422 Device

RS-422 mode

ATC-107		RS-422 Device
(1) T+ -----		R+
(2) T- -----		R-
(3) R- -----		T-
(4) R+ -----		T+

3.22 ATC-107 connecting RS-485 Device

RS-485 mode

ATC-107		RS-485 Device
(1) 485+ -----		485+
(2) 485- -----		485-