USB-RS485 Converter

USB-to-RS485 Converter Cable Datasheet

ACCUENERGY

Compatible with USB and RS485 standards, the USB-to-RS485 converter enables conversion between USB and balanced differential RS485 signals. The converter provides surge protection on each signal line and can operate without an external power source. Featuring low interelectrode capacitance ensures high-speed transmission for RS485 ports. The converter supports point-to-point and multi-drop communication and includes power and data flow indicators that show the communication status.

FEATURES

- Supports USB to RS485 Signal Conversion with a Plug & Play Design.
- Surge Protection for Each Individual Wire.
- Supports Point-to-Point and Point-to-Multipoint Communication.
- Supports 32 Sets of RS485 Devices for Point-to-Multipoint Communication.
- RS485 Data Transfer Baud Rate Ranges from 300 to 921.6 kbps.
- Auto-Controls Data Flow Direction without any Handshake Signal (RTS, DTR).
- DB9 Male Connector with Internal Zero-Delay Auto-Receiving and Transmitting Function.
- Features Power and Data Flow Status Indicators.
- No External Power Supply Required.

SPECIFICATIONS

ELECTRICAL

USB Signal	VCC, DATA+, DATA-, GND, FG
RS485 Signal	T/R+, T/R-, GND
Working Mode	• Point-to-Point • Point-to-Multipoint 2 Wires Half-Duplex
Direction Control	Adopts data flow direction auto control technology, auto distinguishes and controls the data transmission direction.
Baud Rate	300–921.6 Kbps, auto detection
Indicator	TXD, RXD, POWER
Load Capacity	Supports 32 sets of RS485 devices for point-to-multipoint communication.
Port Protection	Surge, 15 KV ESD Protection

MECHANICAL/ENVIRONMENTAL

Connector	USB-A Male, DB9 Male
Transmission Media	Twisted Pair or Shielded Cable
Length	1,500mm
Transmission Distance	1,200m for RS485 Port <5m for USB Port
Working Environment	-40°C - 85°C, RH 5% to 95%
Storage Environment	-40°C - 85°C, RH 5% to 95%
Standards	USB V1.1, 1.0, 2.0, RS485 EIA
OS Support	Windows/Mac/Linux

SUPPORTED MODELS

Acuvim 3   Acuvim II   Acuvim L   AcuRev 1310

AcuRev 2100   AcuDC 240   EV300

KEY FEATURES

Meter Configuration & Testing

+ The USB-to-RS485 converter enables the operator to configure energy meters by connecting them directly to the laptop, performing necessary tests and making adjustments before integrating them into the system.

Integration with Building Automation Systems

+ The USB-to-RS485 converter enables communication between meters and building automation systems. For smaller or temporary projects, a laptop running BAS software can sometimes act as a controller when connected with a USB-to-RS485 converter.

Multi-Meter Network

+ When the meters are connected in a daisy chain, the USB-to-RS485 converter allows the operator to use one laptop to monitor, control, and collect data from multiple energy meters in the chain.
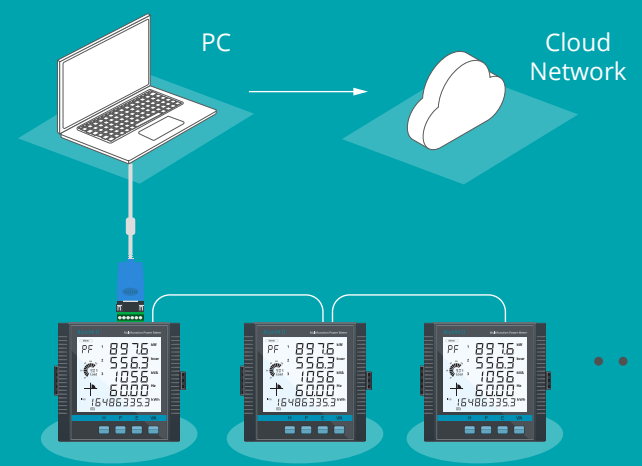
Temporary Backup During Downtime

+ When the data collection system of the metering network fails, operators may use a laptop paired with a USB-to-RS485 converter to collect data, providing a low-cost, temporary data logging solution.
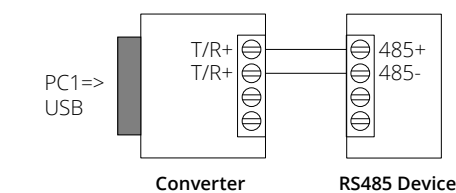
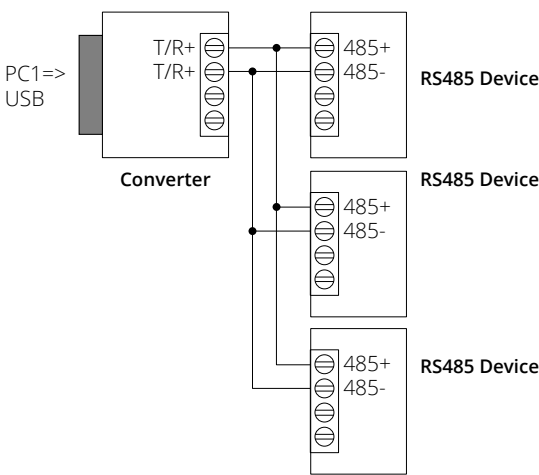## APPLICATION

Point-to-Point Connection

PC

Cloud Network

Current Inputs

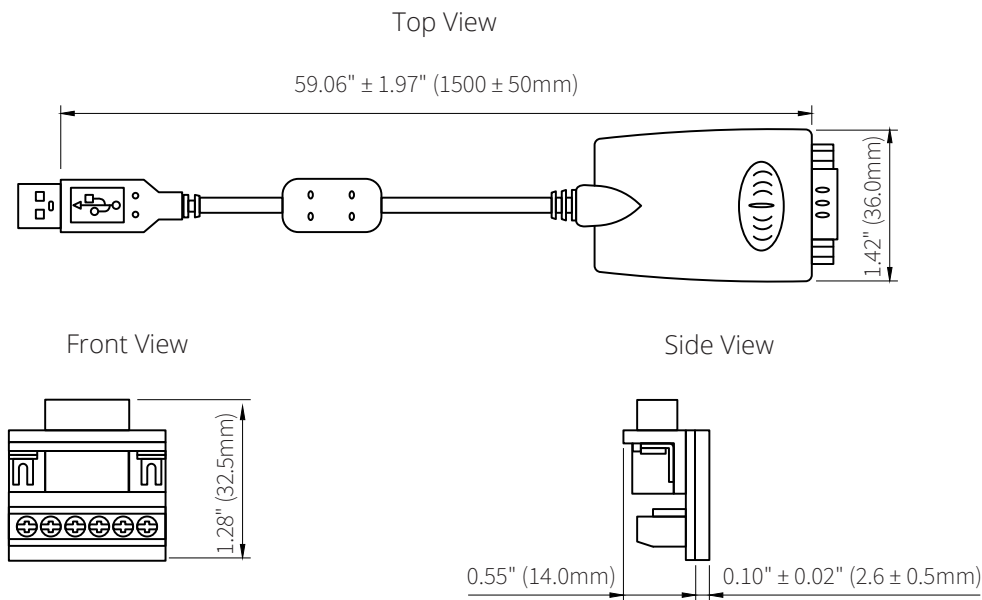5A/1A, 333mV, 80mA, 100mA, 200mA

Rogowski Coil
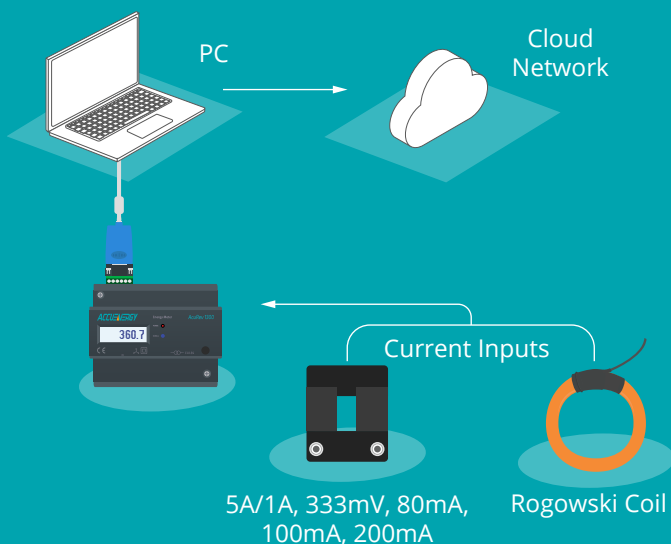
Multidrop Connection

PC

Cloud Network

WIRING DIAGRAMS

RS485 Point-to-Point / 2-Wire Half Duplex

PC1=>
USB

T/R+
T/R+

485+
485-

Converter   RS485 Device

RS485 Point-to-Multipoint / 2-Wire Half Duplex

PC1=>
USB

T/R+
T/R+

485+
485-   RS485 Device

Converter

485+
485-   RS485 Device

485+
485-   RS485 Device

DIMENSIONS

Top View

59.06" ± 1.97" (1500 ± 50mm)

1.42" (36.0mm)

Front View

1.28" (32.5mm)

Side View

0.55" (14.0mm)   0.10" ± 0.02" (2.6 ± 0.5mm)

Connector Pin and Signal

DB9 (PIN)	OUTPUT SIGNAL	RS485 HALF DUPLEX
1	TR+	RS485 (A+)
2	T/R-	RS485 (B-)
5	GND	GND

DB9
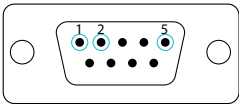
USB-A
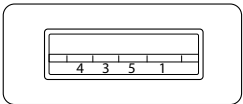
Ordering Information

Ordering Number	USB-RS485