

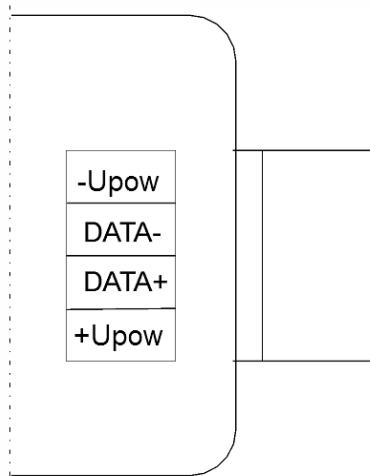
# USB/RS-485 Converter with galvanic separation

- Converting USB standard to RS-485, providing power to USB port, speed up to 115200bps
- Galvanic separation, option to power fuel level probe with +15V voltage
- LEDs signaling work status and data transmission
- Easy installation on a PC

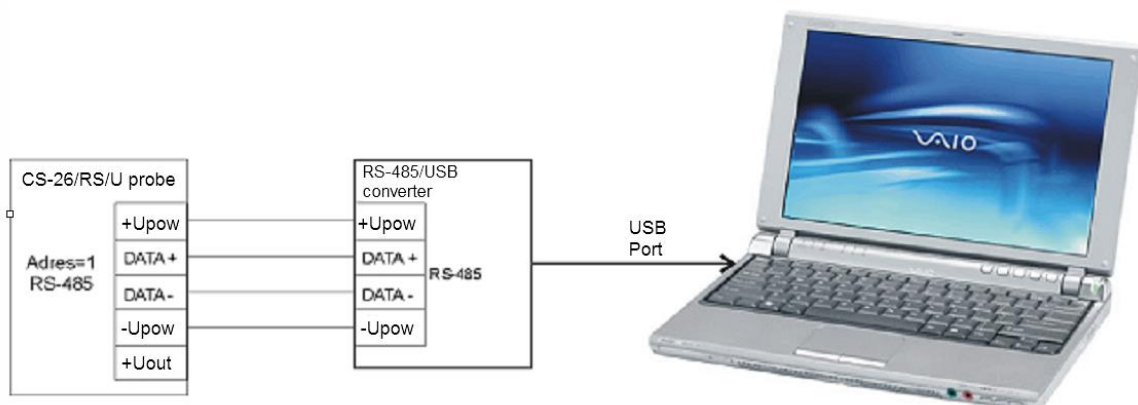
PIC.1 Converter.



PIC.2 Converter output terminals – view from housing base.



PIC.3 Converter to probe and computer connection diagram.



## Purpose

The converter is designed to connect the RS-485 interface of fuel level probe to a PC via USB port and to provide power to the probe with constant voltage of ca. +15V.

RS-485 circuit (DATA+, DATA-) and ground (-Upow) and power (+Upow) terminals of the probe are galvanically separated from USB port (pic. 2).

## Structure and operation

The basic element of the converter is the FT232BL integrated circuit which converts USD standard signals to UART standard signals. The speed of data transmission stays within the range of 300bps to 115200bps. To convert voltage levels of UART standard to voltage levels of RS-485 a MAX584 circuit is used. The circuit is controlled with transistor connected with FT232BL circuit terminals and powered by a +5V/+15V converter circuit with 1W output power with +5V voltage stabilizing circuit connected. Green LEDs are used to indicate power in the converter, and red LEDs to indicate transmission. The converter can provide power to a receiver (e.g. fuel level probe) with ca. +15V rated voltage and maximum power consumption of 65mA. A voltage safety device is used in the converter to protect it from the effect of short circuit in power output terminals (+Upow and -Upow).

## Connection

The converter should be connected to the CS-26/RS/U fuel level probe and computer according to pic. 3.

**Technical specification**

USB Standard	USB1.1 and USB 2.0
USB connector type	USB type B
RS-485 connector type	15EDGK-3.81 ; 250V/7A ; 0,5...1,5mm <sup>2</sup>
Transmission speed	300...115200 bps
Maximum number of receivers / transmitters	32 ; internal polarizing resistors 470 Ω
Differential output voltage (TxD)	5V (min.1,5V)
Receiver input resistance (RxD)	12 kΩ
Minimum input voltage (RxD)	0,2V
Acceptable voltage at terminals DATA+,DATA-	+/- 12V
Power	from USB port
Power consumption – for 1 fuel level probe connected	ca. 120mA (200mA with shorting +Upow and -Upow)
USB/RS-485 galvanic separation	1000VDC
Working temperature	0...+50°C
Storage temperature	-20...+60°C
Weight	ca. 70g
Dimensions (without connections)	(60x35x20)mm
Operating system for VCP (Virtual COM PORT Drivers)	Win98/98SE, Win2000/ME/Server 2003/XP Windows Vista, Windows 7 MAC OS-8 and OS-9, MAC OS-X, Linux 2.40

**Ordering****USB/RS-485 Converter**

## Note:

1. As a standard, a 1.5m USB cord, with a USB-A and USB-B type plug on its end, and a disc with USB port driver are included in the converter set.
2. When ordering the CS-26/RS/U fuel level probe, the attached disc contains Tester\_1.4.1 configuration software and a help file with the software instruction manual 'CS-26 probe parameter configuration'.