



AVS47-Serial/USB-F CONVERTER

The AVS47-Serial/USB-F is an external protocol converter for the AVS-47B AC Resistance Bridge. It changes the proprietary low-level low-noise synchronous primary interface (called “Picobus”) of the bridge to comply with the common asynchronous RS232 hardware standard. With this converter, interfacing is possible with any computer type, operating system and programming language as long as they support RS232 communication in its simplest form: 9600, 8, N, 1 without handshaking. By comparison, the primary interface without a converter is supported only for a Windows-PC running LabView.

The AVS47-Serial/USB-F differs from the AVS47-Serial/USB-W by providing an **optical fibre link** between the bridge and the remote computer. This all-plastic cable is 100% sure not to bring high frequencies into a shielded space from outside, providing the best available safety against all kinds of interference. From the software point of view these two versions are exactly similar.

The converter consists of two boxes. Box 1 is located in the experimental area, near to the bridge, while box 2 should stay outside the shielded room. Even if the cryostat is not in a Faraday cage, a long physical distance - 5m or optionally 10m - can still be valuable.

Box 2 is usually connected to a **USB-232 adapter** (not included - it must be supplied by customer for ensuring compatibility with his platform. Refer also to “Options”).

The USB-232 adapter creates a virtual RS232 port, which the computer’s application program can access via the computer’s USB port. If the computer has a physical RS232 port, no USB-232 adapter is needed.

This device is based on the very popular Arduino Mega2560 circuit board.

The **User Guide** can be downloaded from our WEB site for more detailed information.

SPECIFICATIONS

REMOTE CONTROL COMMANDS: Remote/local, Input(zero, measure, calibrate), Multiplexer channel, Range, Autorange with settling delay, Excitation, Display selector, Deviation reference, Nulling the deviation.

REMOTE CONTROL QUERIES: Remote, Input, Multiplexer, Range, Excitation, Display selector, Reference, Reference source, Magnification, Polarity, Adc Overrange, Autorange.

MEASUREMENT COMMANDS AND QUERIES:

Res X: make X a/d conversions and calculate their mean value. Res? returns this value in ohms (floating point).

Adc X: make X a/d conversions and calculate their mean value. Adc? returns an integer -19999...+19999.

OTHER COMMANDS FOR AVS-47B: Queries for Identification, firmware and hardware versions, Operation complete and Error. Commands: Line terminator, Command delimiter, Stabilisation delay and Reset.

COMMANDS FOR TS-530A: Set point, Proportional gain, Integrator time, Derivation time, Output bias, Power range. Heater output voltage and current are read via the AVS-47B.

DIMENSIONS (BOTH BOXES): 130 x 105 x60 mm (L x W x H)

INCLUDED IN AVS47-USB/232-F ORDER:

AVS47-Serial/USB-F Converter, 1.5m cable (bridge<=>box 1), 5m Picolink Optical Fibre Cable, 1.5m RS232 cable (box 2<=>USB-232 adapter or computer), regulated +12V DC wall adapter.

Options:

Picolink Cable length increased to 10m

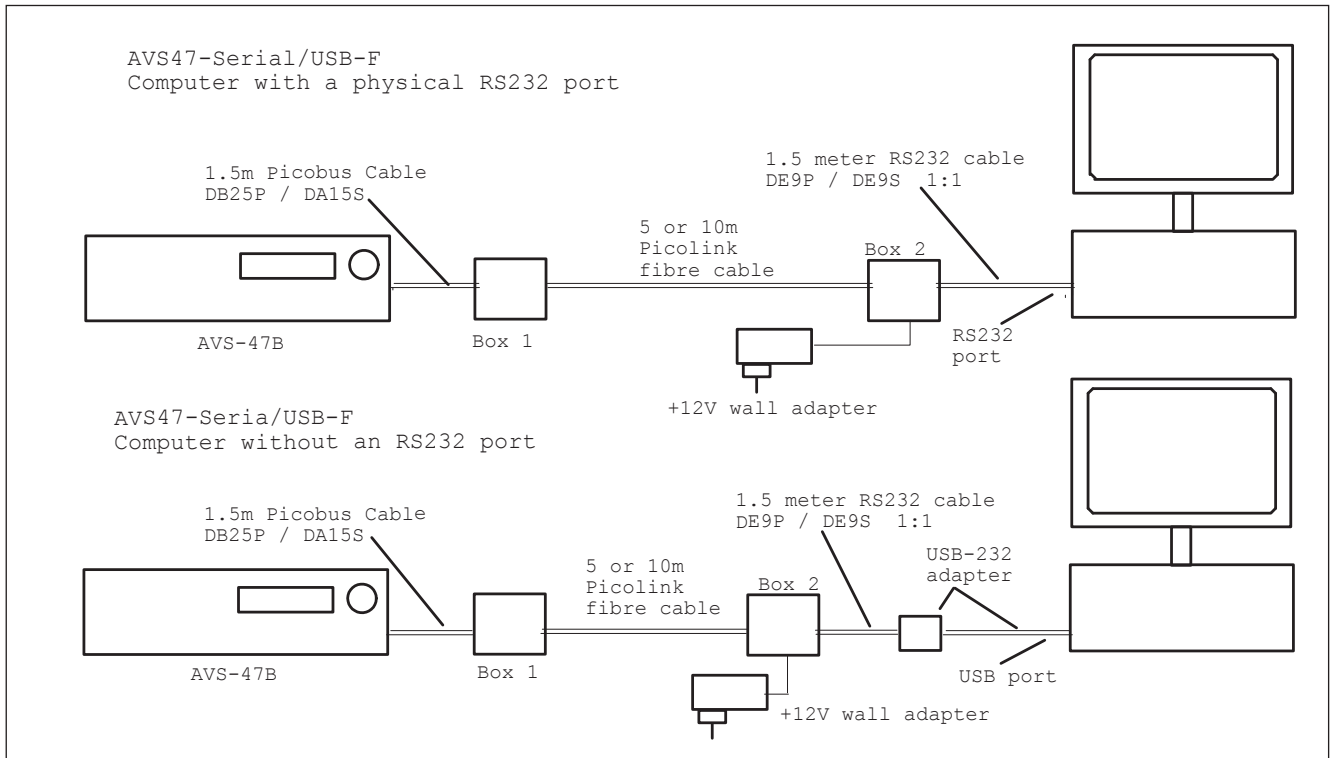
USB-232 Adapter (National Instruments part No. 778472-01). Verify first the suitability of this adapter and its drivers for your system.



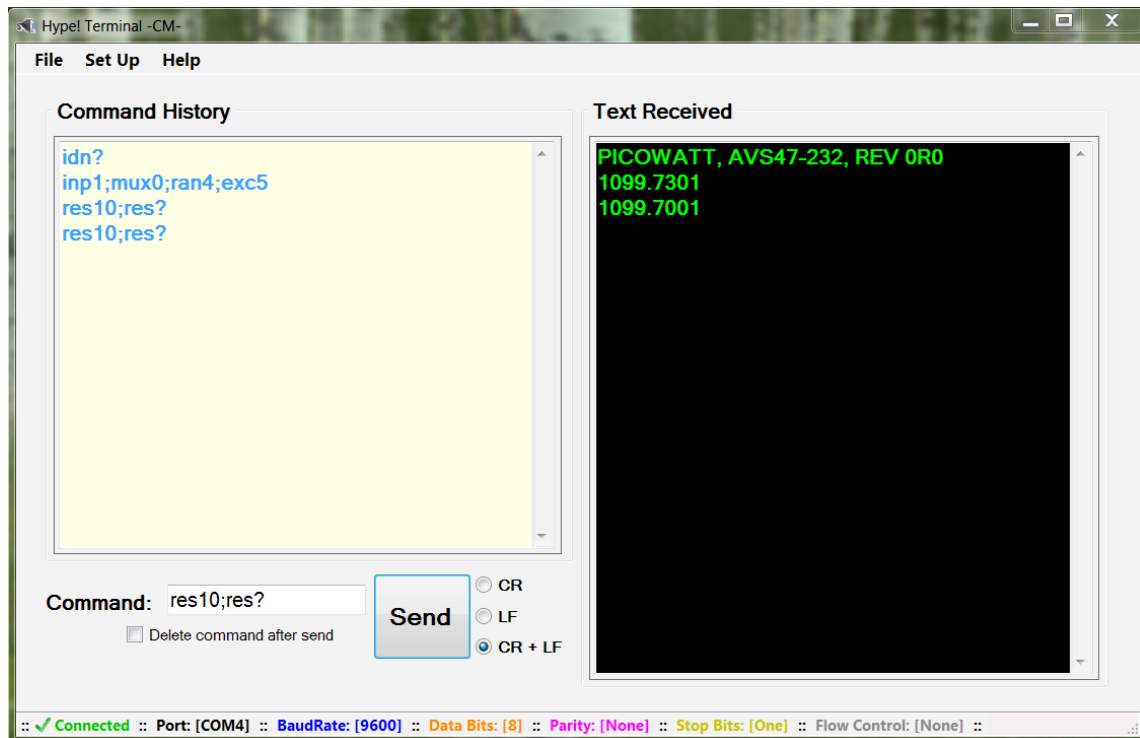
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AVS47-Serial/USB-F Converter

Serial Interface with Optical Fibre Link



There are two ways to connect the AVS47-Serial/USB-F: Either directly to computer's RS232 port, or via a USB-232 adapter to computers USB port. The USB adapter creates a virtual RS232 port that your high-level program can access via its USB port.



A free downloadable RS232 terminal program from WEB can be useful for getting acquainted with the AVS47-Serial/USB-F. This example shows the simplicity of using typical commands and queries.