



AVS47-Serial/USB-W CONVERTER

The AVS47-Serial/USB-W 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 converter box is connected to the AVS-47B by a **galvanically isolated 5-meter wire cable** (different lengths can be made upon request) and it is intended to be kept far from the experimental apparatus. It is recommended to ground the shielding braid of the cable to e.g. the conducting wall of the cryostat room in order to eliminate possible antenna effects inside the room. AVS47-Serial/USB-W differs from AVS47-Serial/USB-F in that the latter has an optical fibre cable and consists of two boxes. From the software point of view they are exactly similar.

The computer is connected to the converter box via a **USB-232 adapter** (not included - it must be supplied by customer in order to ensure compatibility. 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 this value as 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: 130 x 105 x60 mm (L x W x H)

INCLUDED IN AVS47-Serial/USB-W ORDER:
AVS47-Serial/USB-W Converter, 5-meter Picobus cable (DB25P/DA15P), 1.5-meter RS232 cable (DE9P/DE9S), 12V DC wall adapter.

Options:

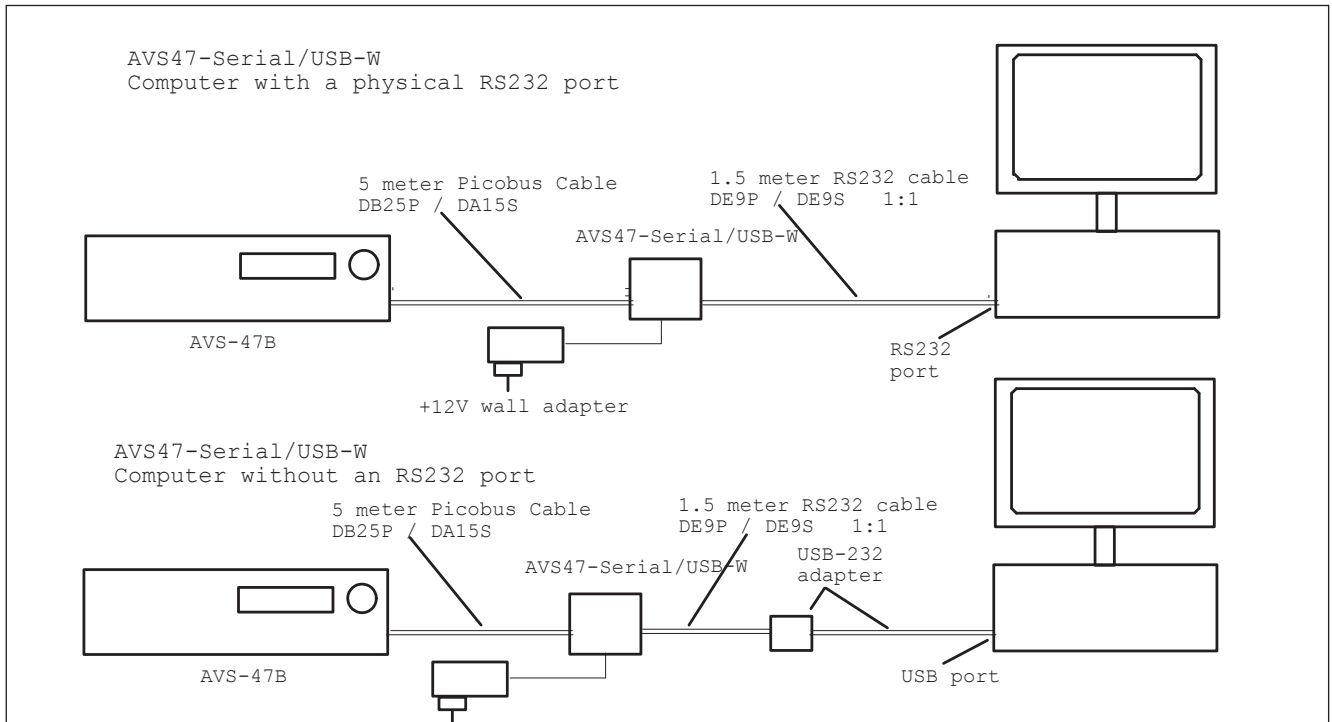
USB-232 Adapter (National Instruments part No. 778472-01). Verify first the suitability of this adapter and its drivers for your platform.



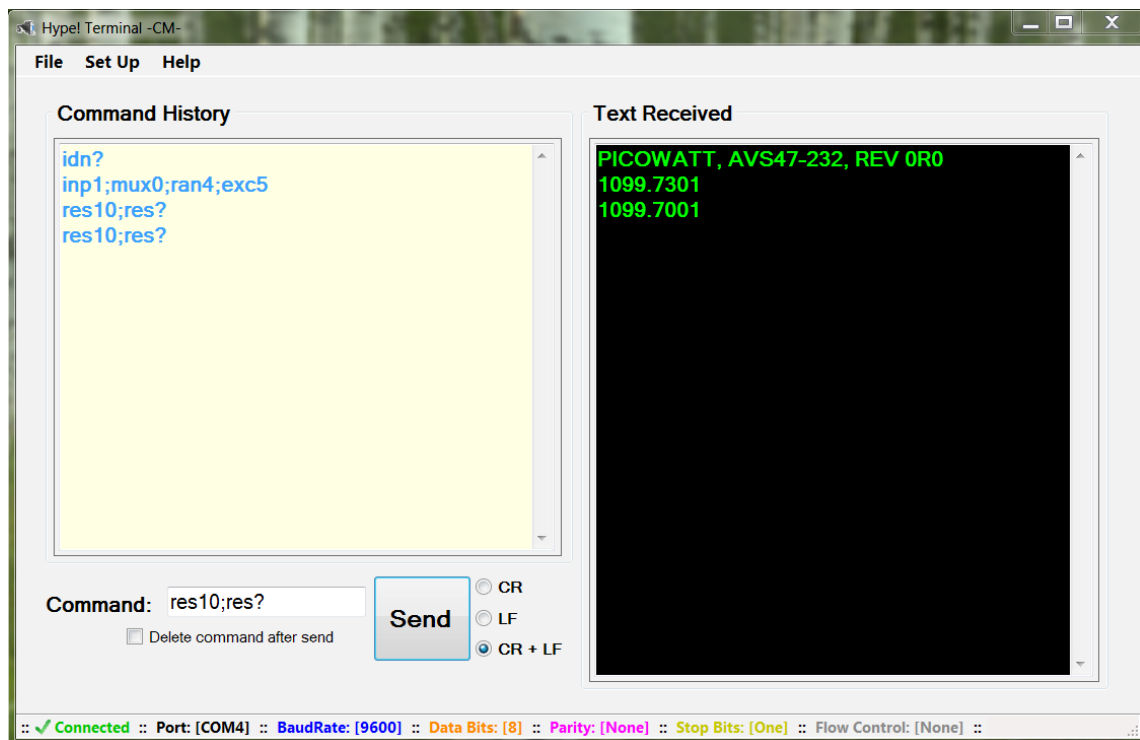
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For Interfacing the AVS-47B with Computers



There are two ways to connect the AVS47-Serial/USB-W: 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-W. This example shows the simplicity of using some typical commands and queries.