



PICOLINK -

A New Optical Fibre Link Between the AVS-47 and AVS47-IB

PICOLINK is our response to requests from customers struggling with ground loops in their resistance thermometry systems. It is a low-speed fibre optic link connecting the AVS47-IB Interface to the AVS-47 Resistance Bridge. The PICOLINK option is installed in the factory into a new bridge and a new interface which are purchased together. The optical link becomes an alternative to the standard Picobus cable. If the original Picobus is needed - e.g. for connecting the AVS-47 directly to a PC- then the PICOLINK can be easily disabled.

Optical fibre links that are available for RS232 communications cannot be used with the synchronous Picobus protocol. The reason is that we require four fibres instead of only one or two. Therefore we based the PICOLINK design on four low-cost 1-millimeter plastic fibres. These fibres are placed in a common tube, which is heat shrunk to form a cable of about 6-8 mm in outer diameter. The length of the standard cable is 5 meters.

The PICOLINK further consists of two receiver/transmitter circuit boards which are mounted on the inner sides of the AVS47-IB and AVS-47 rear panels. The emitters and receivers do not require connectors: the fibre ends are just pushed into them and tightened. The fibres can be cut using a sharp knife, if the ends must be renewed for some reason. In addition to lower price, one advantage of a connectorless cable is that it can be pulled more easily through the wall of the shielded room.

Fehler! Textmarke nicht definiert.

The PICOLINK provides the best solution when a ground current would flow via the Picobus cable. The new EMC regulations have prevented us from disconnecting the cable shield from the safety ground at neither end of the cable. As the firmly grounded cryostat and the computer are often (and hopefully) in separate rooms, ground currents are frequent and very tedious and tricky to get rid of.

PICOLINK is completely transparent in use. It may also be possible to use a cable longer than 5 meters, but then the speed of the transmission must be lowered resulting in a possible reduction in data acquisition speed.

PICOLINK uses visible red light, which makes it easier to verify its operation.

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