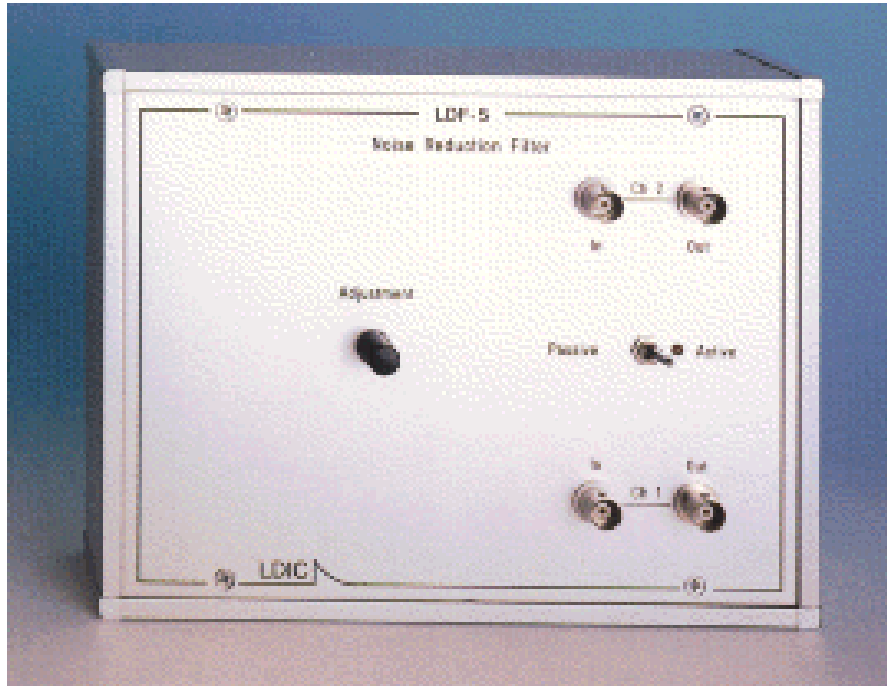


NOISE REDUCTION FILTER

LDF-5



The noise reduction filter LDF-5 is designed for application in connection with the PD measuring systems of LDIC in order to improve the electromagnetic compatibility in the measuring surroundings.

On one hand the LDF-5 can reduce the disturbing influence of high frequency currents along the measuring cable screen. Such noises may be caused, for instance, by power thyristors or computers and travel then along the outer shielding conductor of the measuring cable between HV test circuit and PD detector reducing in this way the signal-to-noise ratio. On the other hand, noises due to radio interference voltages (RIV) in the medium frequency range may be reduced more or less by means of the LDF-5. In this context it has to be stressed, that the noise reduction is a very complex matter and needs a lot of experience. The LDF-5 may be an useful tool, but it is not always able to solve the extremely difficult problems related to electromagnetic compatibility in PD measurement technique.

Using the LDF-5 the noise reduction becomes only effective, if the length of the measuring cable between the measuring impedance LDM-5 and the PD detector exceeds about 10 m. In this case the LDF-5 has to be installed between the LDM-5 and the LDD-5. Usually it should be located close to the LDD-5. The LDF-5 contains two channels; both capable to cut off the mentioned cable screen noises. In this case the BNC connector "PD Pulses" of the LDM-5 has to be connected via a 50 Ω BNC-cable to the BNC connector "In (CH1)". The BNC connector "Out" must be connected to the input "PD INPUT" of the PD detector.

Channel "CH1" is additionally helpful to suppress radio interference voltages (RIV) in the medium frequency range. Setting the mode switch to the position "Passive" and tuning the potentiometer "Adjustment" slowly it has to be tuned for the optimum signal-to-noise ratio. This procedure, however, may not always be successful, especially if the main noise source is located close to the supplying network and the electromagnetic transients are travelling from the PD detector to the HV test circuit, as usually not expected. In some cases it may be helpful to increase the measuring sensitivity, setting the mode switch to the position "Active". Channel "CH 2" is intended to cut off cable screen noises in the path of the test voltage signal derived from LDM-5/U.

Of course, the active operation mode works only, if a powering battery, 9 V type 6LR61, is installed at the bottom of the LDF-5.