

1-channel power supply unit MN 921



Adaptor A 92



Measuring amplifier with power supply, 1 channel MN 921

for conventional measurement microphones (7-pin LEMO) and IEPE* microphones (with adaptor A 92),

The MN 921 is a 1-channel power supply unit for measurement microphones. Between the input (MIC) and output (OUT) a precision measuring amplifier with changeable amplification is connected. It adjusts the dynamic range of the measuring signal to the input dynamic of the following evaluation instrument. Additionally it is a driver for capacitive loading, e. g. long BNC-cables at signal outputs. When the user switches on the MN 921 with flush-mounted switch on the rear panel then on the front panel a green light-emitting diode will light up. This indicates that the internal operating voltage is available. The power supply is optional powered by batteries, accumulators or main. It provides all necessary voltages for a condenser measuring microphone (pre-amplifier-, polarization- and heater voltage). These voltages are absolutely indirect-coupled (no mains hum on the output signal) and are available on the LEMO-socket (MIC). The output for amplifier operating voltage (120 V) is short-circuit proof and the polarization voltage is controlled at $\pm 0,1$ V. For pre-polarized measuring microphones the polarization voltage can be switched off. The MN 921 can supply measurement microphones with IEPE-connection (ICP® etc.) in use with the adaptor A 92. The A 92 has a LEMO-socket and adapts on a BNC-connector.

It exists a level indicator for visual control of output signal at BNC connector (OUT), which assures that the output signal is within the operating range of the amplifier. It averts mistakes through signal clipping when a too large gain is chosen. To dampen infrasonic disturbances on the signal you can switch a high pass second order before the output. When connecting the AC mains adaptor during operation in accumulator or battery modus, the MN 921 automatically switches to DC voltage from the mains adaptor. Thereby the charge of the elements in the battery box is reserved for the next use without mains adaptor. While the device runs in accumulator or battery modus the heater can not be activated to save energy. For this reason the level indicator switches from line-LED-display to single-LED-display. To assure a correct functioning of the power supply and measuring amplifier during operation with accumulators or batteries at all times, the MN 921 shut down as soon the total discharge level is reached. Immediately before the total discharge has been reached the LED (B-Low) lights up.



Technical specifications

Voltage for measuring microphone supply with Lemo-connection

Operation voltage for measuring preamplifier	119 V \pm 1V DC / 1,8 mA
Polarization voltage	0 V / 200 V \pm 0,1 V DC / 0,1 mA
Heater voltage	0 V / 5,5 V DC / 30 mA

Voltage for measuring microphone supply with IEPE-connection (with adaptor A 92)

Constant current	4 mA
Polarization voltage	24 V DC

Measuring amplifier:

AC-output voltage U_a max.	2,6 V _{eff} (K < 0,1 %)
AC-input voltage U_i max., gain = 0,0625	41,6 V _{eff}
Frequency range (high pass of cable capacity on the output connector $C_L = 100$ pF)	3 Hz ... 1 MHz ($\pm 0,1$ dB) 0,4 Hz ... 1 MHz (± 3 dB)
Max. frequency f_{max} at U_a max. and $C_L = 15$ nF	100 KHz (K < 0,1 %)
	$C_L = 47$ nF 20 KHz (K < 0,1 %)
Max. dynamic range (gain = 128)	138 dB
Gain switchable, 12 steps per gain = 2^n (n = -4 ... +7), $\pm 0,1$ %	
Switchable high pass with limiting frequency, active, 40 dB / decade	16 Hz (-3 dB)

Selfnoise voltage U_G (A-weighted) of MN 921 at output relative to input (input short-circuited, high pass out)

V = 0,0625	25 μ V _{eff}
V = 1	650 nV _{eff}
V = 128	330 nV _{eff}

Level indicator of measuring amplifier

Display range	81 dB (9 x 9 dB)
Overload LED (red) on at U_a	2,7 V _{eff}
1. LED (green) on at U_a	240 μ V _{eff}

Voltage from external AC mains adaptor at low voltage connector:

MN 921	6 ... 25 V DC / 400 mA
Battery box MN 921 battery / accumulators, size AA	2 x 1,5 V / 2 x 1,2 V
Display for AA-elements empty "B-LOW" - LED (red)	< 2,2 V
the device shuts-off	< 2,0 V

Max. battery-supplied operating time with connected measuring microphone preamplifier MV 203 (94 dB SPL, 1kHz) at 2 x 2500 mAh nickel metal hydride accumulator ca. 5 Std.

Dimensions	126 x 86 x 35 mm
Weight without AA-elements	280 g
connectors	Lemo-socket EPG.1B.307.HLN Rosenberger BNC-angle-adaptor 51 K 216 - 400 Low voltage-DC-socket DC8 for \varnothing 1,3 mm with A 92 - BNC connector Low voltage-DC-connector for AC mains adaptor DCP3 \varnothing 1,3/3,5 mm, length 9,0 mm