

Product Data

Dual Microphone Supply — Type 5935 & 5935 L

USES:

- Dual channel microphone preamp. power supply
- Use with Falcon® Range Microphone Preamplifiers (Type 5935 L)
- Use with Deltatron® accelerometers and Microphone Preamplifier Type 2671 (Type 5935)
- Use with Sound Quality Head and Torso Simulator Type 4100
- Switch between two measurement positions without having to reconnect the equipment
- High quality field and laboratory measurement systems

FEATURES:

- Amplitude- and phase-matched channels
- Charge injection calibration (Type 5935 L)
- Internal batteries for portability – alkaline or NiCd
- Fits modular cassette system for rack mounting
- 0 V, 28 V or 200 V microphone polarization voltage
- Selectable linear or A-weighted frequency response for each channel
- -5 dB to +55 dB channel gain range

Dual Microphone Supplies Type 5935 & 5935 L are dual channel power supplies and conditioning amplifiers for microphone preamplifiers and DeltaTron® accelerometers.

The units are primarily for use in the field, giving laboratory standard specifications without compromise. Type 5935 has Brüel & Kjær 7-pin input sockets and 5935 L has LEMO 7-pin input sockets for use with Falcon Range Microphone Preamplifiers.

Portability is a key feature, allowing high quality microphone and accelerometer signals to be presented to measuring instruments in the field. The casing can also be rack mounted, where the addition of an external supply makes the Type 5935 & 5935 L a practical laboratory instrument.



Overview

Dual Microphone Supplies Type 5935 & 5935 L each have two main functions. Firstly, the unit supplies the necessary power to attached microphone/preamplifier assemblies, including microphone polarization

voltages. Secondly, active circuitry makes it possible to amplify the output of the preamplifiers or accelerometers by up to +55 dB and to apply an A-weighting filter.

The audio channels are independent, but are electrically identical, giving excellent phase characteristics and minimal gain difference between

channels. The active circuitry has a high specification and will not unduly degrade signals before sending them to connected apparatus.

Type 5935 L powers the Brüel & Kjær Falcon® Range Microphone Preamplifiers and supports charge-injection calibration.

Connections

Except for the Type 2660, all standard Brüel & Kjær Microphone Preamplifiers can be connected to the front panel 7-pin input sockets. Type 5935 has 2 Brüel & Kjær 7-pin sockets and Type 5935 L has 2 LEMO 7-pin sockets for connecting Type 2669 L. The DeltaTron[®] preamplifier is connected to Type 5935 via an adaptor (ZG 0328). Through these input sockets, preamplifiers receive the power to drive their internal circuitry.

Type 5935 & 5935 L provide the polarization voltages necessary for all Brüel & Kjær Microphones; 0 V, 28 V and 200 V. These voltages are sent via the front panel sockets, which in the case of Type 5935, also supply heater current for dehumidification if an external power source is used. Type 5935 L has no input for heating element (not present in Falcon Range Preamplifier Types 2669 L and 2670).

The signals are output via BNC connectors on the front and back panels. The outputs all have a low impedance (15Ω). The front panel

outputs are primarily for monitoring the linear or A-weighted signals, and are AC coupled. The back panel outputs, used to connect to the next instruments in the measuring chain, are DC coupled, and independently access the linear and A-weighted signals.

Power Supply

Types 5935 & 5935 L are powered either by internal batteries or an external power source (e.g. 12 V vehicle battery or mains derived DC). The internal batteries can either be dry cells or rechargeable batteries. When an external supply is connected, rechargeable batteries (if fitted) are trickle charged in the unit.

The internal batteries do not supply the preamplifier heater current. This current must be supplied by an external supply.

Applications

Types 5935 & 5935 L are small. This makes them suitable for a wide variety of portable applications where two inputs are to be simultaneously used for measurement.

For example, attaching calibrated microphones or intensity probes allows high quality acoustic or intensity measurements to be made on moving vehicles under non-laboratory conditions.

It is also possible to have a mixture of microphone and accelerometer connected to Type 5935 if sound and vibration are to be investigated simultaneously. Sound quality measurements can be made using Type 5935 L and Type 4100 (with Type 2669 L).

One useful feature is the ability to route either of the inputs to a single output, allowing comparative measurements with a single channel analyzers to be made quickly without having to reconnect the equipment.

Specifications 5935 & 5935L

<p>INPUT IMPEDANCE: 200 kΩ 500 pF</p> <p>MAXIMUM INPUT LEVEL: 5 V RMS</p> <p>FIXED GAIN: 0–50 dB in 10 dB steps</p> <p>ADJUSTABLE GAIN: \pm5 dB</p> <p>OUTPUT IMPEDANCE: <5 Ω DC coupled or <15 Ω in series with 50 μF AC coupled</p> <p>MAXIMUM CHANNEL OUTPUT LEVEL: 5 V RMS</p> <p>MAXIMUM CHANNEL OUTPUT CURRENT: 15 mA</p> <p>MAXIMUM CHANNEL OUTPUT POWER: 20 mW</p> <p>FREQUENCY RESPONSE (Lin.): 0.5 Hz to 100 kHz (-3 dB) AC coupled</p> <p>A-WEIGHTING FILTERS: In accordance with IEC 651 Type 0</p> <p>CHANNEL SEPARATION: >85 dB at 1 kHz >65 dB at 20 kHz</p> <p>GAIN ERROR: <0.1 dB at 20 dB <0.2 dB at 40 dB</p> <p>INTERNAL NOISE¹ (200 kHz bandwidth):</p> <table border="1"> <thead> <tr> <th>Gain (dB)</th> <th>Linear</th> <th>A-weighting</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>< 35 μV</td> <td>< 30 μV</td> </tr> <tr> <td>10</td> <td>< 46 μV</td> <td>< 30 μV</td> </tr> <tr> <td>20</td> <td>< 46 μV</td> <td>< 40 μV</td> </tr> <tr> <td>30</td> <td><115 μV</td> <td>< 40 μV</td> </tr> <tr> <td>40</td> <td><330 μV</td> <td>< 70 μV</td> </tr> <tr> <td>50</td> <td><900 μV</td> <td><230 μV</td> </tr> </tbody> </table> <p>INTERNAL NOISE¹ (22.4 Hz to 22.4 kHz):</p> <table border="1"> <thead> <tr> <th>Gain (dB)</th> <th>Linear</th> <th>A-weighting</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>< 13 μV</td> <td>< 13 μV</td> </tr> <tr> <td>10</td> <td>< 13 μV</td> <td>< 13 μV</td> </tr> <tr> <td>20</td> <td>< 15 μV</td> <td>< 15 μV</td> </tr> <tr> <td>30</td> <td>< 35 μV</td> <td>< 30 μV</td> </tr> <tr> <td>40</td> <td><100 μV</td> <td>< 70 μV</td> </tr> <tr> <td>50</td> <td><320 μV</td> <td><230 μV</td> </tr> </tbody> </table> <p>¹Noise measured with input short-circuited</p> <p>PHASE BETWEEN CHANNELS (Lin): DC coupled 50 Hz: <17 millidegrees 1 kHz: <66 millidegrees 6.3 kHz: <420 millidegrees</p>	Gain (dB)	Linear	A-weighting	0	< 35 μ V	< 30 μ V	10	< 46 μ V	< 30 μ V	20	< 46 μ V	< 40 μ V	30	<115 μ V	< 40 μ V	40	<330 μ V	< 70 μ V	50	<900 μ V	<230 μ V	Gain (dB)	Linear	A-weighting	0	< 13 μ V	< 13 μ V	10	< 13 μ V	< 13 μ V	20	< 15 μ V	< 15 μ V	30	< 35 μ V	< 30 μ V	40	<100 μ V	< 70 μ V	50	<320 μ V	<230 μ V	<p>Connectors</p> <p>PREAMPLIFIER INPUT: Brüel & Kjær 7-pin socket (Type 5935) LEMO 7-pin socket (Type 5935L)</p> <p>SIGNAL OUTPUT: BNC</p> <p>EXTERNAL SUPPLY INPUT: 7-pin DIN socket</p> <p>HEATER: 4 mm "banana" sockets</p> <p>Power Supply</p> <p>BATTERIES: 3 \times 1.5 V alkaline battery, type IEC LR 20 ("D" size) or 1.25 V NiCd battery, type R 20 ("D" size).</p> <p>BATTERY LIFE: 70 hours (alkaline) 25 hours (NiCd)</p> <p>EXTERNAL SUPPLY: 8 V to 16 V DC</p> <p>COMPLIANCE WITH STANDARDS:</p> <table border="1"> <tr> <td style="text-align: center;">CE</td> <td>CE-mark indicates compliance with: EMC Directive.</td> </tr> <tr> <td>Safety</td> <td>EN 61010–1 and IEC 1010–1: Safety requirements for electrical equipment for measurement, control and laboratory use.</td> </tr> <tr> <td>EMC Emission</td> <td>EN 50081–1: Generic emission standard. 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Ordering Information

<p>Type 5935 & 5935 L Dual Microphone Supply Includes the following accessories: 3 \times QB 0004: IEC LR 20/D alkaline batteries</p> <hr/> <p>Optional Accessories</p> <p>ZG 0283: Battery Charger</p>	<p>ZG 0328: Power Supply Adaptor (5935 only) for DeltaTron[®] preamplifier</p> <p>JP 0736: BNC to Brüel & Kjær Preamplifier socket adaptor (5935 only)</p> <p>WL 0844: Branched cable 18-pin LEMO socket to two 7-pin Brüel & Kjær preamplifier inputs (5935 only) for an intensity probe</p>
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Brüel & Kjær reserves the right to change specifications and accessories without notice

