

# Product Data

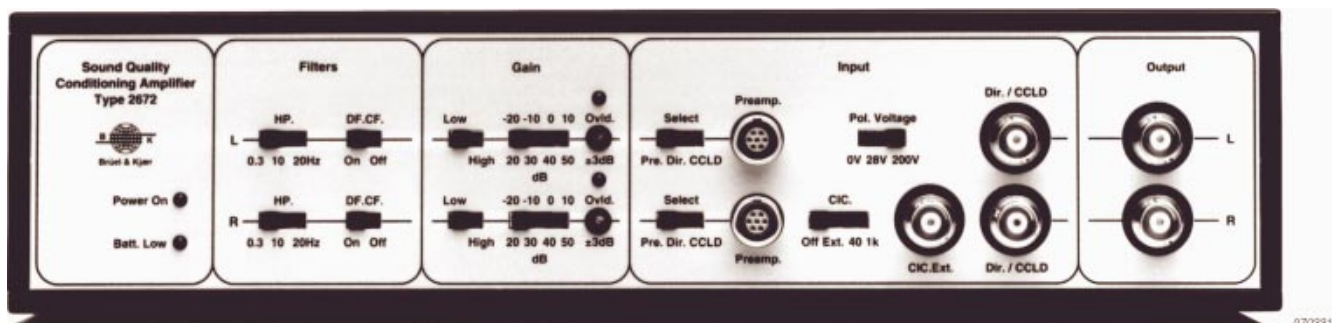
## Sound Quality Conditioning Amplifier — Type 2672

### USES:

- Conditioning input signals from Sound Quality Head and Torso Simulator Type 4100 or 4100D for analog output to a DAT recorder, analyzer or sound quality editing system

### FEATURES:

- DeltaTron<sup>®</sup>, direct and LEMO preamplifier inputs for Falcon<sup>™</sup> Preamplifiers
- 0, 28 or 200 V microphone polarization voltage
- 0.3, 10 and 20 Hz high-pass filters
- Internal rechargeable battery
- Rapid calibration of Type 4100 using charge injection calibration (CIC) facility
- -20 to +40 dB gain in 10 dB steps
- Selectable diffuse field correction filter to match frequency response of Types 4100 and 4100 D
- Dynamic and frequency ranges optimized for output to DAT recorders, e.g., SONY PC 204 A



## Introduction

Sound Quality Conditioning Amplifier Type 2672 is a power supply and conditioning amplifier for microphone preamplifiers. The unit is specifically intended for use with Sound Quality Head and Torso Simulator Type 4100 or 4100D and, in this capacity, can be used as a front end for a SONY PC 204 A instrumentation cassette recorder.

The amplifier contains a selectable diffuse field correction filter which matches the diffuse field frequency response of the head and torso simulator.

The unit is battery powered, and uses the same type of battery and same size of casing as the SONY PC 204A. It thus combines with the DAT recorder and head and torso simulator to provide a high-quality field recording system capable of high quality playback in the laboratory.

## **The Amplifier**

Sound Quality Conditioning Amplifier Type 2672 is a dual-channel conditioning amplifier for use with Sound Quality Head and Torso Simulator Type 4100 or 4100D. The amplifier has preamplifier inputs for use with Preamplifier Type 2669 (4100) and a DeltaTron input for use with DeltaTron Preamplifier Type 2671 (4100D). When used with Type 2669, charge injection calibration can be used for rapid calibration of a sound quality system.

The function of the amplifier is to take analogue signals from the microphones and condition these to match recording on a DAT recorder, analyzer etc. The amplifier's audio channels operate entirely independently, with separate gain, filters and input selectors. In terms of noise and distortion, the active circuitry conforms to the same high specification expected of digital audio systems.

## **Diffuse Field Correction Filter**

Head and torso simulators are normally calibrated in a diffuse field, but the diffuse field frequency response of the simulator is far from flat and needs to be normalised. This can be achieved in the conditioning amplifier which has a selectable diffuse field correction filter. In addition, filtering the signals before they are processed and recorded, improves the signal-to-noise ratio by as much as 10 dB.

## **CIC**

Charge injection calibration is a technique which allows you to get a very precise indication of the correct functionality of the microphone, preamplifier and extension cables. By injecting a signal into the preamplifier, you can sense any changes in leakage capacitance. If there is no change compared to a previous measurement, you can rely on the system being in perfect condition – and any acoustic calibration done earlier with, for example, a pistonphone will still be correct.

## **Use with a DAT Recorder**

To make it easy to use Type 2672 with a SONY PC 204 A DAT recorder, the conditioning amplifier has the same case size as the recorder. The two instruments then fit neatly into Guard Frame WU 0484 (provided) to form a compact, battery operated unit. Both units use the same type of rechargeable battery or external power source, avoiding the need for different power systems. Similarly, both instruments fit conveniently into the base of Positioning Frame UA 1324.

## **Sound Quality Recording**

Sound Quality Conditioning Amplifier Type 2672 can be combined with:

- Sound Quality Head and Torso Simulator Type 4100 or 4100D
- Positioning Frame UA 1324
- SONY PC 204 A Instrumentation Cassette Recorder (WQ 1121)

to form a complete sound quality recording system. These can be assembled as a single unit which can be placed in the seat of, for example, a car or aeroplane, without seat adaptations. See the separate Product Data for Type 4100 (D) and UA 1324 for details.

# Specifications 2672

<p><b>Amplifier Stages</b></p> <p><b>PREAMP. INPUT:</b> 7-pin LEMO connectors to match cable from Microphone Preamplifier Type 2669L <b>Polarization Voltage:</b> 0, 28 or 200 V <b>Supply Voltage:</b> 27 V <b>Charge Inject Calibration:</b> 40 Hz or 1 kHz via internal generator, or from external generator via BNC connector <b>Input Impedance:</b> 100 k<math>\Omega</math></p> <p><b>DELTATRON INPUT:</b> BNC inputs <b>Constant Current:</b> 4 mA <b>Input Impedance:</b> 100 k<math>\Omega</math> <b>Max Input Level:</b> 5 V rms</p> <p><b>DIRECT INPUT:</b> BNC inputs <b>Input Impedance:</b> 100 k<math>\Omega</math></p> <p><b>HIGH-PASS FILTER:</b> 2nd order filter, 0.3, 10 or 20 Hz <math>-3</math> dB <math>\pm 0.5</math> dB</p> <p><b>GAIN:</b> <b>High:</b> 20, 30, 40, 50 dB <math>\pm 0.2</math> dB <b>Low:</b> <math>-20</math>, <math>-10</math>, 0, 10 dB <math>\pm 0.2</math> dB <b>Variable Gain Adjust:</b> <math>\pm 3</math> dB</p> <p><b>DIFFUSE FIELD CORRECTION FILTER:</b> <b>On:</b> Compensates for the diffuse-field frequency response of Head and Torso Simulator Type 4100 (D) <b>Off:</b> No compensation</p>	<p><b>INTERNAL NOISE (0 to 22.4 kHz):</b> <b><math>-20</math> and 0 dB gain:</b> <math>&lt; 50 \mu\text{V}</math> <b>+20 dB gain:</b> <math>&lt; 100 \mu\text{V}</math> <b>+40 dB gain:</b> <math>&lt; 800 \mu\text{V}</math> <b>+50 dB gain:</b> <math>&lt; 2.5</math> mV See EMC Immunity, Note 2</p> <p><b>SIGNAL OUTPUT:</b> BNC connectors; semi-balanced <b>Output Voltage:</b> Max. 5 V RMS (nominal) <b>Output Impedance:</b> <math>&lt; 200 \Omega</math></p> <p><b>Power Supply</b></p> <p><b>Battery:</b> SONY NP-1B, rechargeable <b>Battery Life:</b> 5 hours continuous operation <b>Battery Charge Time (internal):</b> 14 hours trickle charge <b>Ext. Supply Input:</b> 2 Pin <b>Supply Current:</b> 350 mA at 12 V DC 450 mA at 18 V and charging battery <b>Ext. DC Supply:</b> 12 – 20 VDC, 550 mA Mains Supply: Via external mains adaptor <b>100–127 VAC:</b> WB 1375a <b>200–240 VAC:</b> WB 1376a</p> <p><b>Dimensions</b></p> <p><b>Height:</b> 70 mm (2.8") <b>Width:</b> 297 mm (11.7") <b>Depth:</b> 220 mm (8.7") <b>Weight:</b> 2 kg (4lb. 6oz.)</p>
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## COMPLIANCE WITH STANDARDS:

<b>CE</b>	CE-mark indicates compliance with: EMC Directive and Low Voltage Directive.
<b>Safety</b>	EN 61010-1: Safety requirements for electrical equipment for measurement, control and laboratory use.
<b>EMC Emission</b>	EN 50081-1: Generic emission standard. Part 1: Residential, commercial and light industry. CISPR 22 (1993): Measurement of radio disturbances. Class B Limits. FCC Class B limits.
<b>EMC Immunity</b>	EN 50082-2: Generic immunity standard. Industrial environment. <b>Note 1:</b> The above is guaranteed using accessories listed in this Product Data sheet only. <b>Note 2:</b> Susceptibility to radiated RF input noise up to 55 $\mu\text{V}$ . Susceptibility to conducted RF input noise up to 20 $\mu\text{V}$
<b>Temperature</b>	IEC 68-2-1 & IEC 68-2-2: Environmental Testing. Cold and Dry Heat. Operating Temperature: 0 to +50 $^{\circ}\text{C}$ Storage Temperature: $-25$ to +70 $^{\circ}\text{C}$
<b>Humidity</b>	IEC 68-2-3: 90% RH (non-condensing at 40 $^{\circ}\text{C}$ )
<b>Enclosure</b>	IEC 529: IP 20
<b>Mechanical</b>	Non-operating: IEC 68-2-6: Vibration: 0.3 mm, 20 m/s $^2$ , 10–500 Hz IEC 68-2-27: Shock: 1000 m/s $^2$ IEC 68-2-29: Bump: 1000 bumps at 250 m/s $^2$

# Ordering Information

Type 2672 Sound Quality Conditioning Amplifier

**Includes the following accessories:**

WB 1375a: Mains Adaptor 100–127 VAC  
or  
WB 1376a: Mains Adaptor 200–240 VAC  
UA 1369: Guard Frame  
DH 0541: Carrying Strap  
WL 1192: External Supply Cable

## Optional Accessories

**WQ 1121:** SONY PC 204 A Instrumentation Cassette Recorder  
**WQ 1128:** SONY BC–1WD 4-cell Battery Charger  
**WQ 1129:** SONY NP–1B Rechargeable Battery Pack

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**Brüel & Kjær** 

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