

USER'S MANUAL

Large Diaphragm Microphones

Type 4041-S
Type 4041-T
Type 4041-SP

Included in kit solutions:

Type 3541
Type 3532-S
Type 3532-T
Type 3532-SP

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TECHNICAL DESCRIPTION

The modular system

The large diaphragm microphones Types 4041-S, 4041-T and 4041-SP introduce a modular cartridge and preamplifier system. The Modular Microphone Cartridge Type MMC4041 can be unscrewed from the Modular Microphone Preamplifiers Types MMP4000-S, MMP4000-T and MMP4000-SP, which allows for the exchange of the preamplifier.

The 3 types of 4041s are acoustically very similar, but differ in the preamplifier technology. The Type 4041-S contains the solid-state preamplifier Type MMP4000-S whereas the Type 4041-T has the tube preamplifier Type MMP4000-T. The Type 4041-SP contains a 48V phantom powered solid-state preamplifier, the MMP4000-SP.

The cartridge

The Types 4041-S, 4041-SP and 4041-T are omnidirectional (pressure) microphones that use the 24 mm (1 in) Modular Microphone Cartridge Type MMC4041. The diaphragm and the cartridge housing are both made of stainless steel, which gives the capsule a unique immunity against ambient temperature variations. The MMC4041 back plate is placed in a quartz insulator for maximum electrical stability. On the 4041-S and 4041-T, the back plate is polarised with 200V via the HMA4000 Microphone Amplifier, giving the cartridge an extremely high sensitivity and SPL handling capability. On the 4041-SP a polarisation generator in the pre-amp is incorporated, providing the back plate with 200V.

The microphone cartridge Type MMC4041 is designed to have a linear on-axis response from 10 Hz to 20 kHz with a 4-6 dB soft boost around 8 kHz (see fig.3). The MMC4041 cartridge module has an extremely low self-noise of maximum 7 dB(A) and a THD less than 0.5% at 120 dB SPL peak which means that the cartridge has an impressive dynamic range of 113 dB. When mounted on one of the modular high voltage microphone preamplifiers Type MMP4041-S or MMP4041-T the microphone can handle sound pressure levels up to 144 dB SPL peak before clipping occurs. When mounted on the MMP4041-SP preamp, 134 dB SPL peak can be handled before clipping.

The preamplifiers

The microphone preamplifiers Type MMP4000-S and MMP4000-T are part of the modular microphone system to be used with the Modular Microphone Cartridge Type MMC4041. Both microphone preamplifiers are supplied with 130V via the HMA4000 microphone amplifier, enabling them to handle all high level outputs from the microphone capsule without adding any distortion to the signal. Please see full specifications for how the choice of preamplifier will influence the specifications of the complete microphone.

The tube preamplifier MMP4000-T offers a slight musical 2nd harmonic distortion colouration and uses a pentode vacuum tube driven as a cathode follower in a transformerless class A unity gain output stage. The special quality sub-miniature vacuum tube is 'heated' via 6,3V supplied by the HMA4000 Hi-Voltage Microphone Amplifier.

For supreme transparency, the MMP4000-S solid-state preamplifier design is identical to the discrete transistor output stage used in the DPA range of hi-voltage microphones. Like the output stage of the tube preamplifier, the transistor output stage is driven as a class A unity gain impedance converter.

Designed for use in common pro audio environments where 48V phantom power is a defined standard, the 4041-SP does not require the HMA4000 hi-voltage amplifier. But due to the limited voltage supplied to the preamp, 10 dB less SPL handling is the price of the 48V choice. The preamplifier is transformerless in its design.

All microphones are supplied with an individual calibration chart stating the self-noise, sensitivity and the individual frequency response.

Cables

For the 4041-S and 4041-T the dedicated DAO41 10 cable is being used between the microphone and the hi-voltage amplifier.

The 4041-SP uses a regular 3-pin XLR cable, such as the AO0 182.

Important: The microphones will only operate within their specifications if powered correctly.

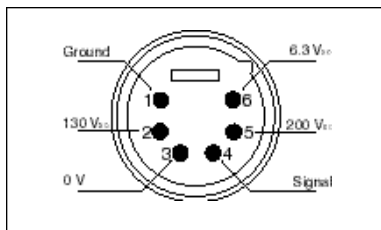


Fig. 1. External view of the output socket of the preamplifiers Types MMP4000-S and MMP4000-T.

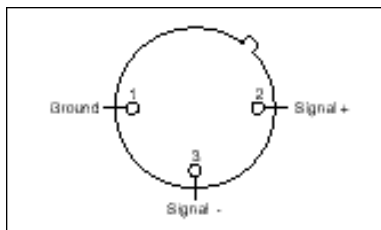


Fig. 2. External view of the output socket of the preamplifier Type MMP4000-SP.

FREQUENCY RESPONSES

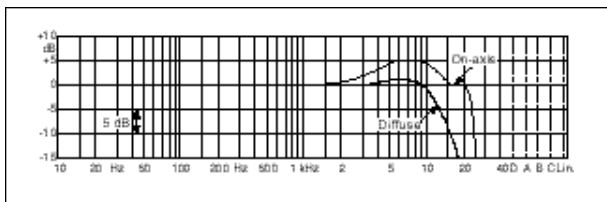


Fig. 3. On-axis frequency response of Modular Microphone Cartridges MMC4041

POLAR PATTERN

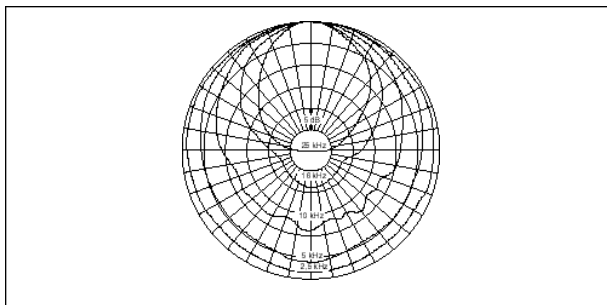


Fig. 4. Directional characteristics of Modular Microphone Cartridges MMC4041.

RECOMMENDED SETTINGS

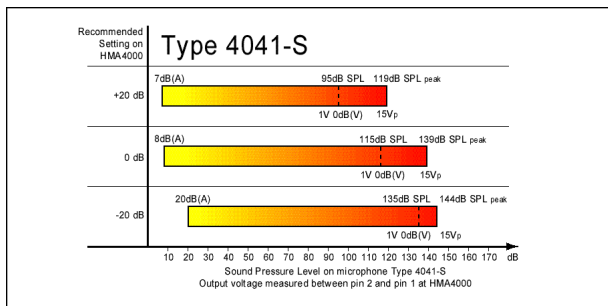


Fig.5. Recommended HMA4000 setting with Type 4041-S

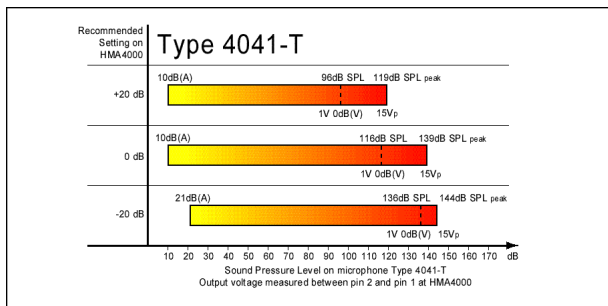


Fig.6. Recommended HMA4000 setting with Type 4041-T

FULL SPECIFICATIONS

Cartridge type:

24mm (1inch) condenser with stainless steel diaphragm

Principle of operation:

Pressure

Power Supply:

4041-S and 4041-T: HMA4000 Two-channel High-Voltage
Microphone Amplifier - 130V

4041-SP: Phantom 48V

On axis frequency range:

4041-S and 4041-T: 10Hz - 20kHz ± 2 dB with 4 - 6dB soft
boost at 8kHz

4041-SP: 20Hz - 20kHz ± 2 dB with 4 - 6dB soft boost at 8kHz

Phase response:

Phase matching between any two microphones: $\pm 10^\circ$
(50 Hz to 20kHz)

Directional characteristics:

Omnidirectional

Sensitivity (at 250Hz, ± 2 dB):

Solid State Preamp: Nominally 90 mV/Pa; -21dB re. 1 V/Pa

Tube Preamp: Nominally 85 mV/Pa; -21.5 dB re. 1 V/Pa

P48 Solid State Preamp: Nominally 70mV/Pa; -26dB re. 1 V/Pa

Equivalent noise level A-weighted:

Solid State Preamp: Max. 7dB(A) re. 20 μ Pa

Tube Preamp: Max. 10dB(A) re. 20 μ Pa

P48 Solid State Preamp: Max. 8dB(A) re. 20 μ Pa

Equivalent noise level CCIR 468-1:

Solid State Preamplifier: Max. 19dB

Tube Preamplifier: Max. 22dB

P48 Solid State Preamp: Max. 20dB

Max SPL before clipping occurs:

4041-S and 4041-T: 144dB SPL peak before clipping

4041-SP: 134dB SPL peak before clipping

Total Harmonic Distortion:

120 dB SPL peak (<0.5% THD)

Output impedance:

4041-SP: < 200 Ohm

4041-S/4041-T: Matches HMA4000 input

Cable drive capability:

4041-SP: Up to 100m (328ft)

4041-S/4041-T: With HMA4000: Up to 300m (984ft)

Polarity:

4041-S and 4041-T: Positively increasing sound pressure produces negative-going voltage at Pin 4. See Fig. 1 for Pin designation.

4041-SP: Positively increasing sound pressure produces negative-going voltage at Pin 2. See Fig. 2 for Pin designation.

Difference frequency distortion:

(DF2, DF3, Df = 80Hz) <1% at 128dB SPL peak

Influence of vibration:

61dB equivalent SPL for 1m/s² in direction of greatest sensitivity

Influence of magnetic field:

24dB equivalent SPL for 80A/m, 50Hz in direction of greatest sensitivity

Operating temperature range:

-10 to +70°C (+14 to 158°F)

Microphone length:

170mm (6.69in)

Microphone diameter:

19mm (0.75in)

Capsule diameter:

24mm (1in)

Weight:

190g (6.7oz)

KITS & ACCESSORIES

TYPE 3541

Modular Microphone Preamplifiers

MMP4000-S	Solid State Preamplifier for 24mm (1in) Cartridge
MMP4000-T	Tube Preamplifier for 24mm (1in) Cartridge

Modular Microphone Cartridges

MMC4041	Omnidirectional 24mm (1in) Cartridge
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Microphone Amplifier

HMA4000	Hi-Voltage Microphone Amplifier, 2 channel
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Shock Mounts

UA0897	Shock Mount
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Windscreens

DUA0040	Windscreen for Ø24mm (1in) Microphone
DUA0090	Pop-filter

Cable

DAO4110	130V Microphone Cable, 10m (32.8ft) (Type 4041)
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3541

TYPE 3532-S

Modular Microphone Preamplifiers

2 x MMP4000-S Solid State Preamplifier for 24mm (1in)
Cartridge

Modular Microphone Cartridges

2 x MMC4041 Omnidirectional 24mm (1in) Cartridge

Microphone Amplifier

HMA4000 Hi-Voltage Microphone Amplifier, 2 channel

Stereo Accessories

UA0836 Stereo Boom with Holders

Windscreens

2 x DUA0040 Windscreen for Ø24mm (1in) Microphone

Cables

2 x DAO4110 130V Microphone Cable, 10m (32.8ft) (4041)



3532-S

TYPE 3532-T

Modular Microphone Preamplifiers

2 x MMP4000-T Tube Preamplifier for 24mm (1in) Cartridge

Modular Microphone Cartridges

2 x MMC4041 Omnidirectional 24mm (1in) Cartridge

Microphone Amplifier

HMA4000 Hi-Voltage Microphone Amplifier, 2 channel

Stereo Accessories

UA0836 Stereo Boom with Holders

Windscreens

2 x DUA0040 Windscreen for Ø24mm (1in) Microphone

Cables

2 x DAO4110 130V Microphone Cable, 10m (32.8ft)
(Type 4041)



3532-T

TYPE 3532-SP

Modular Microphone Preamplifiers

2 x MMP4000-SP Solid State Preamplifier for 24mm (1in)
Cartridge, P48

Modular Microphone Cartridges

2 x MMC4041 Omnidirectional 24mm (1in) Cartridge

Microphone Amplifier

HMA4000 Hi-Voltage Microphone Amplifier, 2 channel

Stereo Accessories

UA0836 Stereo Boom with Holders

Windscreens

2 x DUA0040 Windscreen for Ø24mm (1in) Microphone



3532-SP

ACCESSORIES INCLUDED 4041-S, 4041-T & 4041-SP

Modular Microphone Preamplifiers

MMP4000-S	Solid State Preamplifier for 24mm (1in) Cartridge (Only 4041-S) or
MMP4000-T	Tube Preamplifier for 24mm (1in) Cartridge (Only 4041-T) or
MMP4000-SP	Solid State Preamplifier for 24mm (1in) Cartridge, P48 (Only 4041-SP)

Modular Microphone Cartridges

MMC4041	Omnidirectional 24mm (1in) Cartridge
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Microphone Holders & Suspension Mounts

UA0961	Microphone Holder
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ACCESSORIES AVAILABLE

Modular Microphone Preamplifiers

MMP4000-S	Solid State Preamplifier for 24mm (1in) Cartridge
MMP4000-T	Tube Preamplifier for 24mm (1in) Cartridge
MMP4000-SP	Solid State Preamplifier for 24mm (1in) Cartridge, P48

Shock Mounts

UA0897	Shock Mount
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Microphone Holders & Suspension Mounts

UA0639	Microphone Clip
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Stereo Accessories

UA0836	Stereo Boom with Holders
UA0837	Stereo Boom excluding Holders

Windscreens

DUA0090	Pop-filter
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Cables

DAO4110	130V Microphone Cable, 10m (32.8ft) (Type 4041)
A00182	P48 Microphone Cable, 5m (16.4ft)

Connection Adapters

HTP4000	Converter: 130V to P48
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CARE OF MICROPHONES

It is important to bear in mind the following points with regards to mounting and microphone care:

The Pop-filter DUA0090 is fitted between the microphone stand and the microphone holder.

The UA0897 Shock Mount is mounted on the Pop-filter base. Use the counter screw to position the Shock Mount correctly.

Assemble the cartridge and preamplifier modules of your choice. Assemble the modules using finger torque only. See fig. 7

When detaching or attaching the cartridge Type MMC4041 from the microphone preamplifier, the cable must be disconnected.

Do not try to attach the microphone cartridge Type MMC4041 to any microphone preamplifier that is not specifically designed for this purpose.

Do not try to attach the microphone preamplifiers Types MMP4000-S, MMP4000-T or MMP4000-SP to any microphone cartridge that is not specifically designed for this purpose.

Use of windscreen is recommended when microphones are used in dirty or dusty environments.

When not in use, the microphone should be disconnected and kept in the case supplied.



Fig. 7. Exchange of cartridge can be done by screwing the cartridge from the preamplifier using finger torque only.

SERVICE & REPAIR

Products from DPA Microphones are extremely stable, and there should not be any significant change in the specifications with time and use. If, however, you are not totally satisfied with the characteristics exhibited by these products, contact your nearest DPA Microphones representative for further details of service and the repair facilities that are available. DPA Microphones has a maximum seven working days in-house service policy, usually ensuring that no more than seven working days will elapse from the day the item for service is received and accepted to the day we are ready to return it to you. Please contact DPA Microphones for your nearest representative on

Tel: +45 48 14 28 28

Fax: +45 48 14 27 00

You can also get in touch with DPA Microphones via the internet using e-mail **info@dpamicrophones.com**

Visit our website at **www.dpamicrophones.com**

WARRANTY

All products from DPA Microphones are covered by a two-year limited warranty on both mechanical functionality and documented specifications as long as the items are not mistreated, abused or modified in any way. In case of a warranty claim your invoice is your warranty registration.

CE STANDARD

The CE-mark guarantees all products conform with relevant standards approved by the European Community. The products described in this User's Manual comply with current relevant standards when used with cables from DPA Microphones. EMC Directive: 89/336/EEC, amended by 92/31/EEC and 93/68/EEC Low Voltage Directive: 73/23/EEC, amended by 93/68/EEC.