the signal totally disappears – the two channels are now set identical – now pan channel two fully left and channel three fully right for normal operation). Channels two and three are controlled as a single fader (mechanically or electrically coupled together). The stereo width is controlled by the relative levels – less side is a narrower image, more side is a wider image. The displacement of the faders by 3 dB, as shown in the diagram as an example, results in 1:1 ratio matrixing.

During matrixing, it should be taken into account that the direction of off-axis sound signals can be determined less and less at high frequencies due to the increasing directivity of the shotgun microphone. This may lead to diffused spatial effects, which can be desirable or undesirable depending on the recording situation. In case of doubt, the proportion of the S signal should not be chosen too high. In some cases, it might be necessary to reduce the treble in the S channel on the mixing console. At low frequencies below 300 Hz, it is very difficult to locate sounds for physiological reasons. Since the S system of the microphone, due to its design principle, is more sensitive than the M system to low-frequency interference caused for example by wind, the bass in the S channel should be reduced if required (eg: with a high-pass filter).

Specifications

Acoustic operating principle	M: pressure gradient/ interference tube receiver
	S: pressure gradient receiver
Pick-up pattern	M: super-cardioid/lobar
	S: figure-of-eight
Sensitivity at 1000 Hz	M: 25 mV/Pa (-32 dBV)
	S: 10 mV/Pa (-40 dBV)
Frequency response	40 - 20,000 Hz
Max. SPL	130 dB SPL (63 Pa)
Max. output voltage	1.5 V
Equivalent noise level	M: 14 dB-A / 26 dB-CCIR
	S: 22 dB-A / 34 dB-CCIR
Output impedance at 1000 Hz	< 25 Ω
Min. load impedance	1 kΩ
Power supply	P48: 48 ± 4 V / 2 x 2.3 mA
Connector	5-pin XLR, male
Dimensions	Ø 19 mm x 280 mm
Weight	220 g
Operating temperature range	-20 to +60 °C
Humidity range	< 95 % relative humidity

English

MKH 418 S P48 U
MS Stereo Condenser Microphone

Brief Description

The MKH 418 S is an MS stereo microphone. Its high degree of directivity makes the MKH 418 S the ideal choice for stereophonic recordings for reporting, film and television applications. The microphone is designed for 48 V phantom powering and operates using the RF principle. This principle ensures high operational reliability, even under extreme climatic conditions.

The MKH 418 S has two independent acoustic systems for generating the mid and side signals. The mid signal (M) is generated by a shotgun microphone system. At high frequencies, this results in a lobar pick-up pattern, whereas at low frequencies there is a transition to a super-cardioid characteristic. The side signal (S) is produced by a figure-of-eight capsule, whose positive side is directed to the left. The M and S signals are available independently at the microphone output. The microphone is positioned correctly when the word "TOP" is pointing upwards.

English

Features

- Excellent directivity
- High sensitivity
- Low inherent self-noise
- Rugged and suitable for adverse climatic conditions
- Matt black all-metal casing

Delivery includes

- Microphone
- Transport case
- Instruction manual
- Test certificate
- Document of warranty

Powering

The MKH 418 S is designed for 48 V phantom powering. To ensure proper operation of the microphone, the two channels always have to be

powered simultaneously, even if only the signal of one channel is required. If no 48 V phantom powering is available at the microphone input of the subsequent device, suitable power supply units must be interconnected, e.g. two MZA 14 P48 battery power supply units or one Neumann N 48 i-2 mains power supply unit (both units are fitted with a 3-pin XLR connector) or one Neumann BS 48 i-2 battery power supply unit (fitted with a 5-pin XLR connector). The MZA 14 P48 battery power supply unit also allows direct connection to unbalanced inputs. Also suitable is the MZA MS-1 (available from Sennheiser UK). This is a battery power supply, with 5-pin XLR input and output, that incorporates an MS matrix amplifier and microphone pre-amplifier. The unit enables an MS microphone to output left/right stereo and incorporates a ch-2 phase-reverse switch, bass roll-off and adjustable level and width controls. Output level is switchable microphone or line.

The MKH 418 S is connected via a 5-pin XLR cable. The connector of the MKH 418 S has standard pin assignment:

Pin 1 = Casing/ground
Pin 2 = M channel (+)
Pin 3 = M channel (–)
Pin 4 = S channel (+)
Pin 5 = S channel (–)

Accessories

The following accessories are available:

- MZS 20-1 Suspension/pistol grip
- MZT 100 Table stand
- MZT 441 Table stand
- MZH 60-1 "Hairy" cover
- MZW 60-1 Basket windshield
- MZW 415 Foam windshield
- Y-Cable AC 20 XLR-5F / 2 x XLR-3M, 1 m length

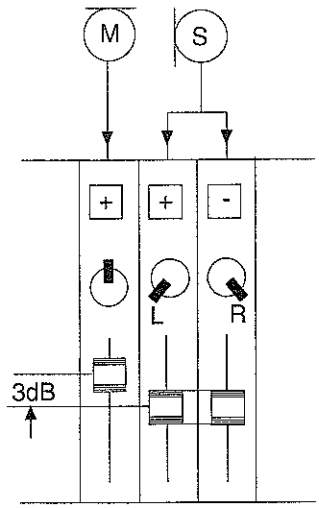
Please order from your local Sennheiser dealer.

Notes on MS Stereo Sound Recording

The MS signal format of the MKH 418 S provides a particularly easy means of setting the optimum balance between the main information of the mid channel and the spatial contribution of the side channel. This balancing can even be performed during re-processing without a loss of information if the original MS signals were recorded.

The MS signal format is converted into the XY format (ie: standard left/right stereo) by adding or subtracting the signals according to the principle X = M + S, Y = M – S. The proportion of the S signal influences the spatial effect and should be chosen in each case in accordance with the recording situation. In order to avoid restricting the possibilities of designing the sound impression, MS – XY matrixing in the microphone was not employed.

If a matrix circuit is not available on the mixing console, matrixing can be performed using the 3-fader method (see diagram). The M signal is connected to



the first microphone channel and panned centre. The S signal is connected to the second channel and panned full left. Take an output from the second channel and connect to the third channel panned full right and phase reversed (via a phase reverse switch or via the cable). (To set the correct S signal level - set the pan controls of channel two to central, set the main fader to normal level and set the correct level at the preset. Then, set the pan control of channel 3 to centre, set the main fader to the same level as channel two and then adjust the pre-set of channel three until