MICROTECH GEFELL

microphones & acoustic systems - founded 1928 by Georg Neumann

Sound intensity probe 194 3D

Capsule pair	Spacer	Frequency range
½“ MK 290 E	50 mm	35 Hz … 1,5 kHz
¼“ MK 390 E	12 mm 7 mm	1 kHz … 6 kHz 1 kHz … 10 kHz

ICP®

The sound intensity probe SIS 194 3D allows a simultaneous sound intensity measurement at one point of a room in all three dimensions. For this purpose an arrangement of three one-dimensional sound intensity probes is formed, thus all three axes of the microphone pairs cross in one point and are in a plane perpendicular in each case. Each of those microphone pairs constitutes a one-dimensional sound intensity probe in conventional design.

In addition to measurement of sound pressure, each individual sound intensity probe - by its two-microphone-technology - enables the acquisition of the sound pressure gradient and thus the sound intensity computation. The probe consists of two in phase- and frequency response matched measurement-microphone capsules MK 222 E (order drawing MK 290 E) and MK 301 E (order drawing MK 390 E). By the use of the constant current powered 1/4 ‘’ measurement-preamplifier MV 310 the sound field distortions (shading and diffraction) are minimal. The distance between the three microphone capsules is accurately defined by means of a spacer. Thereby measurements are possible in a frequency range from 35 Hz to 10 kHz.

The quality of conformity of both measurement capsules, relating to their transfer function, is measured in accordance with DIN EN 61043 and IEC 1043 respectively and documented as pressure-intensity-distance/residual-intensity-distance for probes. To each measurement-capsule pair of the SIS 194 3D a measurement report is enclosed. On the basis of this report the compliance with tolerance limits for class 1 probes is apparent.
On customers request the match of both measurement-microphone capsules can be also documented as differences between phase- and frequency responses of both microphones. In this presentation the compliance of phase differences and level differences is guaranteed. Also a custom-specific selection of microphones of same kind for other applications or tolerances can be made; for example groups of three or four, up to special microphone-arrays or measurement-microphones respectively paired measurement-microphones for low-frequency measurements.

The arrangement of the measurement-microphone preamplifiers is made by angular adaptors and a bend such that they are parallel and tight to each other and thus enables that the general arrangement can be kept small. This allows the access to tight measuring positions. The cable connections of the preamplifiers are separately led to the outside. The overall construction is carried by a bracket, which can be adapted to a robot arm if necessary.

A modular design allows an adjustment of required distances between the microphones and preamplifiers on the basic unit without using tools.

In addition to this current-fed version, the 6-channal overall construction can be supplied with 200 V polarized measurement-microphone capsules- and preamplifiers for conventional LEMO-connection technology (type SIS 94 3D) as well.

Delivery

	¼“ MV 310	½“ MK 290 E	¼“ MK 390 E	Spacer ½“	Spacer ¼“	Adaptor A 69.1	Angle adaptor WA 25	Angle adaptor WA 30	Arch	Order-No.
SIS 194 3D ½“	■■■■■	■■■		■		■■	■■■■		■	315054
SIS 194 3D ¼“	■■■■■		■■■		■			■■■■	■	315055

Accessories

Cable-Set SMB , 6-
Cable-Set SMB, multi-channel compact plug

Customized connection

Technical specifications SIS 194 3D

ICP® ¼” Measurement preamplifier MV 310

Current consumption				2 … 10 mA
Transducer Excitation				24 … 30 VDC
Frequency range				20 Hz … 100 kHz
R_L = 100 kΩ	C_e = 3,3 nF, 22 pF			≤± 0,1 dB
	C_e = 5,63 pF			≤± 0,4 dB
Gain V [dB] R_L = 100 kΩ		C_e	5 Hz	10 kHz 1kHz
		22 pF	-1,0	-0,7 -0,5
		5,6 pF	-5,0	-0,3 -2,0
Input impedance				10 GΩ II< 0,4 pF
Output impedance				< 100 Ω
Inherent noise R_L = 100 kΩ				22 pF 5,6 pF
A - weighted [μV_{eff}] DIN EN 60 651				1,7 3,8
linear [μV_{eff}] 20 Hz…20 kHz				4,2 11
Plug				MALCO-Microdot, 10-32 UNF-2A

Supplied with phase- and amplitude- matched ½“ Measurement capsule pair MK 290 E

Polarisation voltage	0 V
Frequency range	35 Hz…1,5 kHz
Sensitivity	50 mV/Pa
Max. SPL for THD 3% at1 kHz	146 dB
Inherent noise floor	16 dBA

Supplied with phase- and amplitude- matched ¼“ Measurement capsule pair MK 390 E

Polarisation voltage	0 V
Frequency range	1 kHz… 10 kHz
Sensitivity	4 mV/Pa
Max. SPL for THD 3% at1 kHz	158 dB
Inherent noise floor	36 dBA

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