GRAS 90CA-S2

Microphone Calibration System, PXI



The GRAS 90CA-S2 Microphone Calibration System provides for automated and reliable level and frequency response calibration of measurement microphones. The implemented calibration methods conform with relevant standards as listed in the specifications.

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Introduction

The GRAS 90CA-S2 Microphone Calibration System provides for automated and reliable level and frequency response calibration of measurement microphones. The implemented calibration methods conform with these standards:

- IEC Standard 61094
- ANSI S1.10 – 1966 (R1976)
- IEC Standard 60942
- TEDS Standard IEEE 1451.4

The 90CA-S2 is based on National Instruments' PXI architecture: NI PXIe-8101 Embedded Controller, including: National Instruments PXIe1071 4-Slot 3U PXI Express Chassis and PXI cards for Control and Data Acquisition.

Features

- Ready-to-use software and hardware
- Accurate calibration hardware
- Automated and computer-controlled calibration process
- Highly reproducible calibration method
- Pre-installed test parameters for GRAS microphones
- Test conditions easily changable
- Auto-generated, customized documentation to print and archive

Applications

- All types of IEC 61094 standardized 1", 1/2", 1/4", and 1/8" measurement microphones from GRAS and other manufacturers
- GRAS 46xx series standard microphone sets
- GRAS 47xx series flush-mount microphone sets (optional)
- GRAS preamplifiers
- Calibration up to 92 kHz (optional up to 200 kHz)

The system is described in more detail in the Instruction Manual.

ANSI standard		S1.10
IEC standard		61094-5 & 61094-6
Sensitivity Calibration		
Method		Pistonphone, class 0
Frequency		250 Hz
Uncertainty		0.07 dB
Frequency Calibration		
Method		Electrostatic actuator
Frequency		20 to 92 kHz (20 to 200 kHz)*
Uncertainty		0.3 dB

*With HP34410a (or similar) multimeter, not included.

GRAS Sound & Vibration reserves the right to change specifications and accessories without notice.

Included items

GRAS HW1002	PXI: NI PXIe-8821 Embedded Controller, including National Instruments PXIe1071 4-Slot 3U PXI Express Chassis NI Dynamic Signal Acquisition Board PXI-4461, and National Instruments Digital I/O PXI-6509
GRAS SW0013	National Instruments software Diadem version 2017 (or later), Base Edition
GRAS SW0002	Calibration System Software for 90CA
GRAS SW0012	National Instruments Sound and Vibration Analysis SW Run-Time License 779875-01
For Level Calibration	
GRAS AL0017	Pistonphone Calibration Stand
GRAS 42AP	Intelligent Pistonphone, including RS-232 control cable
GRAS 26AN	¼" LEMO Insert Voltage Preamplifier
GRAS 26AG	½" LEMO Insert Voltage Preamplifier
For Frequency Calibration	
GRAS 26AB	¼" LEMO Preamplifier with Inline Barrel Adapter AF0008 for ¼" preamplifier and ½" microphone
GRAS 26AK	½" LEMO preamplifier (for use with most non-GRAS microphones)
GRAS RA0014	½" Electrostatic actuator (includes ¼" microphone adapter RA0017)
GRAS AL0010	Actuator Calibration Stand
GRAS AL0021	Microphone Set Calibration Stand
GRAS 14AA	Electrostatic Actuator Amplifier, including 230 V AC power cable
For Power, Signal Conditioning and Switching	
GRAS 12AQ	2-Channel CCP/LEMO Power Module with Signal Conditioning and Computer Interface
GRAS RA0192	Control box (no cables included in the box)
GRAS 40AG	½" Pressure microphone for reference
Cables, Connectors, Adapters and Tools	
GRAS AA2006	National Instruments Cable 180524-10 (50-position ribbon cable)

GRAS AA0033	1 m BNC cable (5 pcs)
GRAS AA0074	1 m LEMO extension cable (2 pcs)
AC0021	BNC T-connector
GRAS RA0003	Straight adapter for ½" microphone and ¼" preamplifier
GRAS RA0063	⅛ microphone and ¼" preamplifier adapter
RA0081	½" microphone tool
RA0200	¼" microphone tool
RA0210	⅛" microphone tool
Documents	
-	GRAS license for SW0002
LI0028	90CA Instruction Manual
-	Instruction manuals for 42AP, 12AQ and 14AA

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Available Options

Special options are available for specific types of calibration, accredited calibration, and training.

GRAS OP0020

- Preamplifier Calibration Option
- ½'' Pressure microphone, prepolarized
- ¼'' Preamplifier with 3 m cable
- ½'' CCP preamplifier
- ¼'' CCP preamplifier with 3 m cable (Microdot connector)
- 20pF Input adapter for ½'' preamplifiers
- 3 m microphone cable, SMB-BNC connector
- 1 m Cable BNC 50 ohm
- Test program for preamplifier

GRAS OP0021

- Calibration of 1" Microphone Option
- Adapter for 1" microphone and ½" preamplifier
- 1" Electrostatic actuator

GRAS OP0022

- Accredited Calibration of Reference Units
- DANAK calibration of reference microphone, reference preamplifier, and pistonphone

GRAS OP0023

- Kit for sensitivity calibration of Flush-mount microphone Sets

GRAS OP0024

- Kit for frequency calibration of Flush-mount microphone Sets

GRAS OP0025

- Kit for sensitivity calibration of Surface microphone Sets

GRAS OP0026

- Kit for frequency calibration of Surface microphone Sets

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About GRAS Sound & Vibration

GRAS is a worldwide leader in the sound and vibration industry. We develop and manufacture state-of-the-art measurement microphones and related equipment for industries where acoustic measuring accuracy and repeatability are of the utmost importance. This includes applications and solutions for customers within the fields of aerospace, automotive, audiology, consumer electronics and other highly demanding industries. GRAS microphones are designed to live up to the high quality, durability and accuracy that our customers have come to expect, trust and require.
GRAS Sound & Vibration is represented through subsidiaries and distributors in more than 40 countries and is part of Axiometrix Solutions, a leading test solutions provider comprised of globally recognized measurement brands. Read more at www.grasacoustics.com

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