GRAS 50AI-LP

1/2" CCP Rugged Intensity Probe for Siemens DAQ

Freq range: IEC 61043 Class 1
Dyn range: 25 dB(A) to 152 dB
Sensitivity: 12.5 mV/Pa

The GRAS 50AI-LP 1/2" CCP Rugged Intensity Probe for Siemens DAQ is an industrial sound intensity probe in a very robust design that makes it suitable for use in heavy industrial environment. The probe has remote control and direct connection to Siemens data acquisition modules with ICP inputs.

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Typical applications

- Sound-power measurements
- Sound-source location and ranking
- Sound Intensity mapping

Design

The GRAS 50AI-LP 1/2" CCP Rugged Intensity Probe is a sound intensity probe for direct connection to Siemens data acquisition modules with ICP inputs.

The probe includes a pair of phase matched prepolarized measurement microphones that meet the requirements of IEC standard 61043 for a class-1 intensity probe. The small rugged ¼" CCP preamplifiers ensure minimum disturbances to the sound field for accurate measurements in the full frequency range.

The probe set includes solid interchangeable spacers for microphone separation. These spacers can be easily interchanged without dismantling the probe.

The 50AI-LP comes with spacers from 12 mm to 50 mm so that the probe can cover the frequency range from 80 Hz to 10 kHz.

All components are made specifically for sound intensity applications. Both small ¼" diameter by 40 mm long microphone preamplifiers are housed in robust, stainless steel casings. This enables novel probe designs for reducing disturbances to the sound field otherwise brought about by the effects of shadows and diffraction, and a symmetry that enables reliable calibrations as described in the proposed standard (ISO/DIS 9614-2) for sound power measurements using sound intensity measurements.

The microphone is a ½” free-field prepolarized microphone with a uniquely designed pressure equalisation system that ensures extremely well defined phase characteristics.

The microphone and preamplifier are mounted on a swivel head on the telescopic arm of the handle. This flexible solution allows measurements very close to the sound source.

The very robust probe head of the 50AI-LP is optimized for heavy use in the field.

The 50AI-LP is assembled and tested by GRAS before leaving the factory. An individual test certificate is included.

Calibration

Before leaving the factory, all GRAS products are calibrated in a controlled laboratory environment using traceable calibration equipment. We recommend a yearly recalibration at minimum, depending on the use, measurement environment, and internal quality control programs. We recommend calibration prior to each use to ensure the accuracy of your measurements.

Warranty

All GRAS products are made of high-quality materials that will ensure life-long stability and robustness. The 50AI-LP is delivered with a 5-year warranty.

Damaged diaphragms in microphones can be replaced. The warranty does not cover products that are damaged due to negligent use, an incorrect power supply, or an incorrect connection to the equipment.

For more information, contact your GRAS representative.

Service and Repair

All repairs are made at GRAS International Support Center located in Denmark. Our Support Center is

equipped with the newest test equipment and staffed with dedicated and highly skilled engineers. Upon request, we make cost estimates based on fixed repair categories.

If a product covered by warranty is sent for service, it is repaired free of charge, unless the damage is the result of negligent use or other violations of the warranty. All repairs are delivered with a service report, as well as an updated calibration chart.

Specifications

Polarization/Connection		0 V / CCP
Frequency range (±2 dB)	Hz	Ref. IEC 61043 Class 1
Dynamic range lower limit (microphone thermal noise)	dB(A)	25
Dynamic range upper limit	dB	152
Set sensitivity @ 250 Hz (±2 dB)	mV/Pa	12.5
Microphone venting		Rear
Temperature range, operation	°C / °F	5 to 40 / 41 to 104
Temperature coefficient @250 Hz	dB/°C / dB/°F	-0.01
Humidity range non condensing	% RH	0 - 100
Humidity coefficient @250 Hz	dB/% RH	-0.001
Influence of axial vibration @1 m/s²	dB re 20 µPa	66
Connector type		12-pin LEMO
CE/RoHS compliant/WEEE registered		Yes/Yes/Yes
Weight	g / oz	400 / 14.110

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

Ordering info

Included

GRAS RA0213	Rugged Probe Head
GRAS 40GK-S1	1/2"' Intensity Microphone Set
GRAS RA0001	Right-angled (90°) Adapter for 1/2" microphone and 1/4" preamplifier
GRAS GR0040	Holder for spacer
GRAS RA0264	Spacer, 50 mm
GRAS RA0265	Spacer, 25 mm
GRAS RA0266	Spacer, 12 mm
GRAS 26CC Set	1/4" CCP Preamplifier set
GRAS AA0021	5 m Extension Cable, 5 m, 12 pin LEMO male - male
GRAS AC0022	Adapter cable, 12-pin LEMO to 2 x BNC + USB Adapter
GRAS AA0068	2 x SMB to Microdot cable, 25 cm (male-male)
GRAS AI0048S	Probe handle
GRAS AM0376	Windscreen

Optional

GRAS AA0010-S1	3 m LEMO 12-pin - Lemo 12-pin, Cable for Intensity Probe
GRAS AA0010	10 m LEMO 12-pin - Lemo 12-pin, Cable for Intensity Probe
GRAS 51AB	Intensity Calibrator
GRAS 42AP	Pistonphone with built-in barometerand thermometer (recommended)
GRAS 42AA	Pistonphone
GRAS RA0024	Two-port Calibration Coupler (for GRAS 42AP or 42AA Pistonphones)
GRAS 51AC	Sound Intensity Calibration Kit for 50AI-LP

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GRAS Worldwide

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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 to industries where acoustic measuring accuracy and repeatability is of utmost importance in R&D, QA and production. This includes applications and solutions for customers within the fields of aerospace, automotive, audiology, and consumer electronics. GRAS microphones are designed to live up to the high quality, durability and accuracy that our customers have come to expect and trust.

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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