



G.R.A.S. 47DX 1/8" CCP Flush-mount Microphone Set

Frequency range: 10 Hz to 100 kHz
Dynamic range: 52 dB(A) to 174 dB
Sensitivity: 0.9 mV/Pa

The G.R.A.S. 47DX 1/8" CCP Flush-mount Microphone Set is a low profile 1/8" precision pressure microphone with built-in CCP preamplifier and TEDS.

Technology

Introduction

As the only 100% focused developer and manufacturer of measurement microphones, our goal is to provide you with the right sensor for the right application. Whether this is realized through a standard, special or customized sensor solution, our concern and priority is always to help you achieve the best possible measurement results – every time.

The 47DX 1/8" Flush-mount Microphone Set is the newest member of our range of low profile CCP microphone sets. With a height to the diaphragm of only 9 mm and a housing with a diameter of only 12 mm you can use the 47DX in applications with size constraints.

The 47DX has a prepolarized pressure microphone with a wide dynamic and frequency range. The built-in preamplifier is a low-noise constant current power (CCP) type with a built-in TEDS circuit for automatic transducer identification. The set has an integrated 1.5 m cable (customized length optional) with Microdot connector and BNC adapter.

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SOUND & VIBRATION

It is based on the IEC 61094 standard for measurement microphones.

Applications and use

The 47DX's low profile makes it ideal for flush mounting in confined spaces, for example in clay models and scale models for wind tunnel tests.

Its wide frequency range and low sensitivity makes it ideal for high-level impulsive noise measurements and for investigation of air flow and turbulence in scale models or in full scale testing.

System verification

For proper sensitivity calibration, we recommend using a pistonphone like G.R.A.S. 42AP Intelligent Pistonphone.

Quality and warranty

All G.R.A.S. microphone sets are made of high-quality materials that will ensure life-long stability and robustness. The microphone sets are all assembled in verified clean-room environments by skilled and dedicated operators with many years of expertise in this field. The microphone diaphragm, body, and improved protection grid are made of high-grade stainless steel, which makes the microphone resistant to physical damage, as well as corrosion caused by aggressive air or gasses. This, combined with the reinforced gold-plated microphone terminal which guarantees a highly reliable connection, enables G.R.A.S. to offer 5 years warranty against defective materials and workmanship.

Service

If you accidentally damage the diaphragm on a G.R.A.S. microphone, we can - in most cases - replace it at a very reasonable cost and with a short turn-around time. This not only protects your investment, but also pleases your quality assurance department because you don't have to worry about new serial numbers, etc.

Calibration

Before leaving the factory, all G.R.A.S. microphone sets are calibrated as a unit in a controlled laboratory environment using traceable calibration equipment. The sets are delivered with calibration charts including sensitivity values and frequency response graphs for the complete set. You can use the sensitivity value directly in your system setup. Depending on the use, measurement environment, and internal quality control programs, we recommend recalibrating the microphone set at least every second year.

Specifications

Frequency range (± 3 dB)	Hz	10 to 100 k
Dynamic range lower limit (microphone thermal noise)	dB(A)	52

Dynamic range upper limit with G.R.A.S. preamplifier @ +28 V / ± 14 V power supply	dB	174
Set sensitivity @ 250 Hz (± 2 dB)	dB re 1V/Pa	0.9
Polarization voltage	V	0
Microphone venting		Front
Output impedance	Ω	< 50
Temperature range, operation	$^{\circ}\text{C}$ / $^{\circ}\text{F}$	-30 to 70 / -22 to 158
Temperature range, storage	$^{\circ}\text{C}$ / $^{\circ}\text{F}$	-40 to 85 / -40 to 185
Static pressure coefficient @250 Hz	dB/kPa	-0.014
Humidity range non condensing	% RH	0 to 100
Humidity coefficient @250 Hz	dB/% RH	< 0.1
Influence of axial vibration @1 m/s ²	dB re 20 μPa	59
TEDS UTID (IEEE 1451.4)		27 v. 1.0
Connector type		Microdot 10/32
CE/RoHS compliant/WEEE registered		yes/yes/yes
Weight	g / oz	10 / 0.353

Ordering info

Included items

G.R.A.S. AE0046	Microdot - BNC male adapter
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Optional items

G.R.A.S. 12AL	1-Channel CCP Power Module with A-weighting filter
G.R.A.S. 42AP	Intelligent pistonphone
G.R.A.S. RA0278	Pistonphone Calibration Adapter for 1/8" Flush-mount Microphone Sets

G.R.A.S. RA0503	Mounting Adapter for 1/8" Flush-mount Microphone Set
G.R.A.S. AE0074	BNC male to female adapter
G.R.A.S. AA0035	3 m BNC - BNC Cable
G.R.A.S. AA0037	10 m BNC - BNC Cable
G.R.A.S. AA0039-CL	Customized length BNC - BNC Cable



We make Microphones

Tradition

Since the establishment in 1994, G.R.A.S. have been 100% dedicated to developing and manufacturing high-quality measurement microphones and related acoustic equipment. Founded by the Danish acoustics pioneer Gunnar Rasmussen who for more than 60 years has contributed to the world of sound and vibration with his unique ideas and designs. From the first reproducible 1" condenser measurement microphone that enabled quality measurements and instrumentation for acoustic calibration, Mr. Rasmussen's ingenuity and foresight led to the world's most popular acoustic sensor: The 1/2" measurement microphone. Then the 1/4" and 1/8" microphones followed with outstanding dynamic and high-frequency capability that brought higher definition and transparency into impulse noise diagnostics. Many variants have been made available over the years; all based on Gunnar Rasmussen's original 1" pressure microphone design.

Innovation

At G.R.A.S., we and our customers benefit daily from Mr. Rasmussen's exceptional understanding of acoustics, physics, electronics and measurement needs. Not only in R&D but throughout the organisation, we are proud to develop, produce and offer the broadest range of high-quality measurement microphones and accessories in the industry. And as a family company, now owned and managed by the two sons, Per Rasmussen and Peter Wulf-Andersen, we safeguard our heritage and knowledge to help create new opportunities with our customers. We work with everybody with an interest in sound or noise within the fields of aerospace, automotive, audiology, consumer electronics, noise monitoring, building acoustics and telecommunications, metrology, education, consultancy, legislation and system integration.

Quality

All our microphones are solely produced in stainless steel and in a quality that allows for a 5 year warranty. Should you by mistake damage the diaphragm on a G.R.A.S. microphone, our special technique enables repair at very reasonable price.

Partners

G.R.A.S. is represented worldwide in more than 40 countries by subsidiaries and distributors. Whether you are searching for a multi-channel solution or just a replacement microphone for your sound level meter G.R.A.S. will help solve your needs. Visit gras.dk for your local G.R.A.S. partner.