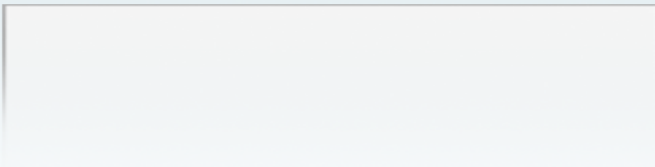




## G.R.A.S. RA0015 1" Electrostatic Actuator



The G.R.A.S. RA0015 is an electrostatic actuator for testing the frequency response of standard 1" microphones. The RA0015 can be connected directly to the G.R.A.S. 14AA Actuator Supply.

### Technology

Electrostatic actuators are used to simulate the pressure response of condenser microphones. This is done by exerting an oscillating electrostatic force in front of the diaphragm of the microphone and measuring the consequent response of the microphone. These electrostatic oscillations must not reverse polarity if frequency doubling is to be avoided. This is overcome by applying an electrostatic force comprising a sufficiently high polarisation voltage (800 V) upon which a smaller alternating voltage is superimposed.

By applying such an oscillating electrostatic force which sweeps over a range of frequencies from 100 Hz to 200 kHz, the pressure response of the microphone can be tested. To this must be added corrections to determine the microphone's response in a free sound field for various angles of incidence as well its response in a diffuse sound field for random angles of incidence.

Care should be taken when calibrating below 200 Hz because of the influence of pressure equalisation in the rear volume of the microphone .

With the G.R.A.S. Actuator Supply Type 14AA it complies with IEC 61094 -6 "Measurement microphones - Part 6: Electrostatic actuators for determination of frequency responses."

## Typical Applications and Use

The RA0015 is used for electrostatic actuator calibration.

With the AC test signal superimposed on the 800V DC polarization voltage, the 12AA makes it possible to measure the pressure frequency response of the microphone under test.

Its wide frequency range makes it possible to determine the pressure frequency response of condenser microphones from 100 Hz to 200 kHz. For calibration of condenser microphones under 100 Hz, the low frequency calibrator 42AE is recommended.

A maximum test signal output of 300 V peak to peak allows testing at realistic sound pressure levels.

## Compability

The RA0015 can be connected directly to the 14AA Actuator Supply. ½-inch microphones can be tested directly, adapters for testing of 1/4-inch and 1/8-inch microphones are included.

## Quality and warranty

The RA0015 is built to high-quality standards which enables G.R.A.S. to offer 3 years warranty against defective materials and workmanship.

## Service

Before leaving the factory, all G.R.A.S products are tested. Should a power module become defective, it can be sent to G.R.A.S. for repair.

## Specifications

ANSI standard		S1.10
IEC standard		61094-6
Weight	g / oz	

G.R.A.S. Sound & Vibration reserves the right to change specifications and accessories without notice.



## **We make Microphones**

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### **Tradition**

Since the establishment in 1994, G.R.A.S. has been 100% dedicated to developing and manufacturing high-quality measurement microphones and related acoustic equipment. G.R.A.S. was 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**

At G.R.A.S. we know that in order for you to trust your measurement results; signal quality, stability and robustness are essentials. And because we also know how you handle and use the microphones in your daily work, we design and build them to perform under real life conditions – and beyond.

When developing measurement microphones, our R&D team uses a series of highly accelerated life tests (HALT) to ensure that our microphones live up to the high quality and precision our customers have come to expect and trust. Thus to simulate the handling and use a microphone is exposed to when working outside the lab – in real life situations - we bake it, we humidify it, we shake it and we try to break it - all to make sure that you can trust your measurement results - every time.

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](http://gras.dk) for your local G.R.A.S. partner.