



# Ideal for Wide Range of High Precision Acoustic Measurement Applications

# NA-42

Sound Level Measuring Amplifier



# From reliable RION microphone lineup you can select a suitable one.

The NA-42 has three settings for frequency weighting (A, C, Flat) and time weighting (Fast, Slow, Impulse), which covers the requirements of general and environmental acoustic measurements.

Measurement mode can be set to sound pressure level, sound level maximum, or peak sound pressure level.



One or two decimal points can be selected for the numeric readout of measurement results.

In addition, the large LCD panel shows settings and various other information.

Besides AC and DC output, a serial interface and a comparator output are also available.

This makes it easy to integrate the unit in a measurement or monitoring system.

Thanks to its handy box-shaped design, the unit is easily portable, and power can be supplied either by an AC adapter or from internal batteries.

Whether in the lab or in the field, the NA-42 always is a capable performer.

Readout with 2 decimal points



Rear View

The NA-42 covers a wide frequency and measurement level range and supports many different kinds of microphones. It can be used for precision measurements in diverse areas, including manufacturing and research. Suitable microphones include the low-noise microphones UC-34P and UC-57 and the UC-29 and UC-54 for measurements up to 100 kHz.



20 dB indication screen

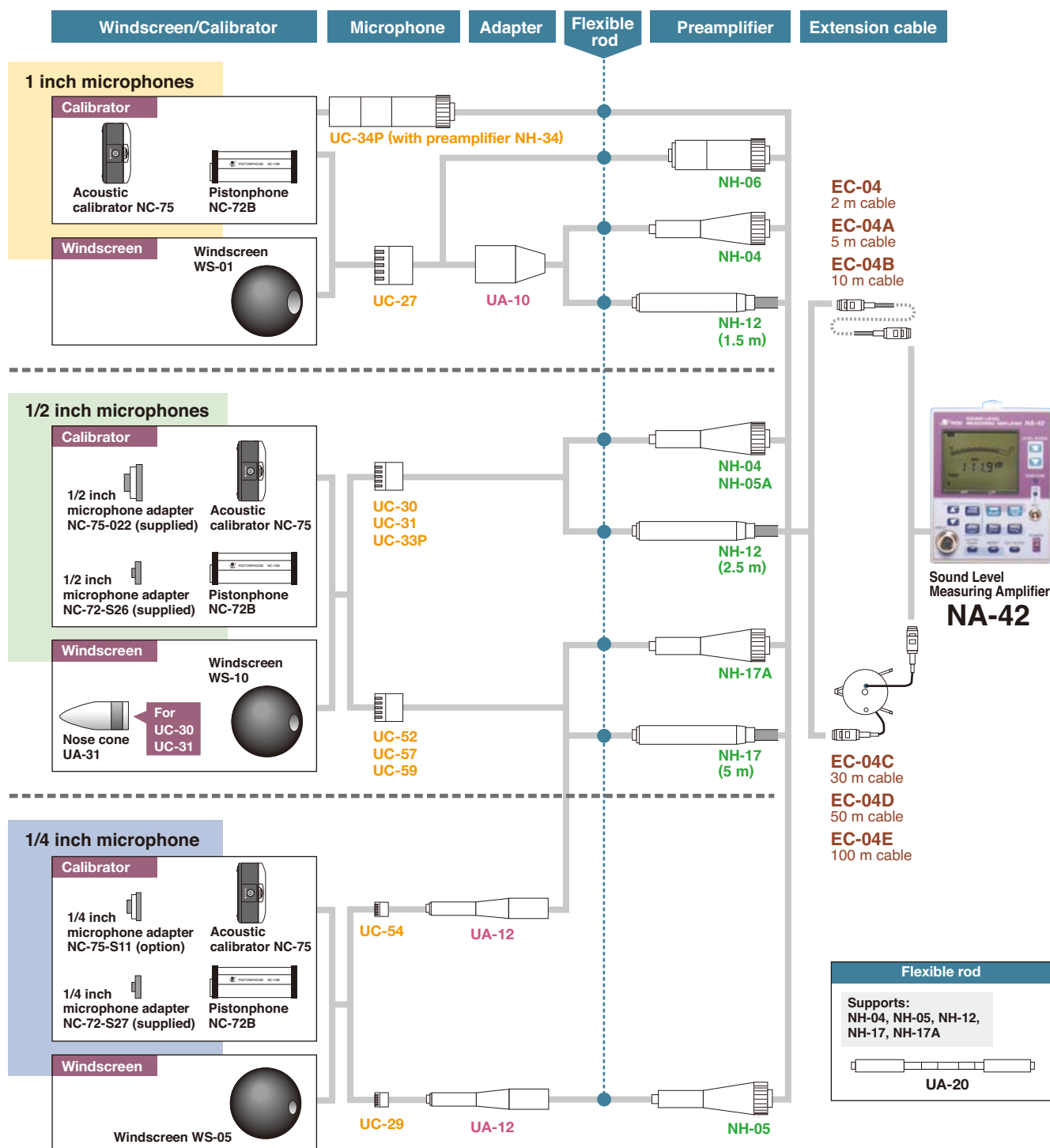


50 dB indication screen

## Features

- Wide measurement frequency and level range, plus support for many different microphone types (from low to high sound pressure levels)
- High-resolution readout of sound pressure level down to two decimal points
- Integrated comparator function is convenient for use in measurement and monitoring systems
- Large, easy to read LCD panel with backlight
- Continuous operation up to 14 hours on one set of alkaline batteries (size "C" x 4).  
Batteries function as power failure backup during AC adapter operation.

# Microphone and preamplifier combinations



## Specifications for various microphone combinations

Overall range of linear operation measured with A weighting, not including overload margin

Model	Range of linear operation	Frequency range	Suitable purpose
UC-59	28 to 145 dB	10 Hz to 20 kHz	Precision sound level measurement
UC-52	28 to 146 dB	20 Hz to 8 kHz	General sound level measurement
UC-34P	10 to 112 dB	10 Hz to 12.5 kHz	Ultra low sound level measurement
UC-29	50 to 164 dB	20 Hz to 100 kHz	Ultrasonic measurement and high sound pressure level measurement
UC-27	20 to 145 dB	5 Hz to 12.5 kHz	Low sound level measurement
UC-54	51 to 164 dB	20 Hz to 100 kHz*1	Ultrasonic measurement and high sound pressure level measurement
UC-57	22 to 132 dB	20 Hz to 16 kHz	Low sound level measurement (up to 16 kHz)
UC-31	34 to 155 dB	10 Hz to 35 kHz	High sound pressure level measurement

\*1 UC-29/54 frequency range refers to microphone without grid.

## Level range settings

Settings shown in    are only available with ±45 V preamplifier voltage.

Preamplifier gain	Microphone sensitivity (dB)	Level range (dB)												
		60	70	80	90	100	110	120	130	140	150	160	170	180
0 dB / 20 dB	-19.9 to -10.0	60	70	80	90	100	110	120	130	140	150	160	170	180
	-29.9 to -20.0	70	80	90	100	110	120	130	140	150	160	170	180	
	-39.9 to -30.0	80	90	100	110	120	130	140	150	160	170	180	—	
	-49.9 to -40.0	90	100	110	120	130	140	150	160	170	180	—	—	
	-59.9 to -50.0	100	110	120	130	140	150	160	170	180	—	—	—	
20 dB (UC-34P)	-19.9 to -10.0	40	50	60	70	80	90	100	110	—	—	—	—	
	-29.9 to -20.0	50	60	70	80	90	100	110	—	—	—	—	—	

## Specifications

		NA-42
Standard		The electrical characteristics correspond to JIS C 1509-1 class 1 and IEC 61672-1 class 1 regarding "frequency weightings (A, C)" and "time weightings (Fast : F, Slow : S)".
Measurement functions		Sound pressure level, sound level maximum, peak sound pressure level
Input section		Preamplifier input connector
		Preamplifier power supply: $\pm 12$ V or $\pm 45$ V (switchable)
		Microphone bias voltage: 30/60/200 V
Frequency range		1 Hz to 100 kHz (NA-42 only)
Frequency weighting characteristics		A, C, FLAT
Measurement level range		Dependent on microphone combination
Residual noise level		∕
Residual noise level (NA-42 only, without microphone and preamplifier)		A weighting: 1.5 $\mu$ Vrms or less
		C weighting: 1.5 $\mu$ Vrms or less
		Flat characteristics: 7 $\mu$ Vrms or less
		Flat (HPF 20 Hz, LPF 20 kHz): 2.5 $\mu$ Vrms or less
Time weighting characteristics		F (Fast), S (Slow), I (Impulse)
RMS detection		By digital processing
Built-in filters		High-pass filter (HPF): 3rd-order Butterworth filter, 20 Hz
		Low-pass filter (LPF): 3rd-order Butterworth filter, 20 kHz
Calibration		Electrical calibration using 1 kHz sine wave signal produced by internal oscillator
Microphone sensitivity setting range		-69.99 dB to -10.00 dB (0.01 dB steps)
Outputs	AC output (BNC connector)	1 Vrms full-scale Output impedance 600 $\Omega$ , load impedance 10 k $\Omega$ or more
	DC output (BNC connector)	6 V (1 V/10 dB) full-scale Output impedance 50 $\Omega$ load impedance 10 k $\Omega$ or more
External filter input/output		BNC connector
		Output impedance 600 $\Omega$ , input impedance 100 k $\Omega$
Interface		Serial communication (for setting control from computer and data output)
		D-sub 9-pin male connector
Comparator function		Sound pressure level evaluating comparator (M3 screw terminal block)
Display	LCD	Numeric readout to 2 decimal points or 1 decimal point (switchable)
	Bar graph	Scale range 50 dB or 20 dB (switchable)
	Other features	Various setting indicators, backlight
Power requirements		IEC R14 (size "C") batteries x 4, or AC adapter (NC-98C, supplied)
Battery life		Alkaline batteries (LR14) approx. 14 hours
		Manganese batteries (R14P) approx. 6 hours
Ambient conditions for use		-10 °C to +50 °C (10 % to 90 % relative humidity)
Dimensions and weight		171 (H) x 120 (W) x 236 (D) mm, 1.8 kg (without batteries)
Supplied accessories		AC adapter (NC-98C) x 1, storage case x 1, IEC R14 (size "C") batteries x 4

### Optional accessories

Product name	Model number
Microphone extension cable	EC-04 (2 m and up)
Input adapter	UA-01
Acoustic calibrator	NC-75
Pistonphone	NC-72B

Product name	Model number
Windscreen	Various
Microphone	Various
Preamplifier	Various



**JCSS**  
JCSS 0197

RIION CO., LTD. is recognized by the JCSS which uses ISO/IEC 17025 as an accreditation standard and bases its accreditation scheme on ISO/IEC 17011. JCSS is operated by the accreditation body (IA Japan) which is a signatory to the Asia Pacific Accreditation Cooperation (APAC) as well as the International Laboratory Accreditation Cooperation (ILAC). The Quality Assurance Section of RIION CO., LTD. is an international MRA compliant JCSS operator with the accreditation number JCSS 0197.

ISO 14001 RIION CO., LTD.  
ISO 9001 RIION CO., LTD.




\* Windows is a trademark of Microsoft Corporation. \* Specifications subject to change without notice.

Distributed by:

 **RIION CO., LTD.**  
<https://rion-sv.com/>

3-20-41, Higashimotomachi, Kokubunji, Tokyo 185-8533, Japan  
Tel: +81-42-359-7888 Fax: +81-42-359-7442

 This product is environment-friendly. It does not include toxic chemicals on our policy.  
This leaflet is printed with environmentally friendly UV ink.