



8947 CHARGE UNIT

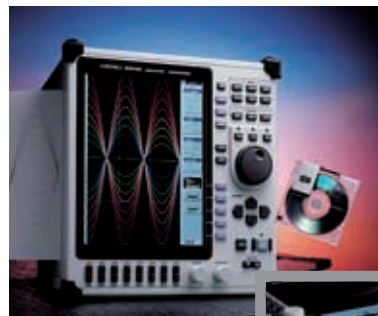
Recorders

For use with the 8826, 8835-01, 8841, and 8842 MEMORY HiCORDERs

Acceleration pickup and voltage input amplifier

Product Outline and Features

- **Single unit supports two channels**
The 8947 CHARGE UNIT is equipped with circuits for two independently usable input channels. As with previous analog units, simply slot the 8947 into the MEMORY HiCORDER for use.
- **In addition to its charge input terminals, the 8947 is equipped with BNC terminals that support internal pre-amplifier pickup sensors.**
Not only ordinary piezoelectric acceleration pickups, but voltage output acceleration pickups with internal pre-amplifiers can be connected directly to the 8947, which supplies a constant current power supply for pre-amplifier operation.
- **Accommodates voltage signal inputs**
In addition to acceleration pickup signals, the 8947 can also measure ordinary voltage signals.
- **Internal anti-aliasing filter**
The 8947 is equipped with an anti-aliasing filter that is indispensable when performing FFT analysis on vibration waveforms.
- **The 8947 can be used for the following applications:**
Measuring engine vibration
Measuring brake vibration
Measuring pump vibration
Measuring bearing vibration
Measuring vibration of vibrators in cellular telephones
CD player vibration testing
...and other types of vibration endurance testing



Photograph shows the 8841 MEMORY HiCORDER



Insert the input unit

Convenient Features

- Because MEMORY HiCORDERs are equipped with a charge amplifier, the cumbersome amplifier, recorder, and wiring that were required with external charge amplifiers are no longer necessary.
- Formerly, conversion was required in order to obtain acceleration values from waveforms captured using an external charge amplifier together with a recorder. This is no longer necessary because the 8947 can read measured values directly.
- MEMORY HiCORDERs accommodate a wide range of input units. This makes it easy to see the correlation between various waveforms appearing simultaneously on a single time axis.

Main Applications

- Measurement of vibration in automobiles
- Measurement of vibration in facilities



ISO14001
JQA-E-90091



<http://www.hioki.co.jp/>

HIOKI company overview, new products, environmental considerations and other information are available on our website.



Photo: The 8936 ANALOG UNIT being connected to the 8841. The 8947 is connected in a similar manner.

■ Specifications for the 8947 CHARGE UNIT



8947 CHARGE UNIT (Accurate to 23±5°C after power on for 1 hour. Accuracy guaranteed for 1 year.)	
Input	<p>Number of channels: 2 Measurement objects can be selected individually for each channel. Full isolation between inputs, and between inputs and recorder. Common GND for voltage input and charge input channels.</p> <p>Voltage and pre-amplifier internal inputs: BNC terminals (With voltage input: input resistance, 1 MΩ; input capacitance, less than 200 pF)</p> <p>Charge input: miniature connector (#10-32 UNF)</p>
Suitable converters	<p>Charge input: piezoelectric charge output acceleration pickup sensors</p> <p>Internal pre-amplifier input: acceleration pickup sensors with built-in pre-amplifier</p>
Measurement ranges Charge input (miniature connector)	<p>4 to 20k (m/s²)/DIV*⁸¹, 12 range (sensitivity: 0.1 to 0.25 pC/(m/s²)) 2 to 10k (m/s²)/DIV*⁸¹, 12 range (sensitivity: 0.251 to 0.5 pC/(m/s²)) 1 to 4k (m/s²)/DIV*⁸¹, 12 range (sensitivity: 0.501 to 1.0 pC/(m/s²)) 400m to 2k (m/s²)/DIV*⁸¹, 12 range (sensitivity: 1.01 to 2.5 pC/(m/s²)) 200m to 1k (m/s²)/DIV*⁸¹, 12 range (sensitivity: 2.51 to 5.0 pC/(m/s²)) 100m to 400 (m/s²)/DIV*⁸¹, 12 range (sensitivity: 5.01 to 10 pC/(m/s²)) Measurement resolution is 1/160 to 1/64 of range (changes according to measurement sensitivity)</p> <p>⁸¹ When attached to recorder where full-scale (f.s.) = 10 divisions</p> <p>2 to 10k (m/s²)/DIV*⁸², 12 range (sensitivity: 0.1 to 0.25 pC/(m/s²)) 1 to 5k (m/s²)/DIV*⁸², 12 range (sensitivity: 0.251 to 0.5 pC/(m/s²)) 500m to 2k (m/s²)/DIV*⁸², 12 range (sensitivity: 0.501 to 1.0 pC/(m/s²)) 200m to 1k (m/s²)/DIV*⁸², 12 range (sensitivity: 1.01 to 2.5 pC/(m/s²)) 100m to 500 (m/s²)/DIV*⁸², 12 range (sensitivity: 2.51 to 5.0 pC/(m/s²)) 50m to 200 (m/s²)/DIV*⁸², 12 range (sensitivity: 5.01 to 10 pC/(m/s²)) Measurement resolution is 1/80 to 1/32 of range (changes according to measurement sensitivity)</p> <p>⁸² When attached to recorder where full-scale (f.s.) = 20 divisions</p> <p>Measurement sensitivity: 0.1 to 10 pC/(m/s²), amplitude accuracy: ±2% f.s., frequency characteristics: 1 to 50 kHz (+1/-3 dB), low-pass filter: 500/5 kHz, highest input charge: ±500 pC (high sensitivity side 6 range), ±50000 pC (low sensitivity side 6 range)</p>

Measurement ranges Pre-amplifier internal input (BNC terminal)	<p>4 to 20k (m/s²)/DIV*⁸³, 12 range (sensitivity: 0.1 to 0.25 mV/(m/s²)) 2 to 10k (m/s²)/DIV*⁸³, 12 range (sensitivity: 0.251 to 0.5 mV/(m/s²)) 1 to 4k (m/s²)/DIV*⁸³, 12 range (sensitivity: 0.501 to 1.0 mV/(m/s²)) 400m to 2k (m/s²)/DIV*⁸³, 12 range (sensitivity: 1.01 to 2.5 mV/(m/s²)) 200m to 1k (m/s²)/DIV*⁸³, 12 range (sensitivity: 2.51 to 5.0 mV/(m/s²)) 100m to 400 (m/s²)/DIV*⁸³, 12 range (sensitivity: 5.01 to 10 mV/(m/s²)) Measurement resolution is 1/160 to 1/64 of range (changes according to measurement sensitivity)</p> <p>⁸³ When attached to recorder where full-scale (f.s.) = 10 divisions</p> <p>2 to 10k (m/s²)/DIV*⁸⁴, 12 range (sensitivity: 0.1 to 0.25 mV/(m/s²)) 1 to 5k (m/s²)/DIV*⁸⁴, 12 range (sensitivity: 0.251 to 0.5 mV/(m/s²)) 500m to 2k (m/s²)/DIV*⁸⁴, 12 range (sensitivity: 0.501 to 1.0 mV/(m/s²)) 200m to 1k (m/s²)/DIV*⁸⁴, 12 range (sensitivity: 1.01 to 2.5 mV/(m/s²)) 100m to 500 (m/s²)/DIV*⁸⁴, 12 range (sensitivity: 2.51 to 5.0 mV/(m/s²)) 50m to 200 (m/s²)/DIV*⁸⁴, 12 range (sensitivity: 5.01 to 10 mV/(m/s²)) Measurement resolution is 1/80 to 1/32 of range (changes according to measurement sensitivity)</p> <p>⁸⁴ When attached to recorder where full-scale (f.s.) = 20 divisions</p> <p>Measurement sensitivity: 0.1 to 10 mV/(m/s²), amplitude accuracy: ±2% f.s., frequency characteristics: 1 to 50 kHz (+1/-3 dB), low-pass filter: 500/5 kHz, driving power supply: 2 mA ±20%, +15 V ±5%</p>
Measurement ranges Voltage input (BNC terminal)	<p>1 mV to 5 V/DIV*⁸⁵, 12 range ⁸⁵ When attached to recorder where full-scale (f.s.) = 10 divisions</p> <p>0.5 mV to 2 V/DIV*⁸⁶, 12 range ⁸⁶ When attached to recorder where full-scale (f.s.) = 20 divisions</p> <p>DC amplitude accuracy: ±0.4% f.s., frequency characteristics: DC to 400 kHz +1/-3 dB (selected DC coupling), 1 to 400 kHz +1/-3 dB (selected AC coupling), low-pass filter: 5/500/5 k/100 kHz, input coupling: DC, AC, or GND, highest input voltage: 30 V rms or 60 V DC</p>
Common to all measurement ranges	<p>Zero position setting: -50 to 150% f.s. (when the y-axis is displayed at ×1)</p> <p>Anti-aliasing filter: can be turned ON or OFF, cut off frequency is the time axis, connected and set automatically by the frequency axis range</p>
Maximum sampling rate	1 MS/s (simultaneous sampling of two channels)
Maximum grounding voltage	30 V rms or 60 V DC between the input unit and frame, and between input channels. (BNC terminal)
Dimensions and mass	Approx. 170 W × 20 H × 148 D mm ; approx. 310 g
Accessories	None Input cord is optional

Ordering information

8947 CHARGE UNIT (2 channels/1 unit)

● Compatible MEMORY HiCORDERS

The 8947 is installable at the factory, and can be replaced by the user.

8826 MEMORY HiRECORDER (Ver. 2.20 or later, unit only)

8835 MEMORY HiRECORDER (Ver. 2.20 or later, unit only)
(when 9540 is installed, Ver. 5.20 or later)

8835-01 MEMORY HiRECORDER (Ver. 1.00 or later, unit only)
(when 9540-01 is installed, Ver. 5.00 or later)

8841 MEMORY HiRECORDER (Ver. 2.20 or later, unit only)

● Options

9198 CONNECTION CORD (low-voltage use, up to 300 V)

9217 CONNECTION CORD (insulated BNC - insulated BNC)

- The 8947 CHARGE UNIT cannot be used on its own. To use, connect to a HIOKI MEMORY HiRECORDER unit.
- A special accelerator pickup is necessary for measuring acceleration. HIOKI does not make accelerator pickups.
- The 8947 CHARGE UNIT is not equipped with a voltage measurement input cord. Please purchase the optional 9198 CONNECTION CORD.

8842 MEMORY HiRECORDER (Ver. 2.20 or later, unit only)

8720 VISUAL HiRECORDER (Main unit only)

HIOKI

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All information correct as of Apr. 20, 2000. All specifications are subject to change without notice.

■ Internet HIOKI website <http://www.hioki.co.jp/>

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