

1. Before Use

- Thank you for purchasing the HIOKI "8955 F/V UNIT". To obtain maximum performance from the device, please read this manual first, and keep it handy for future reference.
- The 8955 is the F/V UNIT for the 8855 MEMORY HiCORDERs. Always install this device on the 8855 MEMORY HiCORDER for use. For the detailed installation procedure, refer to Main unit manual.
- The device can be used with 8855 MEMORY HiCORDERs equipped with ROM Ver. 1.20 or later. For detail, contact your dealer or Hioki representative.
- Follow carefully the advice of "3. Notes on Use."

2. Safety Notes



This device is designed to comply with IEC 61010 Safety Standards, and has been thoroughly tested for safety prior to shipment. However, mishandling during use could result in injury or death, as well as damage to the device. Be certain that you understand the instructions and precautions in the manual before use. We disclaim any responsibility for accidents or injuries not resulting directly from device defects.

Safety symbol

This manual contains information and warnings essential for safe operation of the device and for maintaining it in safe operating condition. Before using the device, be sure to carefully read the following safety notes.

	• The symbol printed on the device indicates that the user should refer to a corresponding topic in the manual (marked with the symbol) before using the relevant function. • In the manual, the symbol indicates particularly important information that the user should read before using the device.
	• Indicates a grounding terminal.
	• Indicates AC (Alternating Current).
	• Indicates DC (Direct Current).

The following symbols are used in this Instruction Manual to indicate the relative importance of cautions and warnings.

	Indicates that incorrect operation presents an extreme hazard that could result in serious injury or death to the user.
	Indicates that incorrect operation presents a significant hazard that could result in serious injury or death to the user.
	Indicates that incorrect operation presents a possibility of injury to the user or damage to the device.

3. Notes on Use



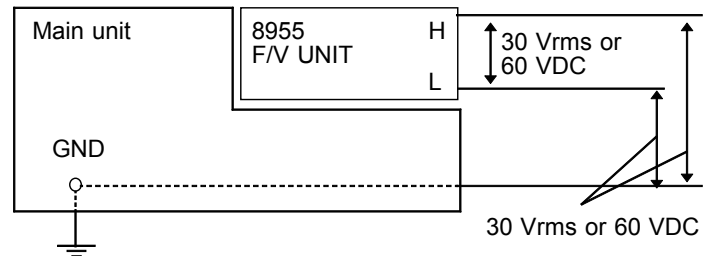
- **The maximum rated voltage to earth (voltage between 8955 BNC input terminal and main unit frame, and between BNC input terminals of other input modules) is 30 V rms or 60 VDC. To avoid the risk of electric shock and damage to the device, take care that voltage between 8955 BNC input terminal and main unit frame, and between BNC input terminals of other input modules does not exceed these ratings.**
- **The maximum input voltage is 30 Vrms or 60 VDC. Attempting to measure voltage in excess of the maximum input could destroy the device and result in personal injury or death.**



- **The power terminal is especially for use with the 9322 differential probe. Use the 9328 power cord to supply power to the 9322. To avoid personal injury or damage to the device, do not connect anything except the 9322 to the power terminal.**
- **Before using the device, make sure that the insulation on the connection cords and conversion cables areundamaged and that no bare conductors are improperly exposed. Using the device in such conditions could cause an electric shock, so contact your dealer or Hioki representative for replacements.**



For safety reasons, only use the optional 9198 CONNECTION CORD (BNC) for measurement.



4. Replacement Procedure

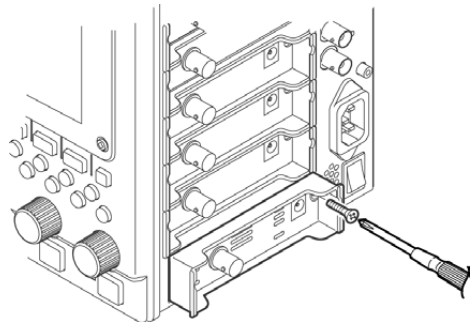


- **To avoid electric shock accident, before removing or replacing an input module, confirm that the instrument is turned off and that the all connection cords and power cord are disconnected.**
- **The mounting screws must be firmly tightened or the input module may not perform to specifications, or may even fail.**
- **To avoid the danger of electric shock, never operate the device with an input module removed. To use the device after removing an input module, install a blank panel over the opening of the removed module.**



Do not measure with a blank panel removed. Otherwise, the main unit internal temperature becomes unstable and consequently the specifications are not met.

- The following procedure describes how to remove the input module.
- Install the devices by reversing the procedure for removal.
 1. Remove the connection cords from all input modules.
 2. Power off the main unit, and disconnect the power cord.
 3. Remove the two fixing screws with a Phillips screwdriver, as shown in the figure below.
 4. Grasp the handle and pull the device out.



5. Specifications

Accuracy at 23°C±5°C(73°F±9°F), 30% to 80%RH after 30-minutes warming-up time. Accuracy guaranteed for 1 year.

Measurement function

Based on voltage input, measures frequency, rotation speed, commercial power frequency, integral values, pulse duty ratio, and pulse width.

Input terminal

Connection terminal	Metal BNC terminal
Input resistance	1 MΩ±1%
Input capacitance	35 pF±15 pF
Maximum input voltage	30 V rms or 60 VDC
Maximum rated voltage to earth	30 V rms or 60 VDC
Input type	Unbalanced (floating)

Power supply terminal

Especially for fuse 12 V±8% (Shares the ground of power with the 9322 terminals of other mounted input modules.) differential probe

Measurement specification

1. Frequency mode	
Measurement ranges	0.1, 0.5, 1, 5, 10, 50, 100, 500, 1 k, 5 kHz/DIV (f.s.=20DIV)
Measurement accuracy	±0.1%f.s. (except for 100 kHzf.s. range) ±0.7%f.s. (100 kHzf.s. range)
Frequency range	DC to 100 kHz
2. Rotation speed mode	
Measurement ranges	10, 50, 100, 500 r/min /DIV (f.s.=20DIV)
Measurement accuracy	±0.1%f.s.
Rotation speed range	0 to 10 kr/min
3. Commercial power frequency mode	
Measurement ranges	50 Hz (40 to 60 Hz), 60 Hz (50 to 70 Hz)
Measurement accuracy	±0.032 Hz
4. Integral values mode	
Measurement ranges	2 k, 10 k, 20 k, 100 k, 200 k, 1 Mcounts/DIV (f.s.=20DIV)
Integral values range	DC to 90 kHz
5. Pulse duty ratio mode	
Measurement ranges	5 %/DIV (f.s.=20DIV)
Measurement accuracy	±1% (10 to 10 kHz), ±4% (10 kHz to 100 kHz)
Pulse duty ratio range	10 to 100 kHz
6. Pulse width mode	
Measurement ranges	500 μ,1 m, 5 m, 10 m, 50 m, 100 ms/DIV (f.s.=20DIV)
Measurement accuracy	±0.1% f.s.
Pulse width range	2.5 μ to 2 s

Measurement resolution

2000 LSB/div (f.s.=20DIV) (Integral values mode)
200 LSB/div (f.s.=20DIV) (except for Integral values mode)

Response time

Response time	Less than 10 μs + sampling interval of instrument in which the device is installed. (Frequency (more than 300 Hz), Integral values, Pulse width mode) Less than 50 μs + sampling interval of instrument in which the device is installed. (Frequency (300 Hz not greater), Rotation speed, Commercial power frequency, Pulse duty ratio mode)
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Other functions

Threshold value	-10 to +10 V variable (0.2 V steps)
Slope	Rising, falling (Frequency, Rotation speed, Commercial power frequency, Integral values mode)
Level	High, Low (Duty ratio, Pulse width mode)
Hold	ON/OFF (Frequency, Rotation speed, Commercial power frequency) When hold is OFF, the current measurement value is halved if the next measurement value is not fixed within the waiting time (Two times of the cycle).
Low-pass filter	Off, 5, 500, 5 k, 100 k ±50% (Hz) -3dB
Pull up	ON/OFF, Pull up resistance: 10 kΩ

Dimensions and mass

Approx. 107.4 W x 28 H x 164.5 D mm
Approx. 4.23" W x 1.10" H x 6.48 D
Approx. 140 g, Approx. 4.9 oz.

Operating environment

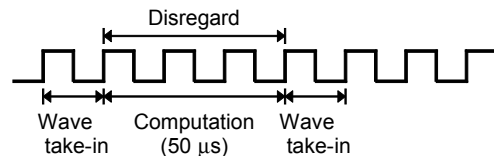
Operational ranges for temperature and humidity	Same as the Memory HiCorder in which the 8955 is installed
Operating place	Same as the Memory HiCorder in which the 8955 is installed
Temperature and humidity ranges for storage	Temperature : -10°C to 50°C (14°F to 122°F) Relative humidity : 80%RH maximum (with no condensation)

Effect of radiated radio-frequency electromagnetic field ±5 %f.s. at 3 V/m

Standards Applying
Safety EN 61010 Pollution Degree 2,
Measurement category I
(anticipated transient overvoltage 330 V)
EMC EN 61326, Class A

6. Note on Pulse Duty Measurement

Upon measurement of pulses (20 kHz or more) that rise during dead time (computation), the duty ratio of dead time pulses is not measured. The duty ratio is determined from pulses that follow the dead time.



HIOKI

HIOKI E.E. CORPORATION

HEAD OFFICE
81 Koizumi, Ueda, Nagano 386-1192, Japan
TEL +81-268-28-0562 / FAX +81-268-28-0568
E-mail: os-com@hioki.co.jp/
URL <http://www.hioki.co.jp/>
HIOKI USA CORPORATION
6 Corporate Drive, Cranbury, NJ 08512, USA
TEL +1-609-409-9109 / FAX +1-609-409-9108

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