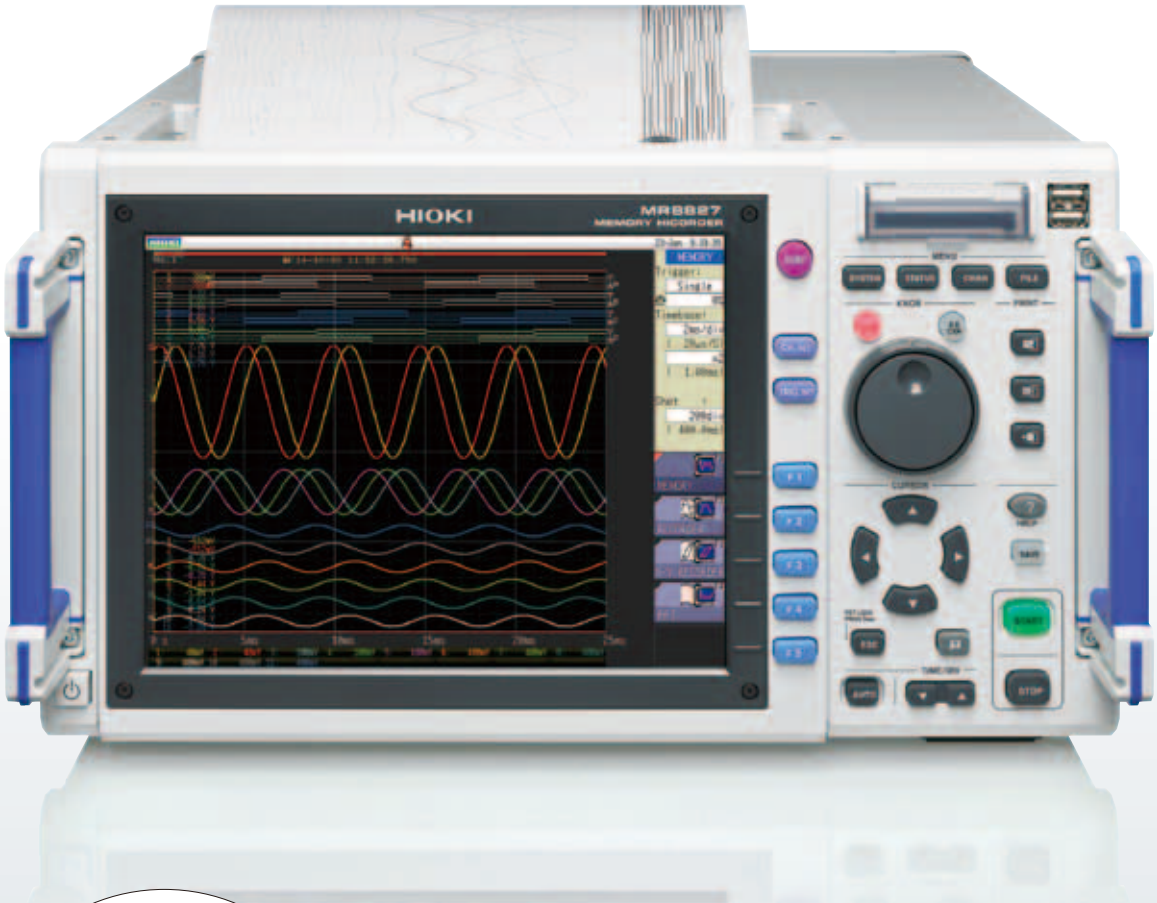
HIOKI

New

MEMORY HiCORDER MR8827

Recorders



64 ch *High-speed Isolated testing*

32 analog channels + 32 logic channels

The Memory HiCorder MR8827 achieves isolated input between the main unit and channel or between channels, at a maximum sampling speed of 20 MS/s on all channels.

It provides mixed recording that combines 32 analog channels and 32 logic channels, and logic input can be expanded up to 64 channels.

Welcome to the next generation of Hioki Memory HiCorders that deliver multi-channel waveform recording of a diverse array of signals to meet complex and demanding applications.

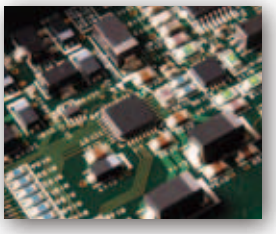
CE

*When using 64 logic channels, 28 analog channels are available.

MR8827 - Evolving to the Next Stage of High-Speed Waveform Recording

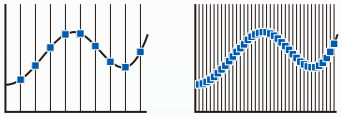
The high-performance 8826 delivered the most analog channels out of all portable-type Memory HiCorders. The new MEMORY HiCORDER MR8827 inherits that concept and evolves even further.

20x Sampling Speed



A/D converter integrated in the input amp

1MS/s ▶ 20MS/s



The sampling speed (for all channels simultaneously) increased by 20 times, while maintaining isolated input.

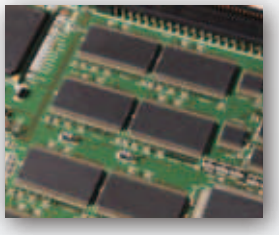
2x Logic Input Channels

Logic Unit 8973

32ch ▶ 64ch

A maximum of 8 logic probes can be inserted in the main unit. Use of 2 Logic Unit 8973 will add 8 more connections, supporting 64 channel logic signal input. (This reduces the number of available analog channels to 28.)

8x Internal Memory Capacity



64MW ▶ 512MW

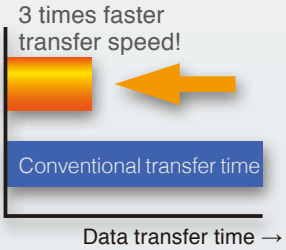
With 8 times more internal memory capacity from 64 MW to 512 MW, you can now record signals of fast events easily and for extended periods of time.

Storage Devices and Media

USB Memory/CF Card
SSD (Solid State Drive)

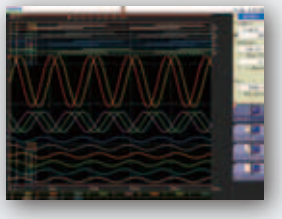
Use various storage devices and media with more capacity and faster writing speeds than conventional drives or PC cards. The optional internal SSD has 128 GB of capacity so you can store large amounts of data.

3x PC Transfer Speed



Transferring speed of stored data from internal memory or SSD to the PC has greatly increased.

LCD Resolution



10.4 inch TFT 10.4 inch SVGA
640×480 ▶ 800×600

Overlapping waveforms are easier to identify now with a new high resolution LCD.

2x Paper Feeding Speed

25mm/sec ▶ 50mm/sec

Use of a high-speed thermal printer gives you 2 times the printing speed.

Easy Setup of Recording Paper

No more hassles of feeding recording paper between the rubber roller and the thermal head. Just drop it in to set it up.

Record

Various Signal Input Support / Optional Units


ANALOG UNIT 8966


DIGITAL VOLTMETER UNIT MR8990

Low voltage

Various amps
Transducers

Sensors / industrial meters


HIGH RESOLUTION UNIT 8968


DC/RMS UNIT 8972

High voltage

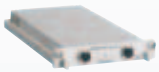
Supply voltage
Inverter Primary / Secondary voltage
Motor voltage, etc.


LOGIC UNIT 8973

Contacts

Voltage / non-voltage contacts

Relay signals
AC / DC signals


CURRENT UNIT 8971

Current

Supply current
Inverter Current
Motor current, etc.


STRAIN UNIT 8969

Strain

Strain gauge converter

Dynamic strain / Acceleration / Vibration
Pressure / Weight, etc.


TEMP UNIT 8967

Temperature

Thermocouples
K, J, E, T, N, R, S, B, W

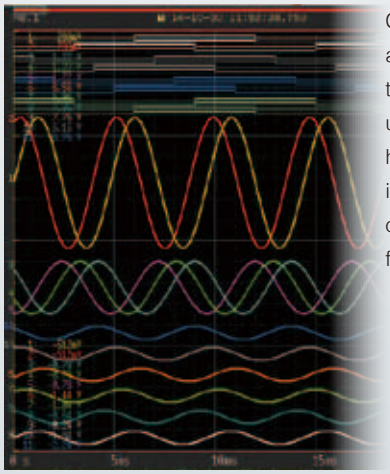

FREQ UNIT 8970

Frequency

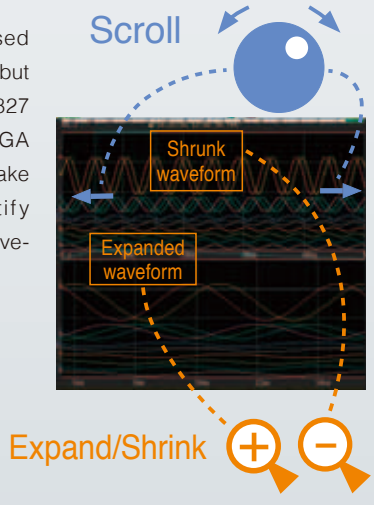
Encoders, etc.
Rotating pulse

View

High Resolution LCD



Conventional devices used a 640×480 dot TFT LCD, but the next-generation MR8827 uses an 800×600 dot SVGA high resolution LCD to make it even easier to identify overlapping measured waveforms.



Scroll

Scroll through the waveform to check all or just part of it.

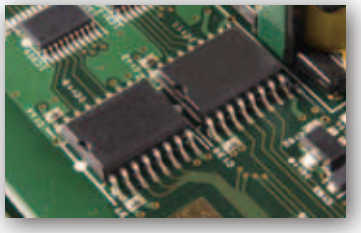
Expand / shrink

Not only can you expand or shrink the time axis or vertical axis, you can also split the screen to check the expanded waveform of the shrunk waveform.

Scalable Input Channels

A maximum of 16 modules can be connected on the rear side. The main unit also has connectors for connecting 8 logic probes.

Isolated Input for Security



Isolation element

The MR8827 differentiates itself from typical oscilloscopes by providing complete isolation for the input of each channel, and between each channel and the main frame, enabling you to handle electrical potential differences among multiple signals without any concern.

Sampling Speed and Recording Time

Memory functions

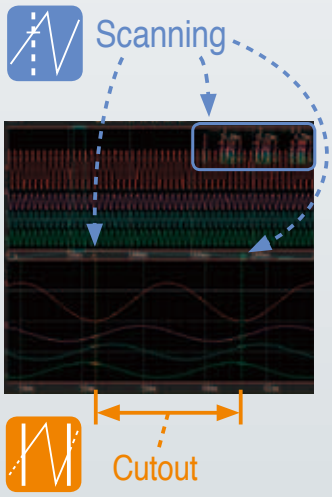
Time axis range/div	Sampling-speed	Maximum recording length 32 channels 160,000 div
5 µs	50 ns	0.8 s
10 µs	100 ns	1.6 s
20 µs	200 ns	3.2 s
50 µs	500 ns	8 s
100 µs	1 µs	16 s
200 µs	2 µs	32 s
500 µs	5 µs	1 min 20 s
1 ms	10 µs	2 min 40 s
2 ms	20 µs	5 min 20 s
5 ms	50 µs	13 min 20 s
10 ms	100 µs	26 min 40 s
20 ms	200 µs	53 min 20 s
50 ms	500 µs	2 h 13 min 20 s
100 ms	1 ms	4 h 26 min 40 s
200 ms	2 ms	8 h 53 min 20 s
500 ms	5 ms	22 h 13 min 20 s
1 s	10 ms	1 d 20 h 26 min 40 s
2 s	20 ms	3 d 16 h 53 min 20 s
5 s	50 ms	9 d 6 h 13 min 20 s
10 s	100 ms	18 d 12 h 26 min 40 s
30 s	300 ms	55 d 13 h 20 min 0 s
50 s	500 ms	92 d 14 h 13 min 20 s
1 min	600 ms	111 d 2 h 40 min 0 s
100 s	1 s	185 d 4 h 26 min 40 s
2 min	1.2 s	222 d 5 h 20 min 0 s
5 min	3 s	- abbreviated -

Recorder functions

Time axis range/div	Maximum recording length 80,000 div
10 ms	13 min 20 s
20 ms	26 min 40 s
50 ms	1 h 6 min 40 s
100 ms	2 h 13 min 20 s
200 ms	4 h 26 min 40 s
500 ms	11 h 6 min 40 s
1 s	22 h 13 min 20 s
2 s	1 d 20 h 26 min 40 s
5 s	4 d 15 h 6 min 40 s
10 s	9 d 6 h 13 min 20 s
30 s	27 d 18 h 40 min 0 s
50 s	46 d 7 h 6 min 40 s
1 min	55 d 13 h 20 min 0 s
100 s	92 d 14 h 13 min 20 s
2 min	111 d 2 h 40 min 0 s
5 min	277 d 18 h 40 min 0 s
10 min	- abbreviated -
30 min	- abbreviated -
1 h	- abbreviated -

Sampling period:
1 µs, 10 µs, 1 ms, 10 ms, 100 ms

*Select within 1/100 of the time axis. Also limited by combination with the time axis setting for memory recording.



Scanning

Scan data at the cursor and the waveform's cross point.

Cutout

Specify the segment to save as binary or CSV data.

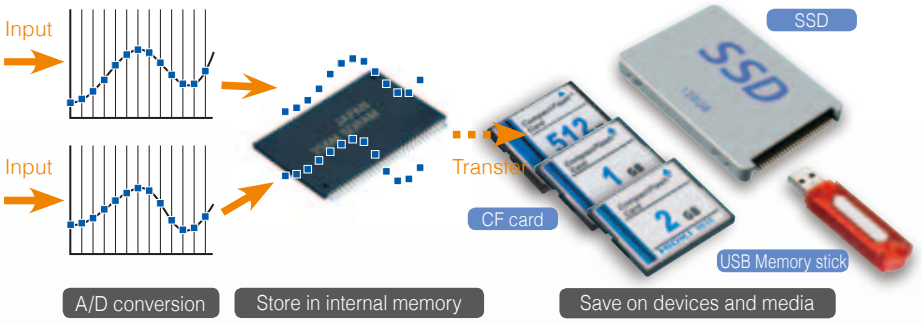
A4 Size Printer

Print in fine detail, with 2 times the paper feeding speed. Get a printout of enlarged waveforms on A4 size paper so you can check them easily on-site.

Save

Save on devices and media

Input signals after A/D conversion stored in internal memory can be saved on the optional internal SDD, USB memory, or CF card.

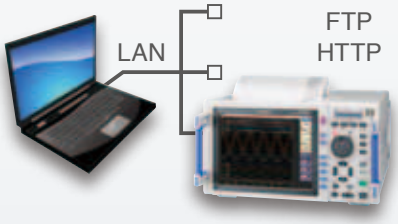


Transfer to PC

Check and analyze data saved in the internal SSD, USB memory, or CF card, by transferring it to a PC, via LAN or USB.

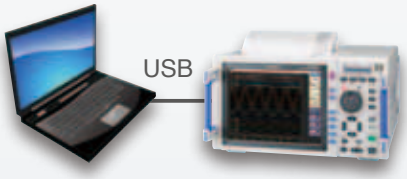
LAN Connection

Use the HTTP function to operate MR8827 with a browser on a PC connected via LAN. You can also use the FTP function to retrieve data from internal memory, devices or media connected to the main unit.



USB Connection

Use a PC to retrieve data saved on devices and media such as internal memory, SSD, or CF card connected to the main unit, via USB.

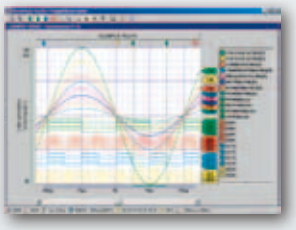


Analyze

WAVE PROCESSOR 9335

(Option)

- Waveform display, calculations
- Print function



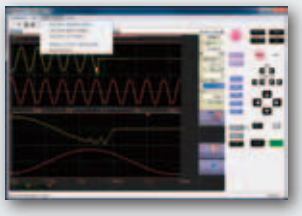
■ 9335 Brief Specifications

Operating environment	Windows 8/7 (32/64-bit), Vista (32-bit), XP
Functions	- Display functions: Waveform display, X-Y display, Cursor function, etc. - File loading: Readable data formats (.MEM, .REC, .RMS, .POW) / Maximum loadable file size: Maximum file size that can be saved by a given device (file size may be limited depending on the computer configuration) - Data conversion: Conversion to CSV format, Batch conversion of multiple files, etc.
Print	- Print function: Printing image file output (expanded META type, *.EMF*) - Print formatting: 1 up, 2-to-16 up, 2-to-16 rows, X-Y 1-to-4 up, preview, hard copy

LAN COMMUNICATOR 9333

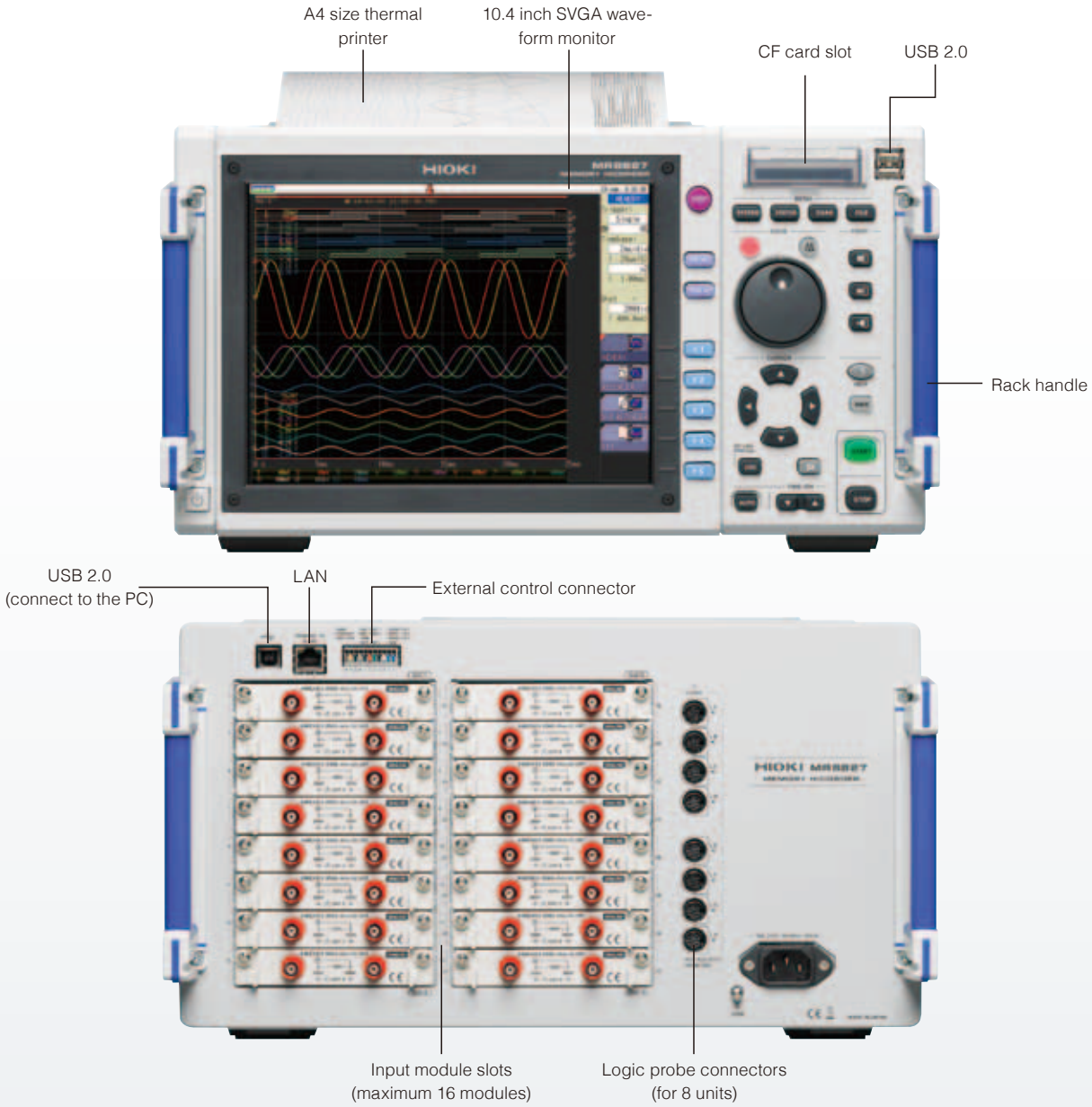
(Option)

- Auto-save waveform data to PC
- Remote control via LAN connection
- Save in CSV format and transfer to spreadsheet programs



■ 9333 Brief Specifications

Operating environment	Windows 8/7 (32/64-bit), Vista (32-bit), XP, (9333 ver.1.09 or later)
Functions	- Auto-saves waveform data to PC, Remote control of Memory HiCorder (by sending key codes and receiving images on screen), print report, print images from the screen, receive waveform data in same format as waveform files from the Memory HiCorder (binary only) - Waveform data acquisition: Accept auto-saves from the Memory HiCorder, same format as auto-save files of Memory HiCorder (binary only), print automatically with a Memory HiCorder from a PC. The Memory HiCorder's print key launches printouts on the PC - Waveform viewer: Simple display of waveform files, conversion to CSV format, etc.



iPad App for Memory HiCorder HMR Terminal

Free app (exclusively for iPad) downloadable from the App Store

- Freely control waveforms using iPad's gesture controls
- Multi-channel support – up to 32 channels (with MR8827, MR8740) of waveform data at your fingertips
- Operate the Memory HiCorder via network
  You can change settings, and monitor waveforms during measurement.
  *New function on Ver 2.0

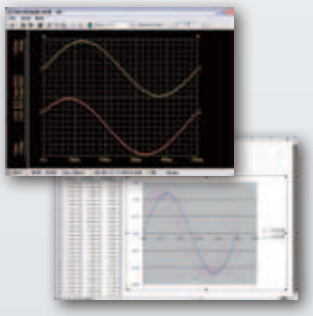
■ HMR Terminal Brief specifications (free software)

Operating environment	iOS on the iPad (Apple Inc.)
Functions	- Data acquisition: Send to iPad via FTP using a WiFi router, or load to iPad via iTunes (PC app) - Intuitively operate waveform level searches, maximum / minimum / average values, zero position adjustment, and more at your fingertips - Waveform monitoring - Meter setting * Logic waveforms and computational waveforms are not supported.

Wave Viewer Wv

(Bundled software)

- Check waveforms with binary data on a PC
- Save data in CSV format and transfer to spreadsheet programs



■ Wave Viewer (Wv) Brief Specifications

Operating environment	Windows 8/7 (32/64-bit), Vista (32-bit), XP, 2000
Functions	- Simple display of waveform files - Convert binary data files to text format, CSV, etc. - Scroll function, enlarge/reduce display, jump to cursor/trigger position, etc.

Perfect for recording a combination of analog and logic signals that require multiple channels.

Electric power

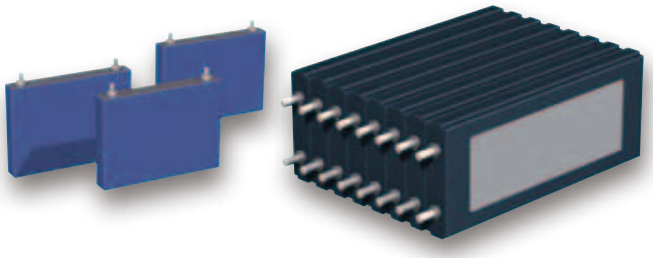
Power electronics

Transformer Interruption Tests

Interchannel isolation allows for safe circuit connections. Simultaneous high-speed sampling can record waveforms before and after the interruption, and allows you to input many control and circuit signals.

Battery Charge/Discharge Tests

Input and test the voltage of each battery cell. The MR8827 is built for up to 400 V DC input, protecting it even if high voltage is applied when there is a short-circuit.

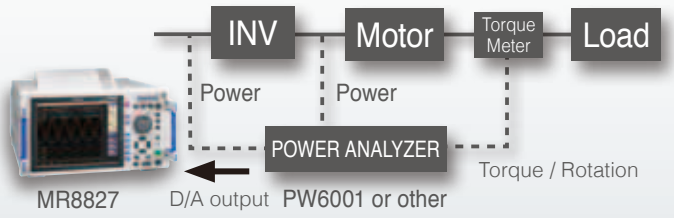


Inverter / UPS Test

Perfect for inverter and UPS evaluation and start-up tests. Record using both logic (control signals) and analog input (primary/secondary voltage or current for a UPS or inverter).

Power Monitor and Logger

By loading the analog output for the effective value (instant power / voltage / current, etc.) calculated by the power analyzer, or by importing the waveform output from the power analyzer to MR8827, you can observe data for long-term tests or irregular waveforms.



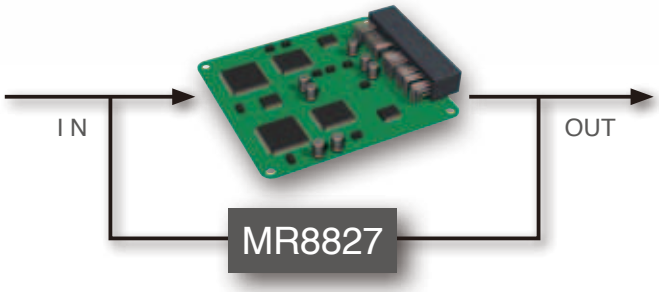
Record a diverse array of signals simultaneously

Mechatronics

Automotive

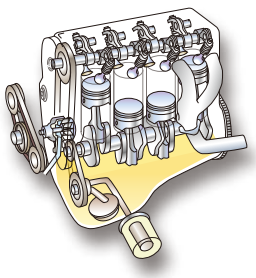
ECU Evaluation

The 32 analog channels and 32 logic channels work great for observing input and output signals of an Engine Control Unit. Over 4 hours of recording can be achieved with 1 ms sampling.



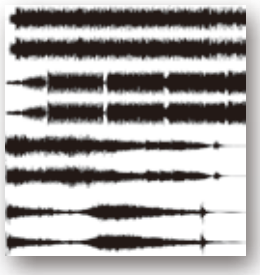
Engine Strain Measurements

Use the Strain Unit 8969 to perform strain measurements of up to 32 channels. You can use the numerical value calculation function to automatically calculate the maximum value, minimum value, and P-P value of strain waveforms.



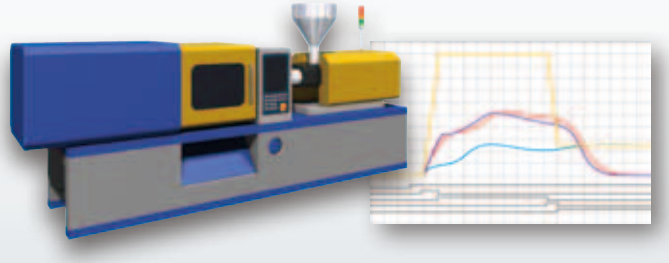
Vibration / Endurance Tests

Use the long 512MW memory to observe vibration waveforms easily (Memory function). Also, with the recorder function, you can perform long-term observation by capturing the waveform peaks while sampling at high speeds.



Injection Molder Evaluation

Along with a pneumatic pressure or valve closure, you can record the logic input from control signals. Select from a rich lineup of Hioki input units that support a wide range of sensors and converters.



Main unit Specifications

Basic specifications (Accuracy guaranteed for 1 year, Post-adjustment accuracy guaranteed for 1 year)

Measurement functions	MEMORY (high-speed recording) RECORDER (real-time recording) X-Y RECORDER (X-Y real-time recording) FFT (frequency analysis)
Main unit OS	µ ITRON (Non-Windows OS)
Number of channels (Max.)	[16 analog input modules]: 32 analog channels + 32 logic channels (logic probe terminals standard, logic has common GND) [14 analog input modules + 2 logic input modules]: 28 analog channels + 64 logic channels (standard 32 channels + 32 channels in Logic unit 8973 ×2) * Max. up to two modules of the Logic Unit 8973, the Current Unit 8971 up to four modules
Maximum sampling rate	20 MS/second (all channels simultaneously)
Internal memory	16MW/ch (total capacity 512MW memory), 16MW/ch (using 32 analog channels), 32MW/ch (using 16 analog channels), 64MW/ch (using 8 analog channels), 128MW/ch (using 4 analog channels)
Data storage media	CF card slot (standard) ×1 (up to 2GB, FAT, or FAT-32 format), USB port ×2 (USB 2.0)
Backup battery life	Clock and parameter setting backup: at least 10 years (reference value at 25°C)
External control connectors	External trigger input, Trigger output, External sampling input, GND, Two external outputs (GO/NG output), Three external inputs (start/IN1, stop/IN2, save/IN3)
External interfaces	LAN: 100BASE-TX (DHCP, DNS supported, FTP server, HTTP server) USB: USB 2.0 compliant, series A receptacle ×1, series B receptacle ×1, (File transfer SSD/ CF card to PC, or remote control from PC)
Environmental conditions (No condensation)	Operation: 0°C to 40°C (32°F to 104°F), 20% to 80% rh Storage: -10°C to 50°C (14°F to 122°F), 90% rh or less
Standards	Safety: EN61010 EMC: EN61326, EN61000-3-2, EN61000-3-3
Power supply	AC 100 to 240 V, 50/60 Hz
Power consumption	220 VA max. (when not using the printer), 350 VA max. (when using the printer)
Dimensions and mass	401 mm (15.79 in)W × 233 mm (9.17 in)H × 388 mm (15.28 in)D, 12.6 kg (444.4 oz) (main unit only)
Supplied accessories	Instruction manual ×1, Application disk (Wave Viewer Wv, Communication commands table) ×1, Power cord ×1, Input cord label ×1, USB cable ×1, Printer paper ×1 (when equipped with a printer unit), Roll paper attachment ×2 (when equipped with a printer unit)

PRINTER UNIT U8350 (Factory-installed option)

Features	Printer paper one-touch loading, high-speed thermal printing
Recording paper	216 mm (8.50 in) × 30 m (98.43 ft), thermal paper roll (use the 9231 paper) Recording witdh: 200 mm (7.87 in) 20 division full scale, 1 div = 10 mm (0.39 in) 80 dots
Recording speed	Max. 50 mm (1.97 in)/sec
Paper feed density	10 lines/mm

Display

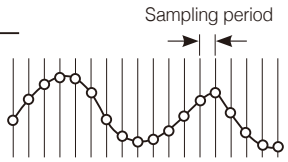
Display	10.4 inch SVGA-TFT color LCD (800 × 600 dots) (Time axis 25 div × Voltage axis 20 div, X-Y 20 div × 20 div)
Languages	English, Japanese, Korean, Chinese
Waveform display zoom/compression	Time axis: ×10 to ×2 (zoom at MEMORY function only), ×1, ×1/2 to ×1/20000, Voltage axis: ×100 to ×2, ×1, ×1/2 to ×1/10
Variable display	Upper/Lower limit set, display/div set
Scaling	10:1 to 1000:1, automatic scaling for various probes Manual scaling (conversion ratio setting, 2-point setting, unit setting)
Comment input	Alphanumeric input (title, analog and logic channels) Simple input, history input, phrase input
Logic waveform	Display point move 1 % step, Line width 3 types
Display partition	Max. eight divisions
Monitor function	• Input level monitor • Numerical value (Sampling 10kS/s fixed, refresh rate 0.5s)
Other display functions	• Waveform inversion (positive/negative) • Cursor measurement (A, B, 2-cursor, for all channels) • Vernier function (amplitude fine adjustment) • Zoom function (horizontal screen division, zoomed waveform shown in lower section) • 16 selectable colors for waveform display • Zero position shift in 1% steps for analog waveform • Global zero adjust for all channels and all ranges

MEMORY (high-speed recording)

Time axis	5 µs to 5 min/div (100 samples/div) 26 ranges, External sampling (100 samples/div, or free setting), Time axis zoom: ×2 to ×10 in 3 stages, compression: 1/2 to 1/20000 in 13 stages
Sampling period	1/100 of time axis range (minimum 50 ns period)
Recording length	**Built-in presets**: (at 4, 8, 16ch mode) 25 to 20000 div, (at 4, 8 ch mode) 25 to 500000 div (at 4 ch mode) 25 to 1000000 div **Arbitrary presets**: setting in 1 div steps, Max. 1280000 div (at 4ch mode), 640000 div (at 8ch mode), 320000 div (at 16ch mode), 160000 div (at 32ch mode)
Pre-trigger	Record data from before the trigger point at 0 to +100% or -95% of the recording length in 15 stages, or in 1 div step settings
Numerical calculation	• Simultaneous calculation for up to 16 selected channels Average value, effective (rms) value, peak to peak value, maximum value, time to maximum value, minimum value, time to minimum value, period, frequency, rise time, fall time, standard deviation, area value, X-Y area value, specified level time, specified time level, pulse width, duty ratio, pulse count, four arithmetic operations, time difference, phase difference, high-level and low-level • Calculation result evaluation output: GO/NG (with open-collector 5 V output) • Automatic storing of calculation results
Waveform processing	• For up to 16 freely selectable channels, the following functions can be performed Four arithmetic operations, absolute value, exponentiation, common logarithm, square root, moving average, differentiation (primary, secondary), integration (primary, secondary), parallel displacement along time axis, trigonometric functions, reverse trigonometric functions, integration time correction for each NPLC setting, auto-saves of calculation results
Memory segmentation	• Max. 1024 blocks, sequential storage, multi-block storage
Other functions	• X-Y waveform synthesis (1 screen, 4 screens) • Overlay (always overlay when started/overlay only required waveforms) • Automatic/ Manual/ A-B cursor range printing/ Report printing • Logging is not available

Memory recording method

Sampling is done at the set sampling period.

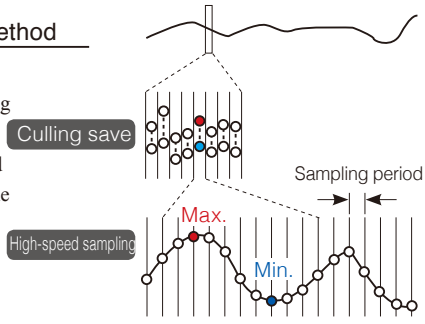


RECORDER (Real-time recording)

Time axis	10 ms to 1 hour/div, 19 ranges, time axis resolution 100 points/div Note: Out of data acquired at selected sampling rate, only maximum and minimum value data determined using 100 points/div units are stored Time axis compression selectable in 13 steps, from × 1/2 to × 1/20000
Sampling rate	1/10/100 µs 1/10/100 ms (selectable from 1/100 or less of time axis)
Real-time printing	Supported * Real-time printing is possible at time axis settings slower than 500 ms/div * Delayed print is performed when recording length is not set to "Continuous" and time axis setting is 10 ms - 200 ms/div * When recording length is set to "Continuous" and time axis setting is 10 ms - 200 ms/div, manual printing can be performed after measurement stop
Recording length	Built-in presets of 25 - 50000 div, or "Continuous" or arbitrary setting in 1 div steps (max. 80000 div)
Waveform memory	Store data for most recent 80000 div in memory
Auto save	Data is automatically saved on CF card, USB memory stick or internal SSD after measurement stops
Other functions	• Manual/ A-B cursor range printing/ Report printing • Logging is not available

Recorder recording method

High-speed sampling is performed at the set sampling frequency, culling data other than the maximum and minimum values to create the recording data of a certain time.



X-Y RECORDER (X-Y real-time recording)

Sampling period	1/10/100 ms (dot), 10/100 ms (line)
Recording length	Continuous
Screen, Printing	Split screen (1 or 4), Manual printing only
Number of X-Y	1 to 8 phenomenon
X-Y channel setting	Any 8 channels out of 16 can be selected for X axis and Y axis respectively
X-Y axis resolution	25 dots/div (screen), horizontal 80 dots/div × vertical 80 dots/div (printer)
Waveform memory	Sampling data for last 16000000 points are stored in memory
Pen up/down	Simultaneous for all phenomena
External pen control	Possible via external input connector (simultaneous up/down for all phenomena)

FFT

Analysis mode	Storage waveform, Linear spectrum, RMS spectrum, Power spectrum, Density of power spectrum, Cross power spectrum, Auto-correlation function, Histogram, Transfer function, Cross-correlation function, Impulse response, Coherence function, 1/1 Octave analysis, 1/3 Octave analysis, LPC analysis, Phase spectrum
Analysis channels	Selectable from all analog input channels
Frequency range	133 mHz to 8 MHz, External, (resolution 1/400, 1/800, 1/2000, 1/4000)
Number of sampling points	1000, 2000, 5000, 10000 points
Window functions	Rectangular, Hanning, Hamming, Blackman, Blackman-Harris, Flat-top, Exponential
Display format	Single, Dual, Nyquist, Running spectrum
Averaging function	Time axis / frequency axis simple averaging, Exponential averaging, Peak hold (frequency axis), Averaging times (2 to 10000 times)
Print functions	Same as the MEMORY function (partial print not available)

Trigger functions

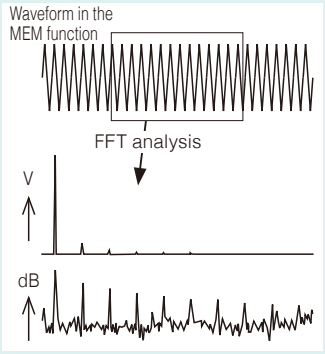
Trigger mode	MEMORY (high-speed recording), FFT: Single, Repeat, Auto RECORDER (real-time recording): Single, Repeat
Trigger sources	CH1 to CH32 (analog), Standard Logic 32ch + Logic Unit (Max. 2 units 32 channels), External (a rise of 2.5V or terminal short circuit), Timer, Manual (either ON or OFF for each source), Logical AND/OR of sources
Trigger types	• Level: Triggering occurs when preset voltage level is crossed (upwards or downwards) • Voltage drop: Triggering occurs when voltage drops below peak voltage setting (for 50/60 Hz AC power lines only) • Window: Triggering occurs when window defined by upper and lower limit is entered or exited • Period: Rising edge or falling edge cycle of preset voltage value is monitored and triggering occurs when defined cycle range is exceeded • Glitch: Triggering occurs when pulse width from rising or falling edge of preset voltage value is under run • Event setting: Event count is performed for each source, and triggering occurs when a preset count is exceeded • Logic: 1, 0, or ×, Pattern setting
Level setting resolution	0.1% of full scale (full scale = 20 divisions)
Trigger filter	Selectable 0.1 div to 10.0 div 9 steps, or OFF (at MEMORY function) ON (10 ms fixed) or OFF (at RECORDER function)
Trigger output	Open collector (5 voltage output, active Low) At Level setting: pulse width (Sampling period × data number after trigger) At Pulse setting: pulse width (2 ms)
Other functions	Trigger priority (OFF/ON), Pre-trigger function for capturing data from before / after trigger event (at MEMORY function), Level display during trigger standby, Start and stop trigger (At RECORDER function), Trigger search function

Other functions

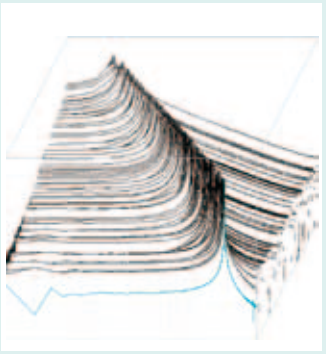
Waveform judgment function (In MEMORY or FFT function)	• Area comparison with reference waveform area for time domain waveform, X-Y waveform, or FFT analysis waveform • Parameter calculated value comparison with reference value • Output: GO/NG decision, Open-collector 5V, *100 msec/div (1 msec sampling) and thereafter allows for evaluation in almost real-time.

How is FFT Analysis Performed?

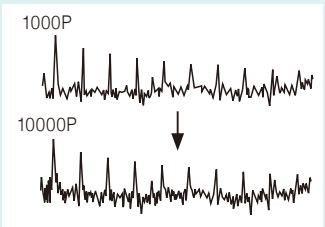
Designate a range of the waveform stored in the memory function to perform FFT analysis. It is rendered simultaneously on the screen.



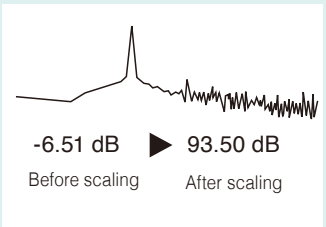
Display the spectrum as it changes over time in 3-D.



Convert data measured with few calculation points into data with many points for re-analysis.
*Not possible with frequency averaging ON



Scale by dB. Input the overall value (sum of the power spectrum) directly as a dB value.



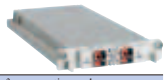
■ Options specifications (sold separately)

Dimensions and mass: approx. 106 (4.17in) W × 19.8 (0.78in) H × 196.5 (7.74in) D mm, approx. 250 g (8.8 oz) Accessories: None

ANALOG UNIT 8966

(Accuracy at 23 ±5°C/73 ±9°F, 20 to 80 % rh after 30 minutes of warm-up time and zero adjustment; Accuracy guaranteed for 1 year, Post-adjustment accuracy guaranteed for 1 year)

Measurement functions	Number of channels: 2, for voltage measurement
Input connectors	Isolated BNC connector (input impedance 1 MΩ, input capacitance 30 pF), Max. rated voltage to earth: 300 V AC, DC (with input isolated from the unit, the maximum voltage that can be applied between input channel and chassis and between input channels without damage)
Measurement range	5 mV to 20 V/div, 12 ranges, full scale: 20 div, AC voltage for possible measurement/display using the memory function: 280 V rms, Low-pass filter: 5/50/500 Hz, 5 k/50 k/500 kHz
Measurement resolution	1/100 of measurement range (using 12-bit A/D conversion)
Highest sampling rate	20 MS/s (simultaneous sampling across 2 channels)
Measurement accuracy	±0.5 % of full scale (with filter 5 Hz, zero position accuracy included)
Frequency characteristics	DC to 5 MHz -3 dB, (with AC coupling: 7 Hz to 5 MHz -3dB)
Input coupling	AC/DC/GND
Max. allowable input	400 V DC (the maximum voltage that can be applied across input pins without damage)



Dimensions and mass: approx. 106 (4.17in) W × 19.8 (0.78in) H × 204.5 (8.05in) D mm, approx. 240 g (8.5 oz) Accessories: Ferrite clamp × 2

TEMP UNIT 8967

(Accuracy at 23 ±5°C/73 ±9°F, 20 to 80 % rh after 30 minutes of warm-up time and zero adjustment; Accuracy guaranteed for 1 year, Post-adjustment accuracy guaranteed for 1 year)

Measurement functions	Number of channels: 2, for temperature measurement with thermocouple (voltage measurement not available)
Input connectors	Thermocouple input: plug-in connector, Recommended wire diameter: single-wire, 0.14 to 1.5 mm^2, braided wire 0.14 to 1.0 mm^2 (conductor wire diameter min. 0.18 mm), AWG 26 to 16 Input impedance: min. 5 MΩ (with line fault detection ON/OFF), Max. rated voltage to earth: 300 V AC, DC (with input isolated from the unit, the maximum voltage that can be applied between input channel and chassis and between input channels without damage)
Temperature measurement range Note: Upper and lower limit values depend on the thermocouple	10°C/div (-100 °C to 200 °C), 50°C/div (-200 °C to 1000 °C), 100°C/div (-200°C to 2000°C), 3 ranges, full scale: 20 div, Measurement resolution: 1/1000 of measurement range (using 16-bit A/D conversion)
Thermocouple range (JIS C 1602-1995) (ASTM E-988-96)	K: -200 to 1350°C, J: -200 to 1100°C, E: -200 to 800°C, T: -200 to 400°C, N: -200 to 1300°C, R: 0 to 1700°C, S: 0 to 1700°C, B: 400 to 1800°C, W (WRe5-26): 0 to 2000°C, Reference junction compensation: internal/ external (switchable), Line fault detection ON/OFF possible
Data refresh rate	3 methods, Fast: 1.2 ms (digital filter OFF), Normal: 100 ms (digital filter 50/60 Hz), Slow: 500 ms (digital filter 10Hz)
Measurement accuracy	Thermocouple K, J, E, T, N: ±0.1 % of full scale ±1°C (±0.1 % of full scale ±2°C at -200°C to 0°C), Thermocouple R, S, W: ±0.1 % of full scale ±3.5°C (at 0°C to 400°C or less), ±0.1 % of full scale ±3°C (at 400°C or more) Thermocouple B: ±0.1 % of full scale ±3°C (at 400°C or more), Reference junction compensation accuracy: ±1.5°C (added to measurement accuracy with internal reference junction compensation)

Dimensions and mass: approx. 106 (4.17in) W × 19.8 (0.78in) H × 196.5 (7.74in) D mm, approx. 250 g (8.8 oz) Accessories: None

HIGH RESOLUTION UNIT 8968

(Accuracy at 23 ±5°C/73 ±9°F, 20 to 80 % rh after 30 minutes of warm-up time and zero adjustment; Accuracy guaranteed for 1 year, Post-adjustment accuracy guaranteed for 1 year)

Measurement functions	Number of channels: 2, for voltage measurement
Input connectors	Isolated BNC connector (input impedance 1 MΩ, input capacitance 30 pF), Max. rated voltage to earth: 300 V AC, DC (with input isolated from the unit, the maximum voltage that can be applied between input channel and chassis and between input channels without damage)
Measurement range	5 mV to 20 V/div, 12 ranges, full scale: 20 div, AC voltage for possible measurement/display using the memory function: 280 V rms, Low-pass filter: 5/50/500 Hz, 5k/50k Hz
Anti-aliasing filter	Integrated filter for suppressing aliasing distortion caused by FFT processing (automatic cutoff frequency setting/OFF)
Measurement resolution	1/1600 of measurement range (using 16-bit A/D conversion)
Highest sampling rate	1 MS/s (simultaneous sampling across 2 channels)
Measurement accuracy	±0.3 % of full scale (with filter 5 Hz, zero position accuracy included)
Frequency characteristics	DC to 100 kHz -3 dB, (with AC coupling: 7 Hz to 100 kHz -3dB)
Input coupling	AC/DC/GND
Max. allowable input	400 V DC (the maximum voltage that can be applied across input pins without damage)

Dimensions and mass: approx. 106 (4.17in) W × 19.8 (0.78in) H × 196.5 (7.74in) D mm, approx. 220 g (7.8 oz) Accessories: Conversion cable 9769 × 2 (cable length 50 cm/1.64 ft)

STRAIN UNIT 8969

(Accuracy at 23 ±5°C/73 ±9°F, 20 to 80 % rh after 30 minutes of warm-up time and auto-balance; Accuracy guaranteed for 1 year, Post-adjustment accuracy guaranteed for 1 year)

Measurement functions	Number of channels: 2, for distortion measurement (electronic auto-balancing, balance adjustment range within ±10000 με)
Input connectors	Weidmuller SL 3.5/7/90G (via Conversion Cable 9769, TAJIMI PRC03-12A10-7M10.5) Max. rated voltage to earth: 33 Vrms or 70 V DC (with input isolated from the unit, the maximum voltage that can be applied between input channel and chassis and between input channels without damage)
Suitable transducer	Strain gauge converter, Bridge impedance: 120 Ω to 1 kΩ, Bridge voltage: 2 V ±0.05 V, Gauge rate: 2.0
Measurement range	20 με to 1000 με/div, 6 ranges, full scale: 20 div, Low-pass filter: 5/10/100 Hz, 1 kHz
Measurement resolution	1/1250 of measurement range (using 16-bit A/D conversion)
Highest sampling rate	200 kS/s (simultaneous sampling across 2 channels)
Measurement accuracy	±(0.5 % of full scale +4 με) (at 5 Hz filter ON, After auto-balancing)
Frequency characteristics	DC to 20 kHz +1/-3dB

Dimensions and mass: approx. 106 (4.17in) W × 19.8 (0.78in) H × 196.5 (7.74in) D mm, approx. 250 g (8.8 oz) Accessories: None

FREQ UNIT 8970

(Accuracy at 23 ±5°C/73 ±9°F, 20 to 80 % rh after 30 minutes of warm-up time; Accuracy guaranteed for 1 year, Post-adjustment accuracy guaranteed for 1 year)

Measurement functions	Number of channels: 2, for voltage input based frequency measurement, rotation, power frequency, integration, pulse duty ratio, pulse width
Input connectors	Isolated BNC connector (input impedance 1 MΩ, input capacitance 30 pF), Max. rated voltage to earth: 300 V AC, DC (with input isolated from the unit, the maximum voltage that can be applied between input channel and chassis and between input channels without damage)
Frequency mode	Range: Between DC to 100 kHz (minimum pulse width 2 μs), 1 Hz/div to 5 kHz/div (full scale= 20 div), 8 settings Accuracy: ±0.1% f.s. (exclude 5 kHz/div), ±0.7% f.s. (at 5 kHz/div)
Rotation mode	Range: Between 0 to 2 million rotations/minute (minimum pulse width 2 μs), 100 (r/min)/div to 100 k (r/min)/div (full scale= 20 div), 7 settings Accuracy: ±0.1% f.s. (excluding 100 k (r/min)/div), ±0.7% f.s. (at 100 k (r/min)/div)
Power frequency mode	Range: 50 Hz (40 - 60 Hz), 60 Hz (50 - 70 Hz), 400 Hz (390 - 410 Hz) (full scale= 20 div), 3 settings Accuracy: ±0.03 Hz (exclude 400 Hz range), ±0.1 Hz (400 Hz range)
Integration mode	Range: 2 k counts/div to 1 M counts/div, 6 settings Accuracy: ±range/2000
Duty ratio mode	Range: Between 10 Hz to 100 kHz (minimum pulse width 2 μs), 5%/div (full scale=20 div) Accuracy: ±1% (10 Hz to 10 kHz), ±4% (10 kHz to 100 kHz)
Pulse width mode	Range: Between 2 μs to 2 sec, 500 μs/div to 100 ms/dv (full scale=20 div) Accuracy: ±0.1% f.s.
Measurement resolution	1/2000 of range (Integration mode), 1/500 of range (exclude integration, power frequency mode), 1/100 of range (power frequency mode)
Input voltage range and threshold level	±10 V to ±400 V, 6 settings, selectable threshold level at each range
Other functions	Slope, Level, Hold, Smoothing, Low-pass filter, Switchable DC/AC input coupling, Frequency dividing, Integration over-range keep/return

Dimensions and mass: approx. 106 (4.17in) W × 19.8 (0.78in) H × 196.5 (7.74in) D mm, approx. 250 g (8.8 oz) Accessories: CONVERSION CABLE 9318 × 2 (To connect the current sensor to the 8971)

CURRENT UNIT 8971

(Accuracy at 23 ±5°C/73 ±9°F, 20 to 80 % rh after 30 minutes of warm-up time and zero adjustment; Accuracy guaranteed for 1 year, Post-adjustment accuracy guaranteed for 1 year)

Measurement functions	Number of channels: 2, Current measurement with optional current sensor, Note: Maximum 4 units connectable to main unit
Input connectors	Sensor connector (input impedance 1 MΩ, exclusive connector for current sensor via conversion cable the 9318, common GND with recorder)
Compatible current sensors	CT6863, CT6862, 9709, 9279, 9278, 9277, 9272-10 (To connect the 8971 via conversion cable the 9318)
Measurement range	Using 9272-10 (20 A), 9277: 100 mA to 5 A/div (f.s.=20 div, 6 settings) Using CT6862: 200 mA to 10 A/div (f.s.=20 div, 6 settings) Using 9272-10 (200 A), 9278, CT6863: 1 A to 50 A/div (f.s.=20 div, 6 settings) Using 9279, 9709: 2 A to 100 A/div (f.s.=20 div, 6 settings)
Accuracy	Using 9278, 9279: ±0.85% f.s. Using other sensor: ±0.65% f.s. RMS amplitude accuracy: ±1% f.s. (DC, 30 Hz to 1 kHz), ±3% f.s. (1 kHz to 10 kHz) RMS response time: 100 ms (rise time from 0 to 90% of full scale), Crest factor: 2 Frequency characteristics: DC to 100 kHz, ±3 dB (with AC coupling: 7 Hz to 100 kHz)
Measurement resolution	1/100 of range (using 12-bit A/D conversion)
Highest sampling rate	1 MS/s (simultaneous sampling across 2 channels)
Other functions	Input coupling: AC/DC/GND, Low-pass filter: 5, 50, 500, 5 k, 50 kHz

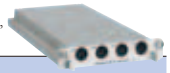
■ Options specifications (sold separately)

Dimensions and mass: approx. 106 (4.17 in) W × 19.8 (0.78 in) H × 196.5 (7.74 in) D mm, approx. 250 g (8.8 oz) Accessories: None

DC/RMS UNIT 8972

(Accuracy at 23 ±5°C/73 ±9°F, 20 to 80 % rh after 30 minutes of warm-up time and zero adjustment; Accuracy guaranteed for 1 year, Post-adjustment accuracy guaranteed for 1 year)

Measurement functions	Number of channels: 2, for voltage measurement, DC/RMS selectable
Input connectors	Isolated BNC connector (input impedance 1 MΩ, input capacitance 30 pF), Max. rated voltage to earth: 300 V AC, DC (with input isolated from the unit, the maximum voltage that can be applied between input channel and chassis and between input channels without damage)
Measurement range	5 mV to 20 V/div, 12 ranges, full scale: 20 div, AC voltage for possible measurement/display using the memory function: 280 V rms, Low-pass filter: 5/50/500 Hz, 5 k/100 kHz
Measurement resolution	1/100 of measurement range (using 12-bit A/D conversion)
Highest sampling rate	1 MS/s (simultaneous sampling across 2 channels)
Measurement accuracy	±0.5 % of full scale (with filter 5 Hz, zero position accuracy included)
RMS measurement	RMS amplitude accuracy: ±1 % of full scale (DC, 30 Hz to 1 kHz), ±3 % of full scale (1 kHz to 100 kHz), Response time: SLOW 5 s (rise time from 0 to 90% of full scale), MID 800 ms (rise time from 0 to 90% of full scale), FAST 100 ms (rise time from 0 to 90% of full scale), Crest factor: 2
Frequency characteristics	DC to 400 kHz -3 dB, (with AC coupling: 7 Hz to 400 kHz -3dB)
Input coupling	AC/DC/GND
Max. allowable input	400 V DC (the maximum voltage that can be applied across input pins without damage)



Dimensions and mass: approx. 106 (4.17in) W × 19.8 (0.78in) H × 196.5 (7.74in) D mm, approx. 190 g (6.7 oz) Accessories: None

LOGIC UNIT 8973

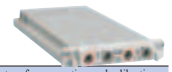
Measurement functions	Number of channels: 16 channels (4 ch/1 probe connector × 4 connectors)
Input connectors	Mini DIN connector (for HIOKI logic probes only), Compatible logic probes: 9320-01, 9327, MR9321-01

Cable length and mass: 70 cm (2.30 ft), Output side: 1.5 m (4.92 ft), 170g (6.0 oz)

DIFFERENTIAL PROBE P9000

(Accuracy guaranteed for 1 year, Post-adjustment accuracy guaranteed for 1 year)

Measurement modes	P9000-01: For waveform monitor output, Frequency properties: DC to 100 kHz -3 dB P9000-02: Switches between waveform monitor output/AC effective value output Wave mode frequency properties: DC to 100 kHz -3 dB, RMS mode frequency properties: 30 Hz to 10 kHz, Response time: Rise 300 ms, Fall 600 ms
Division ratio	Switches between 1000:1, 100:1
DC output accuracy	±0.5 % f.s. (f.s. = 1.0 V, division ratio 1000:1), (f.s. = 3.5 V, division ratio 100:1)
Effective value measurement accuracy	±1 % f.s. (30 Hz to less than 1 kHz, sine wave), ±3 % f.s. (1 kHz to 10 kHz, sine wave)
Input resistance/ capacity	H-L: 10.5 MΩ, 5 pF or less (at 100 kHz)
Maximum input voltage	1000 V AC, DC
Maximum rated voltage to ground	1000 V AC, DC (CAT III)
Operating temperature range	-40°C to 80°C (-40°F to 176°F)
Power supply	(1) AC adapter Z1008 (100 to 240 V AC, 50/60 Hz), 6 VA (including AC adapter), 0.9 VA (main unit only) (2) USB bus power (5 V DC, USB-microB terminal), 0.8 VA (3) External power source 2.7 V to 15 V DC, 1 VA
Accessories	Instruction manual ×1, Alligator clip ×2, Carrying case ×1



Dimensions and mass: approx. 106 (4.17 in) W × 19.8 (0.78)H × 196.5 (7.74 in)D mm, approx. 260g (8.8 oz) Accessories: None

DIGITAL VOLTMETER UNIT MR8990

(Accuracy at 23 ±5°C, 20 to 80% rh after 30 minutes of warm-up time and calibration, Accuracy guaranteed for 1 year, Post-adjustment accuracy guaranteed for 1 year)

Measurement functions	Number of channels: 2, for DC voltage measurement
Input connectors	Banana input connectors (Input resistance: 100 MΩ or higher with 100 mV f.s. to 10 V f.s. range, otherwise 10 MΩ) Max. rated voltage to earth: 300 V AC or DC (with input isolated from the main unit, the maximum voltage that can be applied between input channel and chassis, and between input channels without damage)
Measurement ranges	100 mV f.s. (5 mV/div) to 1000 V f.s. (50 V/div), 5 ranges, full scale: 20 div
Measurement resolution	1/1000000 of measurement range (using 24 bit ΔΣ modulation A/D)
Integration time	20 ms ×NPLC (during 50 Hz), 16.67 ms ×NPLC (during 60 Hz)
Response time	2 ms +2× integration time or less (rise - f.s. → + f.s., fall + f.s. → - f.s.)
Basic measurement accuracy	±0.01% rdg. ±0.0025% f.s. (at range of 1000 mV f.s.)
Maximum input voltage	500 V DC (maximum voltage that can be applied between input connectors without damage)

Cable length and mass: Main unit cable 1.5 m (4.92 ft), input section cable 30 cm (0.98 ft), approx. 150 g (5.3 oz)
Note: *The unit-side plug of the* 9320-01 *is different from the* 9320

LOGIC PROBE 9320-01/9327

Function	Detection of voltage signal or relay contact signal for High/Low state recording
Input	4 channels (common ground between unit and channels), digital/contact input, switchable (contact input can detect open-collector signals) Input resistance: 1 MΩ (with digital input, 0 to +5 V) 500 kΩ or more (with digital input, +5 to +50V) Pull-up resistance: 2 kΩ (contact input: internally pulled up to +5 V)
Digital input threshold	1.4 V/ 2.5 V/ 4.0 V
Contact input detection resistance	1.4 V: 1.5 kΩ or higher (open) and 500 Ω or lower (short) 2.5 V: 3.5 kΩ or higher (open) and 1.5 kΩ or lower (short) 4.0 V: 25 kΩ or higher (open) and 8 kΩ or lower (short)
Response speed	9320-01: 500 ns or lower, 9327: detectable pulse width 100 ns or higher
Max. allowable input	0 to +50 V DC (the maximum voltage that can be applied across input pins without damage)

Cable length and mass: Main unit cable 1.5 m (4.92 ft), input section cable 1 m (3.28 ft), approx. 320 g (11.3 oz)
Note: *The unit-side plug of the* MR9321-01 *is different from the* MR9321.

LOGIC PROBE MR9321-01

Function	Detection of AC or DC relay drive signal for High/Low state recording Can also be used for power line interruption detection
Input	4 channels (isolated between unit and channels), HIGH/LOW range switching Input resistance: 100 kΩ or higher (HIGH range), 30 kΩ or higher (LOW range)
Output (H) detection	170 to 250 V AC, ±DC 70 to 250 V (HIGH range) 60 to 150 V AC, ±DC 20 to 150 V (LOW range)
Output (L) detection	0 to 30 V AC, ±DC 0 to 43 V (HIGH range) 0 to 10 V AC, ±DC 0 to 15 V (LOW range)
Response time	Rising edge 1 ms max., falling edge 3 ms max. (with HIGH range at 200 V DC, LOW range at 100 V DC)
Max. allowable input	250 Vrms (HIGH range), 150 Vrms (LOW range) (the maximum voltage that can be applied across input pins without damage)

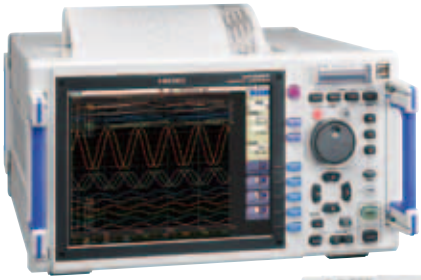
System Chart

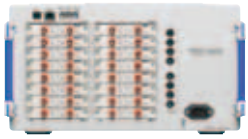
Main unit

MEMORY HiCORDER MR8827

Note: Main unit MR8827 cannot operate alone. You must install one or more optional input modules in the unit.

Order Code: MR8827





Printer options

*PRINTER UNIT is a built-in option that must be specified upon order.

PRINTER UNIT U8350
Specified upon order. Printing width 200 mm (7.87 inch). Compatible recording paper: Model 9231
Order Code: U8350

RECORDING PAPER 9231
A4 width 216 mm (8.50 in) × 30 m (98.43 ft), 6 rolls/set
Order Code: 9231

Storage media

*SSD is a built-in option that must be specified upon order. *The CF card includes a PC card adapter.

SSD UNIT U8330
Specified upon order, built-in type, 128 GB
Order Code: U8330

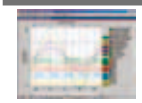
*PC Card Precaution
Use only PC Cards sold by HIOKI. Compatibility and performance are not guaranteed for PC cards made by other manufacturers. You may be unable to read from or save data to such cards.

PC CARD 2G 9830
(2 GB) Recommended
Order Code: 9830

PC CARD 1G 9729
(1 GB)
Order Code: 9729

PC CARD 512M 9728
(512 MB)
Order Code: 9728

PC Software



WAVE PROCESSOR 9335
Convert data, print and display waveforms
Order Code: 9335

LAN COMMUNICATOR 9333
• Waveform data collect function
• Remote control with the PC
Order Code: 9333

iPad App for MEMORY HiCORDER HMR Terminal
Download from the App Store Free (exclusively for Apple Inc. iPad)

LAN CABLE 9642
Straight Ethernet cable, supplied with straight to cross conversion cable, 5 m (16.41 ft) length
Order Code: 9642

Case

CARRYING CASE (special order)
hard trunk type
Inquire with your local Hioki distributor.

Input modules

*Input cords are not included. Please purchase them separately. *When using 9709 with Current Unit 8971, a total of 7 current probes can be used.

ANALOG UNIT 8966
2 ch, Voltage input, DC to 5 MHz bandwidth
Recommended
Order Code: 8966

TEMP UNIT 8967
2 ch, thermocouple temperature input
Order Code: 8967

HIGH RESOLUTION UNIT 8968
2 ch, voltage input, DC to 100 kHz bandwidth
Order Code: 8968

STRAIN UNIT 8969
2 ch, strain gauge type converter amp
Order Code: 8969

Conversion Cable 9769
For the 8969(MR8847/8827 series), bundled with the 8969
Order Code: 9769

FREQ UNIT 8970
2 ch, for measurement of frequency, rpm, pulse, etc.
Order Code: 8970

CURRENT UNIT 8971
2 ch, for measuring current using dedicated current sensors, bundled two Conversion cable 9318
* The Current unit 8971 up to four module
Order Code: 8971

DC/RMS UNIT 8972
2 ch, voltage/DC to 400 kHz, RMS rectifier, DC and 30 to 100 kHz bandwidth
Order Code: 8972

LOGIC UNIT 8973
4 terminals, 16 ch
* Max. up to two modules of the Logic unit 8973
Order Code: 8973

DIGITAL VOLTMETER UNIT MR8990
2ch, high-precision DC V input, 0.1μV resolution, high-speed sampling 500 times/s
Order Code: MR8990

Logic signal measurement

LOGIC PROBE 9327
4-channel type, for voltage/contact signal ON/OFF detection (response pulse width 100 ns or more, miniature terminal type)
Recommended
Order Code: 9327

LOGIC PROBE MR9321-01
4 isolated channels, ON/OFF detection of AC/DC voltage (miniature terminal type)
Recommended
Order Code: MR9321-01

LOGIC PROBE 9320-01
4-channel type, for voltage/contact signal ON/OFF detection (response pulse width 500 ns or more, miniature terminal type)
Order Code: 9320-01

CONVERSION CABLE 9323
*Used for connecting the 9320/9321/MR9321 and the 9324 to the Memory HiCorder with small logic terminal models
* This cable is not required for the small-terminal types 9327, 9320-01, 9321-01 and MR9321-01.
Order Code: 9323

*You can connect up to 4 Current Unit 8971 to the Memory HiCorder main unit, allowing up to 8 current sensors to be used.
*There is no limit for connecting current sensors to voltage input analog units.

INPUT CORD (A)
*Voltage is limited to the specifications of the input modules in use

CONNECTION CORD L9790 Recommended — Order Code: L9790
Flexible φ 4.1 mm (0.16 in) thin dia., cable allowing for up to 600 V input. 1.8 m (5.91 ft) length
* The end clip is sold separately.

ALLIGATOR CLIP L9790-01 Recommended — Order Code: L9790-01
Red/black set attaches to the ends of the cables L9790

GRABBER CLIP 9790-02 — Order Code: 9790-02
Red/black set attaches to the ends of the cables L9790
* When this clip is attached to the end of the L9790, input is limited to CAT II 300 V. Red/black set.

CONTACT PIN 9790-03 — Order Code: 9790-03
Red/black set attaches to the ends of the cables L9790

INPUT CORD (B)
*Voltage is limited to the specifications of the input modules in use

CONNECTION CORD L9198 — Order Code: L9198
φ 5.0 mm (0.20 in) dia., cable allowing for up to 300 V input. 1.7 m (5.58 ft) length, small alligator clip

CONNECTION CORD L9197 — Order Code: L9197
φ 5.0 mm (0.20 in) dia., cable allowing for up to 600 V input. 1.8 m (5.91 ft) length, a detachable large alligator clips are bundled

GRABBER CLIP 9243 — Order Code: 9243
Attaches to the tip of the banana plug cable, CAT III 1000 V, 196 mm (7.72 in) length

INPUT CORD (C)
*Voltage is limited to the specifications of the input modules in use

10:1 PROBE 9665 — Order Code: 9665
Note: This probe does not expand the maximum rated voltage above ground of an isolated input.
Max. rated voltage to earth is same as for input module, max. input voltage 1 kV rms (up to 500 kHz), 1.5 m (4.92 ft) length

100:1 PROBE 9666 — Order Code: 9666
Note: This probe does not expand the maximum rated voltage above ground of an isolated input.
Max. rated voltage to earth is same as for input module, max. input voltage 5 kV peak (up to 1MHz), 1.5 m (4.92 ft) length

INPUT CORD (D)
*For measuring high voltage. *Voltage to ground is within this product's specifications, and is not affected by connected input modules. Separate power source is also required.

DIFFERENTIAL PROBE P9000-01 Recommended — Order Code: P9000-01
(Wave mode only)
For the Memory HiCorder series, input up to 1kV AC/DC

DIFFERENTIAL PROBE P9000-02 — Order Code: P9000-02
(Select between WAVE/RMS mode)
For the Memory HiCorder series, input up to 1kV AC/DC

AC ADAPTER Z1008 — Order Code: Z1008
100 to 240 V AC

Custom cable
*For P9000. Inquire with your Hioki distributor.

Bus powered USB cable
For power supply from a USB-A terminal

USB(A)- Micro B cable
For power supply via USB Micro B terminal from a USB-A terminal

3-prong cable
AC adapter output terminal split into 3

Other options for Input

CONNECTION CORD L9217 — Order Code: L9217
Cord has insulated BNC connectors at both ends, signal output use, 1.6 m (5.25 ft) length

CONVERSION ADAPTER 9199 — Order Code: 9199
Receiving side banana, output BNC terminal

INPUT CORD (E)
*For the MR8990 *Voltage is limited to the specifications of the input modules in use

TEST LEAD L2200 — Order Code: L2200
Cable length: 70 cm, tips interchangeable with a pin lead or alligator clip, maximum input voltage: CAT IV 600V, CAT III 1000V

Temperature sensor
*For reference only. Please purchase locally.

Thermocouple

Up to 20A (High precision)

AC/DC CURRENT PROBE CT6841 — Order Code: CT6841
20 A AC/DC rated current, DC to 1 MHz response, 20 mm (0.79 in) core dia., 3 m (9.84 ft) cord length

Up to 50 A (High precision)

AC/DC CURRENT SENSOR CT6862 — Order Code: CT6862
CAT III 1000 V, 50 A AC/DC rated current, DC to 1 MHz response, φ 24 mm (0.94 in) core dia., 3 m (9.84 ft) cord length

Up to 200 A (High precision)

AC/DC CURRENT SENSOR CT6863 — Order Code: CT6863
CAT III 1000 V, 200 A AC/DC rated current, DC to 500 kHz response, φ 24 mm (0.94 in) core dia., 3 m (9.84 ft) cord length

AC/DC CURRENT PROBE CT6843 — Order Code: CT6843
200 A AC/DC rated current, DC to 500kHz response, 20 mm (0.79 in) core dia., 3 m (9.84 ft) cord length

CLAMP ON SENSOR 9272-10 — Order Code: 9272-10
CAT III 600 Vrms, 20 A/200 A AC rated current, 1 Hz to 100 kHz response, φ 46 mm (1.81 in) core dia., 3 m (9.84 ft) cord length

Up to 500 A (High precision)

AC/DC CURRENT SENSOR 9709 — Order Code: 9709
CAT III 1000 V, 500 A AC/DC rated current, DC to 100 kHz response, φ 36 mm (1.42 in) core dia., 3 m (9.84 ft) cord length

UNIVERSAL CLAMP ON CT 9279-01 — Order Code: 9279-01
600 Vrms insulated wire, 500 A AC/DC rated current, DC to 20 kHz response, φ 40 mm (1.57 in) core dia., 3 m (9.84 ft) cord length, (CE marked)

Up to 30 A (High speed)

CLAMP ON PROBE 3273-50 — Order Code: 3273-50
DC to 50 MHz wide band response, mA-class current up to 30 Arms

CLAMP ON PROBE 3276 — Order Code: 3276
DC to 100 MHz wide band response, mA-class current up to 30 Arms

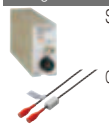
Up to 150 A (High speed)

CLAMP ON PROBE 3274 — Order Code: 3274
DC to 10 MHz wideband response, mA-class current up to 150 Arms

Up to 500 A (High speed)

CLAMP ON PROBE 3275 — Order Code: 3275
DC to 2 MHz wideband response, mA-class current up to 500 Arms

POWER SUPPLY
*Not necessary when using Current Unit 8971



SENSOR UNIT 9555-10 — Order Code: 9555-10
Power supply for the Current Sensor, used alone

CONNECTION CORD L9217 — Order Code: L9217
Cord has insulated BNC connectors at both ends, signal output use, 1.6 m (5.25 ft) length

POWER SUPPLY

POWER SUPPLY 3272 — Order Code: 3272
For the 3270 series, single sensor connectable (2 units possible depending on conditions)

POWER SUPPLY 3269 — Order Code: 3269
For the 3270 series, connect up to four sensors

100 A to 5000 A (Medium speed)

CLAMP ON AC/DC SENSOR CT9691-90 — Order Code: CT9691-90
DC to 10kHz (-3dB), 100A, Output 0.1 V/f.s.

CLAMP ON AC/DC SENSOR CT9692-90 — Order Code: CT9692-90
DC to 20kHz (-3dB), 200A, Output 0.2 V/f.s.

CLAMP ON AC/DC SENSOR CT9693-90 — Order Code: CT9693-90
DC to 15kHz (-3dB), 2000A, Output 0.2 V/f.s.

FLEXIBLE CLAMP ON SENSOR CT9667 — Order Code: CT9667
10Hz to 20kHz (±3dB), AC 5000A/500A, Output AC 500mV/f.s., φ 254 mm (10.0 in) core dia.

LEAK CURRENT
*For commercial power lines, 50/60 Hz

CLAMP ON LEAK HiTESTER 3283 — Order Code: 3283
10mA range / 10μA resolution to 200A range, moniter / analog output 1V f.s.

OUTPUT CORD 9094 — Order Code: 9094
3.5mm (0.14in) dia. mini plug to banana , 1.5m (4.92ft) length

CONVERSION ADAPTER 9199 — Order Code: 9199
Receiving side banana, output BNC terminal

AC ADAPTER 9445-02 — Order Code: 9445-02
For USA, 100 to 240 V AC, 9 V/ 1 A
AC ADAPTER 9445-03 — Order Code: 9445-03
For EU 100 to 240 V AC, 9 V/ 1 A

500 A to 1000 A
*For commercial power lines, 50/60Hz (separate power supply not required)

CLAMP ON PROBE 9018-50 — Order Code: 9018-50
Excellent phase characteristics, Input from 10 to 500 A, 40 Hz to 3 kHz for 0.2 V AC output, BNC terminal

CLAMP ON PROBE 9132-50 — Order Code: 9132-50
Input from 20 to 1000 A, 40 Hz to 1 kHz for 0.2 V AC output, BNC terminal

Evolution Will Never Cease.

HIOKI E. E. CORPORATION

HEADQUARTERS
81 Koizumi, Ueda, Nagano, 386-1192, Japan
TEL +81-268-28-0562 FAX +81-268-28-0568
http://www.hioki.com / E-mail: os-com@hioki.co.jp

HIOKI USA CORPORATION
TEL +1-609-409-9109 FAX +1-609-409-9108
http://www.hiokiusa.com / E-mail: hioki@hiokiusa.com

HIOKI (Shanghai) SALES & TRADING CO., LTD.
TEL +86-21-63910090 FAX +86-21-63910360
http://www.hioki.cn / E-mail: info@hioki.com.cn

HIOKI INDIA PRIVATE LIMITED
TEL +91-124-6590210 FAX +91-124-6460113
E-mail: hioki@hioki.in

HIOKI SINGAPORE PTE. LTD.
TEL +65-6634-7677 FAX +65-6634-7477
E-mail: info-sg@hioki.com.sg

HIOKI KOREA CO., LTD.
TEL +82-2-2183-8847 FAX +82-2-2183-3360
E-mail: info-kr@hioki.co.jp

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All information correct as of Mar. 31, 2015. All specifications are subject to change without notice.

MR8827E2-53E Printed in Japan