

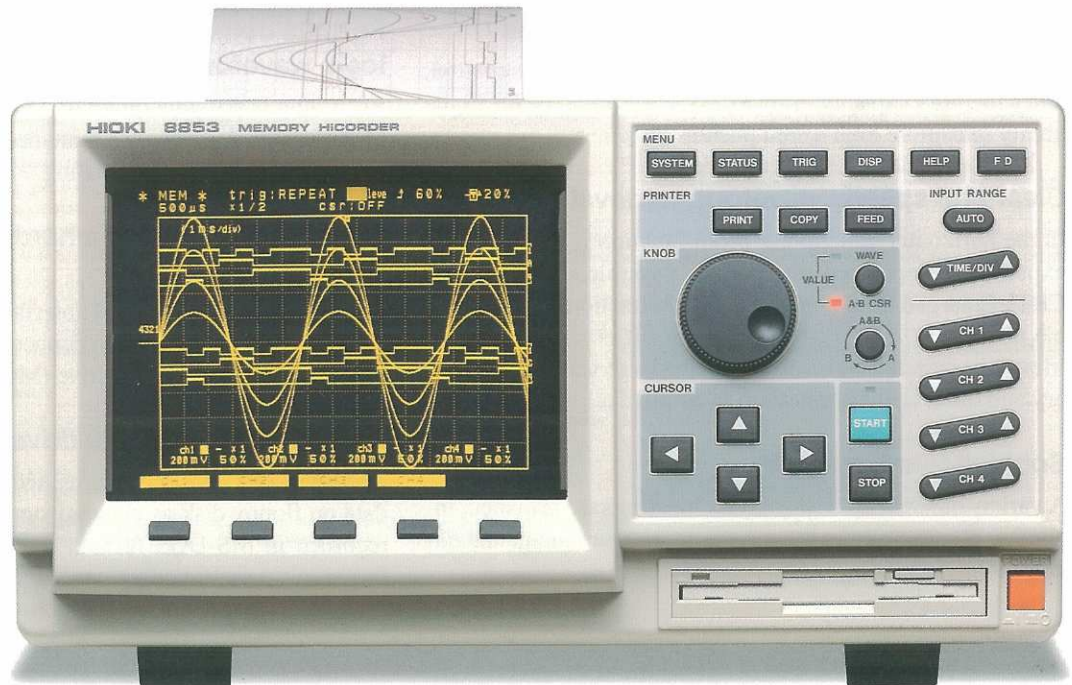
HIOKI

1995

NEW

8853 MEMORY HiCORDER

Recorders



12-bit Recording at 10 MS/s with Insulated Inputs

HIOKI is proud to announce its new **8853 MEMORY HiCORDER**, which is ten times faster than the earlier 8851. The sampling speed is 10 MS/s for high-speed conversion. The 8853 is able to accurately measure precise waveforms, making it ideal for all types of signal analysis tasks in a laboratory.



MEMORY HiCORDER are accredited to ISO 9001, the international standard relating to quality control and quality assurance. Certificate No. JQA-0216/ISO 9001

High speed, high and insulated inputs

1) Features of the 8853 MEMORY HiCORDER

Powerful waveform collection capabilities

The 10 MS/s maximum sampling speed, 12-bit resolution, and a memory capacity of up to 2M words give the **8853** the ability to capture high-speed phenomena.

Clear and speedy waveform retrieval

In the horizontal direction, a zoom function is provided and expanded/compressed display are possible on the 7-inch CRT. Enlarged display in the vertical direction is also possible due to the unit's 12-bit resolution. It is also easy to retrieve one part of a waveform from the large waveform memory and observe that waveform in detail.

Sophisticated analysis

A variety of sophisticated analysis functions are provided, including memory segmentation, cursor measurement, and numerous arithmetic operation functions.

Permits combined recording of analog and logic waveforms

Recording is possible on up to 4 analog signal channels and 16 logic signal channels simultaneously. The analog inputs are insulated and have a floating voltage of 450 V.

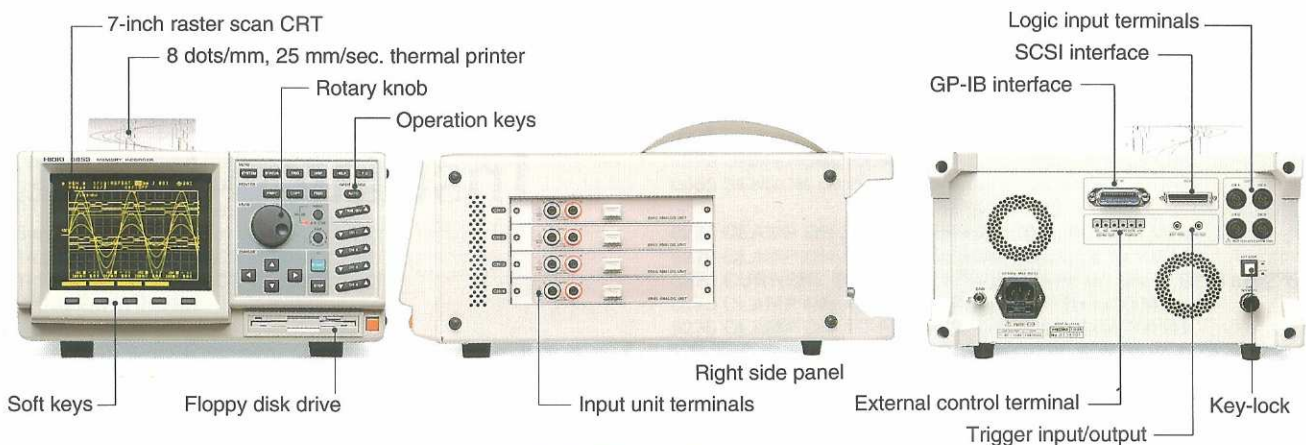
Can be connected to a hard disk or magneto-optical disk

The **8853** includes a SCSI interface as a standard feature. This interface can be used to connect a hard disk drive (HDD) or a magneto-optical disk drive (MO).

Provides a floppy disk drive

The **8853** can save waveforms, setting conditions, and other data on floppy disk as external storage. Because the data is recorded in MS-DOS format, the data can be easily transferred to a personal computer.

2) Configuration and Functions of the 8853 MEMORY HiCORDER



Dimensions : approx. 168(H) × 324(W) × 400(D)mm
Weight : approx. 9.0 kg (excluding input units)

The waveform being monitored is output immediately. Double-sided copies, full printouts of all data, etc., can be produced on the spot. Other convenient functions include real-time double-sided display of low-speed phenomena, the simultaneous printing and recording function, and the X-Y recorder function, which places no restriction on the recording time.



A hard disk drive or magneto-optical disk drive can be connected to the standard SCSI interface. The hard disk drive or magneto-optical disk drive can be used to save important data that has already been stored in the **8853**'s 2-megaword memory. An "auto save" function is also provided.

* Contact your dealer for information on what types of hard disk drives and magneto-optical disk drives can be connected to the **8853**.

resolution, large memory capacity,

■ Main Unit Specifications 8853 MEMORY HiCORDER

Basic specifications	
Measurement functions	①Memory recorder ②recorder ③X-Y recorder
Input method	Plug-in input units (with insulation between each input/output and each channel)
Number of channels (maximum)	4 analog channels + 16 logic channels* * The 16 logic channels are standard equipment on the main unit, and share a common ground with the main unit.
Memory capacity	(12 analog bits + 4 logic bits) × 4 megawords/channel (when using CH1) × 1 megaword/channel (when using CH1 and CH2) × 500 kilowords/channel (when using CH1 to CH4)
Data storage	3.5-inch floppy disk drive built in, MS-DOS format, 1.44 MB, 1.2 MB, 720 kB. Hard disk of 3.5-inch magneto-optical disk can be connected via the SCSI interface.* * Contact your dealer for information on what types of disks can be connected.
Battery backup	Clock, setting conditions; battery life: 10 years (at 25°C)
External control terminals	3.5mm-diameter mini-jacks (trigger I/O), terminal board (start, stop input, waveform judgment go/no go output); outputs have open collector 5 Vvoltage output, all active low.
Interfaces	GP-IB (conforms with IEEE488.2-1987; compatible with HP-GL standard plotter output) SCSI (conforms with ANSI X3.131-1986, JIS X6051; for connection of one HDD or MO only)* * Contact your dealer for information on what types of disks can be connected.
Power supply	90 to 250 V AC (universal) 50/60 Hz
Power consumption	170 VA max. (approximately 70 VA when printer is off and unit is running off of 100 V AC)
Accessories	Power cord × 1, recording paper × 1, dust cover × 1, spare fuse × 1, 3P-2P adapter × 1

Recording and display section	
Recording paper	110 mm × 30 m thermal paper roll
Recording width	Full scale: 10 divisions, 1 division = 10 mm (80 dots)
Paper feed density	Memory recorder: 8 rows/mm (16 rows/mm in smooth print mode); recorder: 16 rows/mm (8 rows/mm for 400 ms or 500 ms/division only)
Recording speed	25 mm/s maximum
Display method	7-inch raster scan CRT (3 grayscale levels)

Trigger section	
Sources	CH1 to CH4, EXT, TIMER; each source can be turned on and off. CH1 and CH2 can be set to analog or logic; start, stop, or interval times can be specified with the TIMER. Each trigger source can be AND'ed or OR'ed together.
Trigger types	(Level) When recorded value rises above or declines below the set value, with the recording width set digitally from 0 to 100%. (Event) When the number of level triggers exceeds the set count. (Window) When the recorded value goes above the upper limit or below the lower limit set for the level. (Glitch) When a pulse width is less than the set pulse width. (Time-out) When the level trigger interval exceeds the setting. (Logic pattern) 1, 0 or × setting, AND/OR result for groups of eight channels
Level setting accuracy	±0.4% f.s. (f.s. = 100%)

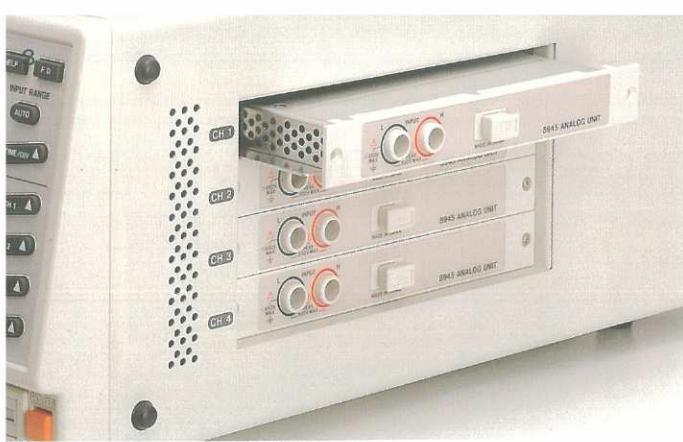
Memory recorder functions	
Time axis	4 μs to 5 s/division; 20 ranges Time axis expansion: 2x to 10x; 3 levels Compression: 1/2 to 1/4,000; 11 levels
Sampling interval	1/40 of the time axis range, 100 ns to 125 ms
Recording duration	15 to 12,500 divisions (when using CH1 to 4), 25,000 divisions (when using CH1 and 2), 50,000 divisions (when using CH1)
Pre-trigger	Can record data from before the trigger; 0 to 100% or -50 to -950% of the recording duration
Waveform processing operations (only when four channels are set)	*Waveform with a maximum of 1500 divisions, precision within the accuracy of the input section, four simultaneous operations Addition, subtraction, multiplication, division, absolute value, exponents, common logarithms, square roots, moving averages, differentials (first order, second order), integrals (first order, second order), parallel shift along time axis
Waveform parameter calculations	Maximum value, minimum value, P-P value, average value, RMS value, area, cycle, frequency, time until maximum value, time until minimum value, rise time, fall time, XY area, either for all data or between cursors A and B, with no limit on the number of divisions.
Miscellaneous	Waveform averaging, memory segmentation (2, 3, 7, 15, 31, or 63 segments), superimposition, expansion/compression along voltage axis (×2 to ×10, or 1/2; four levels), waveform scrolling display (time axis, voltage axis), waveform zoom display

Recorder functions	
Time axis	400 ms to 1 hour/division: 13 ranges; time axis compression: 1/2 to 1/50, 5 levels
Sampling interval	Fixed at 625 μs (1.6 kS/s), except 500 μs (2 kS/s) for 400 ms/division only
Recording duration	15 to 750 divisions, continuous
Miscellaneous	Printout can be made while data is displayed on screen, expansion/compression along voltage axis (×2 to ×10, 1/2; four levels), reprinting of data stored in memory (last 750 divisions)

X-Y recorder functions	
Number of channels	3 channels max., X axis and Y axis can be set as desired
Sampling interval	Fixed at 500 μs (dot), or 0.5 ms to 42 ms (line)
Recording time	Unlimited superimposition
Display, printing	10 divisions × 10 divisions (100 mm × 100 mm when printing)
X-Y axis resolution	X axis: 40 dots/division; Y axis: 25 dots/division (screen) 80 dots/division (printer)

Auxiliary functions	
Sealing	Can substitute amplitude scale only.
Waveform judgment function	(Type) For a time axis waveform, or X-Y plot display, area evaluation versus the reference waveform and evaluation versus the parameter calculation values (Evaluation time) about 66 ms (Evaluation cycle) about 240 ms *The values shown above are reference values under test conditions set by HIOKI.
Miscellaneous	Clock, cursor measurement, comment input, key lock, auto range, auto save, auto setup, list and gauge printing

Number of Channels Application



Option Unit Specifications

(Accuracy measured at 23 ±5°C 60 minutes after power was turned on; accuracy guaranteed for six months)

8945 Analog Unit	
Number of input channels	One channel (insulated between input and output)
Measurement range	10 mV to 50 V/division; 12 ranges Full scale (f.s.) = 10 divisions, max. 500 V (DC + AC peak) Measurement resolution is 1/400 of range. Low-pass filter: 5/500/500 kHz
Maximum sampling speed	10 MS/s
DC amplitude precision	± 0.25% f.s.
Origin setting (Zero position)	-100% to +100% of recording paper width in 1% steps Zero adjust function provided.
Zero position accuracy	± 0.1% f.s. (after zero adjustment)
Frequency band	DC to 4 MHz +1/-3 dB
Input resistance, capacitance	1 MΩ ±1%, approximately 30 pF (at 100 kHz)
Input coupling	AC, GND, DC
Maximum floating voltage	450 V AC, DC * Between input channel and frame, and between input channels.
Temperature characteristics	Gain ± 0.025% f.s./°C Zero ± 0.15% f.s./°C *After zero adjustment
Dimensions/weight	Approximately 24 (H) × 181 (W) × 101 (D) mm Approximately 275 g
Accessories	9574 Input Cord (1.7 m) × 1

Memory recorder function recording times

TIME/DIV	Sampling interval	When using CH1 2MW, 50,000 divisions	When using CH1 to 4 500kW, 12,500 divisions
4μs/division	100ns	200ms	50ms
5	125	250ms	62.5ms
10	250	500ms	125ms
20	500	1s	250ms
50	1.25μs	2.5s	625ms
100	2.5	5s	1.25s
200	5	10s	2.5s
500	12.5	25s	6.25s
1ms/division	25	50s	12.5s
2	50	1m40s	25s
5	125	4m10s	62.5s
10	250	8m20s	2m 5s
20	500	16m40s	4m10s
50	1.25ms	41m40s	10m25s
100	2.5	1h23m20s	20m50s
200	5	2h46m40s	41m40s
500	12.5	6h56m40s	1h44m10s
1s/division	25	13h53m20s	3h28m20s
2	50	1day 3h46m40s	6h56m40s
5	125	1day21h26m40s	17h21m40s

Recorder function recording times (approximately 2970 divisions for a length of 30 m)*1

TIME/DIV	Sampling interval	Approximately time until paper runs out when using 1 channel ~ when using four channels
400ms/division	500μs	19 minutes, 48 seconds
500	625μs	24 minutes, 45 seconds
1s/division		49 minutes, 30 seconds
2		1 hour, 39 minutes
5		4 hours, 7 minutes, 30 seconds
10		8 hours, 15 minutes
20		16 hours, 30 minutes
1min/division		2 days, 1 hour, 30 minutes
2		4 days, 3 hours
5		10 days, 7 hours, 30 minutes
10		20 days, 15 hours
20		41 days, 6 hours
1hour/division		123 days, 18 hours

* Assumes about 30 cm of the paper length is not used, leaving space for approximately 2970 divisions.

Can Be Selected According to the

3) Measurement function summary and examples

Memory recorder function

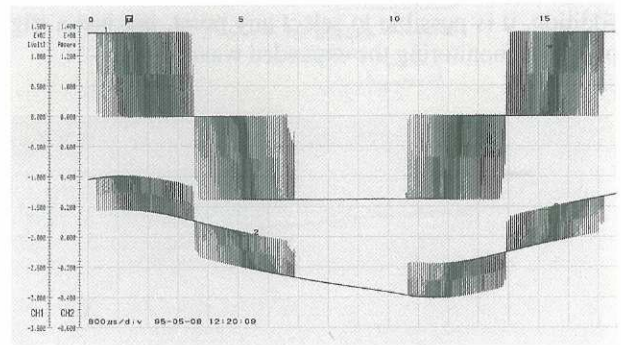
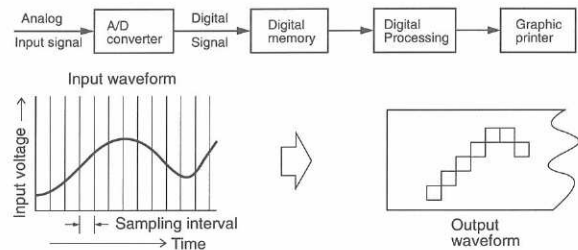
The input signal is first converted to digital form and stored in memory, and then is available for display and printing, thus allowing transient events to be captured reliably. It is also possible to make X-Y plots for any pair of channels.

Example

Assume various waveforms are being observed from an inverter. To observe a current waveform, it is necessary to convert the voltage signal by a clamp sensor, etc. In such a case, scaling is useful for reading the values.

(Output voltage/current waveform example)

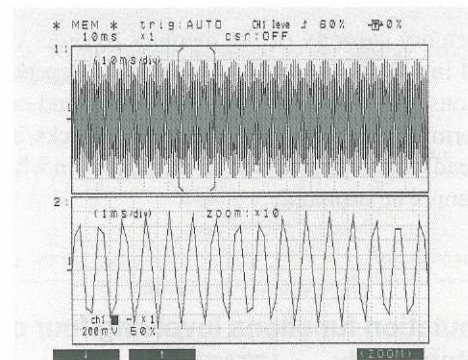
Options/functions used: **9274 CLAMP-ON AC/DC SENSOR** and **3270 CURRENT MONITOR**, memory recorder, level trigger, scaling



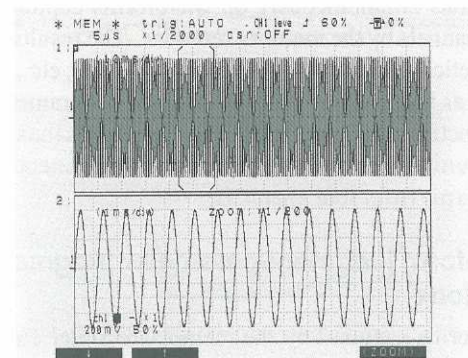
Benefits of high-speed sampling and large memory capacity

The **8853** permits sampling at a maximum speed of 10M samples/second (a sampling interval of 100 ns); in addition, the **8853** is equipped with a large-capacity two-megaword memory. This large memory capacity makes long-term recording possible. Furthermore, high-density recording is possible by compressing the time axis. The screen update rate is also fast at approximately 0.2 seconds.*

* (When data for one channel in 500k words of memory is displayed at once)



By increasing the time/division, the sampling interval increases; as a result, it becomes impossible to capture the peaks of a fast waveform.



In the **8853**, with its large memory capacity, by fixing the time/division (which fixes the sampling interval) and varying the time axis compression ratio, changing the apparent time axis range does not alter the analog band.

Insulated inputs

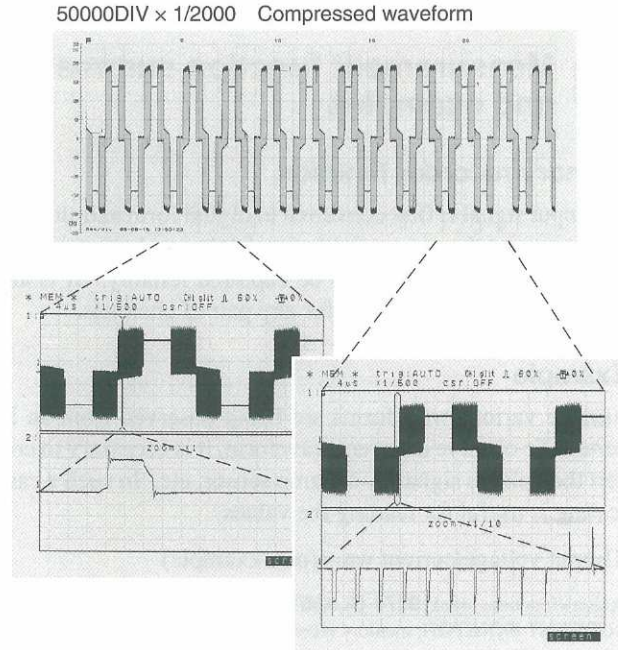
In addition to the high-speed sampling capabilities described above, the **8853** also provides full electrical insulation amongst the input channels and between the input channels and the metal parts of the main unit. This feature permits measurement among different locations with different electrical potentials.

(Floating voltage: 450 V AC, DC)

A Memory Recorder with Complete

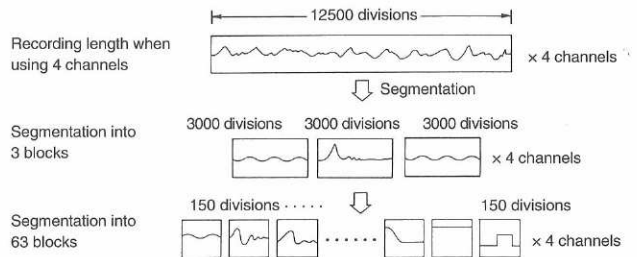
Zoom display function

When monitoring a waveform with an analog oscilloscope, it is common to slow down the sweep speed in order to view the entire waveform or speed up the sweep speed to enlarge the waveform, but waveform enlargement can only be monitored after a trigger point. The **8853's** zoom function makes it possible to simultaneously monitor waveforms that have been compressed and expanded in the direction of the time axis. In addition, it is possible to select any point, not just a trigger point, for monitoring the expanded waveform.



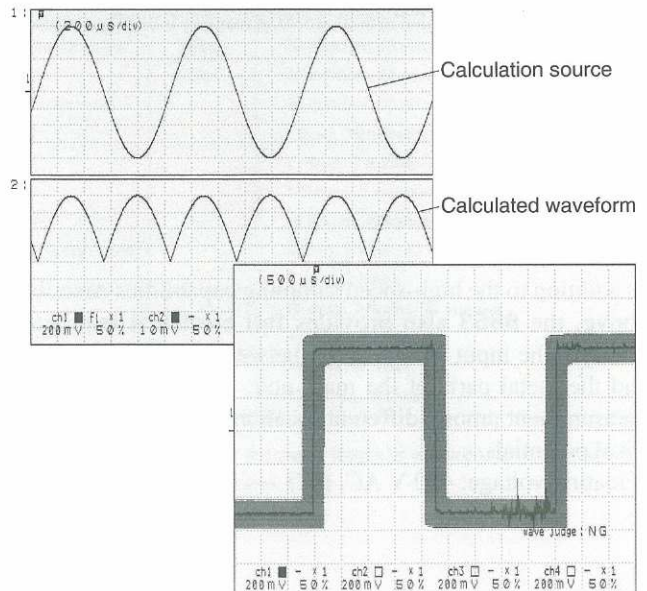
Memory segmentation function

The memory capacity of the memory recorder can be segmented into 2, 3, 7, 15, 31 or 63 blocks (depending on the conditions). It is possible to superimpose and compare the waveform in a reference block with other blocks, and to eliminate dead time in printouts or on the display in which a waveform cannot be captured.



Computation functions involving four channels simultaneously

It is possible to perform four types of waveform processing operations simultaneously on waveforms captured through four channels by the memory recorder. The results of the four arithmetic operations, differentials, integrals, etc., can be displayed as waveforms. Up to four types of parameter calculation functions, which calculate values such as maximums and minimums, can also be performed simultaneously on the waveforms from four channels.



Waveform judgment/parameter judgment functions

Waveforms captured by the memory recorder can be monitored according to a preset judgment area. In the same manner, numerical judgment is possible, in which the input waveform parameter calculation results are monitored according to preset values.

Signal Analysis Capabilities

Recorder function

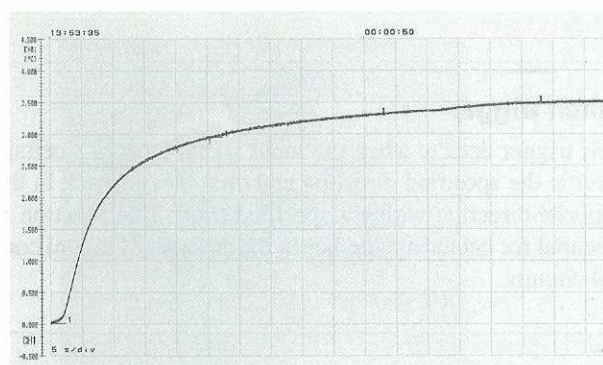
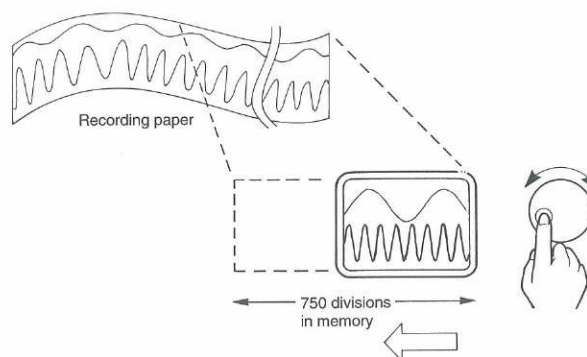
An input signal converted into digital form can be displayed and printed out in real time. The maximum chart speed is 25 mm/second (in the 400 ms/division range). In addition to real-time recording, the most recent 750 divisions of the waveform are stored in memory.

Reverse scrolling function

For waveforms being recorded in real time consisting of less than 750 divisions, including the screen displayed at the end of recording, it is possible to scroll up/down and left/right, and to reprint the waveform.

Example

Assume temperature changes are being monitored using a **HIOKI 3412-50** Thermo-meter with analog output. Because the thermometer's output voltage is 0.001 V DC per 1°C, the scaling function can be used to scale 0.001 to 1 and setting the unit to "°C." (temperature recording example)



Voltage axis: 10 mV/division, enlarged by $\times 2$; scaling: $\times 1000$; display: 5°C/division

X-Y recorder function

An X-Y composite waveform created from two digital signals can be stored in memory. Any one of the four analog channels can be specified for the X axis, and any of the other channels can be specified for the Y axis, up to a maximum of three combinations. The waveform can be monitored in real time on the screen, with no time limit on the recording. The waveform can be printed out again.

Example

Assume recording through a Lissajous figure of phase changes in current and voltage during startup of a motor. The **9272 CLAMP-ON SENSOR** and the **9555 SENSOR UNIT** are used for input of the current signal.

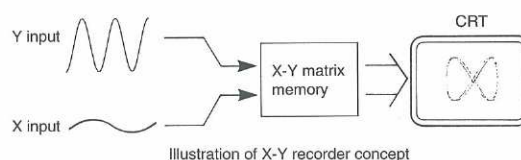
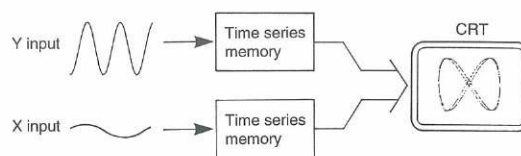
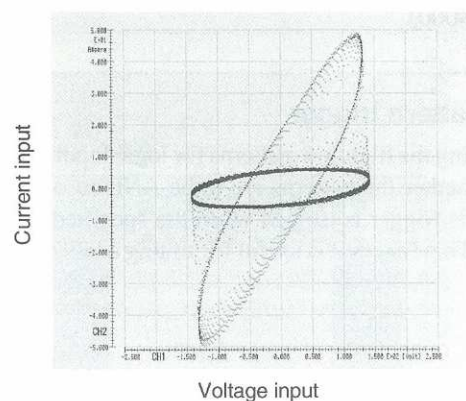


Illustration of X-Y recorder concept



Memory recorder X-Y format display

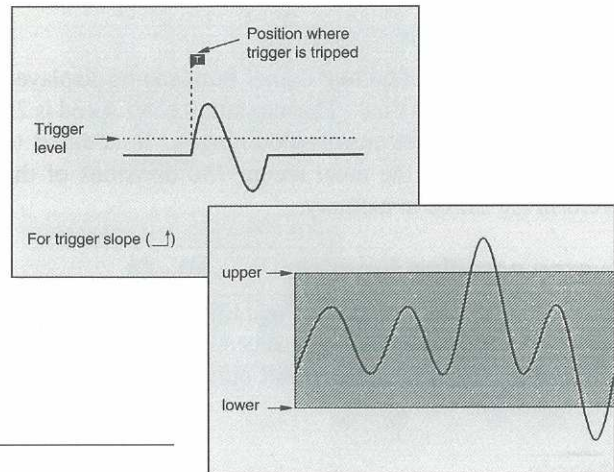


Useful Functions for Expanded

4 Summary of Additional Functions

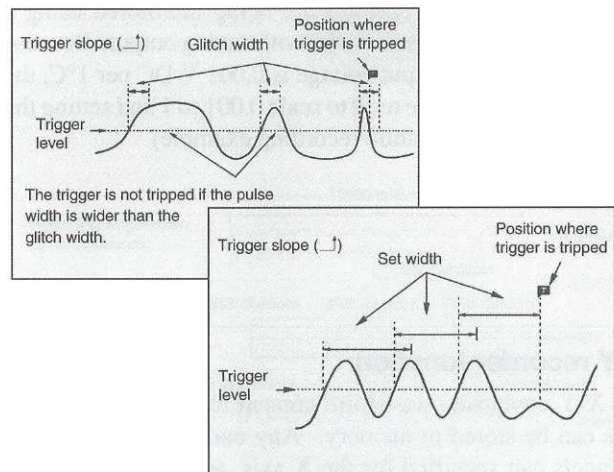
Level trigger and window trigger

The level trigger detects when the input signal crosses a certain level in the specified direction. If the trigger mode is set to "AUTO," the screen is updated continuously, making it easy to measure the waveform. The window trigger function permits the setting of two trigger levels; when the input signal moves out of the range specified by these two levels, the trigger is tripped. This function is useful for capturing a signal with an unknown polarity.



Glitch trigger

This trigger detects when the input signal crosses a certain level in the specified direction and then crosses back in the opposite direction within a specified time. This function is essential for capturing glitches in the analysis of digital control circuits.

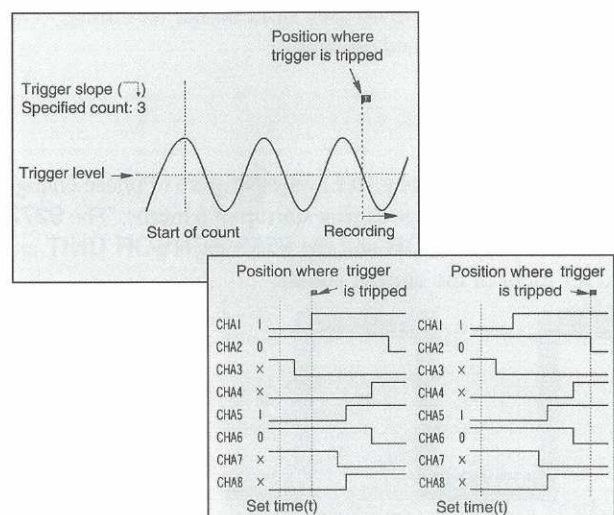


Time-out trigger

This trigger is tripped when the input signal crosses a certain level in the specified direction but then does not do the same again within the specified time limit after the first time the level is crossed. This function can capture waveforms in situations such as where a pulse is missing in output from a pulse encoder, or when a momentary voltage drop occurs in a commercial power supply line.

Event trigger

This trigger is tripped when the input signal crosses a certain level in the specified direction the specified number of times. This function can be used, for example, to trip the trigger after a certain number of pulses in output from a pulse encoder. (2 to 4000)



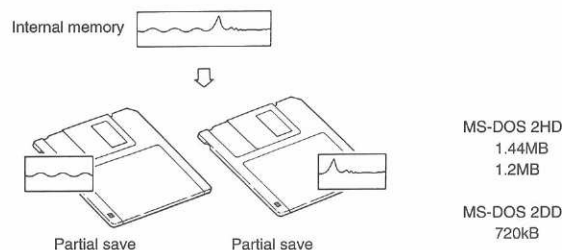
Logic pattern trigger

After setting the high/low patterns for logic input signals and setting whether the patterns are to be AND'ed or OR'ed together, this trigger is tripped when the specified conditions are met. This function is useful for timing analysis of digital circuits.

Applications

Convenient 3.5-inch floppy disk drive built in

Waveforms captured by the memory recorder can be saved on a floppy disk. Three MS-DOS formats are supported: 1.44 MB, 1.2 MB and 720 kB. Since the internal memory capacity of the 8853 is greater than the capacity of a single floppy disk, use an externally connected hard disk, etc., when saving all of the data in memory.



Magneto-optical disks can be used (230MB, 128MB)

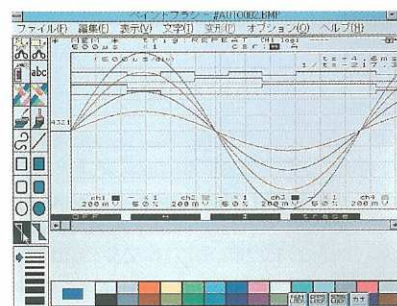
Hard disk drives and magneto-optical drives can be connected to the SCSI interface that is a standard feature on the 8853. Important data stored in the 8853's 2-megaword memory can be saved in one operation on to a disk. An autosave function that responds to triggers or waveform judgment results is also provided. If an MO disk is used, large volumes of data can be transferred off-line to a personal computer.

* Because the SCSI interface and the target device must be compatible, consult your dealer for information on the types of disks that can be connected.



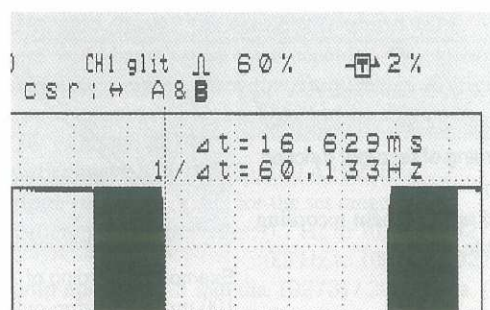
BMP save permits display of the measurement screen on a personal computer

The 8853's screen image can be saved on a floppy disk in bitmap file (BMP) format. Because BMP is the standard format for Windows graphics files, this screen data can be passed to any personal computer that supports Windows.



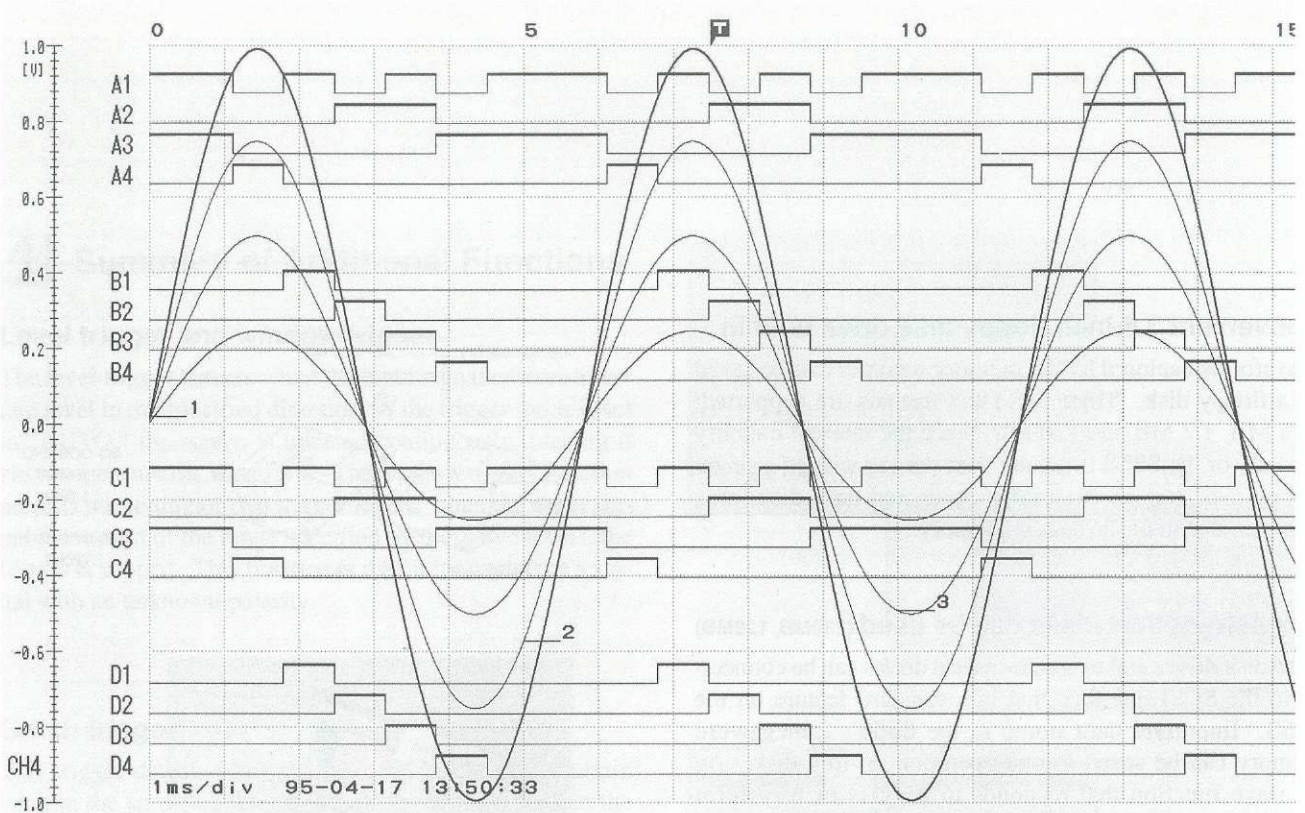
Cursor measurement function

There are two cursors that are displayed on the screen and which can be used to read time differences or differences in electrical potential. The readings can be easily saved simply by pressing the COPY key. (screen copy example)

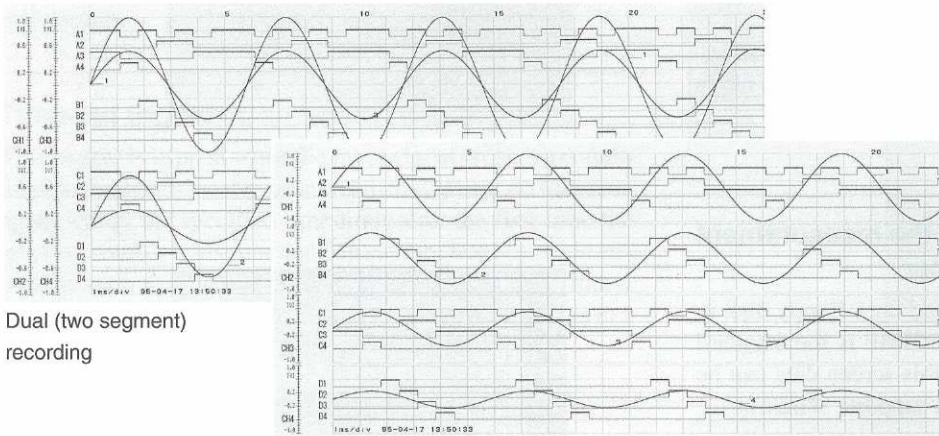


Example Print-Outs

(Actual size)

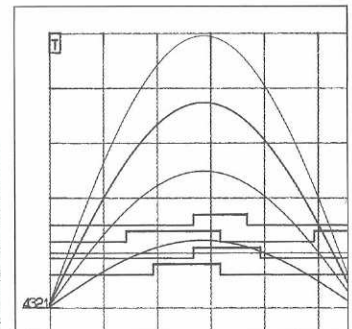


Example recording of memory recorder (full width) Two-segment/four-segment recording and X-Y waveform combination are also possible.

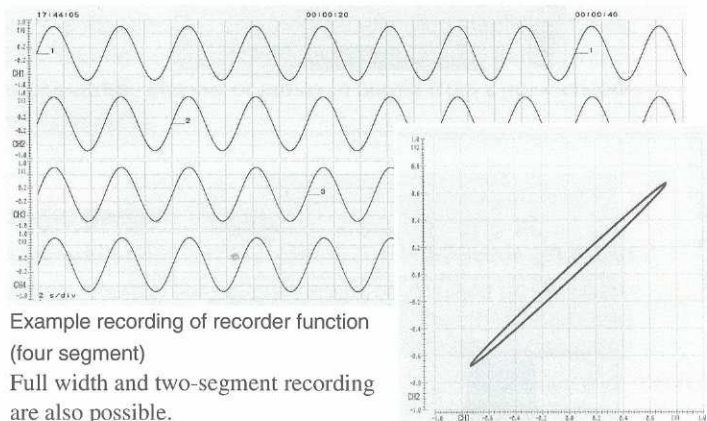


Dual (two segment) recording

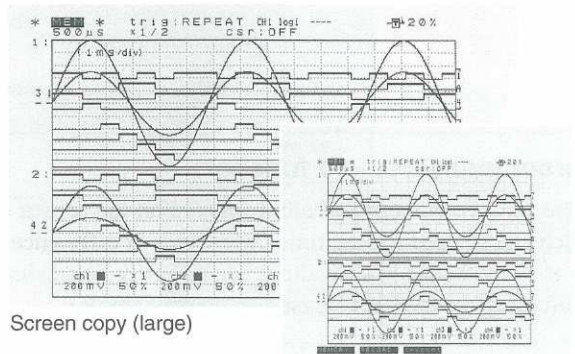
Quad (four segment) recording



Plotter output
The waveform on the screen is output to an HP-GL-standard plotter via the GP-IB interface.



Example recording of recorder function (four segment)
Full width and two-segment recording are also possible.



Screen copy (large)

Screen copy (small)

Example recording of X-Y recorder
100 mm x 100 mm only.

5) Option specifications

9306 LOGIC PROBE

Detector for 0/5 V signals or relay contact signals, for high/low recording. Connects to the logic inputs of the MEMORY HiCORDER.

Inputs: 4 channels (common ground); digital / contact signal on/off detection

Input impedance: at least 50 k Ω (digital), 2 k Ω (contacts)

Threshold level: +1.4 V 

Response time: 2 μ s maximum

Dimensions and weight: 137 (H) \times 64 (W) \times 22 (D) mm;
200 g approx.

9307 LINE LOGIC PROBE

Detector for AC or DC relay drive signals, for high/low recording. Connects to the logic inputs of the MEMORY HiCORDER. Can also be used as outage detector on a power supply line.

Inputs: 4 channels (isolated); Hi/Lo range switchable

Input impedance: 100 k Ω (Hi range), 30 k Ω (Lo range)

Detection levels: 170 - 250 V AC, \pm 70 - 250 V DC (Hi range)

 60 - 150 V AC, \pm 20 - 150 V DC (Lo range)

Non-detection levels: 0 - 30 V AC, \pm 0 - 43 V DC (Hi range)

 0 - 10 V AC, \pm 0 - 15 V DC (Lo range)

Response time: rise 1 ms max., fall 3 ms max.

* With on/off switch at 200 V DC for Hi-range and 100 V DC for Lo-range

Dimensions and weight: 137 (H) \times 64 (W) \times 22 (D) mm;
400 g approx.

9308 LINE DIP DETECTOR

Detector for instantaneous drops on a 100/120V AC line, sending a trigger signal. Connects to the logic inputs of the MEMORY HiCORDER.

Input: 100/120 V AC (50/60 Hz)

Detection level: approx. 80/90% of 100 or 120 V

Response time: approx. 2 cycles of input AC signal

Input impedance: approx. 12 k Ω / With 1/100 waveform output

Dimensions and weight: 137 (H) \times 64 (W) \times 22 (D) mm;
300 g approx.

9270 - 9272 CLAMP ON SENSORS and 9555 SENSOR UNIT

These current sensors are capable of reliable measurement of distorted AC current waveforms. Each clamp-on sensor operates together with the 9555 unit.

Input ranges: 20 A (9270), 200 A (9271), and 20/200 A (9272)

Output voltage: 2 V AC for the set range

Frequency characteristics: 5 Hz to 50 kHz (9270 and 9271)
 \pm 2.5% f.s. 5 Hz to 10 kHz (9272) \pm 2.5% f.s.

Clamp aperture: 20 mm dia. (9270 and 9271)
46 mm dia. or 50 \times 20 mm bus bar (9272)

Circuit voltage: 600 V AC (insulated conductor) *

9274, 9276 CLAMP ON AC/DC SENSORS and 3270

These current sensors are capable of reliable measurement of waveforms ranging from DC current to distorted AC current. Each clamp-on sensor operates together with the 3270 unit.

Input ranges: 20 A (9274), 150 A (9276)

Output voltage: 1 V AC for the set range

Frequency characteristics: DC to 10 MHz (9274) -3 dB
DC to 100 kHz (9276) -3 dB

Clamp aperture: 5 mm dia. (9274) / 20 mm dia. (9276)

Circuit voltage: 600 V peak (insulated conductor) *

9303 PT

This voltage transformer converts 400 or 200 V AC to 10 V AC.

Transformer ratio: 1/40 or 1/20, \pm 1%

Maximum permitted input: 440/220 V AC

Frequency characteristics: 40 Hz to 3 kHz, \pm 1%

Dimensions and weight: 113 (H) \times 56 (W) \times 93 (D) mm;
730g approx.

9305 TRIGGER CORD

This connects the trigger inputs and outputs of a number of MEMORY HiCORDERs.

3.5 mm dia. mini-plugs, length 1.5 m approx.

220H PAPER WINDER

Paper width: 70 to 220 mm

Power supply: 100 V AC (using special-purpose AC adaptor)

Dimensions and weight: 190 (H) \times 240 (W) \times 160 (D) mm
2.6 kg approx.

9536 UTILITY DISK

The software provided on this disk converts captured data to a form directly loadable into a personal computer for use with a spreadsheet such as Lotus 1-2-3 or DADiSP.

Models supported: 8825, 8840, 8851, 8852 and 8853

Supplied medium: 3.5-inch floppy disk; 2HD (9536), 2DD (9536-01)

Operating (9536) PC9801 series VM or later, MS-DOS version 3.0 or later, bus mouse support

environment: (9536-01) IBM PC/AT or compatible, EGA graphics monitor (640 \times 350), MS-DOS version 4.0 or later, PS/2 mouse support

Function: Converts waveform data saved on disk to ASCII format, with voltage value conversion (supports scaling and calculation functions); conversion of all channels together

Software supported: Lotus 1-2-3, DADiSP, Excel, etc.

* The core and shield casing are not insulated. To avoid the possibility of accidents, do not use on bare conductors.

9277-9279 UNIVERSAL CLAMP ON CTs and 9555 SENSOR UNIT

These current sensors are capable of reliable measurement from DC to distorted AC current waveforms. Each clamp-on sensor operates together with the 9555 unit.

Input ranges: 20 A (9277), 200 A (9278), and 500 A (9279)

Output voltage: 2 V AC for the set range

Frequency characteristics: DC to 100 kHz (9277 and 9278)
 \pm 5% f.s. DC to 20 kHz (9279) \pm 5% f.s.

Clamp aperture: 20 mm dia. (9277 and 9278); 40 mm dia. (9279)

Circuit voltage: 600 V AC, 850 V peak (insulated conductor)*

9273, 9275 CLAMP ON AC SENSORS and 3271

These wide-band sensors are capable of measuring AC current waveforms ranging from low frequencies to high frequencies. These sensors have a higher signal-to-noise ratio than the 9274 and 9276. (with the 3271)

Input ranges: 20 A (9273), 150 A (9275)

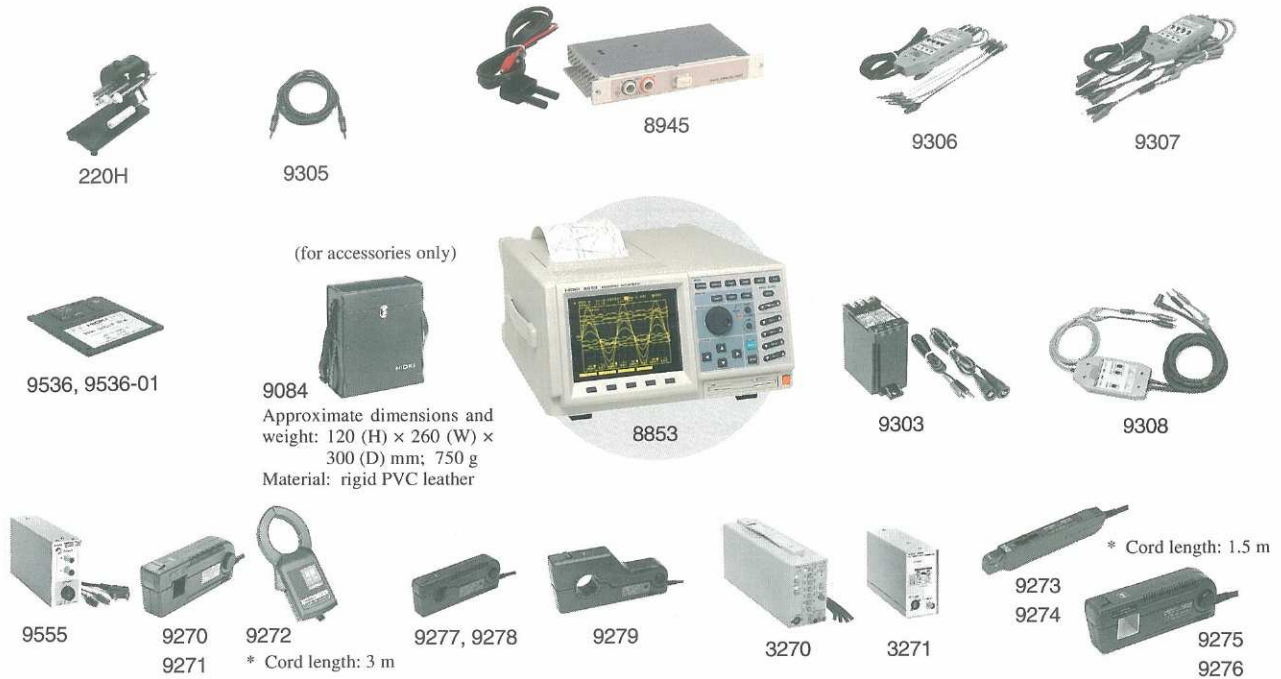
Output voltage: 1 V AC for the set range

Frequency characteristics: 0.7 Hz to 10 MHz (9273) -3 dB
0.5 Hz to 100 kHz (9275) -3 dB

Clamp aperture: 5 mm dia. (9273) / 20 mm dia. (9275)

Circuit voltage: 600 V peak (insulated conductor) *

Options



Main recorder unit (8853) + (8945units × required number) + (other options)

Maximum number of measurements	1 channel	2 channels	3 channels	4 channels
Number of 8945 units	1	2	3	4
Memory capacity per channel	2M words	1M words	500k words	

Ordering information

8853 MEMORY HiCORDER

- Options Factory fitted or user - interchangeable
- 8945 ANALOG UNIT

● Options

- 9221 RECORDING PAPER (30 m, 10 rolls)
- 9303 PT
- 9305 TRIGGER CORD (3.5-mm diameter mini-plug, approx. 1.5 m long)
- 9306 LOGIC PROBE (4 channel digital/contact signal on/off detection)
- 9307 LINE LOGIC PROBE (4 insulated channels, AC/DC voltage on/off detection)
- 9308 LINE DIP DETECTOR
- 9536 UTILITY DISK (for the PC-9801)
- 9536-01 UTILITY DISK (for the IBM PC/AT)
- 9151-02 GP-IB INTERFACE CABLE (2 m)
- 9151-04 GP-IB INTERFACE CABLE (4 m)
- 220H PAPER WINDER
- 9084 CARRYING CASE (for accessories)

The 8853 cannot be used by itself for measurement. Additional input units (sold separately) must also be purchased.

- 9270 CLAMP ON SENSOR: 20 A, 5 Hz to 50 kHz
- 9271 CLAMP ON SENSOR: 200 A, 5 Hz to 50 kHz
- 9272 CLAMP ON SENSOR: 20/200 A, 5 Hz to 10 kHz
- 9277 UNIVERSAL CLAMP ON CT: 20 A, DC to 100 kHz
- 9278 UNIVERSAL CLAMP ON CT: 200 A, DC to 100 kHz
- 9279 UNIVERSAL CLAMP ON CT: 500 A, DC to 20 kHz
- 9555 SENSOR UNIT: used as set with any one of 9270 to 9272, or 9277 to 9279
- 9274 CLAMP ON AC/DC SENSOR: 20 A, DC to 10 MHz
- 9276 CLAMP ON AC/DC SENSOR: 150 A, DC to 100 kHz
- 3270 CURRENT MONITOR: used as set with any one of 9273 to 9276
- 9273 CLAMP ON AC SENSOR: 20 A, 0.7 Hz to 10 MHz
- 9275 CLAMP ON AC SENSOR: 150 A, 0.5 Hz to 100 kHz
- 3271 AC CURRENT MONITOR: used as set with either 9273 or 9275

* Lotus and 1-2-3 are registered trademarks of Lotus Development Corporation. * DADiSP is a registered trademark of DSP Development Corporation. * MS-DOS, Excel, and Windows are registered trademarks of Microsoft Corporation.

HIOKI E.E. CORPORATION

DISTRIBUTED BY

HEAD OFFICE: 81 Koizumi, Ueda, Nagano, 386-11, Japan
FAX. 0268-28-0568 / TEL. 0268-28-0562