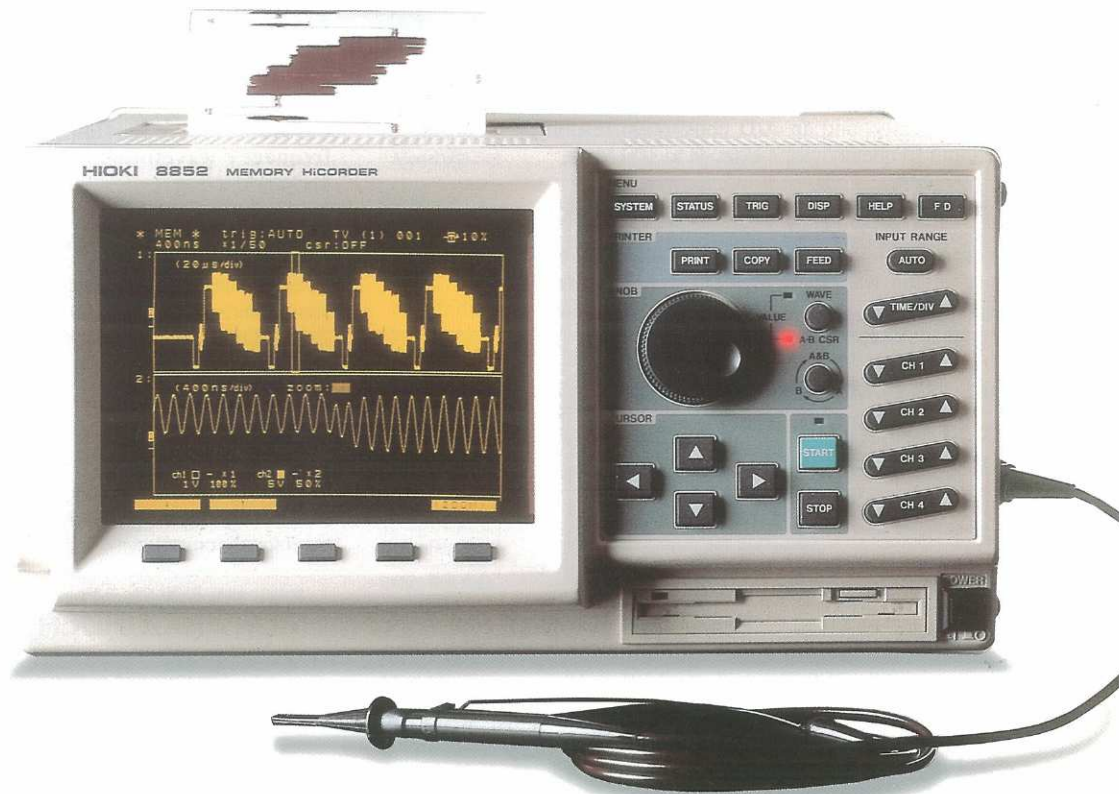


NEW 8852/8852-01 MEMORY HiCORDER

Recorders



High-speed waveform recording at 200 MS/s, with 16 MW memory

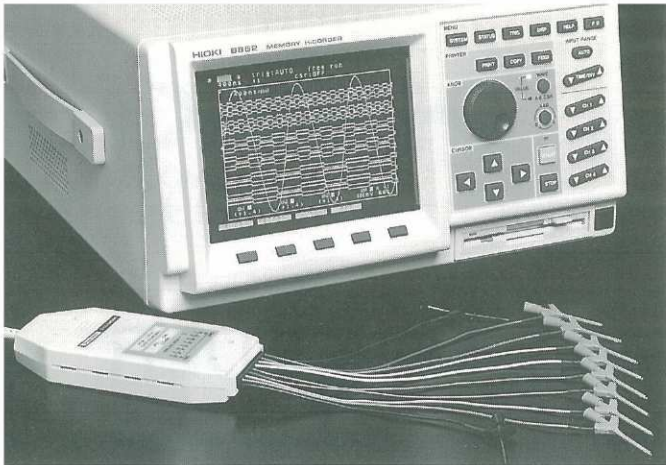
Fast sampling and large memory capacity allow video signals to be captured

The 8852-01 MEMORY HiCORDER has been added to the range: a version of the highly acclaimed 8852 MEMORY HiCORDER, with a large, 16 MW memory. With four times the SRAM capacity of the previous version, this instrument makes long recording times possible. It has a 7-inch CRT display, allowing rapid and efficient searching for required sections of a large volume of data held in memory, and a built-in thermal printer for immediate printouts.



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

A new model brings a



1) Features of the 8852 MEMORY HiCORDER

Waveform measurement in the high-frequency band

This unit provides 100 MS/s sampling for four channels simultaneously, or 200 MS/s sampling for two channels simultaneously, and an A/D conversion resolution of 8 bits. The input frequency range extends to 100 MHz.

Combined recording of analog and logic signals

For three of the analog channels a selection can be made of either analog waveform or logic waveform recording. This allows capture of up to 24 logic channels and one analog channel simultaneously.

Hard disk or Magneto-optical disk connection

A SCSI interface is fitted as standard, allowing a general-purpose hard disk or MO disk to be connected.

Even larger memory capacity

The large 4M word capacity of the existing model is quadrupled by the addition of this 16M word model, which is the authoritative version for capture and analysis of high frequency waveforms. A lithium battery provides a data backup function.

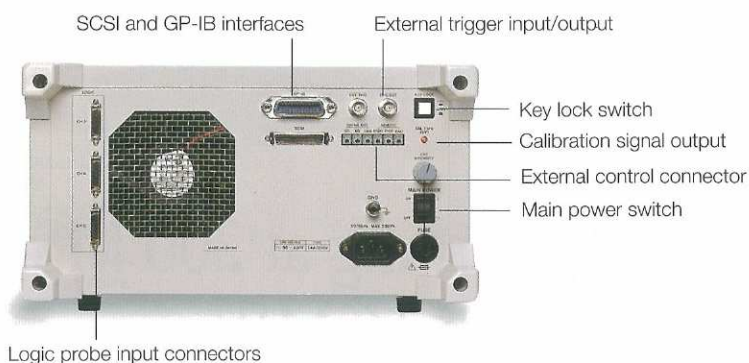
Full range of waveform analysis functions

These include the use of memory segmentation, cursor readout functions, many calculation functions, and FFT analysis. Zoom functions make it possible to combine a compressed waveform display with simultaneous enlargement of a particular section.

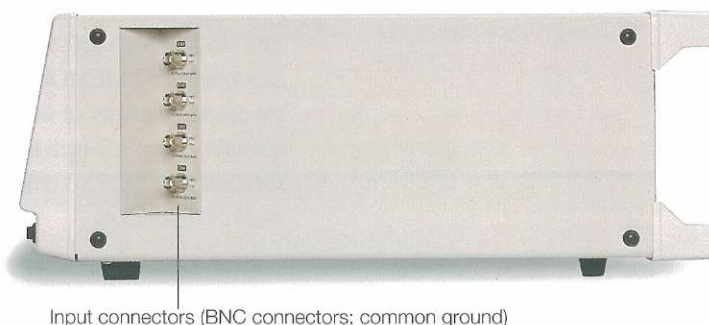
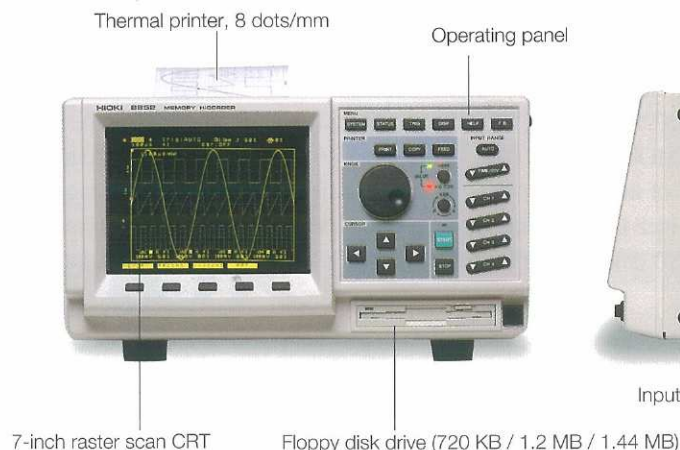
Floppy disk support

Waveform data, settings, and so forth can be saved to floppy disk. Disks are written in MS-DOS format, for easy transfer to a personal computer.

2) Configuration and functions of the 8852 MEMORY HiCORDER



Approximate external dimensions:
324 W x 168 H x 430 D mm
Approximate mass: 10.4 kg



large memory capacity to the 8852 series.

Specification 8852/8852-01 MEMORY HiCORDER

Basic specification	
Measurement functions	① Memory recorder ② Recorder ③ X-Y recorder ④ FFT
Input configuration	Fixed (Ground connection common to all inputs and frame)
Maximum number of channels	4 analog channels 3 analog channels plus 8 logic channels 2 analog channels plus 16 logic channels 1 analog channel plus 24 logic channels * Logic inputs require optional logic probe sets.
Memory capacity * Model 8852	8 bits × 4M words/channel (using CH1) 8 bits × 2M words/channel (using CH1 and CH2) 8 bits × 1M words/channel (using CH1 to CH4)
Memory capacity * Model 8852-01	8 bits × 16M words/channel (using CH1) 8 bits × 8M words/channel (using CH1 and CH2) 8 bits × 4M words/channel (using CH1 to CH4)
External memory	Built-in floppy disk drive, DOS format, 1.44 MB / 1.2 MB / 720 kB. SCSI interface for hard disk or MO drive connection (Consult HIOKI for details of disks that can be connected.)
Backup function	Waveform data, clock, and settings for approx. 10 years (at 25 °C)
External control connectors (active low)	BNC: trigger input/output, TTL levels Terminals: start and stop inputs, TTL levels Terminals: waveform judgment output, with open collector 5 V output
Interfaces	GP-IB: complies with IEEE 488.2-1987; HP-GL plotter support SCSI: complies with ANSI X3.131-1986, JIS X6051; supported target: HDD/MO, 1 drive
Power supply	90 to 250 V AC (50/60 Hz)
Power consumption	200 VA max. (approx. 120 VA during normal recording)
Approximate dimensions and mass	324 (W) x 168 (H) x 430 (D) mm; 10.4 kg
Supplied accessories	Power cord (1), recording paper (1 roll), dust cover (1), 9186 input probes (4), power outlet adaptor (1), spare fuse (1)
Printer and display	
Recording paper	110 mm × 30 m, roll thermal recording paper
Recording width	Full scale 10 divisions; 1 division = 10 mm (25 dots)
Paper feed increment	Memory recorder function: 8 rows/mm (16 rows/mm in smooth print mode); Recorder function: 16 rows/mm (8 rows/mm for 400 ms/division or 500 ms/division only.)
Recording speed	25 mm/s
Display method	7-inch raster scan CRT (3 gray levels)
Trigger functions	
Trigger sources	Channels 1 to 4, external, timer; each source on/off; for channels 1 to 3, analog or logic inputs selectable; logical AND/OR of sources
Trigger types (analog)	(Level trigger) percentage of recording amplitude setting; direction specified as up or down; triggering occurs on crossing set level. (Window) upper and lower trigger levels set; triggering occurs when the range is exited. (Event) when a level trigger count is exceeded. (Glitch) when below a specified pulse width (Time-out) when a level trigger interval is exceeded. (Delay) when difference between two channels is below or above set time. (TV) settings as field or frame count; NTSC/PAL.
Trigger level resolution	± 0.4% f.s. (f.s. = 100%)
Types of trigger (logic)	Pattern trigger: triggering occurs when the logic signal meet the specified pattern of 1, 0, or × (don't care). Each group of eight channels can be ANDed or ORed.
Memory recorder function	
Time axis	200 ns/division (using CH1 and CH2 only) 24 ranges: 400 ns to 5 s/division (1 division = 80 samples); time axis magnification 3 settings, ×2 to ×10; compression 12 settings 1/2 to 1/10,000 * * 8852-01 has 14 settings, 1/2 to 1/40,000
Sampling interval	1/40 of time axis range setting (5 ns to 125 ns)
Recording length * Model 8852	15 to 25,000 divisions (using CH1 to 4), 50,000 divisions (using CH1 and CH2), 100,000 divisions (using CH1)
Recording length * Model 8852-01	15 to 100,000 divisions (using CH1 to CH4), 200,000 divisions (using CH1 and CH2), 400,000 divisions (using CH1)
Pre-trigger	Fraction of recording before trigger event as percentage of recording length: -50 to -950%
Waveform zoom	Time axis: simultaneous display of whole memory waveform display and enlarged section
Other functions	Waveform processing calculations, waveform parameter calculations, waveform averaging, X-Y combination plot, superimposed display, memory segmentation (max. 255), voltage axis zoom x2 to x1/2, waveform area/parameter judgment.
Recorder function	
Time axis	13 ranges: 400 ms to 1 hour/division (1 division = 160 samples); time axis compression 7 settings 1/2 to 1/200
Sampling interval	625 μs fixed (independent of time axis or no. of channels)
Recording length	15 to 3000 divisions, and continuous
Other functions	Simultaneous screen display and printing, screen copy, reprinting of section in memory (last 3000 divisions)
X-Y recorder function	
Channels	Maximum 3 channels, X- and Y-axes independent
Sampling interval	250 μs fixed ("dot" mode); 250 μs to 33 ms ("line" mode)
Recording time	Indefinite superimposition
Resolution on X-Y axes	25 dots/division
FFT function	
Analysis modes	Linear spectrum, power spectrum, histogram (one-signal analysis)
Channels analyzed	Any one of channels 1 to 4
Frequency range	4 Hz to 50 MHz; resolution 1/400; sampling 800 points
Other functions	Rectangular, Hanning, or exponential window, and averaging
Supplementary functions	
Scaling	Readout conversion of measurement axis only
Waveform judgment functions	Types: in time axis waveform, X-Y, or FFT screen display, an area evaluation with respect to reference waveform, or a parameter evaluation with respect to calculated waveform parameter Evaluation time: 45 ms max. Evaluation cycle: approx. 150 ms Above figures are reference from tests carried out under HIOKI standard conditions.
Waveform processing calculations (4-channel setting only)	* Maximum 1500-division waveform; accurate to tolerance of input unit; 4 simultaneous calculations Four arithmetic operations (+, -, ×, ÷), absolute value, exponentiation, common logarithm, square root, moving average, differentiation once and twice, integration once and twice, and parallel displacement along the time axis.
Waveform parameter calculations	* No limit on divisions; accurate to tolerance of input unit; all data or interval between A/B cursors Maximum value, minimum value, peak to peak value, average value, effective (rms) value, area value, period, frequency, time to maximum value, time to minimum value, rise time, fall time, X-Y area.
Other functions	Clock, cursor readout, comment entry, key lock, auto ranging, auto save function, auto setup, and list and gauge printing

Permits Connection With

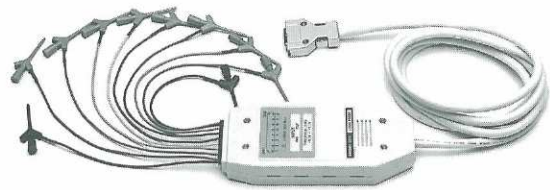


Options

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

Input Section (Vertical Section)	
Frequency band	DC to 100 MHz ± 3 dB (all ranges, DC coupled)
Number of input	Four analog channels 24 logic channels (with three eight-channel logic probes connected)
Measurement range	2 mV to 5 V/division; 11 ranges Full scale (f.s.) = 10 divisions, max. 250 V (DC + AC peak) Measurement resolution is 1/25 of range. Low-pass filter: 20 MHz, 10 Hz
A/D resolution	8 bit
DC amplitude accuracy	± 3% f.s. (f.s. = 10 divisions)
Origin setting (zero position)	-100% to +100% of f.s. in 1% steps Zero adjust function provided.
Zero position accuracy	± 1% f.s.
Input resistance and capacitance	1 MΩ ± 2%, 30 pF ± 3 pF 10 MΩ ± 3%, 12.5 pF ± 1.3 pF when using the 9186 probe.
Temperature characteristics	± 0.3% f.s./°C (typ.) for both zero and gain *after zero adjustment
Input coupling	AC, GND, DC
Input terminal	BNC

9315 LOGIC PROBE (sold separately)	
Frequency band	DC to 80 MHz
Number of input channels	8 channels (shares GND with main unit)
Threshold level	-6.2 V to +6.2 V in 0.1 V steps accuracy: ± 3% of setting ± 0.1 V
Minimum input amplitude	400 mVp-p (DC to 50 MHz), 800 mVp-p (50 to 80 MHz)
Input resistance and capacitance	1 MΩ ± 5%, 10 pF ± 5 pF
Allowable input voltage	30 V (DC + AC peak)
Operating temperature and humidity ranges	0 to 40°C, 35 to 80% RH (no condensation)
Dimensions / mass	Approx. 64 (W) × 141 (H) × 22 (D) mm, Approx. 280 g Length of cord for connection with main unit: 2 m Length of probe cord: 20 cm
Accessories	10 IC clips, 1 carrying case
Max. operating voltage	± 10 V



Memory recorder function recording times

8852 MEMORY HiCORDER

*1: Recording length: 100,000 divisions
*2: Recording length: 25,000 divisions

TIME/DIV	Sampling interval	When using CH1*1 4 MW/channel	When using CH1 to 4*2
200ns/DIV	5ns	20ms	Measurement not permitted
400	10	40ms	10ms
500	12.5	50ms	12.5ms
1 μs/DIV	25ns	100ms	25ms
2	50	200ms	50ms
5	125	500ms	125ms
10	250	1s	250ms
20	500	2s	500ms
50	1.25 μs	5s	1.25s
100	2.5	10s	2.5s
200	5	20s	5s
500	12.5	50s	12.5s
1ms/DIV	25 μs	1m 40s	25s
2	50	3m 20s	50s
5	125	8m 20s	2m 5s
10	250	16m 40s	4m 10s
20	500	33m 20s	8m 20s
50	1.25ms	1h 23m 20s	20m 50s
100	2.5	2h 46m 40s	41m 40s
200	5	5h 33m 20s	1h 23m 20s
500	12.5	13h 53m 20s	3h 28m 20s
1s/DIV	25ms	1d 3h 46m 40s	6h 56m 40s
2	50	2d 7h 33m 20s	13h 53m 20s
5	125	5d 18h 53m 20s	1d 10h 43m 20s

8852-01 MEMORY HiCORDER

*1: Recording length: 400,000 divisions
*2: Recording length: 100,000 divisions

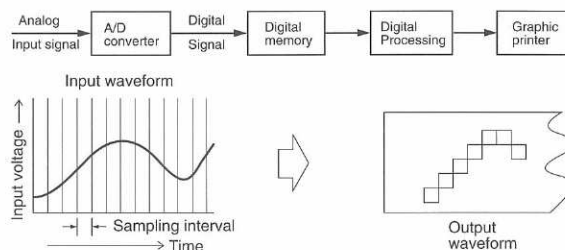
TIME/DIV	Sampling interval	When using CH1*1 16 MW/channel	When using CH1 to 4*2
200ns/DIV	5ns	80ms	Measurement not permitted
400	10	160ms	40ms
500	12.5	200ms	50ms
1 μs/DIV	25ns	400ms	100ms
2	50	800ms	200ms
5	125	2s	500ms
10	250	4s	1s
20	500	8s	2s
50	1.25 μs	20s	5s
100	2.5	40s	10s
200	5	1m 20s	20s
500	12.5	3m 20s	50s
1ms/DIV	25 μs	6m 40s	1m 40s
2	50	13m 20s	3m 20s
5	125	33m 20s	8m 20s
10	250	1h 6m 40s	16m 40s
20	500	2h 13m 20s	33m 20s
50	1.25ms	5h 33m 20s	1h 23m 20s
100	2.5	11h 6m 40s	2h 46m 40s
200	5	22h 13m 20s	5h 33m 20s
500	12.5	2d 7h 33m 20s	13h 53m 20s
1s/DIV	25ms	4d 15h 6m 40s	1d 3h 46m 40s
2	50	9d 6h 13m 20s	2d 7h 33m 20s
5	125	23d 3h 33m 20s	5d 18h 53m 20s

a Hard Disk

3) Measurement function summary and examples

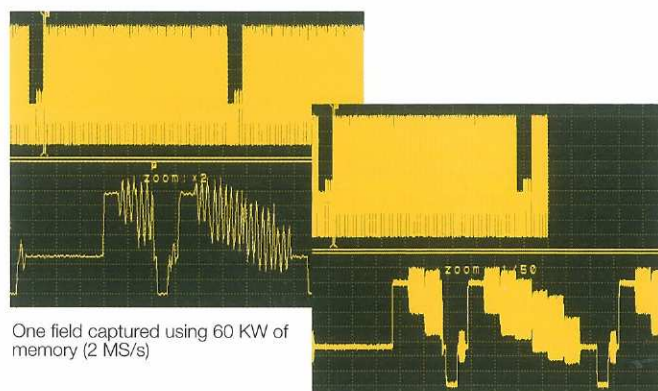
Memory recorder function

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.



Benefits of high-speed sampling and large memory capacity

All four channels can be sampled simultaneously at a high speed of 100 MS/second. When only two channels are used, sampling at 200 MS/second is possible. Because the 8852 is equipped with a large-capacity four-megaword memory, the display time axis can be slowed down while still continuing sampling at high speed by compressing the time axis for display. This prevents waveform peaks from being lost. The screen updating speed remains practical at approximately 0.2 seconds (for batch display of one-megaword of memory for one channel).



One field captured using 60 KW of memory (2 MS/s)

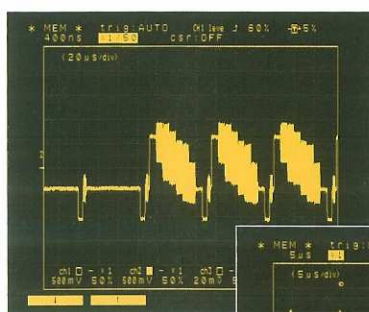
One field captured using 4 MW of memory (200 MS/s)

Examples

Video signal monitoring

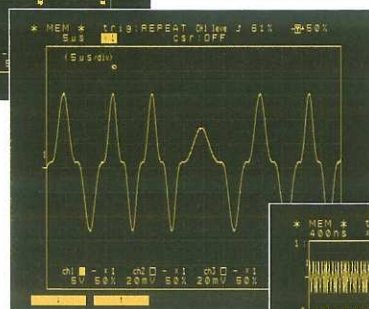
* For 8852-01 (4M specification)

For testing/adjustment of television equipment, one screen field sampled at a speed of 100 MS/s for two channels simultaneously can be completely stored in memory. If only one channel is sampled, one screen (two fields) can be stored in memory at one time.



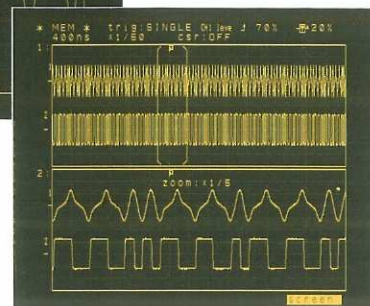
Disk data capture

One track of data from a floppy disk or a hard disk can be stored in memory at one time, permitting a search/monitoring for bit dropouts, etc.



Magnetic card signal monitoring

During maintenance/inspection of machines that use magnetic cards, such as railway ticket machines, the data that is read can be recorded. The waveform expansion/compression function is also convenient.

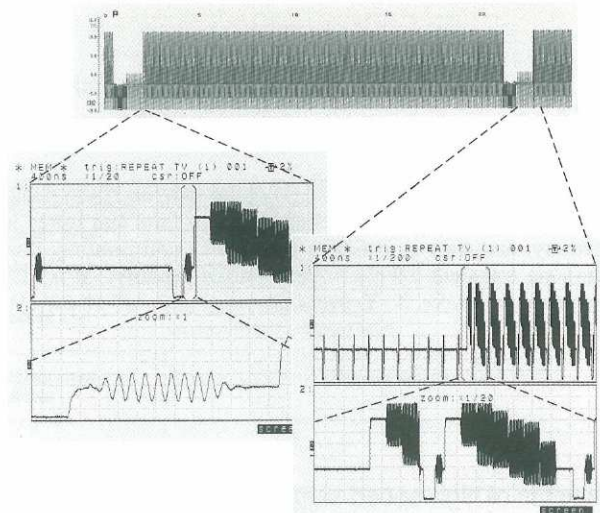


Memory Recorder Functions That Permit

Zoom function

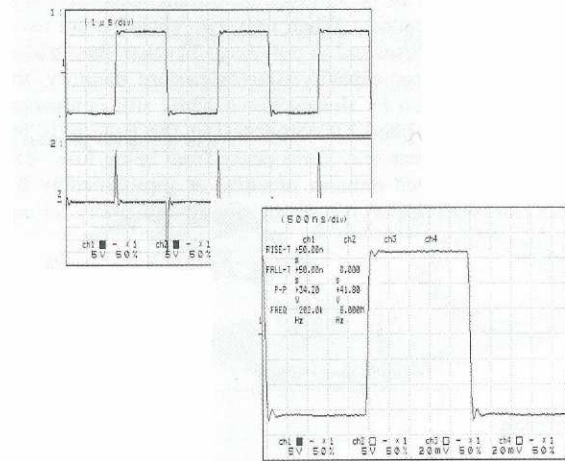
In order to make the best use of the large-capacity memory, it is possible to simultaneously display a compressed waveform and an expanded waveform. Because the 8852 can store a large volume of data, high-speed sampling can be utilized even when measuring a waveform over a long period of time. Therefore, it is possible to view the waveform for the entire phenomena in compressed form while expanding an important portion of the waveform for detailed monitoring. It is also possible to display a portion of the entire compressed waveform. Since both waveforms can be scrolled smoothly, this function makes the 8852 easier to use.

25000 DIV X1/1000 Compressed waveform



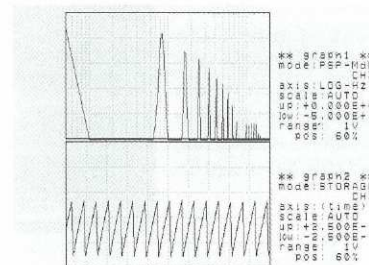
Waveform processing operations/parameter calculations

Various additional analysis results can be obtained by applying various calculation functions to the measured waveform data. The unit has eleven functions, including basic arithmetic operators, integration and differentiation, built in. Processing can be carried out on up to 1500 divisions (60k words) of data on four channels simultaneously. Additionally, various parameter calculations can be carried out on the four channels simultaneously, including minimum and maximum values, areas, and pulse rise times. There is no limit on the waveform recording length (number of divisions) for parameter calculations. Calculations can be made for all data or for the interval between the A and B cursors. Decisions can also be based on the results of these parameter calculations.



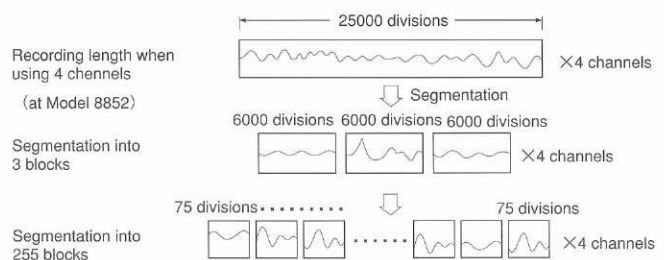
FFT analysis functions

Normally, the monitored waveform is captured as a waveform on the time axis, but the 8852 is able to display the waveform converted into a spectrum on the frequency axis. There are three modes: linear spectrum, power spectrum, and histogram. Because the 8852 has a large memory capacity, it also allows you to specify just a portion of a large volume of captured waveform data for analysis.



Memory segmentation function

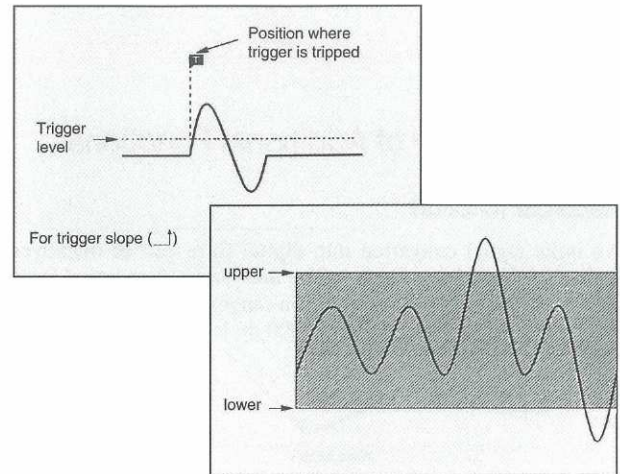
The memory capacity can be segmented into 2 to 255 blocks. (Depending on the recording length) By superimposing a particular block on a reference block for comparison, it is possible to reduce the dead time during waveform display in which no waveforms can be captured. This function also makes it possible to recall a maximum of 255 screens of particular required waveform data during waveform measurement.



Complete Signal Analysis

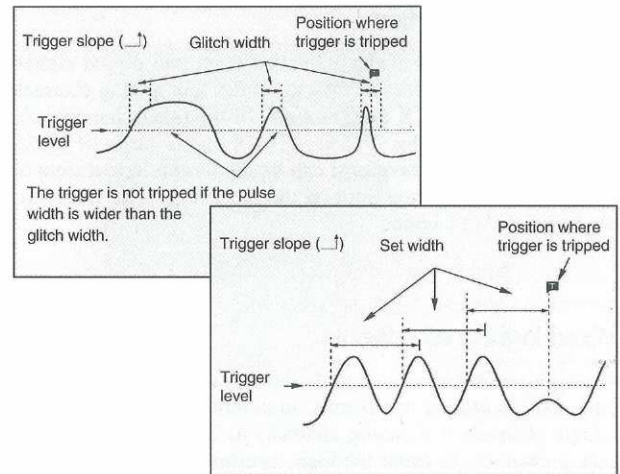
Level trigger and window trigger

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 digital control circuit analysis.

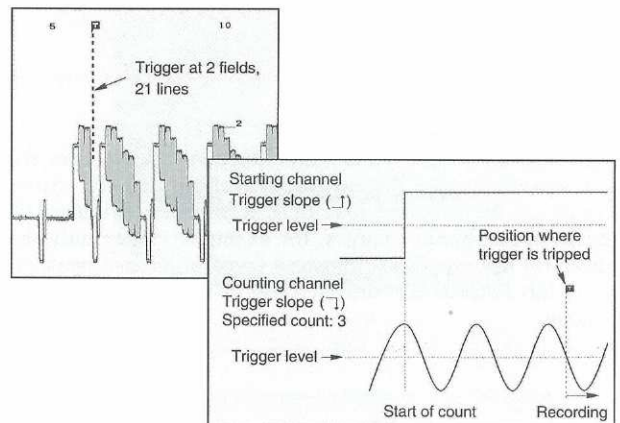


Time-out trigger

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.

TV trigger

This trigger is used to monitor a composite video signal. The desired portion of the video signal can be captured by specifying the number of fields and lines. This function is compatible with NTSC and PAL systems.

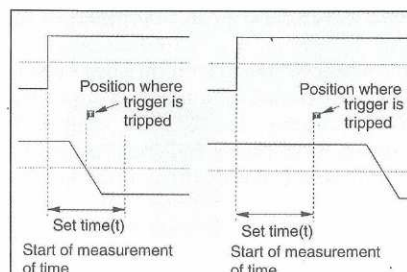


Event trigger

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)

Delay trigger

With this function, separate level triggers are set for two channels, and the trigger is tripped when the time difference between the points where the two levels are crossed is greater than or less than (whichever was specified) the set value. It can be also analysed, the signal timing of synchronous / asynchronous digital circuit.

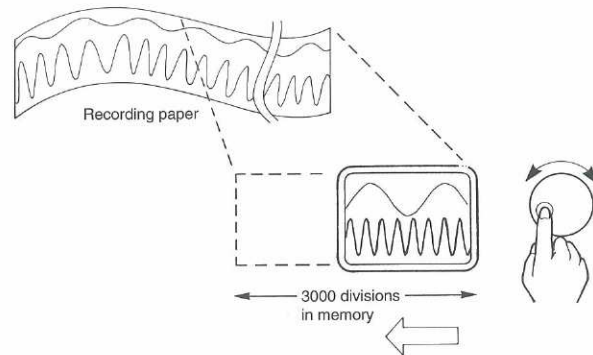


Useful Functions for Expanded Applications

4 Summary of Additional Functions

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 3000 divisions of the waveform are stored in memory.



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, for 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.

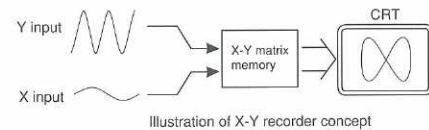
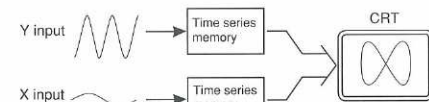


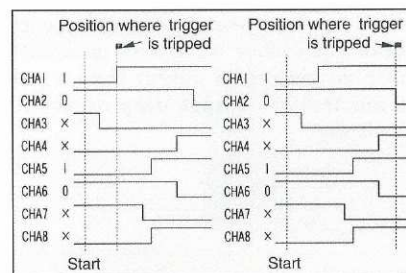
Illustration of X-Y recorder concept



Memory recorder X-Y format display

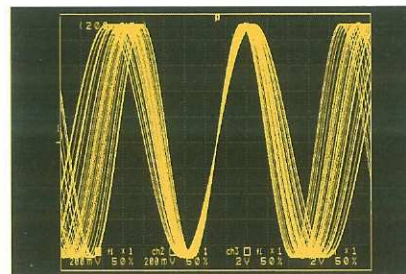
Mixed logic/analog inputs

The high-low signal of a digital circuit can be monitored on the same axis as analog waveforms, in combinations ranging from 8 logic channels + 3 analog channels to 24 logic channels + 1 analog channel. Because the logic threshold level can be varied over a range of ± 6.2 V, this function can be used with non-TTL/CMOS logic circuits.



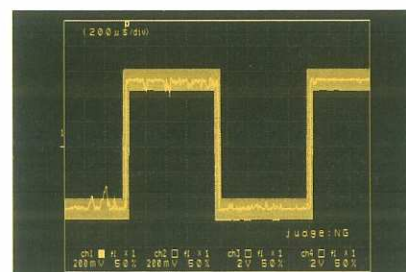
Superimposition function

Each time the trigger occurs, this function superimposes the new waveform over the existing waveform display. Since signals can be compared over time, it provides an immediate check on amplitude changes, for example. Since only the waveform from the latest trigger is saved in internal memory, use of this function is restricted to the display and screen copy printing.



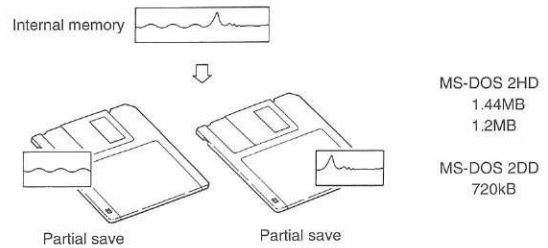
Waveform judgment function

By comparing a measured waveform with a judgment area set beforehand, it is possible to have an external signal output or save/print the waveform whenever the waveform goes outside of the judgment area. Because the waveform data is compared on the screen, this function can also be used with X-Y waveforms and FFT analysis waveforms. Judgment according to the results of calculations on parameter values is also possible.



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 or 720 kB. Since the internal memory capacity of the 8852 is greater than the capacity of a single floppy disk, use an externally connected hard disk when saving all of the data in memory.



Magneto-optical disks can be used (540MB, 230MB, 128MB)

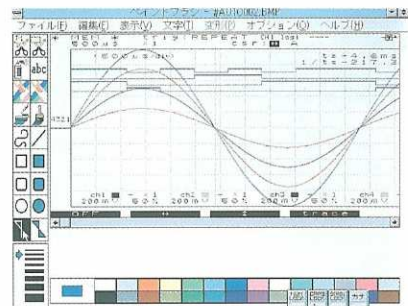
Hard disk drives and magneto-optical drives can be connected to the SCSI interface that is a standard feature on the 8852. Important data stored in the 8852's 4-megaword memory can be saved in one operation on to a disk. An autosave function that responds to triggers or waveform judgment results is also 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.



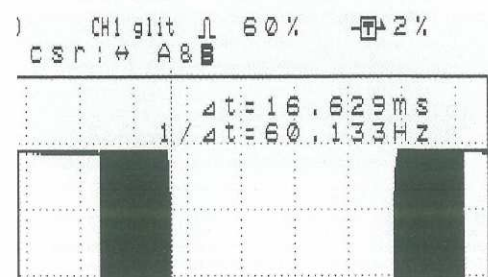
BMP save permits display of the measurement screen on a personal computer

The 8852'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.



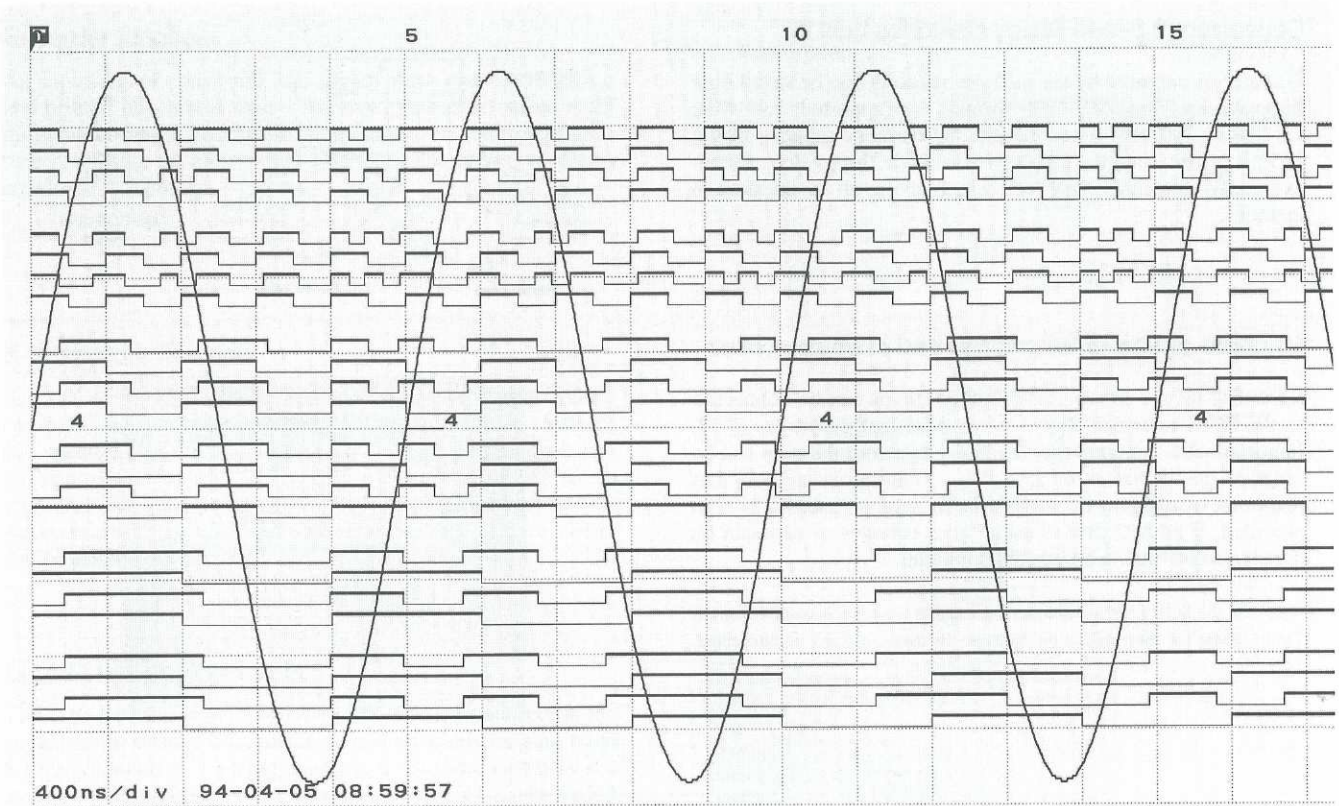
Cursor measurement function

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)

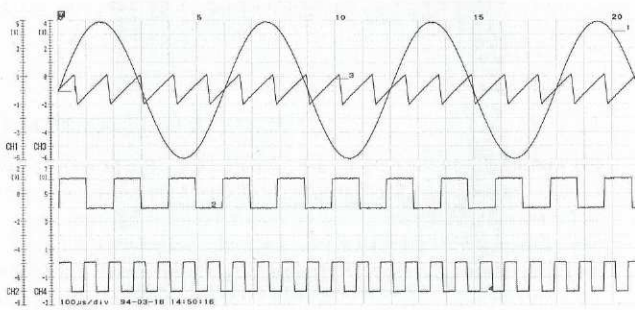


Example Print-Outs

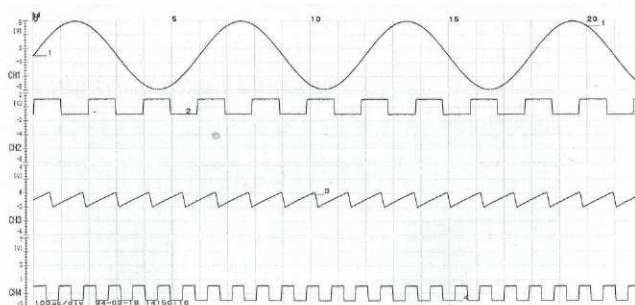
(Actual size)



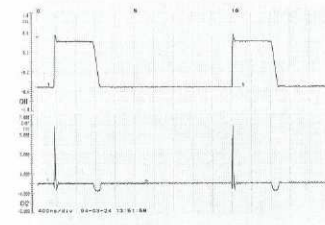
Example recording of single format, 1 analog channel and 24 logic channels combined



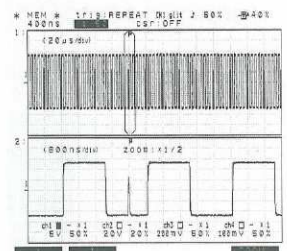
Example recording of dual format, four analog channels



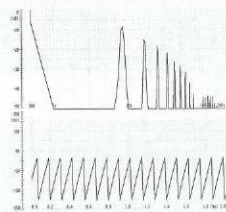
Example recording of quad format, four analog channels



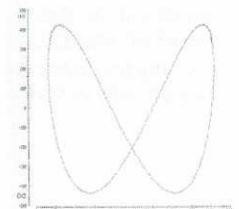
Top: Signal waveform
Bottom: Waveform generated by differential calculation
Example of printer output



Top: Compressed waveform
Bottom: Partial expanded waveform
Example of screen hard copy output



Top: FFT calculation (power spectrum)
Bottom: Signal waveform
Example of printer output



Example of XY format printer output

5) Option Specifications

9186 INPUT PROBE (10:1)

This input probe is provided with the 8852 as standard equipment. The signal is attenuated to 1/10 and the input resistance is increased by a factor of 10 so that the parallel capacitance is small; as a result, the load effect on the target of measurement is reduced.

Length: approx. 1.5 m

9165 CONNECTING CORD (BNC to BNC)

The trigger input and output terminals on the 8852 cannot be connected and operated in parallel (due to timing mismatch). Use this cord as an input cord.

Length: approx. 1.5 m

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 allowable input: 440/220 V AC

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

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

220H PAPER WINDER

Paper width: 70 to 220 mm

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

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

9166 CONNECTING CORD (BNC to Clip)

This cord is not provided with the 8852. The signal is carried at a 1/1 ratio. Because the input resistance is equal to that of the main unit, and the parallel capacitance of the cord (about 150 pF) is added in, the load effect on the target of measurement is greater than with the 9186. This cord can also be used for trigger input/output.

Length: approx. 1.5 m

9536 UTILITY DISK

The software provided on this disk converts waveform data stored on a floppy disk into data that can be read by applications such as Lotus 1-2-3 and DADiSP.

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

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

Operating environment: (9536) PC-9801 Series VM or later; MS-DOS 3.0 or later, bus mouse support (9536-01) IBM PC/AT, graphic mode EGA (640 \times 350), MS-DOS 4.0 or later, PS/2 mouse support

Functions: Converts waveform data saved on disk to ASCII-format voltage values (supports scaling and calculation functions), permits batch conversion of all channels.

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

9270 to 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), 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: 600V AC (insulated conductor) *

9277 to 9279 UNIVERSAL CLAMP ON CTs and 9555 SENSOR UNIT

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 9555 unit.

Input ranges: 20 A (9277), 200 A (9278), 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: 600V AC, 850V peak (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: 600V 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.

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

Output voltage: 1 V AC for the set range

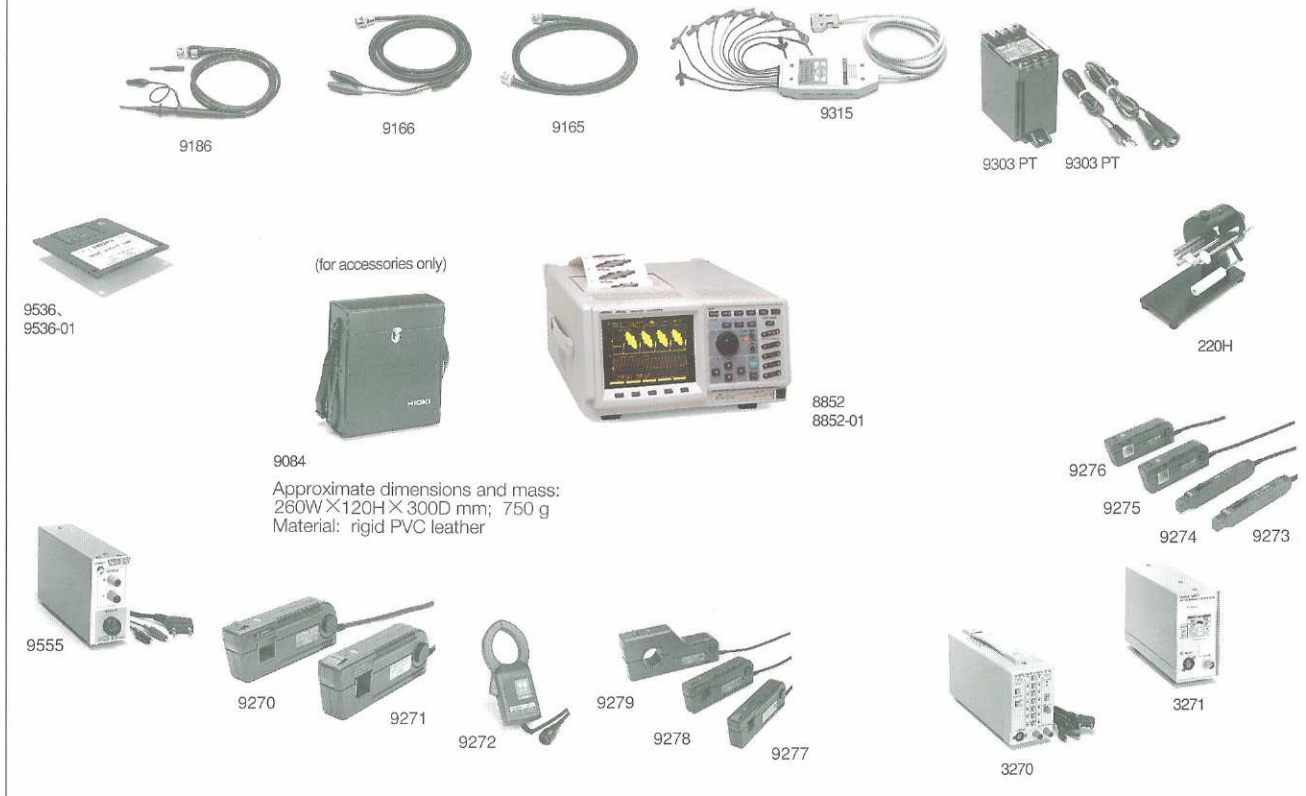
Frequency characteristics: 0.7 Hz to 10 MHz (9273) -3 dB
0.5 Hz to 100 kHz (9275) -3 dB

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

Circuit voltage: 600V peak (insulated conductor) *

* The core and shield casing are not insulated. To prevent electrical accidents, do not use on bare conductors.

Options



Ordering information

8852 MEMORY HiCORDER
8852-01 MEMORY HiCORDER

The 8852 includes an input section and four 9186 input probes as standard equipment, so the 8852 can be used by itself without any need to purchase additional equipment.

If you will be using logic input, it is necessary to also purchase the 9315 Logic Probe (sold separately).

Options

9221 Recording Paper (30 m, 10 rolls)
9303 PT
9165 Connecting Cord (BNC - BNC)
9166 Connecting Cord (BNC - clip)
9186 Input Probe (10:1)
9315 Logic Probe
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

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 1 MHz
3270 Current Monitor: used as set with either 9273 to 9276
9084 Carrying Case (for accessories)
9273 Clamp on AC Sensor: 20 A, 0.7 Hz to 10 MHz
9275 Clamp on AC Sensor: 150 A, 0.5 Hz to 1 MHz
3271 AC Current Monitor: used as set with either 9273 or 9275

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* DADISP is a registered trademark of DSP Development Corporation.

* MS-DOS, Excel, and Windows are registered trademarks of Microsoft Corporation.

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