MEMORY HiCORDER MR8875

- Tough Against Vibrations and Extreme Temperatures
  Strengthened body ideal for in-vehicle testing and road tests
  Compliant with the JIS D 1601: 1995 Vibration Testing Methods for Automobile Parts, 5.3 (1)
  Class 1 Passenger Car, Condition: Class A or the Equivalent, guaranteed

- Small enough to hold with one hand
  Easy-to-carry compact body fits right in the driver’s seat of the car

- Multi-Channel Mixed Recording
  Install up to 16 analog or 60 scanner channels
  Switch out plug-in modules and customize according to your application
  Measure CAN, voltage, temperature, distortion, and pulse signal, as well as current and logic signal using the optional probes

- AC, External DC, and Built-in Batteries
  Three power supplies let you measure anywhere

- Real-Time Saving to SD Card
  Long-term recording to the SD card at the fastest sampling rate

- Isolated Input
  Safe isolated measurement at up to 100 V AC/DC
Ideal for Automotive and Transportation Equipment Applications

- Road test data (analog waveform and CAN data)
- Construction machinery and heavy equipment development (analog waveform and CAN data)
- Railway failure analysis (railway test run)
- Power line quality recording (using the differential probe and clamp probe)
Real-Time Saving
to SD Card in High Resolution

CAN Signal Measurement
for Vehicle Testing

Multi-Channel
Mixed Measurement of Various Signals

Touch Screen
for Direct Operation

Analyze Data
with a Variety of Intelligent Functions
Collect physical signals at a 500kS/s sampling rate with a high resolution of 25,000 point f.s.

The same working principle as that of a digital oscilloscope is used to record data to the large-capacity internal memory at high speed. The sampling rate is 500 kS/s (2 μs period) on all channels simultaneously. Sensor signal waveforms are recorded and represented faithfully. Furthermore, a 16-bit A/D resolution ensures even subtle changes in the sensor signals are not missed.

Ultra-high speed SD data recorder is a vast improvement over legacy products

The MR8875 takes advantage of revolutionary SD card technologies to offer faster real-time saving to a memory card from as fast as 2μs intervals (operation is guaranteed only for a genuine HIOKI SD memory card). When the recording period (sampling rate) is 50 μs or less, data for all 60 channels can be recorded continuously over a long period.

Maximum recordable time to an 2GB SD memory card

<table>
<thead>
<tr>
<th>Time axis</th>
<th>1ch</th>
<th>2ch</th>
<th>4ch</th>
<th>8ch</th>
<th>16ch</th>
<th>32ch</th>
<th>64ch</th>
</tr>
</thead>
<tbody>
<tr>
<td>200µs/div</td>
<td>2µs</td>
<td>1.7min 53s</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>500µs/div</td>
<td>5µs</td>
<td>44min 44s</td>
<td>22min 22s</td>
<td>11min 11s</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>1ms/div</td>
<td>10µs</td>
<td>11h 29min 28s</td>
<td>44min 44s</td>
<td>22min 22s</td>
<td>11min 11s</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>2ms/div</td>
<td>20µs</td>
<td>2h 58min 57s</td>
<td>1h 29min 28s</td>
<td>44min 44s</td>
<td>22min 22s</td>
<td>11min 11s</td>
<td>Not applicable</td>
</tr>
<tr>
<td>5ms/div</td>
<td>50µs</td>
<td>14h 54min 47s</td>
<td>3h 43min 48s</td>
<td>1h 51min 50s</td>
<td>55min 55s</td>
<td>29min 48s</td>
<td>14min 54s</td>
</tr>
<tr>
<td>10ms/div</td>
<td>100µs</td>
<td>1d 05h 49min 34s</td>
<td>7h 27min 23s</td>
<td>3h 43min 48s</td>
<td>1h 51min 50s</td>
<td>55min 55s</td>
<td>29min 48s</td>
</tr>
<tr>
<td>20ms/div</td>
<td>200µs</td>
<td>2d 13h 39min 08s</td>
<td>1d 05h 49min 34s</td>
<td>7h 27min 23s</td>
<td>3h 43min 48s</td>
<td>1h 51min 50s</td>
<td>55min 55s</td>
</tr>
<tr>
<td>50ms/div</td>
<td>500µs</td>
<td>6d 05h 07min 50s</td>
<td>3h 02h 33min 55s</td>
<td>1d 13h 16min 57s</td>
<td>8h 38min 28s</td>
<td>9h 19min 14s</td>
<td>4h 58min 1s</td>
</tr>
<tr>
<td>100ms/div</td>
<td>1ms</td>
<td>12d 10h 15min 41s</td>
<td>6d 05h 07min 50s</td>
<td>3d 02h 33min 55s</td>
<td>1d 13h 16min 57s</td>
<td>8h 38min 28s</td>
<td>9h 16min 31s</td>
</tr>
<tr>
<td>200ms/div</td>
<td>2ms</td>
<td>2d 20h 31min 23s</td>
<td>12d 10h 15min 41s</td>
<td>6d 05h 07min 50s</td>
<td>3d 02h 33min 55s</td>
<td>1d 13h 10min 57s</td>
<td>9h 16min 31s</td>
</tr>
<tr>
<td>500ms/div</td>
<td>5ms</td>
<td>6d 03h 38min 29s</td>
<td>3d 10h 39min 14s</td>
<td>1d 12h 39min 14s</td>
<td>7d 18h 24min 48s</td>
<td>2d 21h 12min 24s</td>
<td>2d 01h 42min 36s</td>
</tr>
<tr>
<td>1s/div</td>
<td>10ms</td>
<td>1d 06h 36min 58s</td>
<td>6d 03h 38min 29s</td>
<td>3d 10h 39min 14s</td>
<td>1d 12h 49min 37s</td>
<td>3d 18h 24min 48s</td>
<td>2d 03h 25min 1s</td>
</tr>
<tr>
<td>2s/div</td>
<td>20ms</td>
<td>2d 43h 13min 56s</td>
<td>12d 06h 36min 58s</td>
<td>6d 03h 16min 29s</td>
<td>3d 01h 39min 14s</td>
<td>1d 12h 49min 37s</td>
<td>4d 06h 25min 27s</td>
</tr>
<tr>
<td>5s/div</td>
<td>50ms</td>
<td>6d 02h 04min 51s</td>
<td>31d 16h 32min 25s</td>
<td>15d 08h 16min 12a</td>
<td>7f 16h 08min 06s</td>
<td>3d 20h 04min 03s</td>
<td>2d 17h 06min 09s</td>
</tr>
<tr>
<td>10s/div</td>
<td>100ms</td>
<td>Upper limit 1000days</td>
<td>6d 02h 04min 51s</td>
<td>31d 16h 32min 25s</td>
<td>15d 08h 16min 12a</td>
<td>7f 16h 08min 06s</td>
<td>4d 10h 12min 19s</td>
</tr>
<tr>
<td>30s/div</td>
<td>300ms</td>
<td>Upper limit 1000days</td>
<td>Upper limit 1000days</td>
<td>9r 2d 0h 37min 16s</td>
<td>77d 16h 21min 04s</td>
<td>3r 88h 04min 32a</td>
<td>20d 03h 01min 37s</td>
</tr>
<tr>
<td>50s/div</td>
<td>500ms</td>
<td>Upper limit 1000days</td>
<td>Upper limit 1000days</td>
<td>Upper limit 1000days</td>
<td>9r 2d 0h 37min 16s</td>
<td>46d 06h 48min 38s</td>
<td>24d 03h 13min 48s</td>
</tr>
<tr>
<td>100s/div</td>
<td>1.0s</td>
<td>Upper limit 1000days</td>
<td>Upper limit 1000days</td>
<td>Upper limit 1000days</td>
<td>Upper limit 1000days</td>
<td>776d 17h 21min 04s</td>
<td>41d 06h 03min 14s</td>
</tr>
<tr>
<td>2min/div</td>
<td>1.2s</td>
<td>Upper limit 1000days</td>
<td>Upper limit 1000days</td>
<td>Upper limit 1000days</td>
<td>Upper limit 1000days</td>
<td>932d 0h 7min 17s</td>
<td>49d 07h 02min 53s</td>
</tr>
<tr>
<td>5min/div</td>
<td>3.0s</td>
<td>Upper limit 1000days</td>
<td>Upper limit 1000days</td>
<td>Upper limit 1000days</td>
<td>Upper limit 1000days</td>
<td>Upper limit 1000days</td>
<td>62d 09h 04min 51s</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time axis (Abridged)</th>
<th>Sampling</th>
<th>1ch</th>
<th>3 - 4ch</th>
<th>9 - 16ch</th>
</tr>
</thead>
<tbody>
<tr>
<td>200µs/div</td>
<td>2µs</td>
<td>16s</td>
<td>4s</td>
<td>1s</td>
</tr>
<tr>
<td>1ms/div</td>
<td>10µs</td>
<td>1min 20s</td>
<td>20s</td>
<td>5x</td>
</tr>
<tr>
<td>10ms/div</td>
<td>100µs</td>
<td>13min 20s</td>
<td>3min 20s</td>
<td>50s</td>
</tr>
<tr>
<td>100ms/div</td>
<td>1ms</td>
<td>2h 13min 20s</td>
<td>33min 20s</td>
<td>8min 20s</td>
</tr>
<tr>
<td>1s/div</td>
<td>10ms</td>
<td>2h 13min 20s</td>
<td>5h 33min 20s</td>
<td>1h 23min 20s</td>
</tr>
<tr>
<td>10s/div</td>
<td>100ms</td>
<td>9d 06h 13min 20s</td>
<td>2d 07h 33min 20s</td>
<td>13h 53min 20s</td>
</tr>
<tr>
<td>100s/div</td>
<td>1.0s</td>
<td>9d 14h 13min 20s</td>
<td>23d 03h 33min 20s</td>
<td>5d 18h 51min 20s</td>
</tr>
<tr>
<td>5min/div</td>
<td>3.0s</td>
<td>277d 18h 40min</td>
<td>69d 10h 40min</td>
<td>17d 08h 40min</td>
</tr>
</tbody>
</table>

- Built-in logic, and pulses P1 and P2 each use the capacity equivalent to one analog channel.
Synchronized mixed recording of CAN data and real data such as voltage, temperature, or distortion signals

CAN bus signals that are used widely, particularly in automotive applications, can be recorded, analyzed, converted to analog waveforms, and viewed. Simultaneous recording and viewing of analog waveforms from sensors, in addition to the CAN data, allows for checking the impact of noise and level changes on the communication data.

Vector’s CAN database can be loaded using supplied software

Industry standard CANdb® database files can be loaded into the supplied setting software and associated to the CAN channel signals. CAN messages can be viewed using the customer-specified message and signal names, as well as scaled engineering units. Since parameters such as signal data type, start bit, length, and byte sequence are all pre-defined in CANdb, users can concentrate on their measurement tasks without needing to define signals.

Withstand extreme environmental temperatures, vibrations, and data loss due to power outages

In road tests, extreme environmental conditions associated with the temperature and vibration are harsh for measuring instruments. The MR8875 has the wide operating temperature range of -10°C to 50°C and is compliant with the JIS DI1601 standard for vibration resistance performance. It is designed to withstand the harsh conditions for in-vehicle measurement.

In the event of a power outage while data is being recorded, the power supply is maintained using a built-in large-capacity capacitor until data is completely written to the SD or USB memory. Risk of data loss or damage to the file system is minimized, and after power is restored, measurement can be restarted automatically.
The MR8875 offers two standard pulse input channels that allow for inputting no-voltage a- and b-contacts, open collector, or voltage. Signals transmitted as pulses, such as those of rotation number and flow rate, can be measured or counted. Use a logic probe for the ON/OFF (logic) signal waveforms of a relay and PLC. Two types of logic probes are available depending on the signal format.

The plug-in units use an input amplifier structure and can be selected according to your measurement application. Additional input modules can be purchased separately and switched with existing units. The MR8903 Strain Unit has a high sensitivity of 1 mV f.s. (maximum resolution of 0.04 μV) for measuring voltage as well as the output of very small sensors.

Directly input pulse signals with built-in logic probe terminals

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### Support for various measurement items
(Standard pulse inputs, and using the optional Logic Probes)

<table>
<thead>
<tr>
<th>Measurement target</th>
<th>Input unit</th>
<th>Measurement range</th>
<th>Resolution</th>
<th>Sampling</th>
<th>Frequency characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotation</td>
<td>Standard included Pulse input</td>
<td>5,000 (r/s) f.s.</td>
<td>1 (r/s)</td>
<td>10 macc</td>
<td>n/a</td>
</tr>
<tr>
<td>Pulse totalization</td>
<td>Standard included Pulse input</td>
<td>65,535 counts to 3,276,750,000 counts f.s.</td>
<td>1 count</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Relay contacts, voltage on/off</td>
<td>Logic probe 9320-01</td>
<td>Depends on logic probe(s) in use</td>
<td>n/a</td>
<td>2 psec (500 kS/s)</td>
<td>500 μsec or lower response</td>
</tr>
<tr>
<td>AC/DC voltage on/off</td>
<td>Logic probe MR9321-01</td>
<td>Depends on logic probe(s) in use</td>
<td>n/a</td>
<td>2 psec (500 kS/s)</td>
<td>500 μsec or lower response</td>
</tr>
</tbody>
</table>

Note: Power line frequency, duty ratio and pulse width measurements are not supported.

### Pulse input terminal
Take advantage of the frequency dividing function, settable from 1 to 50,000 counts, to take direct readings for the encoder that outputs multi-point pulses according to the rotation number.
Touch screen interface improves operating efficiency

Buttons on the main body are kept to a minimum by utilizing touch screen technology. The high-definition 8.4-inch high-brightness TFT color LCD is the interface of choice for improving productivity by offering a more intuitive experience than traditional input methods.

Display rotates to accommodate cabling needs

While the connection terminals are located at the top panel of the instrument, when cables need to be connected from the bottom, simply swipe the screen from top to bottom at either edge and the screen will rotate correspondingly. The instrument can be set in a position that is easier to use according to the installation location.

Waveforms can be monitored before start and also on the setting screen

A waveform monitoring screen is provided to meet customer requests for checking the signal waveform before starting to record. Users can first check the waveform amplitude and values and then start collecting data. Sometimes you may also need to check the input signals while setting the input range. The MR8875 always displays input signal waveforms on the setting screen as well to facilitate the setting.
Split screen, sheet display, event mark input, and jump functions indispensable for efficient analysis

Split screen and sheet display functions are provided to support multiple channels. Individual display formats can be selected and an application can be assigned to each sheet for analysis, increasing productivity.

★ For long-term recordings, tag important points with event markers. Up to 1000 event markers can be placed so that you can quickly jump to them later for detailed analysis.

Touch to scroll back or scale the waveform

Display earlier waveforms during recording without stopping measurement by simply touching the scroll icons on the screen. You can also scale the waveform amplitude by just swiping through the waveform up (to zoom in) or down (to zoom out).

Advanced cursor read function for multi-channel analysis

Six cursors A, B, C, D, E, and F are available, compared with the conventional A- and B-cursors. Use the cursors to measure and display the following:

- Cursors A, B, C, and D: Potential and time from the trigger
- Cursors E and F: Potential
- A-B and C-D cursors: Time difference and potential difference
- E-F cursors: Potential

Numerical calculations for multi-channel analysis

Up to 8 calculations can be performed simultaneously. Choose from 24 unique parameters such as average and RMS values and the save your calculation results to an SD card or USB memory. The calculation range can be selected from all measurement data, A-B cursor section, or C-D cursor section.
Measure the displacement-pressure relationship of a press machine or the pressure-flow rate of a pump

Not only time-axis waveforms but also X-Y waveforms can be viewed. This function is also useful for collecting mechanical data, because X-Y Lissajous waveforms such as those of displacement, pressure, and flow rate can be drawn.

LAN-compatible Web/FTP server function and waveform/CSV conversion using supplied standard software Wv

Take advantage of the built-in 100BASE-TX LAN interface to network with the PC:

<WEB server> Use the Web Server function to view waveforms and remotely control the MR8875 with your PC’s web browser

<FTP server> Use the FTP server function to copy the data stored in memory (SD card, USB memory, or internal storage memory) to the PC. View waveforms for binary data acquired with the MR8875 on a PC, or convert data to CSV using the free WaveViewer (Wv) application for further analysis in Excel. Download the latest version of the WaveViewer from the HIOKI website at www.hioki.com.

Remote control the MR8875 using the Web server function

Use a typical web browser to see the screen of the MR8875 on your PC with no other special software required. Make settings, acquire data, and monitor the screen with ease.

Note: Waveform data cannot be acquired from the internal memory during measurement.

Transfer data using FTP

After measurement is finished, data is transferred automatically to the FTP server that is running on the PC. Data can also be transferred manually.

Download data using FTP

Measurement data in files on recording media and in the internal memory can be acquired from a PC.

Note: Waveform data cannot be acquired from the internal memory during measurement.

Attach data to E-mail

After measurement is finished, you can automatically send the captured data as an e-mail attachment. Data can also be transferred manually.

Saving data to the USB memory or SD card

Convenient USB memory*1 or SD memory cards can be used to copy data stored in the internal storage memory to the PC. Data stored in the MR8875’s SD card can also be downloaded to the PC using a USB cable.*2

Note: *1 Data can be saved to USB memory. However, it is recommended to use a genuine HIOKI SD card for which operation is guaranteed to ensure data protection.

Note: *2 Direct download from USB memory to a PC via a USB cable is not supported - please use a LAN connection and the FTP server.
### Measurment function (high-speed recording)

**Time axis**
- 200 μs to 500 μs, 1 ms to 500 ms/div, 1 to 5 min/div, 21 ranges, External sampling (maximum 200 kHz).
- Recording interval time at real-time save ON: 2 μs/S (using channels up to 2), 5 μs/S (using channels up to 8), 10 μs/S (using channels up to 16), 20 μS/S (using channels up to 30), 50 μS/S (using channels without limit).

**Accuracy of time axis**
- ±0.0005 %

**Time axis resolution**
- 100 points/div

**Recording length (with MR8901, logic and Pulse inputs OFF)**
- 25 to 20,000 div, *±1%, ±5,000 div*, or arbitrary setting in 1-div steps, 5 to 80,000 div,
- when using 8 channels per unit, *±1%*, when using 2 channels per unit, *±2%*, when using 1 channel per unit.

**Waveform expansion, compression**
- Time axis: +10 to +2 or -1, +1/2 to +150,000
- Amplitude axis: +100 to +2, +1, +1/2 to +1/10

**Upper and lower limit settings, or position setting**
- Pre-trigger: at trigger timing: Start Record data from before the trigger point at 0 to +100 % of the recording length, step settings
- Post-trigger: at trigger timing: Stop Record data from after the trigger point at 0 to +100 % of the recording length, step settings

**Real-time data save**
- ON OFF selectable (exclusive real-time save or automatic save)

**Function:** Waveforms are saved as binary data to the SD memory card at each interval (Note: Cannot save in real-time to a USB memory stick, use only SD memory cards sold by HOKR)

**Endless loop saving:** New file overwrites the oldest file when the SD memory card capacity runs short (Note: Delete files only at saved repeat trigger mode)

**Normal saving:** Saving stops when the SD memory card capacity is full

**Data protection**
- When a power failure occurs during real-time save to storage media, the file close sequence is completed before the unit is shut down
- Note: Data protection effective from 15 minutes after power on

**Loading data from media**
- Binary data stored in the SD memory card or the USB memory stick can be recalled by the MR8901 internal storage memory
- Stored data can be recalled by the instrument in 8-MW (16-MB)/input unit blocks by specifying a time point

**Memory segmentation**
- Not available

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### Display

#### Display type
- 8.4-inch SVGA/TFT color LCD (800 × 600 dots, with built-in touch screen), time axis 25 div × Voltage axis 20 div, X/Y axis 20 div × 20 div)

#### Screen settings
- Waveform split screen (1, 2, or 4), X/Y screen, X/Y split 2 screen
- Time axis: X/Y waveform screen, Sheet display (sheet all, sheet 1 to 4 selectable)

#### Screen display types
- Time axis waveform
- Waveform and vertical gauge simultaneously
- Waveform, gauge and setting conditions simultaneously
- Waveform and numerical calculation values simultaneously
- Waveform and cursor readout values simultaneously (A/B/C/D, E/F cursors)
- Waveform and instantaneous values simultaneously

#### Monitor functions
- See waveform without recording start (setting screen, waiting for trigger screen)
- Monitor numerical values for all channels during recording start (average value, peak to peak value, maximum value, minimum value)

#### Other display functions
- Waveform scroll (scroll backwards through the displayed trend graph to view past waveforms even while recording)
- Event marker input: Display the waveforms appearing before and after event (up to 1000 event markers can be input)
- Waveform inversion (positive/ negative)
- Cursor readout (can use the A/B/C/D, E/F cursors)
- Verner display (fine amplitude adjustment)

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### Other display functions

- Open built-in touch screen, active LCD
- Output level: 0 to 10 V at “High” level, 0 to 0.5 V at “Low” level
- Output level: Selectable Level or Pulse
- Level: More than sampling period × data number after trigger - 1 point, or more than 2 μs
- Pulse width: 2ms ±10%
**Calculations**

**Numerical calculation**
- Simultaneously make up to 8 calculations for any selected channel(s)
- 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, Area value, X-Y area value, Standard deviation, Specified level time, Specified time level, Pulse width, Duty ratio, Pulse count, Time difference, Phase difference, High-level, Low-level, Four arithmetic operations
- Calculation range: Selectable from all measurement data, between A/B cursors, or C/D cursors
- Calculation results stored to the SD card or the USB memory
- Automatic storing of calculation results in CSV format to the SD card or the USB memory

**Pulse input section**

**Number of channels**
2 channels, Push button type terminal, Not isolated (common GND with chassis)

**Mode**
Rotation, Totalize

**Measurement functions**
- Divided rotation: 1 to 50,000 count (at pulse rotation: Pulse number by one rotation, At totalized pulse: Pulse number by one count)
- Timing: Select between “begin counting at trigger” or “begin counting at measurement start”
- Totalized pulse: Select between “begin counting at measurement start” or “count the instantaneous value for each sampling period”
- Over process for totalized pulse: Selectable from zero reset, or keep over flow

**Input form**
- No-voltage ‘a’ contact (normally open-contact), No-voltage ‘b’ contact (normally short-contact), Open collector or voltage input
- Input resistance: 1.1 MΩ

**Max. allowable input**
0 V to 50 V DC (maximum voltage between input terminals that does not cause damage)

**Max. rated voltage between channels**
Not isolated (common GND with chassis)

**Detect level**
4 V: (High: over 4.0 V, Low: 0 to 1.5 V)
1 V: (High: over 1.0 V, Low: 0 to 0.5 V)

**Pulse input period**
With filter OFF: 200 μs or more (both H and L periods must be at least 100 μs)
With filter ON: 100 μs or more (both H and L periods must be at least 50 μs)

**Slope**
Count by rising edge, or count by falling edge

**Filter**
For contact bound resistant ON or OFF

<table>
<thead>
<tr>
<th>Setting range</th>
<th>Resolution</th>
<th>Measurement range</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.500 c/div</td>
<td>1 c/LSB</td>
<td>0 to 65,535 c</td>
</tr>
<tr>
<td>25 c/div</td>
<td>0.1 c/LSB</td>
<td>0 to 6,553,500 c</td>
</tr>
<tr>
<td>250 c/div</td>
<td>0.01 c/LSB</td>
<td>0 to 653,500 c</td>
</tr>
<tr>
<td>50 c/div</td>
<td>0.001 c/LSB</td>
<td>0 to 131,070,000 c</td>
</tr>
<tr>
<td>125 c/div</td>
<td>0.0001 c/LSB</td>
<td>0 to 3,276,750,000 c</td>
</tr>
<tr>
<td>Rotation: 250 [r/div]</td>
<td>1 [r/LSB]</td>
<td>0 to 5,000 [r/LSB]</td>
</tr>
</tbody>
</table>

### Maximum time to record to the internal storage memory

- The maximum number of channels to be used is 16 because recording to the internal memory is allocated to each input unit.
- Built-in logic, and pulses P1 and P2 each use the capacity equivalent to one analog channel.

**Other functions**
- **Scaling**
  Selectable: conversion ratio, 2-point, Model name, output rate, dB, rated value of strain sensor, or OFF
- **Comment input**
  Title or alphanumericic input for each channel (numerical value, alphabet, symbol)
- **Time base display**
  Selectable: Date, Number of data point
- **Key lock**
  Slide switch: Touch screen lock, Touch screen and key switch lock, release
- **External sampling**
  Maximum input: Up to 10 V DC
  Maximum input frequency: Up to 200 kHz
  Input signal conditions: High level 2.5 to 10 V, Low level 0 to 0.8 V, Pulse width H or L 2.5 μs or longer
- **Other**
  - Deep sound ON/OFF
  - Auto range setting (automatically sets the best suitable sampling rate and amplitude range)
  - Hold start condition (when the power is interrupted during recording, measurement automatically resumes after power is restored)
  - Auto set up (automatically load setting files stored in internal memory or the SD card)
  - Save the setting condition in internal memory (up to 6 conditions)
  - Manual data save

### External appearance and dimensions

- For the AC adapter Z1002 power, or DC power (10 to 28 V)

![Image 1](image1.png)

**For connecting the power supply to the Differential Probe 9322 (3 lines, +5 V output, via Power cord 9328)**

![Image 2](image2.png)

**Logic probe terminals (4ch × 2 probes)**

![Image 3](image3.png)

**Input module slots (for up to 4 input modules)**

![Image 4](image4.png)

**LAN and USB**

![Image 5](image5.png)

**SD card slot**

![Image 6](image6.png)

**External control terminal**

![Image 7](image7.png)

**slide switch**

![Image 8](image8.png)
**Plug-in slot for the input units**

### ANALOG UNIT MR8901

<table>
<thead>
<tr>
<th>Measurement target</th>
<th>Input unit</th>
<th>Measurement range</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>ANALOG UNIT MR8901</td>
<td>100 mV f.s. to 200 V f.s.</td>
<td>4 μV</td>
</tr>
<tr>
<td>VOLTAGE/TEMP UNIT MR8902</td>
<td>10 mV f.s. to 100 V f.s.</td>
<td>0.5 μV</td>
<td></td>
</tr>
<tr>
<td>STRAIN UNIT MR8903</td>
<td>1 mV f.s. to 20 μV f.s.</td>
<td>0.04 μV</td>
<td></td>
</tr>
</tbody>
</table>

### Current

- ANALOG UNIT MR8901 + optional current sensor
  - Depends on current sensor(s) in use
  - Certain current sensors require a separate power supply
  - I/1250 div

### RMS AC voltage

- ANALOG UNIT MR8901 + optional Differential Probe 9252
  - 100 V rms to 1 kV rms
  - I/1250 div

### Temperature (Thermocouple)

- Voltage/TEMP UNIT MR8902
  - 200°C f.s. to 2000°C f.s.
  - Accuracy: ±0.5 % f.s. (with filter 5 Hz, Balance adjustment included, 1-bit logic signal)

### Distortion, Stress

- STRAIN UNIT MR8903
  - 400 με to 20,000 με f.s.
  - 0.01 με

### Analog signal can do

- CAN UNIT MR8904
  - 2 ports/unit
  - Up to 15 analog channels each equivalent to a 10-bit input
  - ±2V to 5V

### Functions

- VOLTAGE/TEMP UNIT MR8902
  - Resolution: 1/1000 of measurement range (using 16-bit A/D converter)
  - Accuracy: ±0.1 % f.s. (with digital filter ON, Balance adjustment included, 1-bit logic signal)

### Options specifications (sold separately)

- **ANALOG UNIT MR8901**
  - Functions: Number of channels: 4, for voltage measurement
  - Input connectors: Unisolated BNC connector
  - Measurement range: ±100 V
  - Low-pass filter: 150 V DC (the maximum voltage that can be applied across input pins without damage
  - Data refresh rate: 10 ms (with filter OFF, burn-out detection OFF)

- **STRAIN UNIT MR8903**
  - Functions: Number of channels: 4, for voltage measurement
  - Input connectors: Strain gauge converter
  - Measurement range: ±100 V
  - Low-pass filter: 150 V DC (the maximum voltage that can be applied across input pins without damage
  - Data refresh rate: 10 ms (with filter OFF, burn-out detection OFF)

### Dimensions, mass:

- **ANALOG UNIT MR8901**: Approx. 190 g (6.7 oz)
- **STRAIN UNIT MR8903**: Approx. 400 g (14 oz)
- **CAN UNIT MR8904**: Approx. 400 g (14 oz)

### MR8902 specifications

- **Thermocouples**
  - Setting Ranges: 400 to under 600 °C ±5.5 °C
  - Resolution: 100 ˚C 0.1 °C
- **Accuracies**
  - ±1.8 °C
  - ±0.8 °C
  - ±1.0 °C

- **Data refresh rate**
  - 10 ms (with filter OFF, burn-out detection OFF)
  - 20 ms (with filter OFF, burn-out detection ON)

### Note:

- Total thermocouple accuracy is added ±0.5 °C (reference junction compensation accuracy)
**CAN UNIT MR8904**

- **Input CAN port**: Number of port(s): 2, Connector: D-sub a male 9 pin +2
- **CAN standards**: ISO 11898 CAN 2.0B, ISO 11898-1, ISO 11898-2, ISO 11898-3 SAE J241
- **CAN interface**: Selectable: High-speed CAN, Low-speed CAN, or Single-wire CAN, by port (with digital output in transmission mode)
- **Transmit ACK**: ON-OFF for transmitting an ACK for receiving CAN signal with the MR8904
- **Baud rate**: 50kbps to 1Mbps at High-speed, 10kbps to 125kbps at Low-speed, 10kbps to 83,333kbps at Single-wire
- **Analyzed signal output channel**: Up to 15 analog channels each equivalent to a 1-bit analog signal
- **Signal form**: 1-bit signal: 1 channel of Logic, or 1 channel of Analog
- **ID trigger**: Output “II” level pulse to be designated logic channel when receiving set ID signal
- **Response time**: Within 200 μs after completely receiving CAN message

**CAN transmission settings**

- **CAN message ID, Start position, Data length**: Code: Unassigned, 1-Signed, 2-Signed
- **CAN db file**: Loading, Convert to “.csv” file/ Register to list (editing not available), 3-bit data and above not supported
- **Can transmit the setting CAN message to the CAN bus by a port**

**Operating environment**

- **Windows XP (32-bit), or Windows Vista**: 7 (32-bit/64-bit)

**Can definition settings**

- **Message ID, Start position, Data length**: Code: Unassigned, 1-Signed, 2-Signed
- **CAN communication settings**: Interface: High-speed, Low-speed, Single-wire
- **Transmit ACK**: ON-OFF
- **Baud rate**: AUTO (enabled at ACK OFF only)
- **Power Cord**: 9328 or (2) Use the AC Adapter 9418-15
- **Print formatting**: (1 up, 2-to-16 up, 2-to-16 rows, X-Y 1-to-4 up), Preview, Hard copy functions
- **Parameter calculation**, Search, Clipboard copy, Launching of other applications

**Features**

- Waveform display, data calculation, printing function

**WAVE PROCESSOR 9335**

- **Software included**: CD-R
- **Operating environment**: Running under Windows 2000/XP/Vista (32-bit), or Windows 7 (32-bit/64-bit)
- **Display functions**: Waveform display, X-Y display, Digital value display, Cursor function, Scroll function, Maximum number of channels (32 channels analog, 32 channels digital), Scale display (time, voltage axes), Graphical display
- **File loading**: Readable data formats (MEM, REC, SMS, PKW)
- **Data conversion**
  - Conversion to CSV format, Tab delimited Space delimited
  - Data cutting (event), Offset, Convert for specified channel, Batch conversion of multiple files
- **Print functions**: Printing format (1 up, 2-up, 4-up, up, 2-to-16 rows, X/Y 1-to-4 up), Preview, Hard copy functions usable on any printer supported by operating system

**PC Software Specifications**

- Bundled with the MR8875 in the CD-R

**WAVE Viewer (WV) Software**

- **Functions**: Simple display of waveform file
  - Text conversion: binary data file to text format, with selectable space or tab separators in addition to CSV, and specifyable section, timing available
  - Display format settings: scrolling functions, enlarge/reduce display, selection of desired channels
  - Other: Various wave form trace function, jump to cursor/trigger position function
- **Operating environment**: Windows 2000/XP/Vista (32-bit), or Windows 7 (32-bit/64-bit)
Configuration of options

### Analog Unit MR8901
- Voltmeter, DC: 0–9999.9μA/100mV
- Resolution: 1μA/0.01mV

### Analog Unit MR8902
- Voltmeter, DC: 0–9999.9μA/100mV
- Resolution: 1μA/0.01mV

### Analog Unit MR8903
- Voltmeter, DC: 0–9999.9μA/100mV
- Resolution: 1μA/0.01mV

### Analog Unit MR8904
- Voltmeter, DC: 0–9999.9μA/100mV
- Resolution: 1μA/0.01mV

### Logic Signal Measurement
- **LOGIC PROBE MR8901**
  - 4-channel type, for voltage output signal on/off detection response time 5 μs, another terminal type
- **LOGIC PROBE MR8902**
  - 4-channel type, ON/OFF detection of AC/DC voltage (minimum terminal type)

### Conversion Cable 9323
- Used for connecting the MR8875/9320/9325 to the MR8901, because of the terminal shape differences.
- This cable is not required for the small terminal size 9327, 9320-01, 9321-01, and 9321-02.

### Voltage Measurement
- **Universal Clamp on CT 9270**
  - Detects observable waves from DC to distorted AC, DC to 2kHz response, input 500mA / output 2V AC
- **Universal Clamp on CT 9278**
  - Detects observable waves from DC to distorted AC, DC to 1kHz response, input 2A / output 2V AC

### Current Measurement
- **Clamp on Probe 9158-50**
  - Enables observation of AC current waveforms, 40 Hz to 3kHz response, input 50mA to 500mA range, output 0.2V AC range
- **Clamp on Probe 9158-55**
  - Enables observation of AC current waveforms, 40 Hz to 4kHz response, input 2A to 20A range, output 0.5V AC range

### Leakage Current/Load Current measurement
- **Clamp on AC/DC HISTETER 3284**
  - 20A, 200A AC/DC ranges, monitor / analog output 4mA
- **Clamp on AC/DC HISTETER 3285**
  - 20A, 200A AC/DC ranges, monitor / analog output 4mA

### Removable Storage
- **SD Memory Card 2GB 2401**
  - 2GB

### SD Card Precautions
- Use SD cards that HIOKI has tested. Compatibility and performance are not guaranteed for SD cards made by other manufacturers. You may be unable to read from or write data to such cards.

### Power Supply
- **AC Adapter Z1002**
  - 100 to 240 V AC
- **Battery Pack Z1003**
  - Ni-MH, charges while installed

### LAN Cable 9642
- Includes compartment for options

### Other Options
- **CAN Cable 9713-01**
  - For the MR8904, unprocessed on one end, 1.8 m (5.9ft) length
- **LAN Cable 9642**
  - Straight Ethernet cable, supplied with straight type conversion adapter, 1.3m (4.3ft) length

### Examples of combination
- The MEMORY HI-CORDER MR8875 cannot operate alone. You must install one or more optional input modules in the unit.

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- All information correct as of Jun. 5, 2012. All specifications are subject to change without notice.

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