Thank you for purchasing the midi LOGGER GL900. This Quick Start Guide describes the basic operations. Please refer to the manual (PDF) in the CD-ROM for more information.

**Checking the Outer Casing**
After unpacking, check the GL900’s outer casing before use to make sure that there are no surface scratches or other flaws such as stains or dirt.

**Checking the Accessories**

- Quick Start Guide : 1
- CD-ROM : 1
- AC cable/AC adapter : 1
GL900 Contents

Part Names ........................................................................................................... 2
Connection Procedures ......................................................................................... 3
Precautions to Observe When Performing Measurement .............................. 4
Descriptions of the Control Panel Keys .............................................................. 5
Descriptions of the Menu Screens ....................................................................... 8
Measurement Procedure ....................................................................................... 9
  1. Preparations : How to Make the Preparations Required for Data Capture .... 9
  2. Setup : How to Make the Settings ................................................................. 10
  3. Data Capture : How to Capture Data ........................................................... 13
  4. Data Replay : How to Replay Captured Data ............................................... 14
Convenient Functions ......................................................................................... 15
  Timer Functions and Trigger Functions to Control Data
  Capture Start/Stop Operations ........................................................................... 15
  Span, Position and Trace Functions to Adjust the Waveform Display .......... 17
Specifications .................................................................................................... 18
  Standard Specifications .................................................................................... 18
  External Input/Output Functions ..................................................................... 18
  Input Unit Specifications .................................................................................. 19
Installation Guide ................................................................................................. 20
GL900 Part Names

Top Panel

- Analog signal input terminals
- Operation status LED
- Control panel keys
- Power jack for the humidity sensor
- USB memory terminal
- USB interface terminal
- LAN interface terminal
- Monitor
- Operation status LED
  - POWER
  - START
  - CHARGE

Bottom Panel

- AC adapter jack
- GND terminal
- Model imprint and others
- Power switch
- Battery cover
- Battery pack
  (When using the B-517 option)
- External input/output terminals
  - LOGIC/PULSE
  - EXT TRIG
  - ALARM
- Logic alarm cable
  (When using the B-530 option)
GL900 Connection Procedures

Connecting the AC Adapter

Connect the output side of the AC adapter to the connector indicated as "DC LINE" on the GL900.

Connecting the Grounding Cable

Use a flathead screwdriver to push the button above the ground terminal while connecting the grounding cable to the GL900. Connect the other end of the cable to ground.

Making Connections to the Analog Input Terminals

Caution: The BNC and screw-type terminals of the same channel are connected. Do not input signals to the BNC and screw-type terminals of the same channel at the same time. It may cause damage to the measurement device.

Making Connections to the External Input/Output Terminals

(When using the B-530 option)

*B-513 (sold separately) cable is required for external input/output. (For logic/pulse input, alarm output, trigger input)
Precautions to Observe When Performing Measurement

Avoid electrical shock and short circuit accidents
• Do not apply voltage of AC33 Vrms or 60 VDC or above between the analog input section and main unit (GND terminal), or to between each analog channel.
• Do not apply voltage exceeding the rated voltage to analog input section (between + and – terminals).
  Range 20mV to 1V : maximum 30Vp-p
  Range 2V to 500V : maximum 500Vp-p

Connection Precautions
Do not input signals to the BNC and screw-type terminals of the same channel at the same time.
It may cause damage to the measurement device.

Warming-up
The GL900 should be allowed to warm up with the power turned on for approximately 30 minutes to achieve operation according to the specified performance.

Unused channels
The analog input section has high impedance.
If it is open, measurement signals may not be visible due to noise.
In such a case, set input setting of unused channels to "Off" or short circuit the + and – terminals.

Noise countermeasures
If measured values fluctuate due to extraneous noise, conduct the following countermeasures.
(Results may differ according to noise type.)
Ex 1 : Connect the GL900's GND to ground.
Ex 2 : Connect GL900's GND to measurement object's GND.
Ex 3 : In the AMP settings menu, set filter to any setting other than "OFF".
Ex 4 : Operate GL900 with batteries (Option: B-517).

Use correctly and safely!
GL900 Descriptions of the Control Panel Keys

1. CH SELECT
Press this key to switch the channel. Press ▲ to switch to the channel with a smaller number, and press ▼ to switch to the channel with a larger number.

2. SPAN/TRACE/POSITION
This key enables SPAN, POSITION, and TRACE settings to be made independently for each channel. Each time this key is pressed, the mode displayed in the waveform operation display area changes in the sequence shown below. Use the ▲ and ▼ keys to select the channel, and the ◀ and ▶ keys to change the setting values.

3. TIME/DIV
Press the TIME/DIV key to change the time axis display range on the waveform screen.
4. MENU

Press the MENU key to open a setup menu. Each time this key is pressed, the setup screen tabs change in the sequence shown below.

- AMP Settings
  Used to make the input, range, filter and other settings.
- Data Capture Settings
  Used to make settings such as the sampling interval, data capture destination, and calculations during data capture.
- Trigger Settings
  Used to specify data capture start and stop conditions, and alarm conditions.
- Options Settings
  Used to set USB ID numbers and IP addresses, and to change from one user to another.
- Other Settings
  Used to make settings such as the screen brightness, background color, and language.

Settings are complete!

5. QUIT (LOCAL)

Press the QUIT key to cancel the settings and return them to their default status. If the device is in the Remote (Key Lock) status, namely the external operating status via the interface, press this key to return the device to the normal operating status (Local).

6. keys (DIRECTION KEYS)

These keys are used to select menu setup items, to make span settings in the digital display area, to move the cursors during a data replay operation, and so forth.

7. ENTER

Press the ENTER key to enter the settings made in the setup menus, and to confirm your settings.

8. keys (KEY LOCK)

These keys are used to move the cursor at high speed during a data replay operation, and to change the operation mode in the file settings box. Hold down both keys simultaneously for at least two seconds to enable key lock status. To cancel key lock status, press them again for at least two seconds. The key lock status can be confirmed by the status of the key lock lamp on the monitor.
9. START/STOP (USB DRIVE MODE)
Press the START/STOP key to perform a data capture start operation while the GL900 is in the Free Running status, and a data capture stop operation when data capture has ended. If this key is held down while the power to the GL900 is turned on, the GL900 goes into USB Drive Mode.

10. REVIEW
Press the REVIEW key to perform a data capture start operation while the GL900 is in the Free Running status, and a data capture stop operation when data capture has ended. If this key is held down while the power to the GL900 is turned on, the GL900 goes into USB Drive Mode.
Note: A data replay operation will not be performed if data has not been captured.

11. DISPLAY
Press the DISPLAY key

Many display modes are available!

- Waveform + Digital - This is the default screen when the GL900 is turned on, and both waveforms and digital values are displayed. The screen settings can also be changed by using the SPAN/POSITION/TRACE key. Settings can also be changed by using the SPAN/TRACE/POSION keys.
- Expanded Waveform - Displays waveforms only.
- Digital + Calc - Displays large-size digital values and two types of calculation processing results. The calculation settings are made in the "DATA" menu.
- X-Y Waveform - X-Y display of 4 channels is possible. You can specify channels freely for X and Y axes. The settings can also be changed using the SPAN/TRACE/POSION keys. Penup and clear screen can also be performed.

12. CURSOR (ALARM CLEAR)
Press the CURSOR key to switch between the A and B cursors during a data replay operation. If the Alarm setting has been specified as "Alarm Hold", press this key to clear the alarm. The alarm settings are made in the "TRIG" menu.

13. FILE
Press the FILE key to save data to the GL900's internal memory and to a USB memory device.

14. NAVI
Press the NAVI key to display operational descriptions during the Free Running status, and during data capture and data replay operations.
GL900 Descriptions of the Menu Screens

1. Status message display area: Displays the operating status.
2. Time/DIV display area: Displays the current time scale.
3. Device access lamp: Turns red when USB memory is accessed.
4. Key lock lamp: Displays the key lock status. (Yellow = keys locked, white = not locked)
5. Remote lamp: Displays the remote status. (Yellow = Remote status, white = Local status)
6. Clock display: Displays the current date and time.
7. AC/Battery status indicator: Displays the following icons to indicate the operating status of the AC power supply and the battery. (see right figure)
8. Waveform operation display area: Displays the mode selected by the SPAN/POSITION/TRACE key.
9. Digital display area: Displays the input values for each channel. The ▲ and ▼ keys can be used to select the active channel (enlarged display). Moreover, the selected active channel is displayed at the very top of the waveform display.
10. Quick settings: Displays items that can be easily set. The ▲ and ▼ keys can be used to make a Quick settings item active, and ▲ the ▼ keys to change the values.
11. Alarm display area: Displays the status of the alarm output terminal. (Red = alarm generated, white = alarm not generated)
12. Pen display: Displays the signal positions, trigger positions, and alarm ranges for each channel. (see right figure)
13. File name display area: Displays the data capture file name during the data capture operation. During a data replay operation, the name of the data replay file is displayed.
14. Scale lower limit: Displays the lower limit of the scale of the currently active channel.
15. Waveform display area: The input signal waveforms are displayed here.
16. Scale upper limit: Displays the upper limit of the scale of the currently active channel.
17. Data capture bar: Displays items that can be easily set. The ▲ and ▼ keys can be used to make a Quick settings item active, and ▲ the ▼ keys to change the values.

AC/Battery Indicator
- When the AC power supply is being used
- Battery power: Full
- Battery power: Medium
- Battery power: Low
- Battery power: Very low

Trigger position: Inside range
- Rising trigger
- Falling trigger
- Within the range
- Outside the range
- Stop side
- Start side

Alarm range: Inside range
- Inside range
- Outside range
- Inside range
- Outside range

1.Status message display area 2.Time/DIV display area
3.Device access lamp 4.Key lock lamp
5.Remote lamp 6.Clock display
7.AC/Battery status indicator 8.Waveform operation display area
9.Digital display area 10.Quick settings
11.Alarm display area 12.Pen display
13.File name display area 14.Scale lower limit
15.Waveform display area 16.Scale upper limit
17.Data capture bar

Free Running 10 ms/DIV
2008-04-19 01:44:17

ALARM 1 2 3 4

MONITOR
CH 1

-0.3245 V
-0.2319 V
-0.0011 V
-0.0012 V
+0.0013 V
+0.0014 V
+0.0015 V
+29.0 V
+47.7 V
+9.6 V

0.0008 V
0.0007 V
0.0006 V
0.0005 V
0.0004 V
0.0003 V
0.0002 V
0.0001 V
0.0000 V

Sample 1 ms
Zone 1 zone

GL900-Quick-E.indd   9
08.5.15   3:27:45 PM
GL900 Measurement Procedure

In this section we will provide a simple explanation of the data capture procedure: Preparations → Setup → Data Capture → Data Replay. Voltage measurement is performed here.

**Purpose of data capture**: To measure the temperature of the target objects

- **Measurement points**: 2 locations
- **Voltage range**: 1V
- **Sampling interval**: 10ms
- **Data save destination**: Internal RAM
- **Number of capture points**: 10000
- **Auto save**: Internal flash memory

(Note: If data is saved only in the internal RAM, it is erased when the next data capture is started or when the power is turned off.)

1. **Preparations : How to Make the Preparations Required for Data Capture**

1. Connect measurement object 1 to the CH 1 terminal.
2. Connect measurement object 2 to the CH 2 terminal.
3. Connect the AC power supply.
4. Turn on the power supply.

Screw-type terminal can also be used.
2. Setup: How to Make the Settings

Make the settings required for data capture. Here we will make only those settings that are absolutely necessary. The other settings will be left as the default settings (the settings made prior to shipment from the factory).

Basic Setup Menu Operation

The keys used on the menu screens are the \( \uparrow \downarrow \leftarrow \rightarrow \) keys, the ENTER key, and the QUIT key. The current cursor position is displayed in blue. Use the \( \uparrow \downarrow \leftarrow \rightarrow \) keys to move the cursor. If you press the ENTER key at the cursor position, a selection menu or a box for inputting numeric values and so forth is displayed. If you press the QUIT key, the screen closes and the settings are canceled.

Examples of selection menu operations (AMP screen)

1. Use the \( \uparrow \downarrow \leftarrow \rightarrow \) keys to move the cursor to the Input parameter opposite CH 1 and then press the ENTER key.
2. A selection menu is displayed when the ENTER key is pressed. Use the \( \uparrow \downarrow \leftarrow \rightarrow \) keys to select “TEMP.”
3. Press the ENTER key to confirm your selection.

(Note: Select “DC” for voltage measurement, and “Humidity” for humidity measurement.)

1. Press the MENU key to display the setup menu screen.
2. Select “1V” for the Range parameter for CH 1 and CH 2.
   (1) Move the cursor to the Range parameter opposite CH 1 and select “1V”.
   (2) Make the same setting for CH 2.
3. Select “Off” for all the other channels.
   (1) Using the procedure described above, select “Off” for CH 3 to CH 8.

Points to Remember!
4. Press the MENU key and open the "DATA" menu.

5. Set the sampling interval to "10ms".
   Move the cursor to "Sampling" and then select "10ms".

6. Set the Data Capture Destination to "Internal RAM".
   Move the cursor to "Data Capture Destination" and then select "Internal RAM".

7. Set the number of capture points to 10000.
   Move the cursor to "Number of Capture Points" and then select "10000".

8. "Internal Flash Memory".
   Move the cursor to "Auto Save" and then select "On".

Internal RAM, Internal Flash Memory, and USB memory can be selected for Data Capture Destination.
Data can be recorded in the internal RAM at the sampling interval of 10μs or more, but will be erased when the power is turned off or next capture is performed. Internal Flash Memory and USB memory can record at the sampling interval of 1ms or more for a long period of time (until the medium is full or one file reaches 2GB).

When data capture starts, auto save starts saving data in the auto save destination at the same time with the internal RAM. Auto save is continued in the background even when internal RAM data capture is finished.
(1) Move the cursor to "Data Capture File Name" and then press the ENTER key to show the submenu.

(2) Move the cursor to "Folder" and the press the ENTER key to show the file menu.

(3) Press the ▶ key to move to the "Internal Flash Memory" layer, press the ▶▶ key to align the cursor with the icon, and then press the ENTER key to show the file name input menu.

(4) Here let's input "TEST" as a test.
Align the cursor with the desired text and then press the ENTER key.
Finally, move the cursor from the text selection area, align it with the mark, and then press the ENTER key.

(5) Return to screen (2) and align the cursor with the icon to select the created folder and then press the ENTER key.

(6) Align the cursor with and then press the ENTER key.
When this setting has been made, data will be captured to the <TEST> folder in the internal flash memory with an automatic file name.

(7) In the lower part of the screen, we can check the amount of data than can be captured and the allowable data capture time.

This completes all the settings required for data capture.
3. Data Capture: How to Capture Data

Now that all the data capture settings have been made, we will start actual data capture. During the data capture operation, let's also replay some data that was captured previously.

1. Starting data capture
   (1) Press the START/STOP key.
   (2) A confirmation message is displayed.
   (3) Press the ENTER key to start data capture.

2. Screen status during data capture
   Once data capture has started, the elapsed time and the allowable data capture time are counted.

3. Stopping data capture
   Press the START/STOP key to end the data capture operation.
   (1) Press the START/STOP key.
   (2) A confirmation message is displayed. Press the ENTER key.
   (3) Data capture ends, and the GL900 goes into the Free Running status.

This completes the data capture operation.
4. Data Replay : How to Replay Captured Data

When data capture ends, data is automatically replayed. The automatically replayed data is the data captured to the internal RAM which has been set as the data capture destination. Press the QUIT key to end the data replay operation.

1. Screen and operations during replay

You can check arbitrary level values and time with two lines of cursors during the replay.

1. Scroll bar
   Displays the position within the whole data and the display width.

2. Level display area
   Displays the levels of A and B cursors and the difference between the A and B values.

3. Quick settings
   Use the keys to search the previous or next level.
   (Note: Make search settings in the menu.)

4. Time display
   Displays the sampling interval and the time of the cursor.

5. Cursor
   Displays the cursor.
   (Note: Press the CURSOR key to switch between A and B cursors.)

   Move the cursor using the keys or the keys.

2. Menu during replay

During replay, you can display the replay menu by pressing the MENU key.

Here, moving of the cursor, making of data search settings, statistical calculation between cursor values, X-Y display and such can be performed. Please try each of the functions.

In order to replay the auto save file, press the FILE key and then open the file from "File Replay". Files that were captured in the past can also be replayed from the same menu.

This completes our simple explanation of how to use the basic GL900 functions.

The GL900 has many other convenient functions. Please see the next five pages for further details.
Timer Functions and Trigger Functions to Control Data Capture Start/Stop Operations

Timer functions and trigger functions can be used to control the timing of the start of a data operation, and the timing of the end of a data capture operation.

Here we will specify the timer condition as "Enable data capture from 9AM to 2PM every day", and the trigger condition as "Start data capture when the CH1 level exceeds 0.3V". In the left diagram, the green bar of the timer trigger information shows the actual data capture. (You can see the timer trigger information in the TRIG menu.)

Timer Functions

Specify the condition as "Enable data capture from 9AM to 2PM every day".

1. Press the MENU key to open the "TRIG" menu and then set the timer mode to "Everyday cycle".

2. Align the cursor with the start side setting and then press the ENTER key to open the Everyday Cycle menu.

3. Align the cursor with the time and then press the ENTER key to open the Numerical Value Setting screen. Set the numerical value to "09" using the cursor and then press the ENTER key.

4. Set the stop side setting in the same way to "14".

This completes the timer settings.

When the timer mode is set to "Everyday cycle" or "Every hour cycle", data capture operation is automatically repeated after it is started. When the timer mode is set to the date time setting, data is captured in one data capture operation.

GL900 Convenient Functions

The GL900 is provided with various functions that enable it to be used more effectively. We have selected three of those functions to describe in further detail.

Points to Remember!

Here we will specify the timer condition as "Enable data capture from 9AM to 2PM every day", and the trigger condition as "Start data capture when the CH1 level exceeds 0.3V". In the left diagram, the green bar of the timer trigger information shows the actual data capture. (You can see the timer trigger information in the TRIG menu.)

The GL900 is provided with various functions that enable it to be used more effectively. We have selected three of those functions to describe in further detail.

When the timer mode is set to "Everyday cycle" or "Every hour cycle", data capture operation is automatically repeated after it is started. When the timer mode is set to the date time setting, data is captured in one data capture operation.
Trigger Functions

Specify the condition as "Start data capture when the CH1 level exceeds 0.3V".

1. Press the MENU key to open the "TRIG" menu and then set the Start Source setting to "Level".

2. Set the Combination to "Edge OR".

3. Set the CH1 mode to "H".

4. Open the Level Value Settings menu and set to "0.3V" with the cursor, and then press the ENTER key.

5. Align the cursor to the button in the level menu settings and press the ENTER key.

This completes the trigger settings.

Points to Remember!

Level detects whether or not it is above or below the set level. Edge detects when it passes through the set level.
1. How to Make a Span setting.

The Span parameter is used to adjust the amplitude of the input waveform. This setting is made in the aforementioned Free Running status.

1) Adjust the span display width for CH 2 to 0.25V.
2) Press the SPAN/POSITION/TRACE key to select the SPAN mode.
3) Use the and keys to make CH 1 active (enlarged display).
4) Use the and keys to change the Span value. Here we will set the value to 0.25V.

When this setting has been made, the waveform screen scale will be set to "+0.125 to -0.125".

2. How to make a Position setting.

The Position parameter is used to adjust the zero position’s upper and lower positions for the input waveform.

1) Press the SPAN/POSITION/TRACE key to select the POSITION mode.
2) Use the and keys to make CH 1 active (enlarged display).
3) Use the and keys to set the Position value to "+0.25V to -0V".

When this setting has been made, the waveform screen scale will be set to "+0.25V to -0V".

3. How to make a Trace setting.

The Trace parameter can be used to specify the waveform display of selected channels as On or Off.

1) Press the SPAN/POSITION/TRACE key to select the TRACE mode.
2) Use the and keys to make CH 2 active (enlarged display).
3) Use the and keys to select Off.

When this setting has been made, the CH 2 waveform is not displayed.
GL900 Specifications

Standard Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of analog terminal units</td>
<td>8 channels</td>
</tr>
<tr>
<td>External input and output functions</td>
<td>Trigger input (1ch), Logic input (4ch) or Pulse input (4ch), Alarm output (4ch)</td>
</tr>
<tr>
<td>PC interface</td>
<td>Ethernet (10BASE-T/100BASE-TX), USB (HighSpeed supported) provided as standard features</td>
</tr>
<tr>
<td>Built-in memory device</td>
<td>Internal RAM: one million data points/Internal flash memory: Approx. 256MB USB memory slot (HighSpeed supported) is provided as a standard feature</td>
</tr>
<tr>
<td>Sampling interval</td>
<td>10μs MAX (When capturing to Internal RAM) 10/20/50/100/200/500μs/1/2/5/10/20/50/100/200/500ms/1/2/5/10/20/30sec/1min</td>
</tr>
<tr>
<td>Back-up functions</td>
<td>Setup parameters: EEPROM/Clock: Lithium secondary battery</td>
</tr>
<tr>
<td>Clock accuracy (ambient temperature 23°C)</td>
<td>±0.002% (approx. 50 seconds per month)</td>
</tr>
<tr>
<td>Operating environment</td>
<td>0 to 40°C, 5 to 85% RH (15 to 35°C when using batteries)</td>
</tr>
<tr>
<td>Power supply</td>
<td>AC adapter: 100 to 240 VAC, 50 to 60 Hz DC input: 8.5 to 24 VDC Battery pack (option): 7.2 VDC (2200 mAh), two packs required</td>
</tr>
</tbody>
</table>
| Power consumption | ○ AC power consumption (when using the AC adapter provided as a standard accessory)  
| | No | Condition | Normal | During battery recharge |
| 1 | When the LCD is on | 30VA | 42VA |
| 2 | When the screensaver is operating | 25VA | 37VA |
| ● DC current consumption |  
| | No | Condition | Normal | During battery recharge |
| 1 | +24V | When the LCD is on | 0.62A | 1.0A |
| 2 | When the screensaver is operating | 0.48A | 0.88A |
| 3 | +12V | When the LCD is on | 1.16A | Recharging not possible |
| 4 | When the screensaver is operating | 0.92A | |
| 5 | +8.5V | When the LCD is on | 1.82A | Recharging not possible |
| 6 | When the screensaver is operating | 1.36A | |
*Normal status is when LCD brightness is set to MAX.*

External Input/Output Functions

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
</table>
| Input specifications (pulse/logic, trigger) | Maximum input voltage: 0 to +24 V (single-ended ground input)  
Input threshold voltage: approx. +2.5 V  
Hysteresis: approx. 0.5 V (+2.5 V to +3 V) |
| Alarm output specifications | Output format: Open collector output (5 V, 10 KΩ pull-up resistance)  
: Contact capacity 5 V to 24 V, 100 mA or below |

External dimensions | 232 x 150.1 x 80mm |
Weight | 1.1Kg (*Excluding the AC adapter and battery packs) |
Vibration-tested conditions | Equivalent to automobile parts Type 1 classification |
### Input Unit Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of input channels</td>
<td>8 channels (fixed)</td>
</tr>
<tr>
<td>Input terminal type</td>
<td>BNC connectors</td>
</tr>
<tr>
<td>Voltage</td>
<td>M3 screw type terminal board</td>
</tr>
<tr>
<td>Temperature method</td>
<td>All channels isolated</td>
</tr>
<tr>
<td>Maximum sampling speed</td>
<td>10μs</td>
</tr>
<tr>
<td>Measurement accuracy</td>
<td>20m 50m 100m 200m 500m 1 2 5 10 20 50 100 200 500V 1-5V F.S.</td>
</tr>
<tr>
<td>Temperature</td>
<td>Thermocouple: K, J, E, T, R, S, B, N, W (WRe5-26)</td>
</tr>
<tr>
<td>Humidity</td>
<td>0 to 100% (voltage 0 V to 1 V scaling conversion) *with B-530 (option)</td>
</tr>
<tr>
<td>Measurement accuracy *1</td>
<td>(23°C±5°C)</td>
</tr>
<tr>
<td>Voltage</td>
<td>±0.25% of F.S.</td>
</tr>
<tr>
<td>Thermocouple</td>
<td>±(0.05% of rdg +3.0°C)</td>
</tr>
<tr>
<td>Type</td>
<td>±(0.05% of rdg +3.0°C)</td>
</tr>
<tr>
<td>R/S</td>
<td>±(0.05% of rdg +3.0°C)</td>
</tr>
<tr>
<td>B</td>
<td>±(0.05% of rdg +2.0°C)</td>
</tr>
<tr>
<td>K</td>
<td>±(0.05% of rdg +2.0°C)</td>
</tr>
<tr>
<td>E</td>
<td>±(0.05% of rdg +2.0°C)</td>
</tr>
<tr>
<td>T</td>
<td>±(0.05% of rdg +2.0°C)</td>
</tr>
<tr>
<td>J</td>
<td>±(0.05% of rdg +2.0°C)</td>
</tr>
<tr>
<td>N</td>
<td>±(0.05% of rdg +2.0°C)</td>
</tr>
<tr>
<td>W</td>
<td>±(0.05% of rdg +2.0°C)</td>
</tr>
<tr>
<td>Reference contact compensation accuracy</td>
<td>±1.0°C</td>
</tr>
<tr>
<td>A/D converter</td>
<td>16Bit (out of which 14 bits are internally acknowledged)</td>
</tr>
<tr>
<td>Temperature coefficient</td>
<td>Gain : 0.01% of F.S./°C</td>
</tr>
<tr>
<td>Maximum input voltage</td>
<td>Zero : 0.02% of F.S./°C</td>
</tr>
<tr>
<td>Withstand voltage</td>
<td>Between each input channels and +/- terminals : 20mV to 1V ---&gt; 30Vp-p</td>
</tr>
<tr>
<td>Between each input channel terminal/input channel terminal</td>
<td>60Vp-p</td>
</tr>
<tr>
<td>Frequency response</td>
<td>DC to 20KHz (+1/-4dB)</td>
</tr>
<tr>
<td>Filter</td>
<td>Off, Line, 5Hz, 50Hz, 500Hz (Attenuation) —3dB / 6dB oct</td>
</tr>
</tbody>
</table>
This section explains how to install the environment settings tool and GL900 application software.

**System Requirements**

This software can be installed on a PC which fulfills the following conditions.

- **OS**: Windows 2000, WindowsXP, WindowsVista
- **CPU**: Pentium4 1.7GHz or higher
- **Memory**: 512MB or more (1GB or more recommended)
- **HDD**: 200MB (1GB recommended) additional space required for installing the application software
- **Display**: Resolution 1024 x 768 or higher, 65535 colors or above (16 Bit or higher)
- **Others**: CD-ROM drive (for installing from CD), USB port required

**To Install the USB Driver**

To install the USB driver, follow the directions below.

1. Insert the accompanying midi LOGGER GL900 CD-ROM in the PC’s CD drive.
2. Connecting the PC and GL900.
   - Connect the PC and GL900 via a USB cable and power on the GL900.
3. Installing the USB driver
   - The "Found New Hardware" message appears, followed by the Install New Hardware wizard for the environment settings tool.
   - Follow the directions displayed by the installer.
   - Choose "USB Driver" for driver selection.
   - The driver is located in the "USB Driver".

**To Install GL900 Application Software**

To install the application software which sets and controls the GL900, follow the directions below.

1. Insert the accompanying midi LOGGER GL900 CD-ROM in the PC’s CD drive.
2. Select [Start] → [Run] to open the [Run] window.
3. In the [Open:] field, type in "D:\English\GL900APS\SETUP.EXE" and press [OK]. The installer starts.
   - ("D:" represents the CD-ROM drive. Change this letter to the drive letter representing your CD-ROM drive, if necessary.)
4. Follow all directions displayed by the installer to continue.