

# GL860

## Safety Precautions

This document is warning to the fire and person injury and physical damage assume.

Please carefully read this document, and the instruction manual, before using this device to use this device correctly.

### Conventions Used in This Manual

To promote safe and accurate use of the GL860 as well as to prevent human injury and property damage, safety precautions provided in this manual are ranked into the five categories described below. Be sure you understand the difference between each of the categories.

#### DANGER

This category provides information that, if ignored, is highly likely to cause fatal or serious injury to the operator.

#### WARNING

This category provides information that, if ignored, is likely to cause fatal or serious injury to the operator.

#### CAUTION

This category provides information that, if ignored, could cause physical damage to the GL860.



#### HIGH TEMPERATURE



This category provides information that, if ignored, is likely to cause burns or other injury to the operator due to contact with high temperature.



#### ELECTRICAL SHOCK

This category provides information that, if ignored, is likely to expose the operator to electrical shock.

### Description of Safety Symbols

The  symbol indicates information that requires careful attention (which includes warnings). The point requiring attention is described by an illustration or text within or next to the  symbol.

The  symbol indicates action that is prohibited. Such prohibited action is described by an illustration or text within or next to the  symbol.

The  symbol indicates action that must be performed. Such imperative action is described by an illustration or text within or next to the  symbol.

### Safety Precautions WARNING

#### Be sure to securely connect the GL860's GND terminal.

- For grounding, use a ground wire with a diameter of at least 0.75 mm<sup>2</sup>. When using the GL860 in an environment where grounding is not possible, ensure that the voltage to be measured is no greater than 100 V (DC or rms).

If the GL860 generates smoke, is too hot, emits a strange odor, or otherwise functions abnormally, turn off its power and unplug its power cord from the electrical socket.

- Use of the GL860 in such status may result in a fire hazard or electrical shock.
- After checking that smoke is no longer being generated, contact your sales representative or nearest Graphtec vendor to request repair.
- Never try to perform repair yourself. Repair work by inexperienced personnel is extremely dangerous.

#### Before turning on the GL860, ensure that the electric socket's supply voltage conforms to the GL860's power rating.

- Use of a different supply voltage may cause damage to the GL860 or a fire hazard due to electrical shock or current leakage.

#### Avoid using the GL860 in extremely dusty or humid places.

- Such action may cause a fire hazard due to electric shock or current leakage.

#### Never disassemble or remodel the GL860.

- Such action may cause a fire hazard due to electric shock or current leakage.
- If repair is required, contact your sales representative or nearest Graphtec vendor.

Avoid using the GL860 in places where it may be exposed to water such as bathrooms, locations exposed to wind and rain, and so on.

- An electrical shock or fire may be caused due to current leakage.

### Safety Precautions WARNING

#### Prevent dust or metallic matter from adhering to the power supply connector.

- Adhesion of foreign matter may cause a fire hazard due to electrical shock or current leakage.



#### Never use a damaged power cord.

- Use of a damaged cord may result in a fire hazard due to electrical shock.
- If the cord becomes damaged, order a new one to replace it.



### Safety Precautions CAUTION

#### Do not use or store the GL860 in a location exposed to direct sunlight or the direct draft of an air conditioner or heater.

- Such location may impair the GL860's performance.



#### Do not place the receptacles containing fluid onto this device or close to this device.

- Fluid spilling inside the GL860 may cause a fire hazard due to electrical shock or current leakage.



#### To insert or disconnect the power cord or a signal input cable, grasp the power cord's plug or the signal input cable's connector.

- Pulling the cord/cable itself damages the cord/cable, resulting in a fire hazard or electrical shock.



#### If fluid or foreign matters enters inside the GL860, turn off the power switch and disconnect the power cord from the electrical socket.

- Use in such status may cause a fire hazard due to electrical shock or current leakage.
- Contact your sales representative or nearest Graphtec vendor to request repair.



#### Do not use the AC power supply and the DC power supply other than the specified supply voltage for this device.

- Such action may cause a fire hazard due to electric shock or current leakage.



#### Be sure to use the Graphtec-supplied AC adapter.

- It will damage this device.



#### Do not touch the input terminals after the signal cable is connected to the measuring objects that are containing the voltage.

- It will cause the electric shock.
- Ensure that the GL860's power source is positioned so that it can easily be disconnected.



#### Confirm the power of supplier of signal is turned off before connecting the input cables to the input terminal of this device to prevent the electric shock.

- It will cause the electric shock.



#### Do not touch the device with wet hands.

- This can cause an electrical shock or malfunction.



#### Be careful of static electricity.

- Static electricity may damage the device. To prevent this from happening, touch a different metal object to discharge any built-up static electricity before touching the GL860.



#### Do not input the voltage that is exceeding the specification of this device.

- If a voltage exceeding the specified value is input, the semiconductor relay in the input section will be damaged. Never input a voltage exceeding the specified value even for a moment.



- Have an enough margin from the specification of withstanding voltage when using this device, it have to consider a noise and change of the measurement voltage.



- It will cause the fire or the electric shock when the voltage is input to the defective device.



#### Do not block the air vent on the GL860.

- This device will get damage when there is abnormal heat in this device.



#### Confirm this device is not broken before the input cable is connected to the input terminal.

- It will cause the fire or the electric shock when the voltage is input to the defective device.



#### Do not use the device in any way not specified in this instruction manual. There is a danger that protective provisions will have not been put in place.



This GL860 is not meant for use with lifesaving devices or devices with mission-critical high reliability or high safety requirements (medical devices, aerospace devices, shipping devices, nuclear power devices, etc.). In the event that this GL860 causes injury or property damage when used under these circumstances, the maker assumes absolutely no responsibility and is not liable.



# Regarding the maximum input voltage

## Do not input the voltage that is exceeding the specification of this device.

- If a voltage exceeding the specified value is input, the semiconductor relay in the input section will be damaged. Never input a voltage exceeding the specified value even for a moment. It will cause the fire.
- Have an enough margin from the specification of withstanding voltage when using this device, it have to consider a noise and change of the measurement voltage.
- Confirm this device is not broken before the input cable is connected to the input terminal.
- Please take care of the static electricity when the connecting the input cables or the thermocouples.
- Do not touch the tip of thermocouples with bare hand after the thermocouples are connected to the terminal of this device when the tip of thermocouples is not insulated.



The static electricity of a human body will cause damage to this device.

- Do not put the tip of thermocouples to the object which is containing the static electricity when the tip of thermocouples is not insulated. The static electricity of object will cause damage to this device.
- Do not put the tip of thermocouples to the object which is containing the leaked high voltage of chassis or metal etc. when the tip of thermocouples is not insulated.

The leaked high voltage of object will cause damage to this device.

- We recommend that the insulation tape puts on the tip of thermocouples before connecting the thermocouples to the input terminals. This will protect this device from the static electricity and the leaked high voltage.

\*This applies to all the channels even if channel extension is used.

\*The specification of all channels becomes the B-563, when the B-563, B-563SL, B-563SL-30 and the B-565 are installed.

## Maximum input voltage

Input location	B-563 B-563SL, B-563SL-30	B-565
Between +/- terminals (Section A)	60Vp-p (Range of 20mV to 2V) 110Vp-p (Range of 5V to 100V)	60Vp-p (Range of 20mV to 2V) 110Vp-p (Range of 5V to 100V)
Between input terminal / input terminal (Section B)	Maximum input voltage : 60Vp-p Withstand voltage : 350 Vp-p at 1min	Maximum input voltage : 600Vp-p Withstand voltage : 600 Vp-p
Between input terminal / GND (Section C)	Maximum input voltage : 60Vp-p Withstand voltage : 350 Vp-p at 1min	Maximum input voltage : 300Vp-p Withstand voltage : 2300VACrms at 1 min

