

User Manual

B Series, Digital Cell Jig Oven

08/2025

TLP- 1109LO

DIGITAL CELL JIG OVEN



User Manual

B Series, Digital Cell jig Oven, valid for
08/2025

Warranty

Product introduction

Teraleader Inc. warrants this product to be free from defects in material and workmanship for a period of 1 year from date of shipment. Teraleader, Inc. warrants the following items for 90 days from the date of shipment: probes, cables, and documentation. During the warranty period, we will, at our option, either repair or replace any product that proves to be defective. To exercise this warranty, write or call your local Teraleader representative, or contact Teraleader headquarters in Korea, Deajeon. You will be given prompt assistance and return instructions. Send the product, transportation prepaid, to the indicated service facility. Repairs will be made and the product returned, transportation prepaid. Repaired or replaced products are warranted for the balance of the original warranty period, or at least 90 days.

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Be sure to read the "Safety information" before using the product, and use the product correctly

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User's Manual NOTICE

Product introduction

- Thank you for purchasing TERALEADER, INC. products. This user's manual explains the functions of the product, precautions, how to install and use it. Please read the user's manual carefully beforehand. In addition, please make it available for the end user and keep it where you can view it any time.

This manual is intended for those who have a basic understanding of the basic principles of electrical and electronic equipment, knowledge of the equipment (system) to which this product applies, and knowledge of computers and communication.

⚠ CAUTION – Safety Precautions

- Safety precautions should be observed to ensure safe and proper use of the product, and to prevent accidents or hazards.
- This equipment operates at high temperatures, and there is a risk of burns. Please exercise caution during operation and until the equipment has completely cooled down after use



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User's Manual NOTICE

Safety information

- Do not touch any object that could provide a current path to the common side of the circuit under test or power line (earth) ground. Always make measurements with dry hands while standing on a dry, insulated surface capable of withstanding the voltage being measured. The instrument and accessories must be used in accordance with its specifications and operating instructions or the safety of the equipment may be impaired.
- Do not exceed the maximum signal levels of the instruments and accessories, as defined in the specifications and operating information, and as shown on the instrument or test fixture panels, or switching card. When fuses are used in a product, replace with same type and rating for continued protection against fire hazard. Chassis connections must only be used as shield connections for measuring circuits, NOT as safety earth ground connections. If you are using a test fixture, keep the lid closed while power is applied to the device under test. Safe operation requires the use of a lid interlock.
- If a  screw is present, connect it to safety earth ground using the wire recommended in the user documentation.
- The  symbol on an instrument indicates that the user should refer to the operating instructions located in the manual.
- The  symbol on an instrument shows that it can source or measure 1000 volts or more, including the combined effect of normal and common mode voltages. Use standard safety precautions to avoid personal contact with these voltages.
- The  symbol indicates a connection terminal to the equipment frame.
- The **WARNING** heading in a manual explains dangers that might result in personal injury or death. Always read the associated information very carefully before performing the indicated procedure.
- The **CAUTION** heading in a manual explains hazards that could damage the instrument. Such damage may invalidate the warranty. Instrumentation and accessories shall not be connected to humans.

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INSTALLATION

CAUTIONS

- Do not use it outdoors.
- Use it in the ambient temperature and humidity ranges indicated in the instruction manual.
- Use it in locations where corrosive gases (especially harmful gases, ammonia, etc.) and flammable gases are not generated.
- Use it in places where vibrations and impacts are not directly applied to product body. - use it in places without liquids, oils, chemicals, steam, dust, salt, iron, etc. (pollution degree 1 or 2).
- Avoid places where large inductive interference, static electricity, magnetic noise are generated. - avoid places with heat accumulation caused by direct sunlight, radiant heat, etc.
- Use it in places with elevation below 2000 m.

USAGE

- Please do not wipe the product with organic solvents such as alcohol, benzene, etc. (wipe it with neutral detergents).
- When water enters, short circuit or fire may occur, so please inspect the product carefully.
- Use the input signal line away from power line and load line to avoid the influence of inductive noise.
- Input signal line and output signal line should be separated from each other. If separation is not possible, use shield wires for input signal line.
- When there is a lot of noise from the power, we recommend to use insulation transformer and noise filter. Please install the noise filter to a grounded panel or structure, etc. and make the wiring of noise filter output and product power supply terminal as short as possible.

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QUALITY ASSURANCE CONDITIONS OF THIS PRODUCT

- The warranty period of this product is one year from its date of purchase. This product will be repaired free of charge in the event of malfunction occurring under normal use conditions set forth in this manual.
- Repairs due to breakdown occurring after the expiration of the warranty period of the product will be charged according to the standard determined by the company.
- In the following cases, even if the breakdowns occur within the warranty period, they will be charged.
 - Breakdowns due to user's fault - Breakdowns due to natural disaster.
 - Breakdowns due to movements after installation.
 - Breakdowns due to arbitrary product change or damage.
 - Breakdowns due to power supply abnormality (such as power instability).
 - If A/S is required due to breakdowns, please contact the place of purchase, or our sales department.

QUALITY ASSURANCE

- We do not assume any warranty or liability with respect to this product, except as stipulated in our quality assurance conditions
- We are not responsible for any direct or indirect damages suffered by users or third parties due to unforeseeable defects or natural disasters.

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INSTALLATION

Operating requirements

- Use the Ampoule Furnace within the required operating power voltage ranges to provide the most accurate measurements and safe instrument operation

Requirements	
Characteristic	Description
Power Source voltage	115V~120V AC, 50/60Hz
Powering	Always connect the Ampoule Furnace to AC power using the power cord that shipped with the device

Operating Condition

- The operating conditions of the equipment must remain within the allowable range. Exceeding these limits may cause damage to the device.
- Please make sure to follow the conditions below.

Equipment Setup Conditions	
	Condition
Temperature	R.T ~ 80°C

1. Product Overview

1-1. Front Panel

Figure 1 shows the front panel of the Digital Cell Jig Oven. Please review the following instructions before operation to ensure safe and proper use of the equipment.

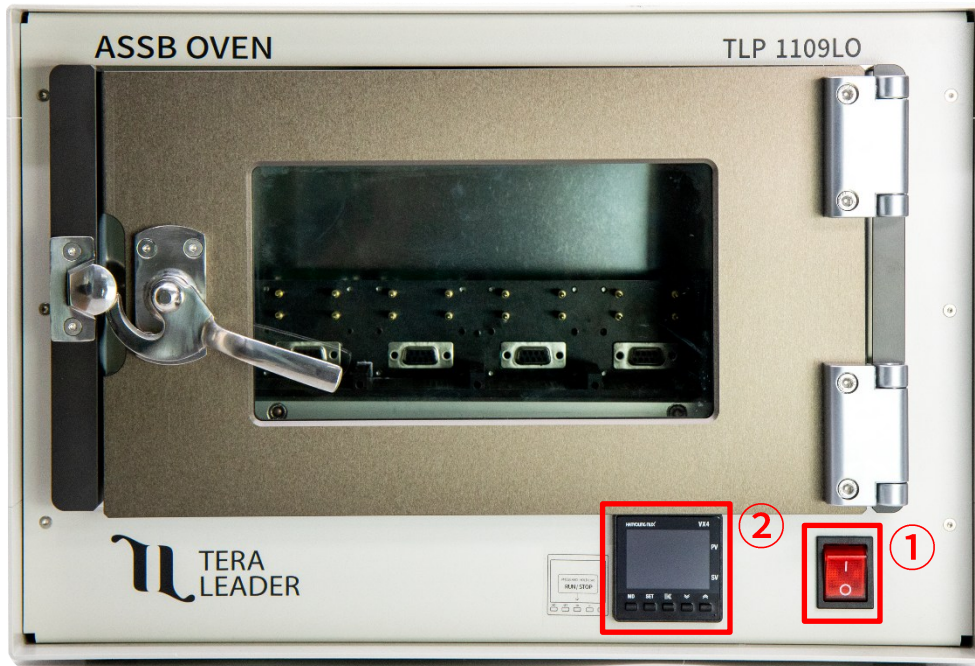


Figure 1. The front panel of the Digital Cell Jig Oven

Description		
①	Power	Use the power switch to turn ON/OFF
②	Temperature Controller	Set chamber temperature and run/stop heating

1. Product Overview

1-3. CHAMBER

Figure 3 shows the chamber interior of the Digital Cell Jig Oven. Please review the following instructions before operation to ensure safe and proper use of the equipment.

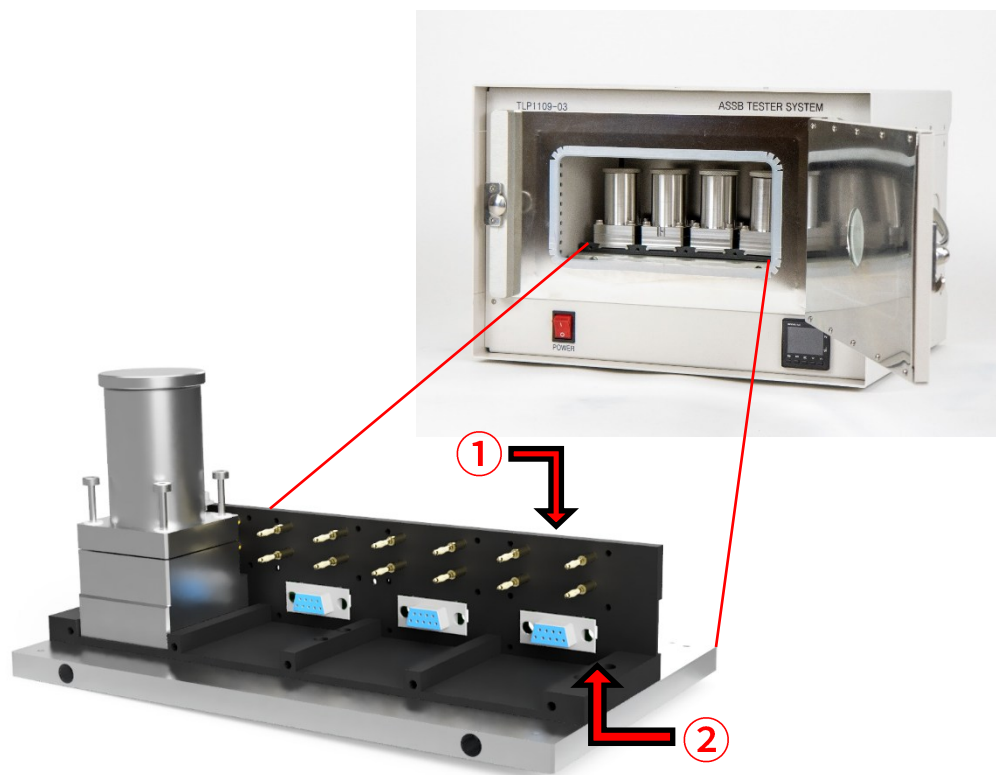


Figure 3. The Interior of the Digital Cell Jig Oven

Description		
①	4 Probe Connector	WE, RE, CE terminals for electrochemical measurement
②	D-SUB Port	D-SUB ports for loadcell connection

2. Operate

2-1. Basic Connection Procedure

Figure 4 shows the connection guide for electrochemical measurements using the Digital Cell Jig Oven. Please review the following instructions before operation to ensure safe and proper use of the equipment.

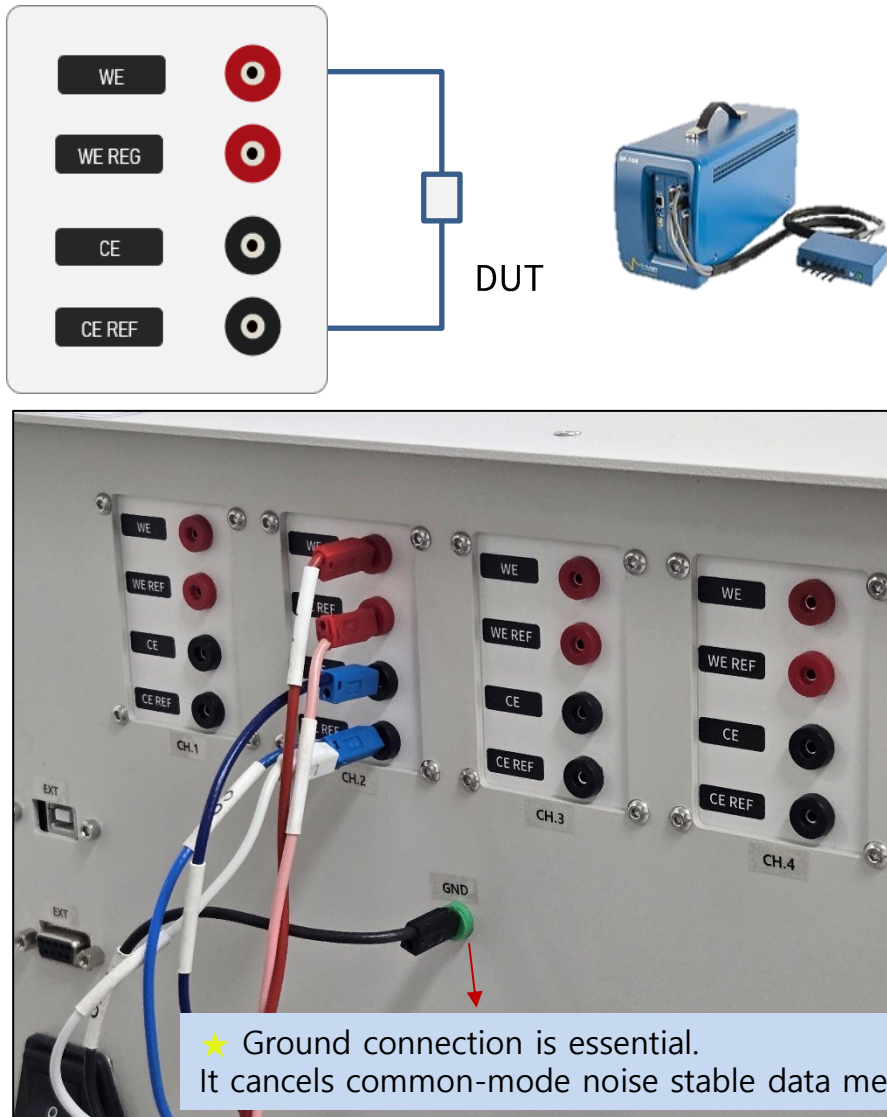


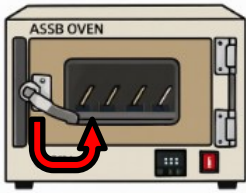
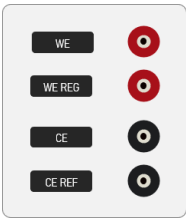
Figure 4. the connection guide for electrochemical measurements

⚠ Note

- Always connect the rear panel ground terminal to the DUT's ground terminal.
- Before starting the measurement, ensure that all cables between the DUT and the oven are securely connected.

2. Operate

2-2. Basic Operation Procedure

Procedure		
①		Turn the door handle counterclockwise to unlock and open the chamber door
②		Insert the Digital-type Cell Jig into the chamber, aligning it carefully with the 4 probes and D-SUB connector
③		Close the door and Turn the door handle clockwise to lock the chamber door
④		Set the desired temperature and start heating (RUN) (Refer to pp. 14–17 for detailed instructions on the controller operation)
⑤		Connect the 4 probe terminals and the D-SUB connector on the rear panel to external devices. (e.g., Bio-Logic, Digital Load Cell Indicator)
⑥		For real-time monitoring of load cell data, connect the Digital Load Cell Indicator to PC via RS-232 communication.

2. Operate

2-3. Temperature Controller (VX4) Overview

Figure 5 shows the temperature controller of the Digital Cell Jig Oven. Please review the following instructions before operation to ensure safe and proper use of the equipment.

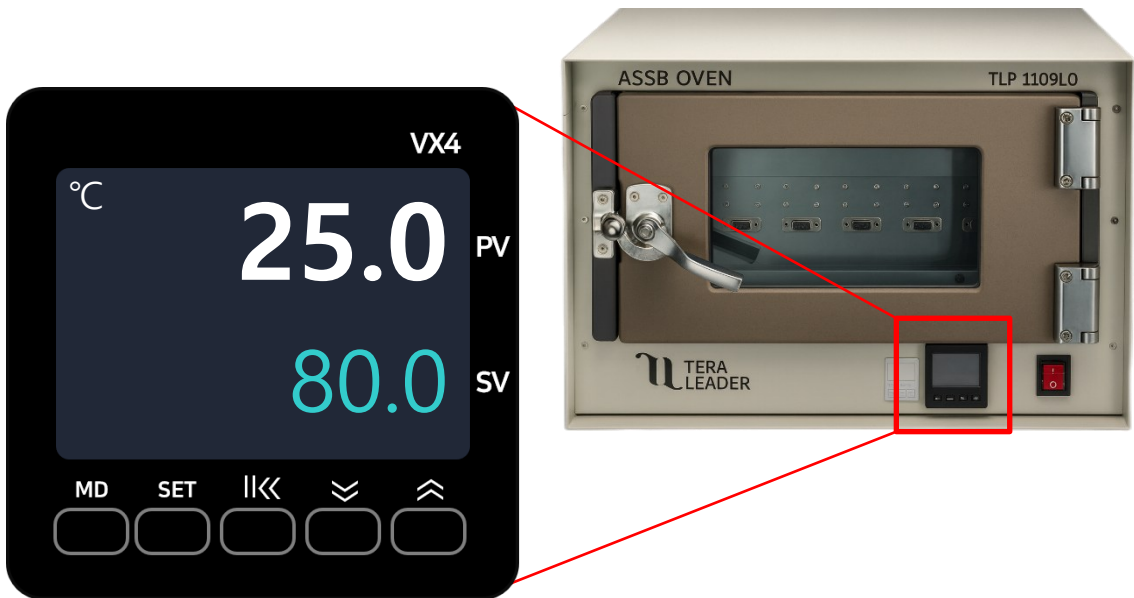


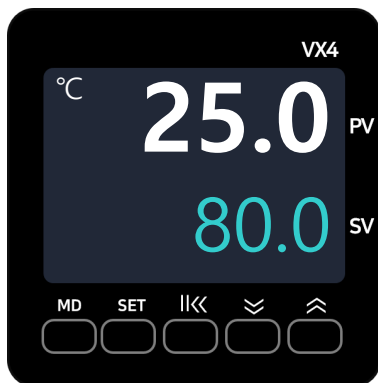
Figure 5. The temperature controller

Description		
①	PV (Present Value)	Display the current chamber temperature
②	SV (Set Value)	Display the target temperature set by the user
③	SET	Display the temperature setting screen
④	⬆	Increase the set value in the setting screen
⑤	⬇	Decrease the set value in the setting screen
⑥	⏪	Run or Stop the heating operation

2. Operate

2-3. Operation Procedure – RUN / STOP

How to RUN / STOP



Monitoring operation
(STOP)

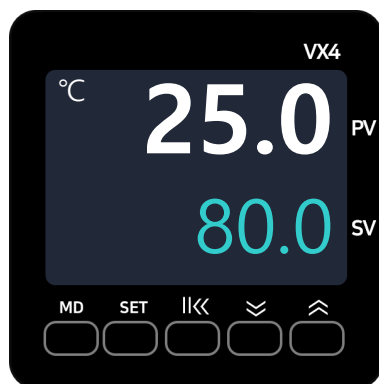


Monitoring operation
(RUN)

When in STOP mode, press and hold the RUN/STOP button for 2 seconds to start RUN mode, and the RUN indicator will light up.



Monitoring operation
(RUN)



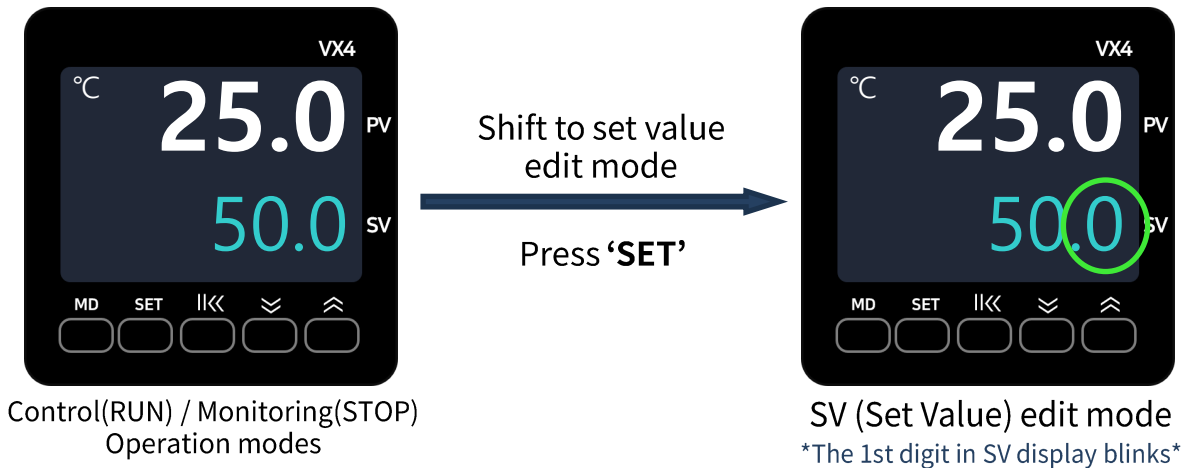
Monitoring operation
(STOP)

When in RUN mode, press and hold the same button for 2 seconds to switch back to STOP mode, and the RUN indicator will turn off.

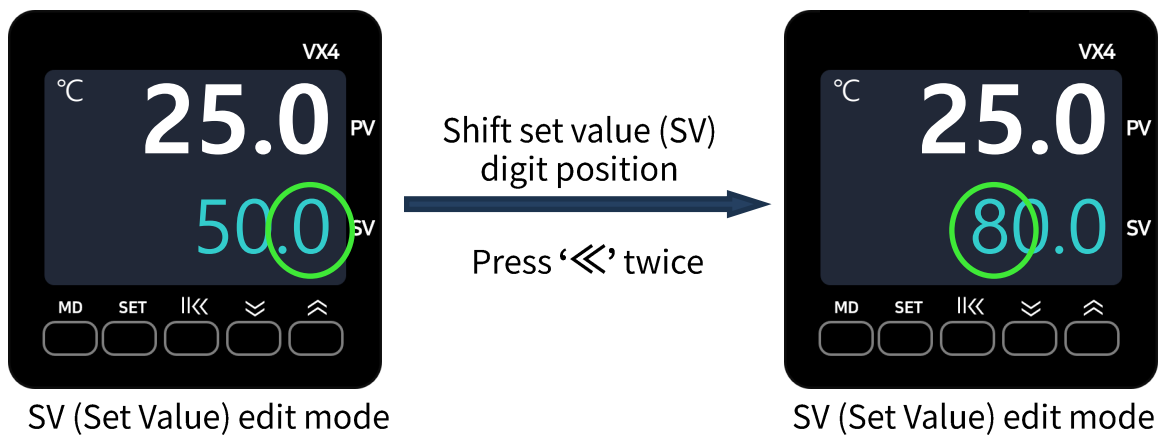
2. Operate

2-4. Operation Procedure – Temperature Setup

How to Change SV(SET VALUE)



To edit the set value (SV), press the SET button while in RUN or STOP mode.
This enters the SV edit mode, and the digits on the display will start blinking.

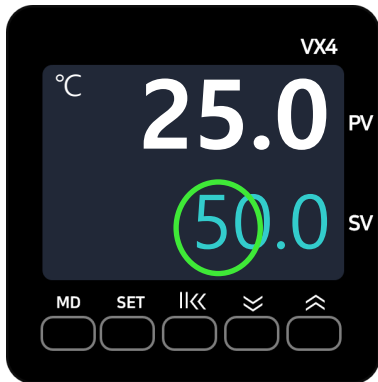


In SV edit mode, use the <<<, ^, v buttons to adjust the digits and set the desired temperature. For example, to set the SV to 100°C, edit each digit step by step using <<< button.

2. Operate

2-4. Operation Procedure – Temperature Setup

How to Change SV(SET VALUE)

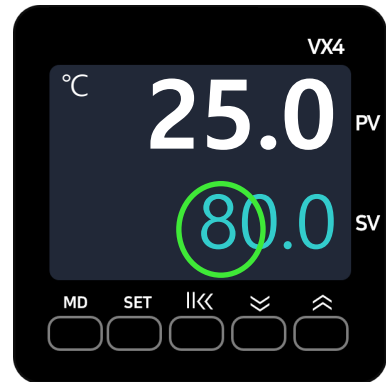


SV (Set Value) edit mode

The 3rd digit in SV display blinks

Change **SV**

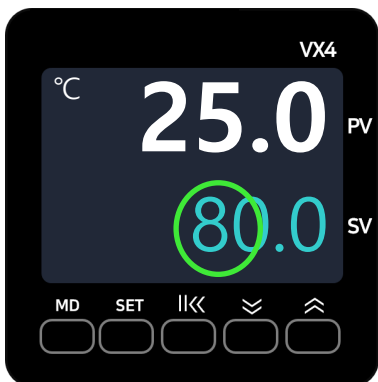
Press **Δ** or **▽**



SV (Set Value) edit mode

The 3rd digit in SV display blinks

Set the desired temperature using **Δ**, **▽** buttons.

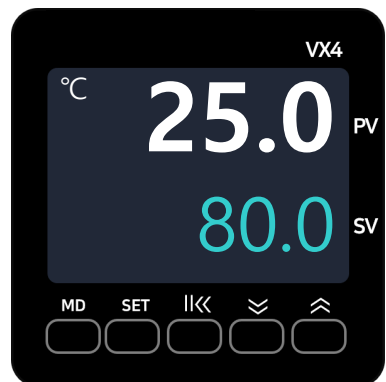


SV (Set Value) edit mode

The 3rd digit in SV display blinks

Shift to set value save
and operation mode

Press '**SET**'



Control(RUN) / Monitoring(STOP)
Operation modes

Once the desired value is entered, press the **SET** button to save and return to RUN / STOP mode. If the SET button is not pressed after editing, the new value will not be saved, and if no key is pressed for 30 seconds, the controller will automatically return to operation mode.

3. Specification

3-1. Specification



Specification

Item	Spec.
Model	TLP-1109 LO
Power	AC 110V
Max. temp	80°C
Temp. range	R.T ~ 80°C ($\pm 0.1^\circ\text{C}$ Resolution)
Controller	VX4
Interfaces	RS-485, D-SUB 9pin, USB
Measurement	EIS, Impedance, Load cell, etc.
Safety	Door lock mechanism, Bimetal protection

Specifications are subject to change without notice.
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