

DIGITAL FINE THERMO
DG2-SSR

(100VAC ~ 220VAC Free Power Supply)

INSTRUCTIONS MANUAL

Thank you for your choosing our product.
Read the instructions before use and keep in a
convenient place for future reference.



CAUTIONS FOR SAFE USE

[Power supply]

Feed the same voltage with the heater's rating.
Use the power equipment with overtemperature
protection and circuit breakers for safety.

[Temperature control]

DG2-SSR controls temperature with the static
relay. The hanging plate of the back can radiate
the heat from control unit. Fix the controller at
the place that lets air through well. Since the
life of the static relay may end remaining the
contact ON, make sure to use with the
overtemperature protection device.

[Use only for heaters]

DG2-SSR is only designed for heaters. Do not
use as a controller for such as electric lights,
motors, or electromagnetic contactors.

[Current load]

Current load of heaters is 3A or less to connect.
When you need to apply the heater with more
than 3A, use HAKKO DG2P or DG3P.

[Noise]

Strong noise may cause malfunctions. Set DG2-
SSR away from the source of noise or replace
the power equipment when the noise arises.

[Vibration]

DG2-SSR has no vibration proof structure. Use
in the condition without vibration.

[Use in equipment]

If you use DG2-SSR with the voltage more than
100V, make sure to cut off and replace the
attached plug with voltage adapted one. When
DG2-SSR is used successively as built-in
apparatus in the equipment, detach the plug of
cable and connect on the terminal block firmly.
Do periodic inspections (every 6 months or one
year) and check overheat or deformation of the
plug. Otherwise it may cause fire.

[Fire protection]

Pay fully attention to the protection from firing
and electric shock when you use DG2-SSR and
heaters.

1. FOR SAFE USE OF THIS PRODUCT

We use the following symbols for safety.



Improper use may cause the danger of death or injury.



Improper use may cause the danger of slight injury or property damage.

WARNING

- Do not alter or deform the controller.

Otherwise it may cause fire, electric shock and failures.



- Do not operate the controller with wet hands.

Otherwise it may cause electric shock.



- Do not use in the explosive or flammable atmosphere.

Otherwise it may cause explosion or fire.



- Do not use other than recommended sensors.

Otherwise, it may cause fire, electric shock or failures.



- Connect power cables with the controller by crimping terminals.

Otherwise it may cause fire or electric shock.



CAUTION

- Do not use the heater in the following condition. It may cause fire, electric shock or failures.

- Use in the corrosive atmosphere.
- Use in the atmosphere at temperatures of -5°C or less.
- Use in the atmosphere at temperatures of 40°C or more.
- Use in the atmosphere of high humidity, such as bath.
- Use in the steamy or water dropping place.



- Do not use other power voltage than the indicated.

Otherwise it may cause fire and electric shock.



- Do not pour water at the controller.

Wet controller may cause electric shock or leakage.



- Do not bent or pull forcedly, or deform the power cables.

Otherwise it may cause fire or electric shock. Ask your distributor to replace when the power cable has damage.



- Do not use the controller outdoors.

DG2N is designed only for indoor use.



- Do not sink the sensor sleeve or compensation lead wires into water.

Otherwise it may cause failures.



- Power off and connect sensors or wire cables.

Otherwise it may cause electric shock.



- Hold the plug by hand and pull out of the socket.

Damage on cables may cause fire and electric shock.



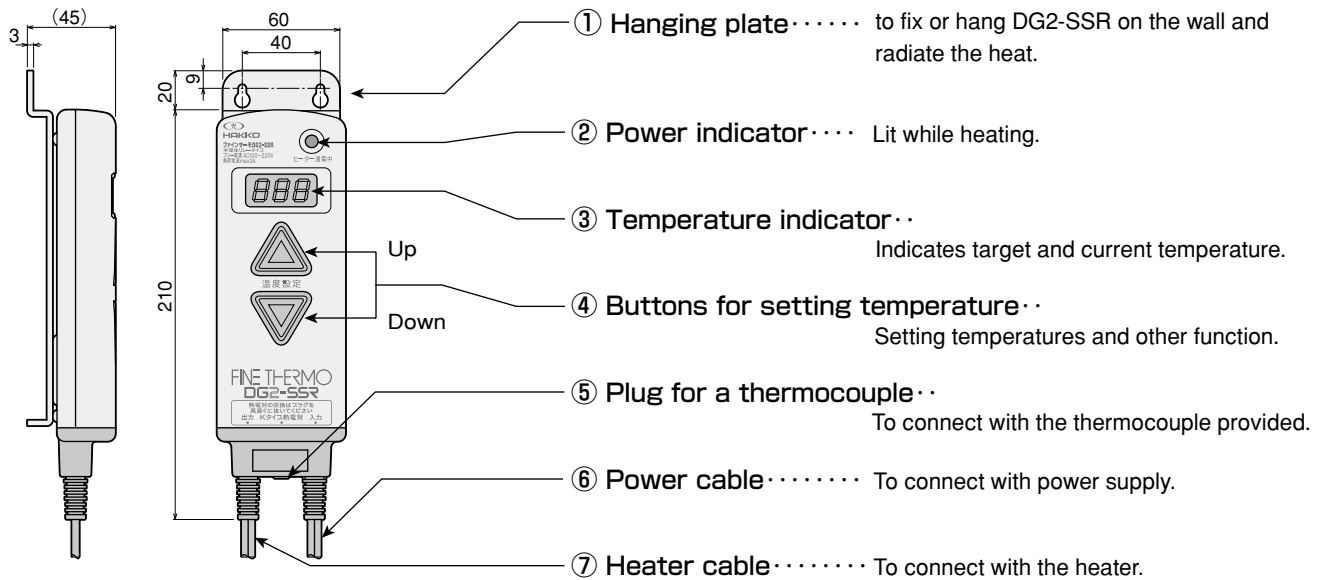
2. SPECIFICATIONS

DIGITAL FINE THERMO DG2-SSR makes temperature control easier to connect with immersion heaters or plug heaters.

PRODUCT NAME	DG2-SSR
Product number	DGC1230
Input voltage	Single phase 100~220V (50/60Hz)
Maximum load	3A (resistance load)
The range of controlled temperatures *	0°C to 750°C
The range of controlled temperatures *	-9°C to 800°C
Precision of temperature indication	±(1% F.S.+ 2.5)°C
Precision of room temperature compensation	± 3°C
Control method	ON/OFF control
Sensor	K type sheathed thermocouple (maximum 700°C for the provided sensor)
Usage environment	5 ~ 40°C (humidity 85% or less) Keep from dew condensation.
Weight	600 g

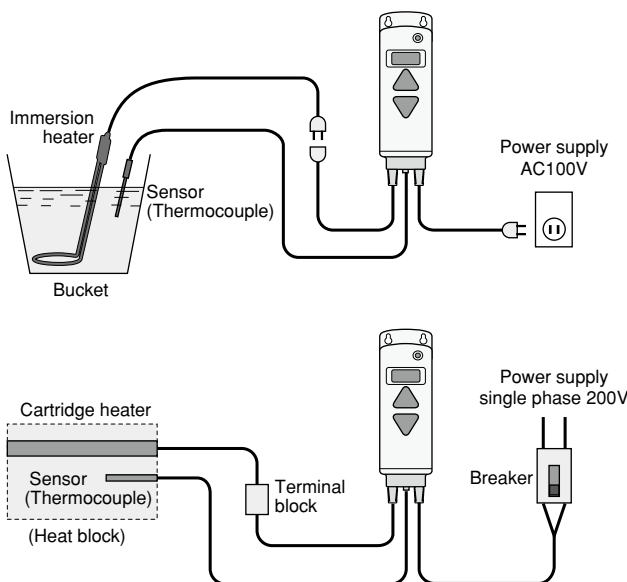
* : If you use DG2-SSR at a temperature of 700°C or more, the sensor with sheath of 3.2mm in diameter is available.

3. NAMES OF PARTS

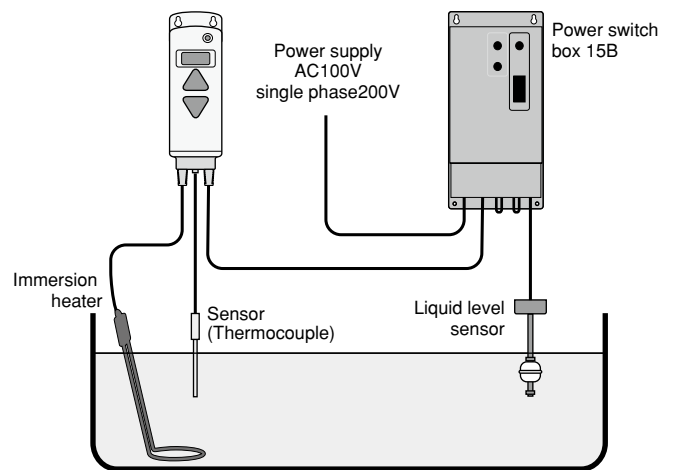


4. CONNECTION IMAGE

Temporal use



Long term use as in equipment

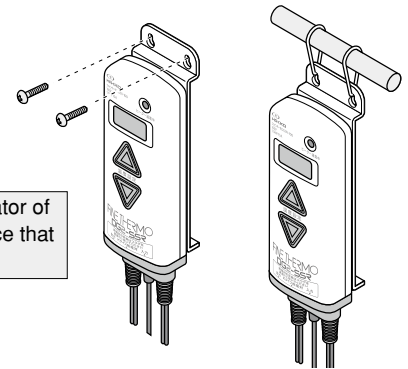


Ask your distributor about sensors other than accessory.

5. APPLICATION

To fix DG2-SSR on the wall

- ① Fix DG2-SSR on the wall by screws or bolts through the holes.
- ② If you fix on the hollow wall, use special screws for them.



To hook DG2-SSR

- ① Keep DG2-SSR from shaking or vibration.
- ② Hook DG2-SSR through 2 holes and fix tightly.

The hanging plate works as the radiator of control unit. Fix DG2-SSR at the place that lets air through well.

6. HOW TO OPERATE

Power ON/OFF

DG2-SSR has no power switch on the body. After powered on by plugging or a breaker, the temperature indicator shows **888** and **55r**. Consequently current temperature is indicated. Power off immediately after use of DG2-SSR.

Temperature setting

- ① Normally the temperature indicator shows current temperature.
- ② After pressing buttons once (0.3 second), the temperature indicator shows target temperature for 1 second. After 2 or 3 seconds, it returned to show current temperature.
- ③ To raise the target temperature, press the upper button. To turn down, press the lower button. One press (0.3second) can change one degree. Keeping pressing can make continuous change.

- ④ Keep pressing to approach the target temperature, and press some more times to adjust to it (the range of setting temperatures is from 0°C to 750°C). 2 or 3 seconds after releasing from button, the indicator shows current temperature.

Reconfirmation of the target temperature

If you need to see target temperature while heating, press either the upper or the bottom button once (0.3 second) and the indicator shows target temperature. If you press again within 3 seconds, the target temperature moves. Press once after 5 seconds if you need to confirm again.

WARNING

Do not push both UP and DOWN buttons at the same time. Otherwise DG2N may shift to the mode required to recalibrate. Repair charge is needed to recover from the mode.

7. TROUBLE SHOOTING

MALFUNCTION	CAUSE	CAUSE
FFF is indicated.	The sensor is not connected.	Connect exactly the sensor cable.
	The sensor cable has disconnection.	Replace the sensor.
Hot or CLd is blinking.	Failure occurs inside the controller.	Replace or repair DG2N.
E-1 or E-2 is indicated.	Failure in FEPRM of DG2-SSR.	
E-5 , E-6 , or E-7 is indicated.	Failure in AD converter of DG2-SSR.	
Temperature is not increased while the power indicator is on.	The heater has disconnection.	Replace the heater.
	The sensor cable is short-circuited.	Replace the sensor.
The temperature indicator does not show anything after powered on.	Short circuit protection is activated by overloaded current.	Impossible to repair. Replace DG2N.

AFTER SALES SERVICE For Inquiry

If you have any questions about our products, contact with your distributors, or the Sales Head Office of HAKKO CO., LTD. The addresses and phone numbers are as follows.

○ HAKKO CO., LTD.

Sales Head Office

1-7-9 Kamimeguro, Meguro-ku, Tokyo, 1530051, Japan.
TEL. +81-3-3464-8500 FAX. +81-3-3464-8539

Production Head Office

1490 Isobe, Chikuma-shi, Nagano, 3890806, Japan
TEL. +81-26-275-0121 FAX. +81-26-275-4878

○ HAKKO ELECTRIC THERMAL DEVICE (SHANGHAI) CO., LTD.

No. 512 Yutang Rd., Songjiang, Shanghai, 201600, China.
TEL. +86-21-5774-3121 FAX. +86-21-5774-1700

○ HAKKO (THAILAND) CO., LTD.

9/41 Moo 5, Paholyotin Rd., Klong 1, Klong Luang, Patumthani, 12120, Thailand.
TEL. +66-2902-2512 FAX. +66-2516-2155