(2) Notes on load

2) Notes of rickal a)Load with small current or sensitive load sometimes disables off-function as the product maintains or-condition resulting from off state leakage current. In such cases, connect shunt resistance (Rp) to be parallel with load and reduce off state leakage current applied on the load.

IR: Load off current RL: Load impedance ILEK: Off state leakage current b) The product is designed for the purpose of controlling resistance load. If the load has larger inductance, current phase delays comparing to voltage and may cause disoperation when changing the current flow. Please allow your time to pre-check the function.

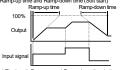
(3) Operation

a)The product controls output proportional to the input rating (4 to 20 mA DC) by adopting phase control

The product is available for use without analog input by applying external volume adjuster.

b) The Ramp-up/Ramp-down (Soft start) function can be used to suppress rapid change in output voltage by changing the output slowly in case of a rapid change in the output due to input signal changes.

· Ramp-up time and Ramp-down time (Soft start



* The length Ramp-up and Ramp-down time is the same

1. Ratings

Do not connect products in series to raise strength or in parallel to raise the current volume.

SF	PECIFICATIONS	

ltem	SSNP-15F	SSNP-25F	
Maximum Input Current	24 mA DC		
Max. Load Voltage	264 V AC rms		
Max. Load Current	15 A AC ms	25 A AC ms	
1 Cycle Surge Current	146 A	250 A	
Isolation Resistance	100 MΩ and above (500 V DC) *		
Dielectric Strength	2500 V AC rms/1 min *		
Ambient Temperature	-20 to +60 °C		
	(No Icing and Condensation)		
Storage Temperature -30 to +		+70 °C	
	(No Iring and Condensation)		

Input (①, ②), Ext. Volume (③, ④) –Output (⑤, ⑥),

ver Source (②) -Between Cases

2. Electrical Characteristics

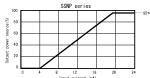
(Ta = 25 °C)

ITE	m	SSNP	-15F	SSNP-25F
Input Impeda		250 Ω ± 20 %		
Input Current Range		4 to 20 mA DC		
Load Voltage	Range	85 to 264 V AC rms (Sine wave)		
Load Current Range		100 mA AC rms to max. load current *1		
On State Voltage Drop		Below 3.0 V AC rms		
		(at max. output power)		
Off State Leakage Current		Below 9 mA AC rms		
9		(load voltage 200 V AC rms, 60 Hz)		
Power Adjustment Range		0 to 95 %		
Load Voltage Frequency		50 Hz/60 Hz Auto-change		
Range		47 to 53 Hz/57 to 63 Hz		
Current	Analog Input		5.1 mA A	
Consumption	Alialog Iliput			ns, 50 Hz)
(©-Ø)	Ext. volume		7.0 mA A	
(w-v)	EXt. Volume			ns, 50 Hz)
Responding Time		Below 1 cycle without Soft start *2		
Ramp-up/Ramp-down Time		Approx. 0.5 to 13 seconds *2		
Weight		Approx. 260 g		
Standard		UL508 c	ategory l	No. NRNT2

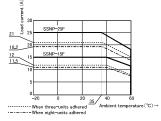
ISIADRATE

1 Conduction angle tend to be narrower when the load with mixed current applied. Please allow your time to pre-check the function. '2 The front volume adjuster reach MAX when turned clockwise and reach ZERO when turned counter-clockwise. The ratings of approx. 0.5 to 13 seconds. shows changing time of the power from 0 % → 95 % or 95 % → 0 %.

3. Input Current vs. Output Power



4. Load Mitigation



The first edition: MAR. 2005 [IMQ00] The seventh edition: JUL. 2016 [IMQ00]



Single Phase Power Controller Phase Control Type



SSNP-15F/SSNP-25F

User's Manual

IMR02A01-E7

RKC INSTRUMENT INC.

Thank you for purchasing this RKC product. In order to achieve maximum performance and ensure proper operation of your new instrument, carefully read all the instructions in this manual.

Please place the manual in a convenient location for easy

The instruction manual is intended for those who have the knowledge on electronic devices.

SAFETY INSTRUCTION



Incorrect application may result in fire or potential



Incorrect application may result in damage to the unit or other equipment.

№ WARNING

- The terminal cover should be attached whenever it is operating.
- Do not remove the outer case.
- Do not touch the product when operating.
 Do not touch the terminal immediately after it is switched off. It may cause an electric shock by electricity charged in the condenser.

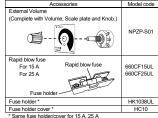
2. Risk of fire or fire burn

- Do not touch the heat sink while on operation or
- immediately after it is switched off.

 Do not use the product near inflammable gas or explosive gas.

 Keep combustibles away from the product.
- Apply fuse or breaker for safety reason in order to prevent overcurrent, short circuit, or breakdown.
- Wiring to terminals must be screwed with adequate torque. (It may cause excessive heat generation on terminals.)

- Use the unit within the specified ratings.
 Do not drop the product on any of your body parts.



♠ CAUTION

- Do not put any metallic particles or conducting
- materials inside the product
- Do not overhaul or remodel them.
- Use correct size of wires according to the current.

 Do not drop the product, give vibration or physical
- Use the power source within the rated frequency range
- Using the product under the following condition may cause failure, malfunction or degradation.
 Exposed to water, oil or chemicals.

 - Exposed to corrosive gas.
- Exposed to corrosive gas.
 In the high heat or high humidity.
 Exposed to dust or metal powders.
 As the product self-heats while on operation, heat sink is attached as a radiator. If the heat convection is obstructed by surrounding equipment and parts, it will lead to possible cause of fire or damage by excessive heat generation.
- Check the polarity of wires and apply adequate
- voltage.

 The load should be within the rated range.



NOTICE

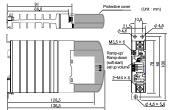
- The figures, diagrams and numeric values used in this manual are only for purpose of illustration.
- RKC is not responsible for any damage or injury that is caused as a result of using this instrument, instrument failure or indirect damage.
- ●RKC is not responsible for any damage and/or injury resulting from the use of instruments made by imitating this instrument.
- · Periodic maintenance is required for safe and proper operation of this instrument. Some components have a limited service life, or characteristics that change over
- Every effort has been made to ensure accuracy of all information contained herein. RKC makes no warranty expressed or implied, with respect to the accuracy of the information. The information in this manual is subject to change without prior notice.
- No portion of this document may be reprinted, modified, copied, transmitted, digitized, stored, processed or retrieved through any mechanical, electronic, optical or other means without prior written approval from RKC.
- Check specifications or any standards if it conforms to the product when used with other equipment. We are not responsible for the item's conformity if the pre-confirmation is not carried out.
- When using the product with the following application, do not apply the maximum ratings on the item and take safety measures in advance in order to minimize the damage to the product.
- When using outside, using under the condition with potential damage by chemicals or electric obstruction or under the condition not specified in the instruction manual.
- under the concion inclusions.

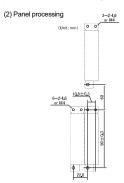
 b) Any facilities of nuclear power control, incineration, railways, ainways, vehicles, medical devices, safety devices and the facilities regulated by administrative organ or private sectors.
- c) Any system or machinery which may endanger person or
- d) Any facilities which requires high reliability such as the suppliers of gas, electricity and water or the system continuously operating 24 hours.
 e) Any other application when an advanced security is

HOW TO MOUNT

1. Dimensions and Mounting

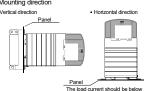
This product can be mounted on a DIN-rail and the wall of a panel





(3) Torque rate against panel When mounting the product onto the panel, the tightening torque should be 1.18 to 1.47 N·m.

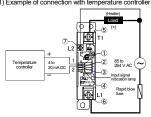
(4) Mounting direction



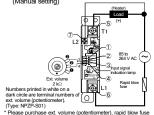
2. Regarding Wiring and Connection

When a load is not connected rightly, a fault may be happened. Please connect the load according to the connection example.

(1) Example of connection with temperature controller



adopting external volume (2) Example connection (Manual setting)



- Type: NPZP-S01)
 Please purchase ext. volume (potentiometer), rapid blow fuse and fuse holder separately (sold separately).
 When used with a temperature controller, this ext. volume

- ①: Input terminal (1+) ②: Ext. Volume terminal (3) ③: Output terminal (T1) ②: Power terminal (L2)
- Ext. Volume terminal
 Output terminal (L1)

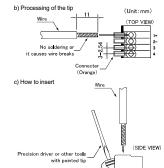
When connecting a load (*), make sure one side of the load is connected to terminal ③ (T1) as shown above. Do not connect the load between terminals ⑥ (L1) and ⑦ (L2).

Input impedance of the product is 250 Ω (ohm). Ext. Volume terminal (3) outputs 5 V, therefore, the input voltage of the

terminal (a) journals 3 v, interiore, the injut vinage of the product is; $5 \ V \times 250 \ \Omega/(Resistance on ext. volume + 250 \ \Omega)$ Choose the ratings of the external volume in compliance with the amount of electric power adjustments. The volume is available as an optional part from us.

(3) Input wiring

- a) Wire size
 Single wire: 0.14 to 0.5 mm²
 Stranded wire: 0.14 to 0.5 mm²
- AWG: 20 to 26



Connecter (Orange) Insert the connector lever as in the illustration and insert the power cord. If the power cord is pushed in coercively without placing the lever, it may become the cause of bad contact or disconnection.

(4) Output wiring



Terminal No. Item	φA	ØB
S/6 Output terminal (T1/L1)	Below 9.5 mm	Above 4.3 mm
 Power terminal (L2) 	Below 6.5 mm	Above 3.7 mm

b) Screw torque

ĺ	Terminal No.	Item	Max. rate	Recommendation
Ì	©/®	Output terminal (T1/L1)	1.47 N·m	1.18 to 1.37 N·m
	0	Power terminal (L2)	0.78 N·m	0.64 to 0.74 N·m

3. Notes on Electric Circuit Design

(1) Protective circuit on output side

- a)The product is composed of semi-conductor elements and there is a possibility that the unit fails due to surge voltage and overcurrent. Failures are generally caused by short circuit and it becomes uncontrollable when load is at on state. It is, therefore, more secured to use the product with breaker or contactor as the protective circuit.
 b) Output element damages if output side has short-current
- or overcurrent.

Apply rapid blow fuse within the following range on load

lsurge > lff > lr

Isurge: 1 cycle surge on current
Iff: Fusing current of rapid blow fuse
Ir: Inrush current of load

