

- Please keep these instructions and review before using this controller.
- This instruction manual uses WARNING and CAUTION as signal words for safety.

WARNING WARNING indicates a potentially hazardous situation which, if not avoided, will result in death or serious injury.

CAUTION CAUTION indicates a potentially hazardous situation which, if not avoided, will result in minor or moderate injury or, at other times or circumstances, may also be used to alert against less serious practices.

1. In case of using this unit with machineries (warehouse, medical equipments, vehicle, train, airplane, nuclear power of safety devices etc.), it requires installing fail-safe device.
 - ▶ It may result in serious damage, fire or human injury.
2. Use a rated voltage to prevent damage or trouble.
 - ▶ It may result in fire.
3. Check the number of terminal when connect each line and signal input.
 - ▶ It may cause fire or trouble.
4. Do not turn on the power until the wiring completed.
 - ▶ It may cause electric shock.
5. Do not repair, wiring or checkup when electric power on.
 - ▶ It may cause electric shock.
6. Installation the controller where there is no dust, corrosive or explosive gas, direct ray of the sun, mechanical vibration or shock present.
 - ▶ It may cause fire or explosion.
7. This controller must be mounted panel.
 - ▶ It may cause electric shock.
8. Do not repair beyond of authorized technician.
 - ▶ It may cause trouble.

1. Ensure the surrounding ambient operating temperature is 0~50°C.
 - ▶ It may cause fire or wrong operation.
2. Ensure the power supply for the controller does not fluctuate. Main supply voltage fluctuation not exceed $\pm 10\%$ of the normal voltage.
 - ▶ It may cause fire.
3. This controller shall not be used outdoors.
 - ▶ It might shorten the life cycle or given an electric shock.
4. When wiring connection, #20AWG (0.5mm²) should be used and screw bolt on terminal block with 0.74mm strength.
 - ▶ It may result in malfunction or error.
5. Keep the controller away from high current and voltage circuits. The controller and connection wires (esp. compensation conductors and RTD lead wires) should be kept approximately 30cm away from high electric circuit to limit the possible effect of noise.
 - ▶ It may cause display fluctuation or error.
6. Do not use a place where temperature fluctuate or icing occurs.
 - ▶ It may cause fire, explosive or error.
7. In cleaning the controller, do not use water or an oil-based detergent.
 - ▶ It might cause an electric shock or fire that will result in damage to the product.
8. Do not inflow dust or drops into inside of this controller.
 - ▶ It may cause fire or trouble.
9. Installation Category II, Pollution Degree 2, Altitude over 0~2000m use.

1P SCR POWER CONTROLLER



SPR / TPR-Pro

Thank you very much for selecting Sanup products. For your safety, please read the following manual before using.

SANUP ELECTRIC • URL: <http://www.sanup.com>
• E-Mail: sanup@sanup.com

■ H.Q. & Factory: 240-42, Uijeongbu 2dong, Uijeongbu, Gyeonggi-do, Korea
Tel. +82 31 876 4641-3
Fax. +82 31 876 4640

■ Sales Shop: 42, Jangseongdo Jongoro Seoul, Korea
Tel. +82 2 2265 2298
Fax. +82 2 2272 9450



1 Features

SPR-Pro / TPR-Pro is high stable SCR power controller for electrical heater. Also it has Output Limit and many great safety features for load protection.

- Output Limit _____ by 1k Ω VR
- Soft Start _____ 0~60sec.
- Current Limit _____ by internal V.R (Optional)
- Large Heat Sink _____ better cooling for power element

2 Ordering Codes

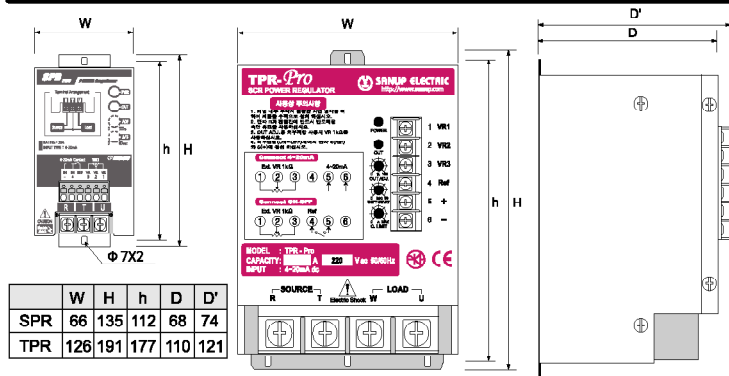
MODEL	CODE	NOTE
SPR-Pro	35A	Triac
TPR-Pro		SCR
INPUT	4~20mAdc	1~5Vdc
RATED CURRENT	35A	035
	50A	050
	60A	060
	75A	075
SOURCE POWER	110V	
	220V	
	380V	
	440V	
	Others	
OPTION	None	N
	Current Limit	C

Note) SPR-Pro is for 110V or 220V 35A only.
Current limit function is for TPR-Pro only.
Use TPR-Pro for inductive load.

3 Specification

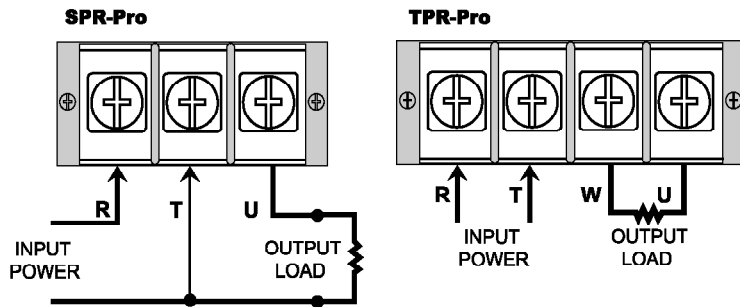
	SPR-Pro	TPR-Pro
Control Signal	4~20mAdc	ON/OFF Control (by external contact) Manual control (by VR)
Rated Current	30A	50A, 60A, 75A
Protection	Current Limit (Optional)	
Element	Triac	SCR Module (Anti-parallel)
Cooling	Natural cooling	
Control Mode	Phase-angle control	
Load	R-load	R-load, Transformer primary.
Power	110V, 220V	110V, 220V, 380V, 440V, Others
Output	0~98% or mor	
Frequency	50, 60Hz detecting	
Soft Start	Settable front VR, 0~60sec.	
Ex. VR	B 1k Ω 1w	
Operating Condition	Continuous Vibration	5-14Hz: forward width 1.2m max. 4-150Hz: 4.9m/cm ²
	Vibration	14.7m/cm ² 15sec. max. each 3 direction
	Shock	147m/cm ² 11msec. max. 6 direction 3 times
Operating Environment	Temp.	0~50°C
	Humi.	35~85%RH. No condensation
Storage	Temp.	-25~70°C
	Humi.	5~95%RH. No condensation

4 Dimension



5 Wiring

Power & Load

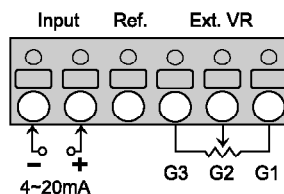


CAUTION

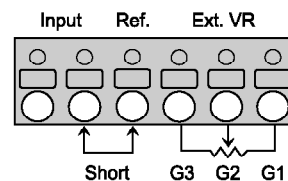
1. Required external fuse on input line for protection Thyristor element and load. The Fuse type must be rapid fuse for semiconductors.
2. For wiring of R and U lines, use a wire of sufficient thickness to match the actual load capacity. T lines should be 0.5sq or more.
3. Tighten the power connections correctly. Poor tightening can lead to incorrect operation of the Thyristor unit and can have serious consequences on the installation

Signal Input

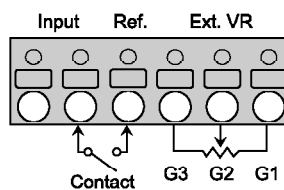
1. 4~20mA Input



2. Manual Control

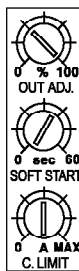


3. ON-OFF Control

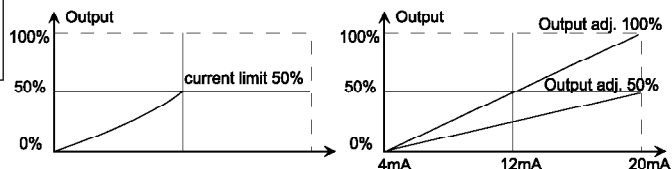


- Note.
1. External output limit V.R is B 1k Ω 1w.
 2. At manual control mode, output is limited by output adjustable V.R.
 3. At ON-OFF control mode, output is limited by output adjustable V.R.

6 Set



1. Output Limit: Set output limit value within input power voltage. It enables when ON-OFF control mode.
2. Soft Start: Set suitable soft start time for the load protection. Set full output delay time 0~60sec. If set to 0, soft start is disable.
3. Current Limit: Protects SCR element by shutting off the over-current detected by a load current monitoring CT. Set load current limit value within max. rate. If not select this option, this function is not operation.



1. Must use external Rapid-Fuse for system protection.
2. Use under 60% of maximum heater capacity.
3. If SCR is short, full power will be out to load. Must use second safety device.
4. This manual subject to change without notice.