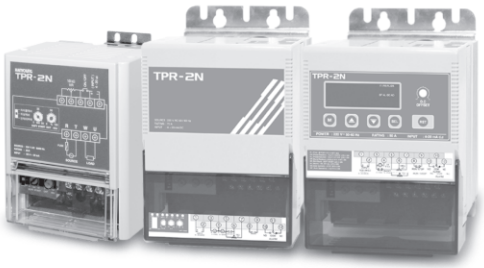
TPR-2N/TPRF-2N

Single phase power regulator

- Set the max output voltage by setting the slope
- Various input signals
- Phase control and cycle control are internally selectable



Suffix code (25 A, 35 A)

Model	Code		Information
TPR-2N	□	□	Single phase power regulator
Power supply voltage	110		110 V AC 50/60 Hz(dual usage)
	220		220 V AC 50/60 Hz(dual usage)
Rated current		25	25 A
		35	35 A

Suffix code (50 A, 70 A)

Model	Code			Information
TPR-2N	□	□	□	Single phase power regulator
TPRF-2N				Single phase power regulator (digital indication type)
Power supply voltage	110			110 V AC 50/60 Hz (dual usage)
	220			220 V AC 50/60 Hz (dual usage)
	380			380 V AC 50/60 Hz (dual usage)
	440			440 V AC 50/60 Hz (dual usage)
Rated current		50		50 A
		70		70 A
Communication function (only with TPRF)			N	None
			1	Communication (RS 485/422) ※in the process of developing

Specification

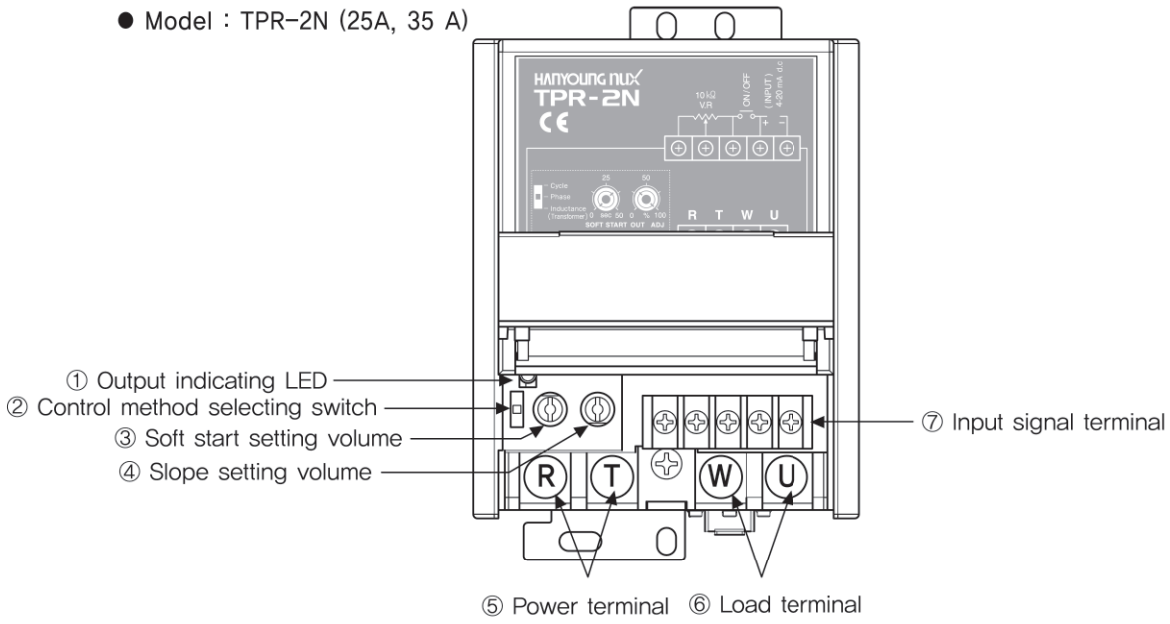
Model	TPR-2N□□□	TPR-2N□□□	TPRF-2N□□□
appearance			
(㎜)	92(W) X 100.2(H) X 131.6(D)	115.2(W) X 194.7(H) X 123.6(D)	115.2(W) X 194.7(H) X 123.6(D)
Function	• Soft Start / Soft Down • Slope setting	• Soft start • Over heated alarm (O.T) • Alarm output • Slope setting • Output setting limitation • Over current alarm (O.C) • Load break alarm (L.L)	
Display method	Output indication by the LED		Current and state indication by the 7 segments LED
Control method	Phase control, Cycle control(switch selection), ON/OFF control		Phase control, cycle control, ON/OFF control
Movement type	• Soft start / Soft down. (time : 0 ~ 50sec)		• Soft Start (time : 0 ~ 250sec) • Soft Up/Soft Down (time : 0 ~ 25sec)
Applying load	Resistance, Inductance load (selection by the switch, TPRF: selection by the parameter)		
Rated current	25, 35 A	50A, 70 A	
Power supply voltage	110, 220 V AC	110, 220, 380, 440 V AC	
Power frequency	50/60 Hz (dual usage)		
Min load	0.5 A	0.5 A	
Control element	Triac	SCR	SCR
Control input	4 – 20 ㎃ (1 – 5 V) DC ON/OFF, external volume	4 – 20 ㎃ DC, 1 – 5 V DC, 0 – 10 V DC	4 – 20 ㎃ DC, 1 – 5 V DC, 0 – 5 V, 0 – 10 V DC
External volume	Manual setting volume(B 10 KΩ)		
Alarm output	–	Over heated alarm(TPR-2N), over current alarm, Relay contact output (1a contact) 125V AC 10A, max 5A 250V AC	
Insulation resistance	Min 20 MΩ, 500 V DC (input terminal-power terminal)		
Dielectric strength	2,000 V, for 1 min (input terminal-power terminal)		
Cooling method	Natural cooling	50 A (natural cooling), 70 A (forced cooling)	
Weight(g)	Approx 960	Approx 2,000	Approx 2,000

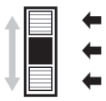
Environment specification

Ambient temperature	0 ~ 50 ℃ (Refer to the load current characteristic)
Ambient humidity	35 ~ 85 % RH. (No condensation allowed)
Storage temperature	-25 ~ 70 ℃

Name of each part

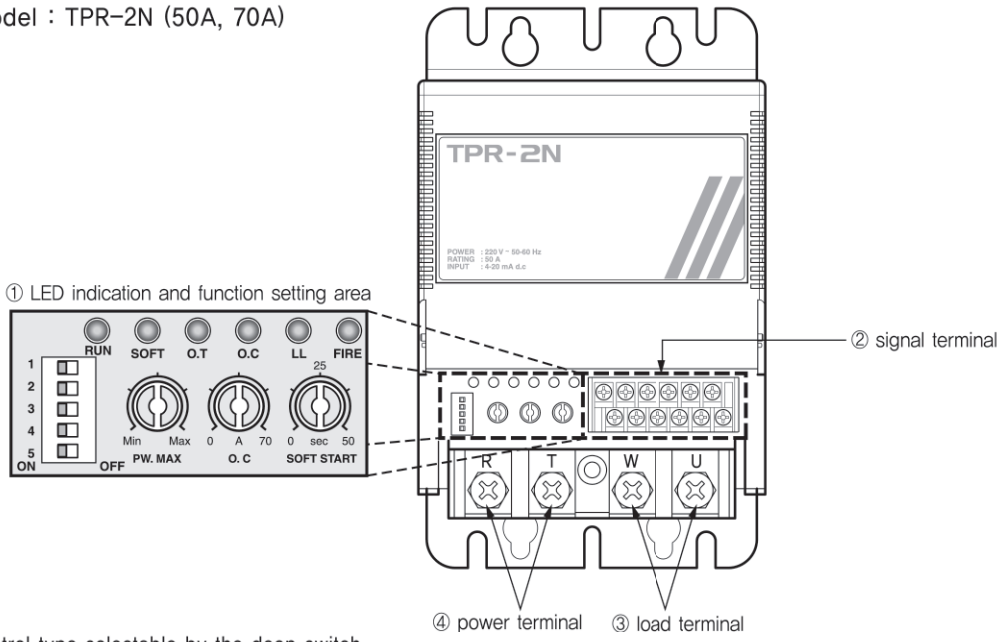
● Model : TPR-2N (25A, 35 A)



setting	name	Description	default value
	Cycle control	When selecting the cycle control resistive load (zero cross)	Phase control
	Phase control	When selecting the phase control resistive load	
	Inductance load (*)	When selecting the phase control inductance load (limits an output amount to 50%)	
 25 0 sec 50 SOFT START	SOFT START setting volume	Set the soft start/soft down time synchronously (set range: 0~50 sec) Not operated in the cycle control	0 sec
 50 0 % 100 OUT ADJ	Slope setting volume (OUT ADJ)	Output limitation by the slope setting (setting range: 0~100%)	100 %
	Output power indicator	Brightness varies by proportioning to the output amount of output power (load). L.ON with the max value	

- Selecting the deep switch as inductance load will limit the output amount to 50%
- Switch conversion is not recognized during operation so please check for the switch before supplying in the power.

● Model : TPR-2N (50A, 70A)



■ Control type selectable by the deep switch

classification	number	ON	OFF	default value
	1	Resistive load	Inductance load	ON
	2	Phase control	Cycle control	ON
	3	Internal volume (LOCAL)	External volume (REMOTE)	ON
	4	4 – 20 ㎃ DC	1 – 5 V DC(ON/OFF), 0 – 10 V DC	ON
	5	–	REMOTE (external volume)	ON

※ Switch conversion is not recognized during operation so please check for the switch before supplying in the power.
※ Selecting the deep switch as inductance load will limit the output amount to 50%

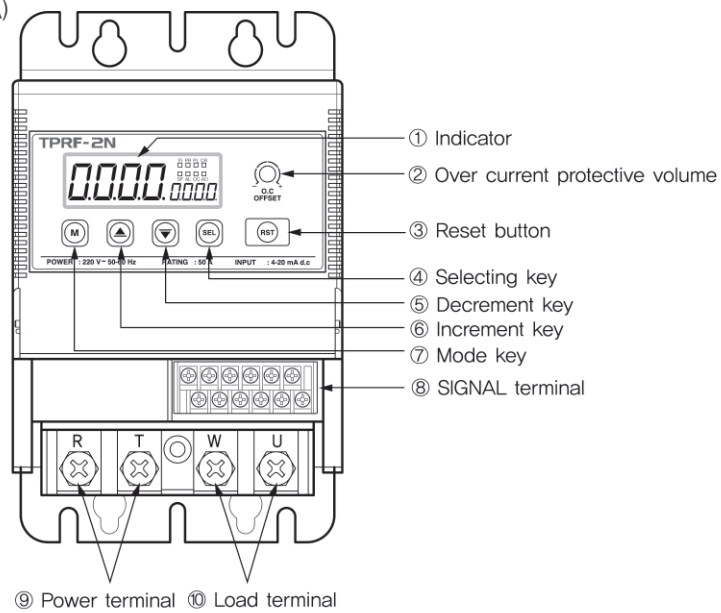
■ Function setting by the volume

Setting	Name	Information	default value
	Slope setting volume	Output limitation by the slope setting (set range: 0~100%)	max value
	Over current setting volume	Over current alarm value setting Alarm output becomes ON when value exceeds the set value for more than 0.5 sec (but only when performing phase control)	max value
	Soft start setting volume	Set the soft start/soft down time synchronously (set range: 0~50 sec) but only when performing phase control	0

■ LED indication

LED name		Information	LED name		Information
RUN	Input power indicator	L.ON when input power (power) is supplied in	O.C	over current alarm indicator	L.ON when Over current is detected
SOFT	Soft start indicator	L.ON when soft start is operated	L.L	Load break alarm indicator	L.ON when detecting the load break but only applied when performing phase control
O.T	Over temperature indicator	L.ON when temperature of heat sink is over heated	FIRE	Output power indicator	Brightness varies by proportioning to the output amount of output power (load). L.ON with the max value

● **Model** : TPRF-2N (50A, 70A)



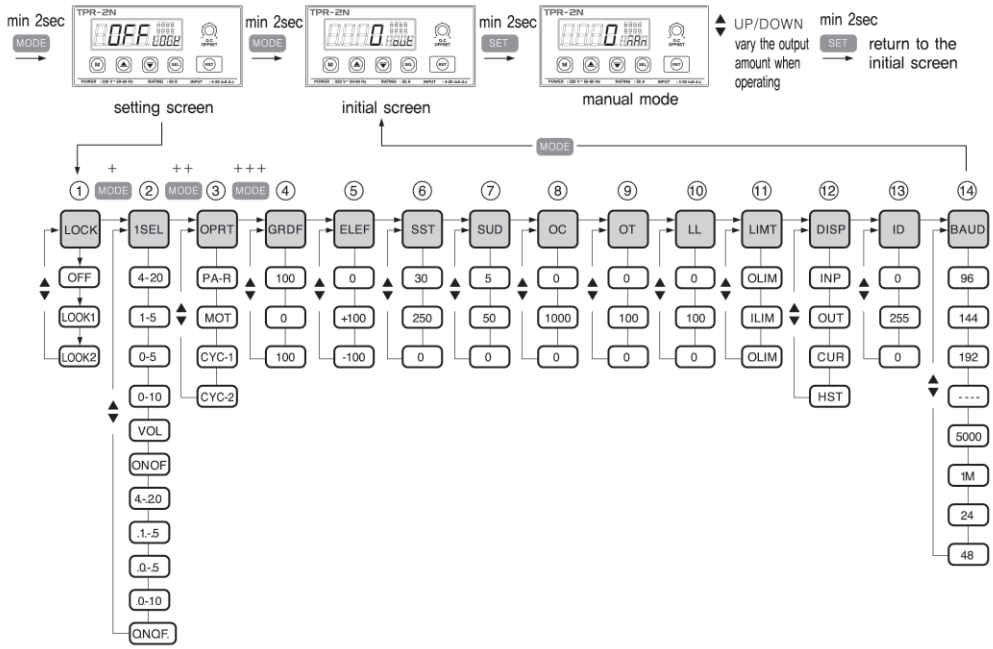
• LED indication and explanation

Name of LED indication		Explanation
FI	output power indicator	Brightness varies by proportioning to the output amount of output power (load). L.ON with the max value
P.R	Phase control resistive load indicator	L.ON when selecting the phase control resistive load
P.L	Phase control inductive load indicator	L.ON when selecting the phase control inductive load
C.R	Cycle control indicator	L.ON when selecting the cycle control
SF	Soft start indicator	L.ON when selecting the soft-start function
AL	Alarm output indicator	L.ON when over current alarm and over heated temperature alarm is operated
O.C	Over current detection indicator	L.ON when over current alarm is operated
A.O	Auto operation indicator	L.ON when selecting the auto operation

• Actuating button explanation

Button name		Explanation
M	Mode key	Enter into the edit mode and save the data
▲	Incremental key	Increase the set value
▼	Decrement key	Decrease the set value
SEL	Selecting key	Pressing it for 2 sec will enter into the manual mode
RST	Reset button	System temporarily stops when alarm occurs. It restores the system
O.C OFFSET	Over current compensating volume	Compensate the current that is displayed in the displaying unit (default setting: middle) ※applied only when performing phase control

Parameter setting method

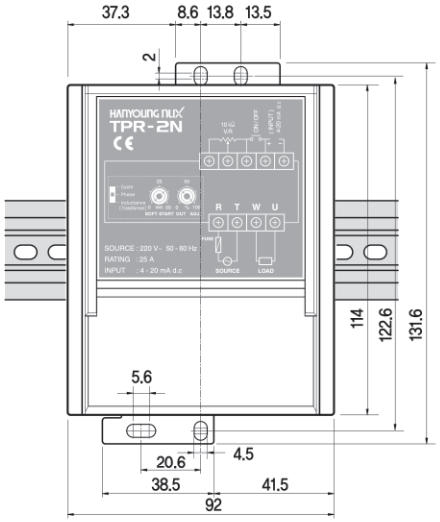


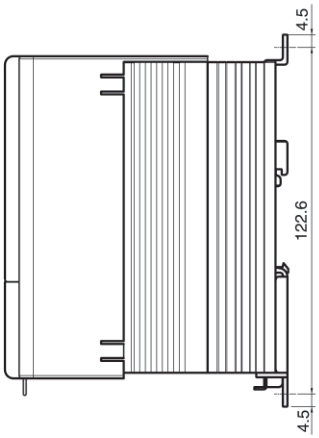
NO.	symbol	Information	Explanation	default value
1	LoCK	Lock mode	OFF : UNLOCK, Loc1 : ALL LOCK, Loc2 : AUTO MODE Lock	OFF
2	1SEL	Input selection	4 – 20 ㎃ / 1 – 5 / 0 – 5 / 0 – 10 / VOL(external volume) / ONOF(ON/OFF) External volume output limiting function when selecting the input with point (4 – 20 ㎃ / 1 – 5 / 0 – 10 / ON/OFF)	4 – 20
3	oPrt	Operation mode selection	PA-R : phase control resistive load MOT : Phase control (inductance load) CYC1 : cycle control (time proportional : 100 period fixed method) CYC2 : cycle control (period proportion-high speed response)	PA-R
4	GrdF	Output limit setting	Output limiting value setting (set range: 0~100%)	100
5	ELEF	Elevation setting	Input signal compensation regarding an output amount (set range: +–100%)	0
6	SSt	SOFT START	The time to reach from Power ON to when input signal and ouput amount become same(0~205sec)	30
7	SUd	SOFT up / down	The time when input variation and output become same during operation(0~25sec)	5
8	oC	Over current alarm setting	Alarm output is operated when over current set value is bigger than load current(Set range: 0~1000A)	0
9	ot	Heat sink over heat alarm setting	Alarm output is operated when OT set value is bigger than OT indicated value(Set range: 8888)	0
10	LL	Load break alarm	When yielding output more than the set value and if current is less than 1 A, then ALARM LED will be lighted (With phase angle control)	0
11	LIMt	Output limit / input limit	oLIM : Slope setting function selection ILIM : Output limitation setting function selection	OLIM
12	diSP	Display mode setting	Set the standard display state when power is ON	INP
13	Id	Address setting	Set the number of communication device (Set range : 0 ~ 255)	0
14	boUd	Communication speed setting	Communication speed setting (Set range : 2400 bps ~ 1M bps)	96
15	etc	Error Massage	Err-OC=over current/Err-T=heat sink heating/Err-LL=load break	–

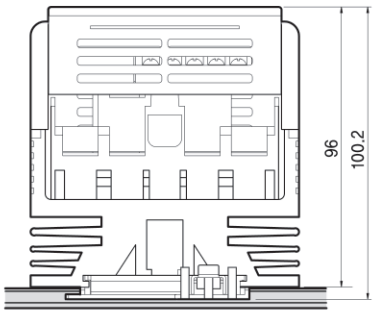
※ Selecting the operation mode as phase control inductance load will limit the output amount to 50%

Dimension and panel cutout (unit: mm)

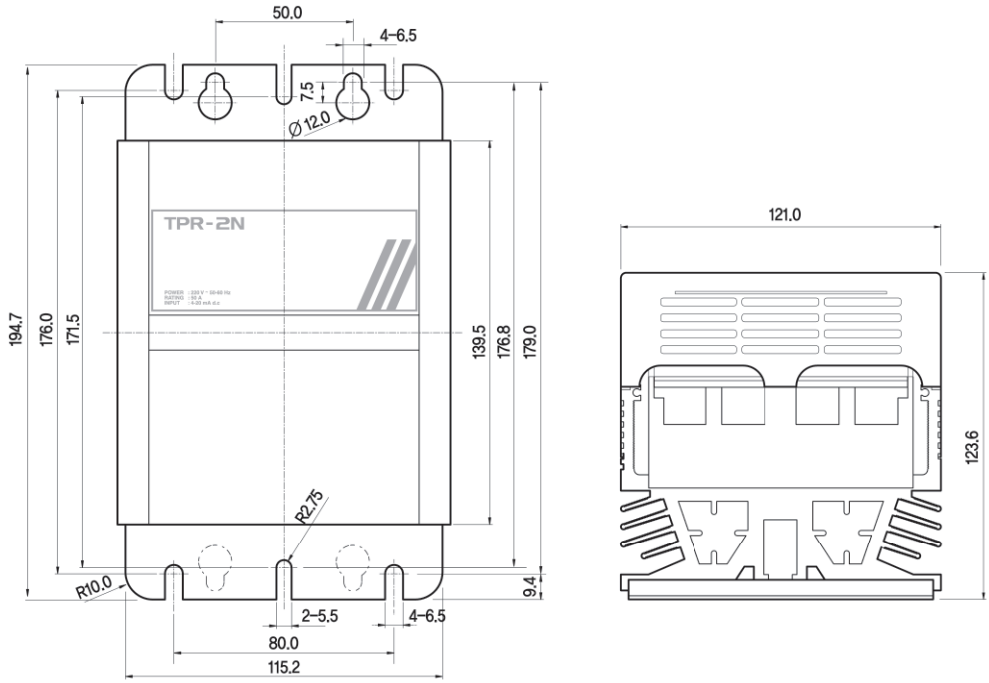
● Model : TPR-2N(25, 35 A)





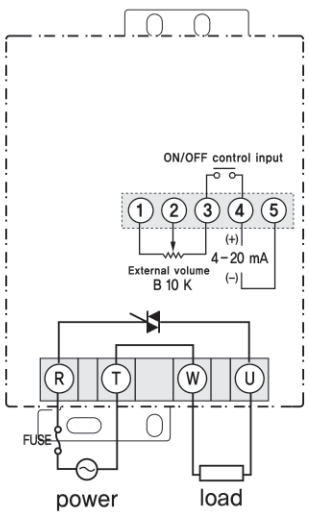


● Model : TPR-2N / TPRF-2N(50, 70A)



Connection diagram

■ Terminal arrangement diagram (TPR-2N 25, 35 A)



■ Terminal arrangement diagram (TPR-2N/TPRF-2N 50, 70 A)