TPR-2G

Single-phase power regulator

- Phase control, cycle control internal selection (Optional when release)
- Improved safety with terminal protection cover
- LED display alarm for overcurrent and SCR short
- Slim size

Specification

Model	Low	TPR-2G25L	TPR-2G35L	TPR-2G50L	TPR-2G70L
	High	TPR-2G25H	TPR-2G35H	TPR-2G50H	TPR-2G70H
Power Voltage	Low	220 V a.c.			
	High	380 V a.c.			
Power frequency		50/60 Hz (Dual usage)			
Rated current (Based on 40 °C)		25 A	35 A	50 A	70 A
Applied load		Resistive load			
Control Input	Current Input	4 - 20 mA d.c. (Impedance 100 Ω)			
	Voltage Input	-		1 - 5 V d.c.	
	Contact Point Input	ON / OFF		-	
	External V.R	External volume (10 KΩ)			
Control method		Phase control (fixed cycle, variable cycle control option selected)			
Movement type		SOFT START, SOFT UP/DOWN (Time 0 to 60 seconds)			
Output voltage		More than 98 % of the power voltage (in case of maximum current input)			
Cooling method		Natural cooling			Forced cooling
Display method		Output display by LED			
Insulation Resistance		500 V d.c. 100 MΩ			
Dielectric strength		2,500 V a.c. 50/60 Hz for 1 min			
Line noise		Noise by noise simulator (Pulse width 1 us : ±2 kV)			
Operating ambient temperature		0 ~ 50 °C (Without condensation)			
Ambient humidity		30 ~ 85 % R.H.			
Storage temperature		-25 ~ 70 °C			
Certification		CE KC			
		RoHS ※ Only with TPR-2G25L-P, TPR-2G35L-P			
Weight		740g		1730g	1750g

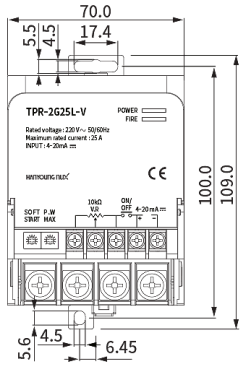
Suffix code

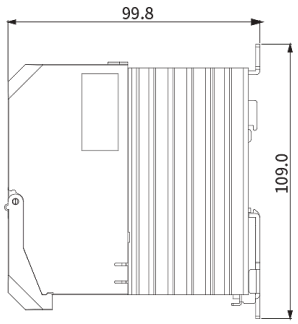
Model	Code			Content
TPR-2G	□	□	-□	Single-phase power regulator
Rated current	25			25 A
	35			35 A
	50			50 A
	70			70 A
Used load voltage		L		220 V a.c. 50/60 Hz
		H		380 V a.c. 50/60 Hz
Control method			P	Phase Control
			F	Fixed Cycle Control
			V	Variable Cycle Control

Dimension

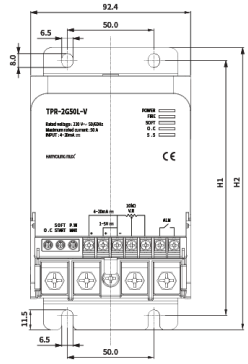
[Unit : mm]

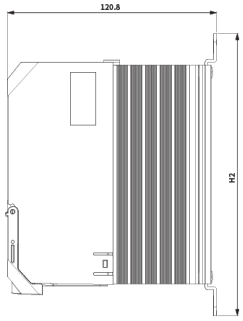
▪ **25A, 35A**





▪ **50A, 70A**

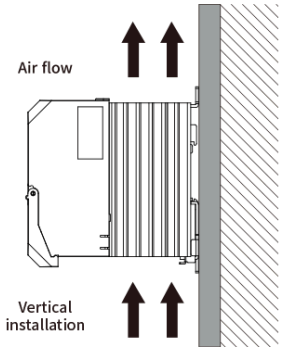




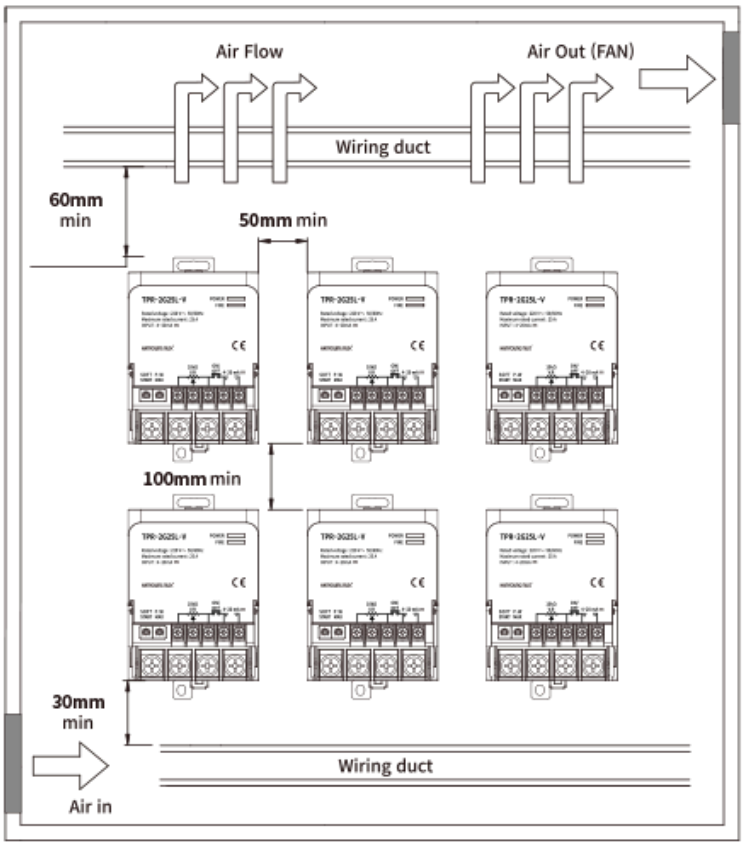
	H1	H2
50 A	147±0.5 mm	163.0 mm
70 A	160±0.5 mm	176.2 mm

- Cooling pan is installed for TPR-2G70A.

Installation



- Install in the vertical direction as shown above. Please use only 50% of rated current when installing the product horizontally or vertically in unavoidable circumstances.
- When installing several products closely, please install at intervals of 5cm width and 10cm height as shown below.
- Install the wiring duct so that it is not more than half the height of the heat sink so as not to block the flow of air.
- Please pay attention to air flow. The lower the ambient temperature, the better the durability and reliability of the product and the longer the life. Use caution temperature is 0 ~ 40 °C
- When wiring, use a crimp terminal to tighten the terminal part where high current flows. If the joint surface is poor, wiring and terminals may overheat and lead to fire.
- To prevent electric shock, this product requires a third or more grounding before turning on the power. Since there is no separate ground terminal, it is recommended to install the bracket together with the ground terminal when installing the panel

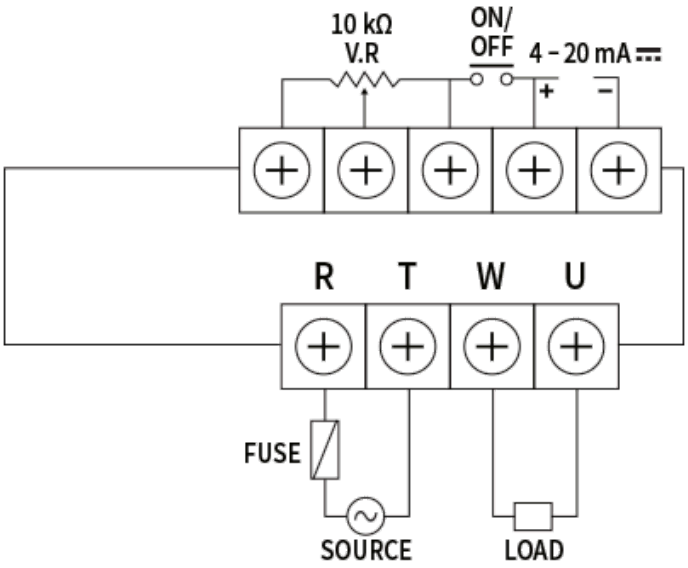


Connection diagram

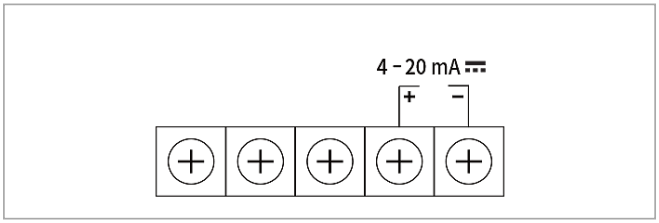
- It is recommended that you connect as shown in the picture.
- Fuse is not installed inside the product.
- For Fast acting fuse, select the fuse that matches the current/voltage used.

  Ex) Actual operating current 25A : BUSSMANN's 35ET (using fuse over 25 A r.m.s)
  [35 A → 50FE (35 A r.m.s or more), 50 A → 71FE (50 A r.m.s or more), 70 A → 100FE (70 A r.m.s or more)]
- High current flows, so use the compression terminal to tighten the connections.

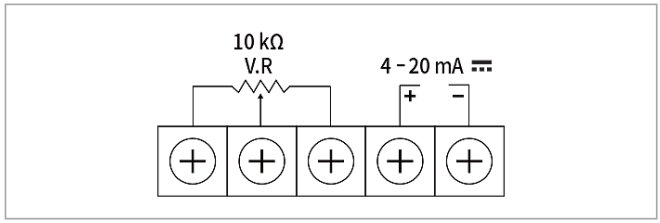
▪ Terminal layout (25 A, 35 A)



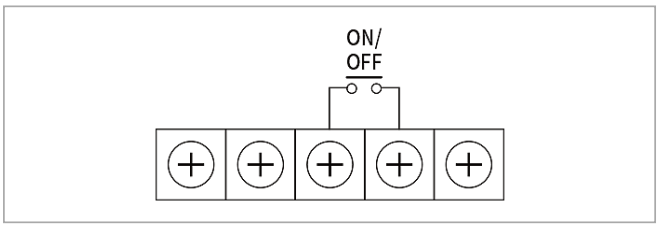
▪ Input signal terminal connection method (25 A, 35 A)



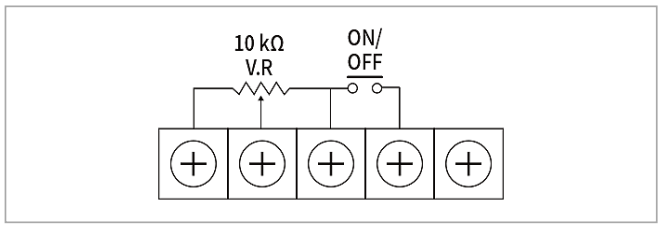
- Control input signal: 4 - 20 mA d.c.
- Output limit : P.W MAX(Internal volume)



- Control input signal: 4 - 20 mA d.c.
- Output limit: External V.R (10 ㏀)

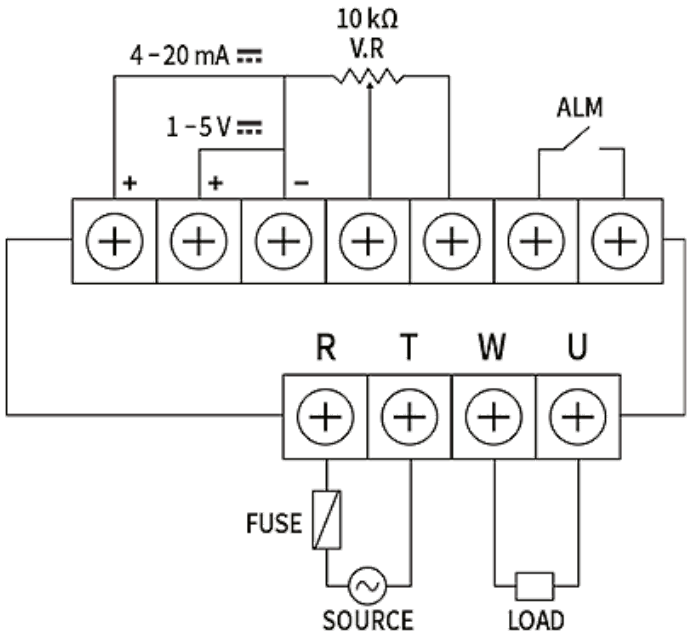


- Control input signal : ON/OFF - manual control (Always ON/OFF terminal contact status during output operation)
- Output limit : P.W MAX (Internal volume)

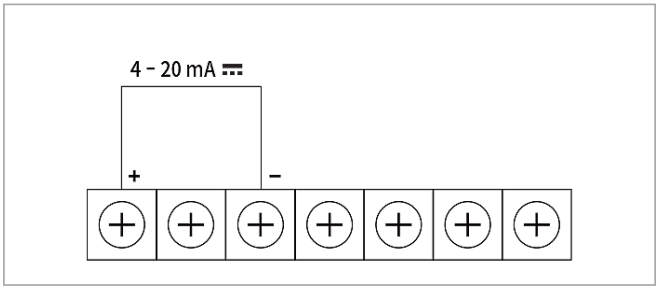


- Control input signal : External V.R (10 ㏀) - manual control
  (Always ON/OFF terminal contact status during output operation)

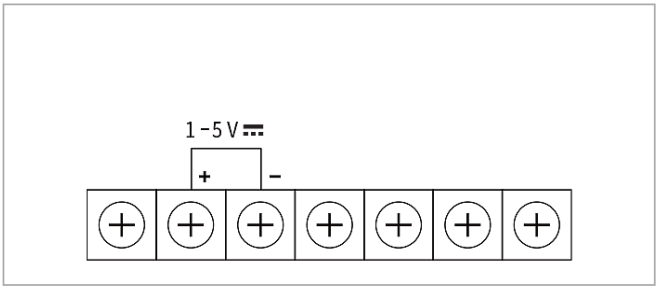
▪ **Terminal layout (50 A, 70 A)**



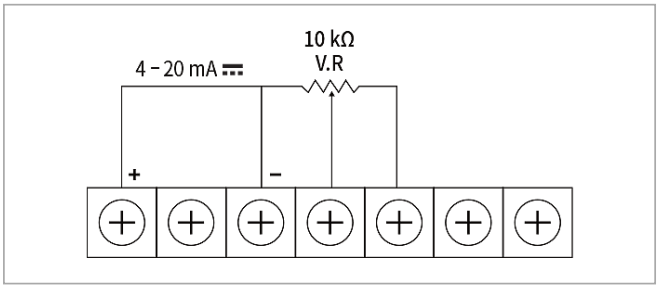
▪ **Input signal terminal connection method (50 A, 70 A)**



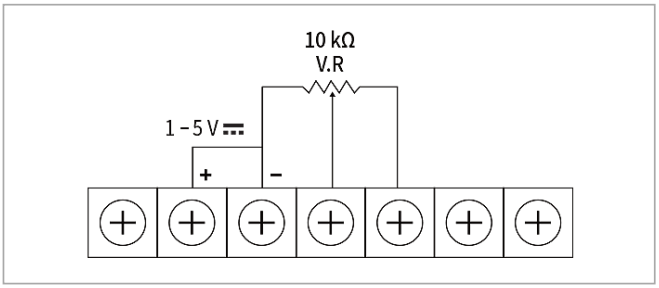
- Control input signal : 4 - 20 mA d.c.
- Output limit : P.W MAX(Internal volume)



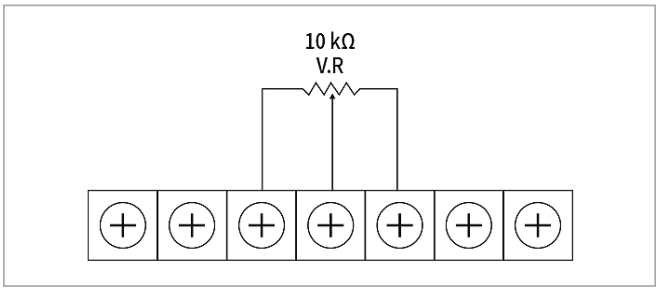
- Control input signal : 1 - 5 V d.c.
- Output limit : P.W MAX(Internal volume)



- Control input signal : 4 - 20 mA d.c.
  (When using external V.R, the control input should always be applied more than 4 mA)
- Output limit : Applies to the smallest value of external V.R (10 ㏀) and internal V.R



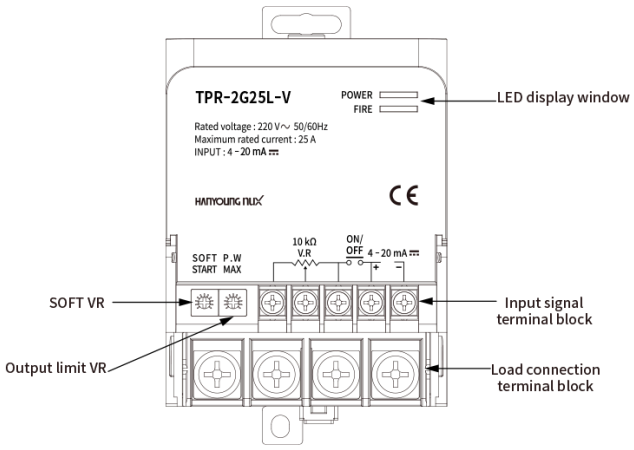
- Control input signal : 1 - 5 V d.c.
  (When using external V.R, the control input should always be applied more than 1 V)
- Output limit : Applies to the smallest value of external V.R (10 ㏀) and internal V.R



- Control input signal : External V.R (10 ㏀) - manual control
- Output limit : P.W MAX(Internal volume)

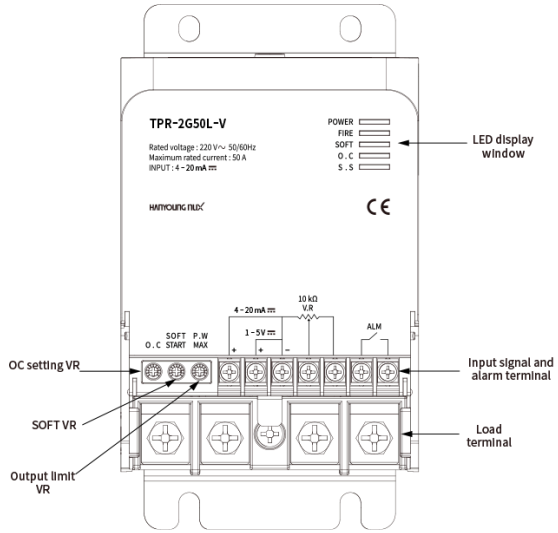
Part names and functions

▪ **LED display description (25 A, 35 A)**



Designation	Description
POWER	The light is on when the power is applied.
FIRE	Lights in proportion to the amount of output according to the control input. The larger the output, the longer the light, and the light continues on when the output is 100 %.

▪ LED display description (50 A, 70 A)



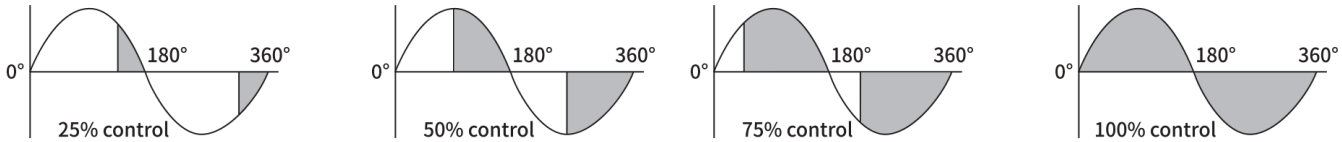
Designation	Description
POWER	LED turn ON when the power is applied
FIRE	LED turns ON proportionally to the control output according to the control input. It lights on longer if the output amount is large and it is continuously ON if it outputs 100 % continuously
SOFT	To use "Soft start, Soft up/down" function, turn Soft VR clockwise and LED will turn ON
O.C	When overcurrent occurs, for the protection of the product and load, if a current exceeding O.C VR occurs, LED turns ON and Alarm happens.
S.S	If the SCR is shorted, the power is still on even though there is no control input, and the heater continues to overheat. Therefore, if the current flows over 5 A without the control input, LED turns ON and alarm.

※ Alarm terminal operates as A contact (N.O)

Function description

+ Phase control

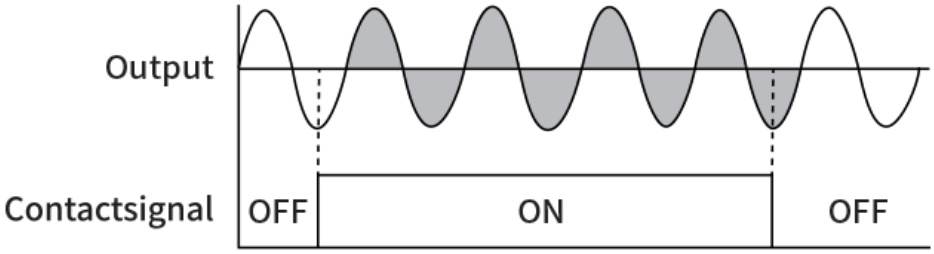
- Phase control is to control the AC power supply applied to the load proportionally according to the control input signal as changing phase angle (0 ~ 80 degree) in each half cycle, 8.33 ms.



+ ON/OFF control (25 A, 35 A Only)

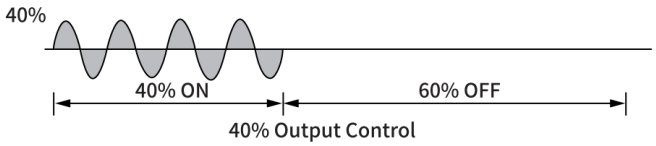
- If ON/OFF contact is ON, then the output is 100 %. ON/OFF always operates near zero point

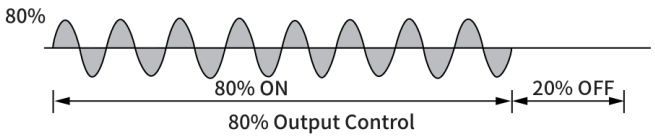
※ Even though the control input signal is ON, the output is 100 % when ON/OFF control is used.



+ Fixed cycle control (optional)

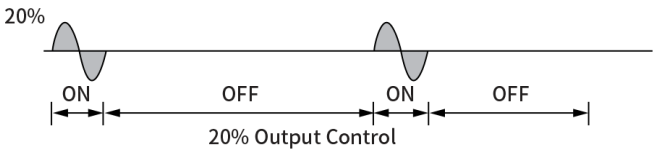
- The output is set at a fixed period (Approx. 1.6s) and the ON / OFF control is repeatedly controlled at a constant rate according to the control input.

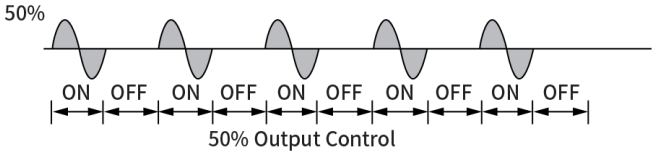




+ Variable cycle control (optional)

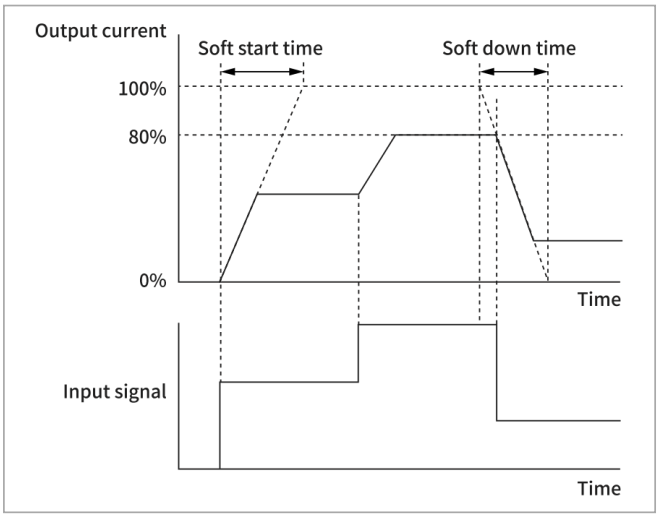
- It is a method to control by using the number of cycles of AC Sine waveform, not by controlling the cycle.





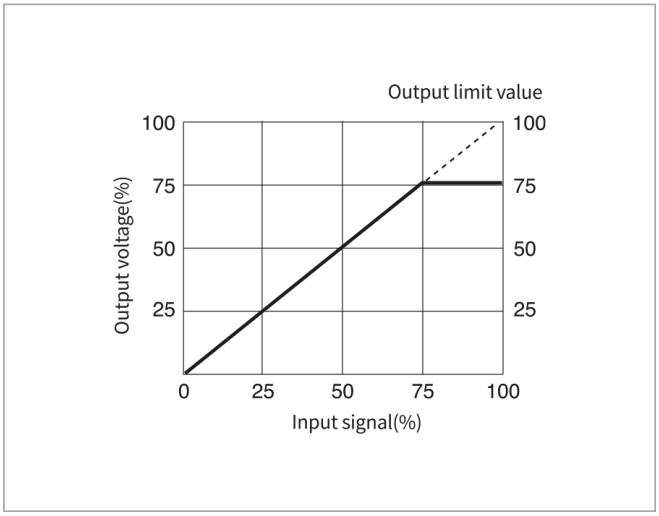
VR Description

+ SOFT START



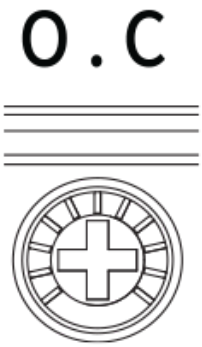
- It is a function to protect the load from a load with a large start-up current (inrush current), and gradually raises the output.
※ Setting time : 0 ~ 60 sec (0 sec setting at shipment)
※ If SOFT START VOLUME is turned to minimum, SOFT will not operate.

+ Output Voltage Limit (PW MAX)



- This function is to limit the output separately from the control input. When the control input is 100%, changing the POWER VR to the left will reduce the output. (100% setting at shipment)

+ Overcurrent setting (O.C)



- Function to protect power regulator (TPR) and load when over current occurs. (Phase control only)

※ Setting range: 0 ~ 84 A
※ Default : Set to 84 A at shipping.
※ The maximum value of the overcurrent detection value is set to 84 A when the variable resistor is at the right side.

※ 50 A, 70 A Only