

# PAN-GLOBE

E-Series

SCR POWER CONTROLLER

# INSTRUCTION



# 目錄

- 一、產品特點 (Product features)
- 二、使用環境 (Operation enviroment)
- 三、安裝(Installation)
- 四、負載測試(load test)
- 五、控制方式及輸出波形(Control mode and output wave)
- 六、LED燈顯示狀況及故障排除 (LED lamp indication and trouble shooting)
- 七、使用說明(Operation instruction)
- 八、接線範例(Examples of connecting circuit)

## 一、 Product features

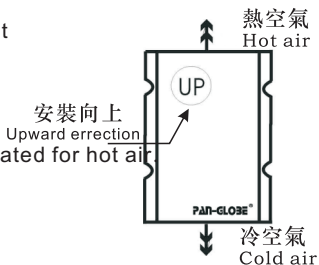
- (1) The SCR unit attached with high speed fuse in order to prevent the damage of SCR due to the shortage current ( $di/dt$ )
- (2) The unit is packaged construction with less dimension, easy for installation and wiring.
- (3) The causes of malfunction can be indicated by individual LED lamp, easy for trouble shooting.
- (4) Less non-linearity output provides accurate control of temperature.
- (5) High quality and high technical productions with no electrical interference.
- (6) Quality and cost is all good.

## 二、 Operation environment

- (1) Ambient temperature:  $-10\sim 50^{\circ}\text{C}$ , Relative humidity: Max 90%.

## 三、 Installation

- (1) The SCR unit will produce heat itself during operation, please erect it upward according to the instruction
- (2) The panel must be upward ventilated for hot air



we recommend mounting a ventilating.

- (3) Do not install the unit in the space with high temperature and poor ventilating, Do not operate the unit exceed 70% of rated output in case of above mentioned poor ambient conditions.

## 四、 Load test

- (1) The SCR unit will not well functioned in case of less output load (0.6Amp). Please connect the load at least 0.6Amp.

## 五、 Control mode and output wave

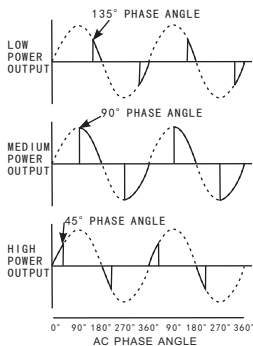


Fig 1 Phase Angle Power Control

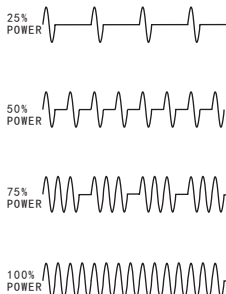


Fig 2 Distributed Zero Crossover Power Control

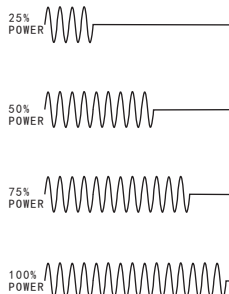


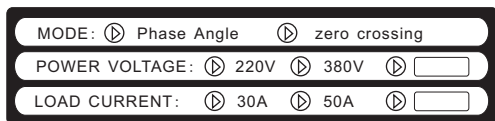
Fig 3 Time Proportioned Power Control

## 六、 LED lamp indication and trouble shooting

編號 Pos. NO	顏色 Color	顯示狀況 Indicating condition	異常故障原因 Causes of malfunction	處理對策 Treatment and trouble shooting
PWL (L1)	紅色 Red	電源指示燈不亮 No indication of power supply lamp (燈亮表示正常) Lamp lighting means normal	1、輔助電源未送電 No power of Aux. source. 2、PCB基板故障 Malfunction on PCB board 3、SCR超溫 Over temperature of SCR	1、檢查輔助電源電路 Check the AUX. power supply. 2、更換PCB基板或送修 Repair or replace the PCB board 3、檢查SCR超溫情形 Check the SCR temperature.
IN (L2)	綠色 Green	輸入指示燈不亮 No indication of input lamp (燈亮表示正常) Lamp lighting means normal	1、TIC輸出信號未輸出 No output signal from TIC 2、TIC輸出信號極性反 Output signal from TIC is reverse. 3、內部MAX或外部VR歸零 Max value of internal output or External VR is zero setted.	1、檢查TIC輸出信號 Check the output signal of TIC 2、檢查TIC輸出信號接線 Reverse the connecting wiring of TIC. 3、檢查內部MAX及外部VR Check the setting of internal and external VR output
OUT (L3)	黃色 Yellow	輸出指示燈不亮 No indication of output lamp (相位-燈亮表示正常) Phase angle control lamp lighting means normal (零位-閃爍表示正常) Zero crossing control lamp blinks means normal	1、無TIC信號或反接 No output signal from TIC or reverse the connecting of output signal. 2、IN燈有亮,OUT燈不亮 Lamp IN lighting and lamp OUT no indication. 3、OUT燈亮,無電流輸出 Lamp OUT lighting but no current output . OUT no indication.	1、檢查IN燈,燈未亮表示TIC無輸出信號或反接 Check the lamp IN,NO indication means no output signal from TIC or reverse wired. 2、PCB基板故障,更換或送修 Repair or replace the PCB board in case of the malfunction on the board. 3、檢查主電源或保險絲 Check main power supply or fuse
ERR (L4)	紅色 Red	SCR超溫指示燈燈亮 Over-temp of SCR lamp light (燈亮則表示異常) Lamp light means SCR over temp	1、SCR散熱風扇故障或卡住 Malfunction or dirt blocking on the ventilation fan 2、周圍環境溫度過高或通風不良 High ambient temperature or poor ventilation.	1、更換風扇或清除異物 Replace or clean the dirt of the impeller. 2、改善通風條件 Improve the ventilation condition

## 七、 Operation instruction

### SINGLE PHASE 50/60HZ



(一) Please order the thyristor power regulator according to the following specifications.

- MODE: ● PHASE ANGLE(相位控制，適用定阻抗負載)  
(PHASE angle control mode,suitable for constant current load)
- ZERO CROSSING (零位控制，適用定阻抗負載)  
(Zero crossing control mode,suitable for constant current load)

#### (二) Adjustable functions

- BLAS 基準電壓輸出量調整 (5mA)  
Output adjustment of basic voltage.(5mA)
- MAX 最高輸出量調整 (0~100%)  
Max output adjustment.(0~100%)

#### (三) Selection of input signal

- 4~20mA, MANUAL 將J6短路片置於Jump J6 Setting  
At 4~20
- 1~5V, \*0~5Vdc 將J6短路片置於Jump J6 Setting  
At 1~5

#### (四) Description of indicating lamp

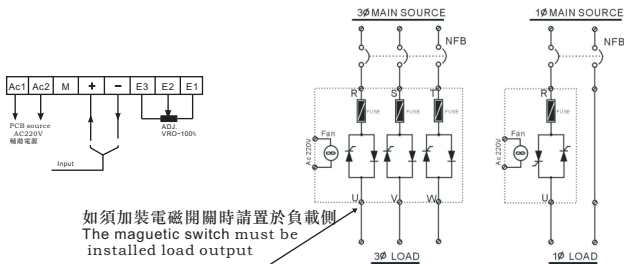
- PWL(PL紅色) 電源指示 (輔助電源通電時亮)  
Indication of power supply(light when  
Aux.Power switched on)

- IN(IN綠色) 溫度表信號指示隨信號量大小明滅)  
 Indication of transfer signal from TIC (Lamp illuminating acc.TO the output signal of TIC)
- OUT(OUT黃色) 輸出中指示 (隨輸出量大小明滅)  
 Output signal transferring(lamp illuminating acc.To the output)
- ERR(ERR紅色) 故障指示 (SCR超溫指示)  
 Malfunction indication(lamp lighting in case of SCR over temp)

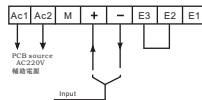
## 八、 Examples of connecting circuit

- (1) Voltage,current signal with adjustable External VR.

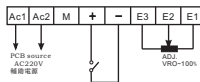
主回路接線圖  
Main Circuit



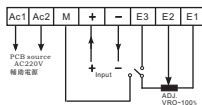
- (2) Voltage,current signal with none VR.



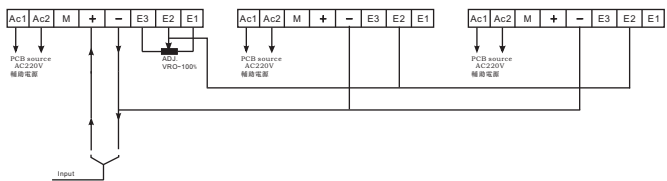
- (3) Contact control signal with adjustable External VR.



- (4) Contact control signal with adjustable External VR.



- (5) Multiple unit connecting with 1 set external VR setting

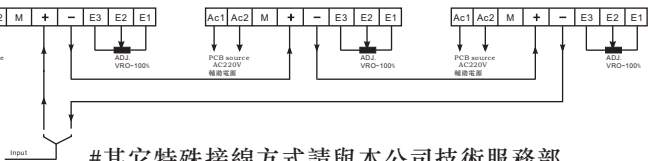


- (6) Multiple unit connecting with individual external VR setting, the connecting method is only suitable for less than 3 installations.

Jump J6 setting at 4~20

Jump J6 setting at 4~20

Jump J6 setting at 4~20



#其它特殊接线方式請與本公司技術服務部  
For the other special connecting, please  
contact with manufacturer