

**D-series SCR Digital Display Three-phase Power Regulator User Manual**

**Thank you for using our products!  
Please read this manual carefully  
before use!**

**Product features**

1. High-pressure full-control module using vacuum welding process, high stability.
2. Built-in fast fuse with overcurrent protection.
3. It has the function of body temperature detection and over-temperature protection.
4. With abnormal real-time monitoring and alarm functions.
5. The output has slow start and start and stop functions.
6. The power frequency is adapted to 50/60Hz without any switching.
7. Fully digital operation , one-key switch between manual and automatic control modes.
8. The output mode of phase-shift voltage regulation and zero-crossing power regulation can be switched.
9. The input control signal is linearly proportional to the output.

**Product capability**

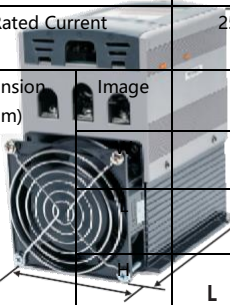
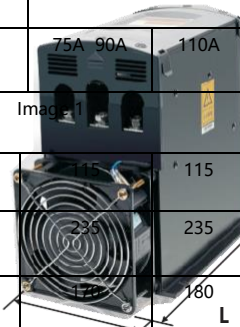


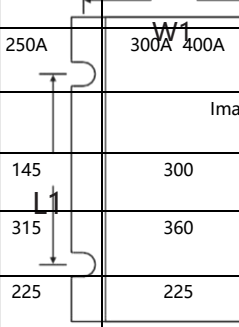
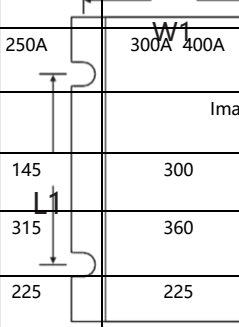
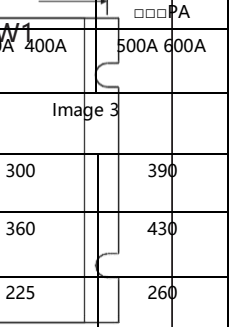
Rated Voltage	Three-phase 380VAC (three phase three wire)/50Hz/60Hz
Auxiliary power	220VAC 50Hz/60Hz
Output Mode	Phase output / zero-crossing /Zero crossing sampling output (three ways to switch)
Control Signal	4-20mA, 1-5VDC, 2-10VDC , 0-20mA, 0-5VDC, 0-10VDC *Manual 2-10K potentiometer adjustment * Enter the control layer can switch to digital input mode for adjustment *Signal can be selected for switching, factory default control signal: 4-20mA
Main Function	Display function: LED panel shows SCR working status , Body temperature and fault codes Overcurrent protection: Using fast fuse overcurrent protection Overtemperature shutdown: body temperature exceeds 85℃, SCR stop working Start stop function: Short circuit of terminal RUN/Stop to start, disconnect and stop Alarm output: After a fault alarm, there are two sets of normally closed/normally

# D系列SCR数显三相电力调整器

# SCR POWER REGULATOR

	open relay outputs
	Quick switching: One click quick switching between manual/automatic output
Use Environment	Temperature: -10-45°C, humidity: less than 90%RH

## Product model

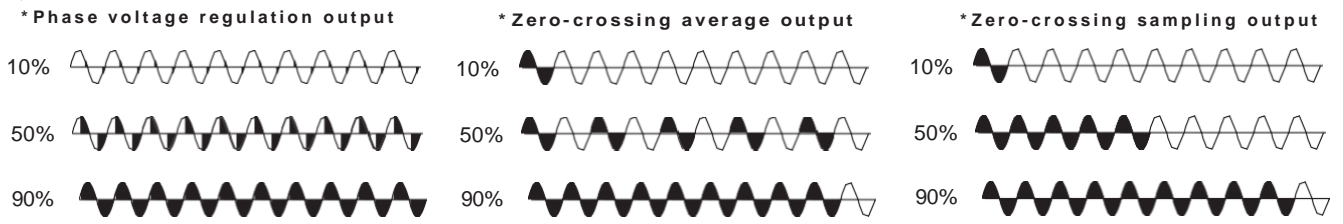
Image1		Image			Image3		Image4	
Model	D1-33-□□PA	D2-33-□□PA	D3-33-□□PA	D4-33-□□PA	D5-33-□□PA	D6-33-□□□PA	D7-33-□□□□PA	
Rated Current	25A 40A	75A 90A 110A	120A 150A	200A	250A	300A 400A	500A 600A	
Dimension (mm)	Image 	Image 1 	Image 2 	Image 2 	Image 3 	Image 3 	Image 3 	
Install dimension (mm)	W	Image			Image 4			
	W	105	105	135	135	135	200	250
	L	95	160	150	205	205	345	410
		M6			M8		M10	

W

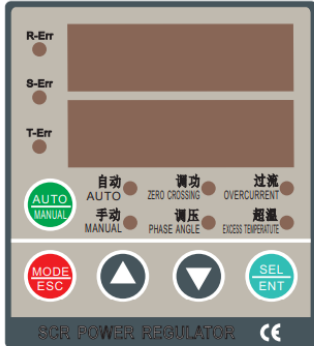
## Output wave

# D系列SCR数显三相电力调整器

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## Panel explanation



### 一、 Light description

1. R-Err: When lit, it means that R phase is missing or R phase is broken fast.
2. S-Err: When lit, it indicates that S phase is missing or S phase is breaking fast.
3. T-Err: When lit, it means that T phase is missing or T phase is breaking fast.
4. Overcurrent (OVERCURRENT): when lit, it indicates the output current The rated current value is exceeded.
5. EXCESS TEMP: when lit, it indicates the temperature of the radiator The set value is exceeded.
6. AUTO (AUTO): When lit, it indicates that it is currently operating in automatic mode.
7. Manual (MANUAL): when lit, it indicates that the current work is manual mode.
8. ZERO CROSSING: when lit, it indicates the current output Output for zero-crossing power adjustment.
9. Voltage regulation (PHASE ANGLE): when lit, it means that the current output is Phase shift output.

### 二、 Key function description



**AUTO/MANUAL :** Manual mode and automatic mode switch, combined Automatic and manual indicators determine the current mode



**MODE/ESC :** 1. Short press: return to the main interface of the display layer  
2. Long press: enter the parameter layer



**SEL/ENT :** 1. Short press: When not selected, select; When selected, confirm input and save  
2. Long press: enter the control layer



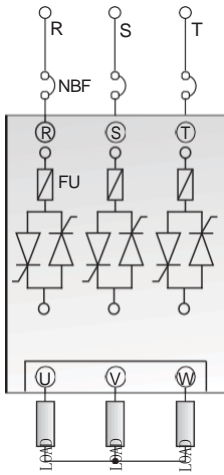
**Move up key:** 1. When not selected, the parameter switches (upward move);  
2. When selected, the value increases.



**Down key:** 1. When not selected, the parameter is switched (down);  
2. When selected, the value decreases.

## Examples of connecting circuit

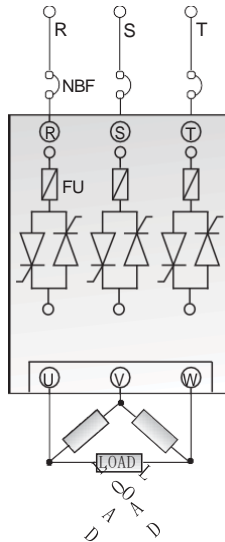
Three-phase three-wire AC380V star connection



Heating tube AC220V

Switched to three-phase three-wire in the control layer (factory default)

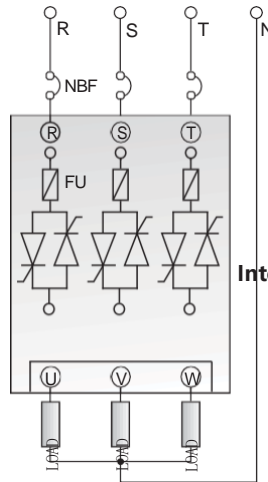
Three-phase three-wire AC380V delta connection



Heating tube AC380V

Switched to three-phase three-wire in the control layer (factory default)

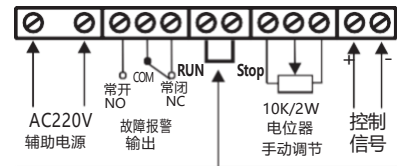
Three-phase four-wire AC380V star connection



Heating tube AC220V

Switch to three-phase four-wire in the control layer

### Function description of wiring terminal



RUN / Stop- is factory shorted. Short circuit means start-up, open circuit means stop. During shutdown, the panel displays top EOP (start-stop function).

### Internal control signal can be switched

4- 20mA



0-20mA



1-5V



0-5V



2-10V



0-10V

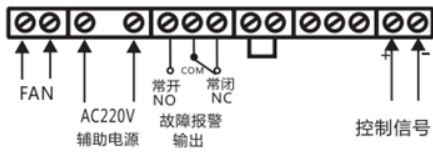


\* Factory default control mode : 4-20ma

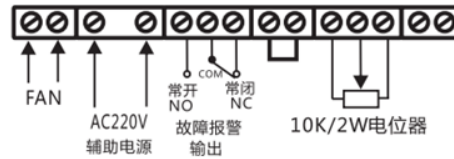
# D系列SCR数显三相电力调整器

# SCR POWER REGULATOR

- (1) Automatic signal control (switch to automatic mode)      (2) Manual potentiometer adjustment (switch to manual mode)

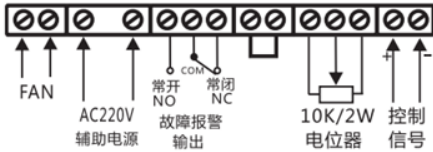


Auxiliary power ↓  
Error alarm output ↓  
control signal

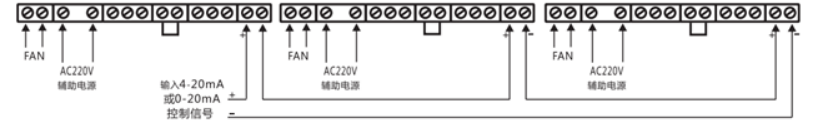


10K/2W potentiometer ↓

- (3) Automatic control/manual adjustment



- (4) Multiple online automatic control (4-20mA or 0-20mA signal)/up to three and simultaneous wiring use



In manual mode, the potentiometer can adjust the output of 0-100%.  
In automatic mode, potentiometer adjustment can be used as output limit.

## ▲ Parameter setting mode (D-008version)

### ▲ Display layer

Press MODE/ESC button to return to the display layer. Move up and down to view the parameters of the layer

Code	Description	Unit	Range
out	Main power output percentage	%	0.0-100
in	signal input percentage	%	0.0-100
°C	Radiator temperature	°C	0.0-100
Err	Abnormal code		0: Normal 1: Missing phase or no main power supply 4: Over temperature 5: Disconnect the internal temperature switch
Stop	Start stop status		on: RUN/Stop Short circuit ,means start-up off: RUN/Stop open circuit ,means stop

### ▲ Parameter layer

Press the MODE/ESC button in the display layer to enter, the up and down buttons to view the parameters of the layer, short press the SEL / ENT button to select and determine

Code	Description	Settable range	Factory default	Unit
ton	Slow start time	0-99	10	S
0max	Maximum output limit	0-100	100	%
0min	Minimum output limit	0-100	0	%
U.r	Rated voltage (Note 1)	180-440	380	V(Note 1)
I.r	Rated current (Note 1)	10-100	40	A (Note 2)
tmax	Radiator maximum temperature limit	60-85	85	°C

Note 1: The model with stable voltage output supports this function, but it is not available on this machine

Note 2: The model with stable current output supports this function, but it is not available on this machine

## ▲ Control layer

Press the SEL / ENT button in the display layer to enter, the up and down buttons to view the parameters of the layer, press the SEL / ENT button to select and determine

Code	Description	Settable range	Function	factory default	Note
in.md	Input signal selection (valid in automatic mode)	0	External signal input	0	External signal input shall correspond to Dip switch
		1	digital input		Note 3
ct.md	Output mode selection	0	Phase decompression	0	Phase output
		1	Zero crossing average		Zero position output
		2	Zero crossing sampling		Zero position output
3or4	Three phase three wire or three phase four wire selection	3	Three phase three wire	3	Corresponding to load wiring
		4	Three phase four wire		
Eout	Main power output selection during alarm	ON	Continue to output during alarm	OFF	Control the main power output
		OFF	Turn off output during alarm		
Lock	Restore factory parameter settings	33	Restore factory parameters	0	Write 33, skip to 1, indicating successful recovery Write other numbers, skip to 0, indicating invalid
rp.md	Potentiometer limiting mode setting	0	Counterclockwise adjustment	0	In automatic and digital mode, the direction of potentiometer amplitude limiting adjustment
		1	Clockwise adjustment		

Note 3: 1. Switch external signal input to digital input: long press SEL/ENT button → control layer in.md → short press SEL/ENT button → use up button to change factory value 0 to 1 → short press MODE/ESC button → parameter layer (external signal input switch to digital input is completed), at which point the automatic (AUTO) light flashes.

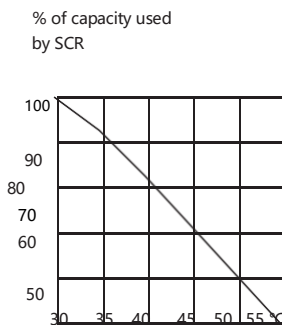
2. Main output setting in digital input mode: short press SEL/ENT → the upper row displays ctin, and the lower row displays the input set value → Use the up and down shift button to set the desired percentage value → Short press SEL/ENT (save/confirm), the main output setting complete.

## Use power selection and accessories

Product model	Three-phase three-wire star connection				Built-in fast melt model	Built-in module model	Built-in fan model	trigger board
	maximum power usage		Maximum use current					
	Three-phase total power	power per phase	Three-phase total current	Current per phase				
D1-33- 25PA	≤8.4KW	≤2.8KW	≤37.5A	≤12.5A	RG11- 25A	SCR-DX- 25A/H2	EC90 fan /AC220V	D1-SCR (three-phase)
D1-33- 40PA	≤13KW	≤4.3KW	≤60A	≤20A	RG11- 50A	SCR-DX- 40A/H2	EC90 fan /AC220V	D1-SCR (three-phase)
D2-33- 75PA	≤25KW	≤8.3KW	≤112.5A	≤37.5A	RGS4-75A	SCR-DX- 75A/H2	EC90 fan /AC220V	D1-SCR (three-phase)
D2-33- 90PA	≤30KW	≤10KW	≤135A	≤45A	RGS4-100A	SCR-DX- 90A/H2	EC90 fan /AC220V	D1-SCR (three-phase)
D2-33- 110PA	≤36.6KW	≤12.2KW	≤165A	≤55A	RGS4-110A	SCR-DX-110A/H2	EC90 fan /AC220V	D1-SCR (three-phase)
D3-33- 120PA	≤40KW	≤13.3KW	≤180A	≤60A	RGS12- 120A	SCR-DX-120A/H3	EC120 fan /AC220V	D3-SCR (three-phase)
D3-33- 150PA	≤50KW	≤16.6KW	≤225A	≤75A	RGS12- 160A	SCR-DX-150A/H3	EC120 fan /AC220V	D3-SCR (three-phase)
D4-33- 200PA	≤66KW	≤22KW	≤300A	≤100A	RS94A- 200A	SCR-DX-200A/H3	EC120 fan /AC220V	D3-SCR (three-phase)
D5-33- 250PA	≤83KW	≤27.6KW	≤375A	≤125A	RS95F- 250A	SCR-DX-250A/H3	EC120 fan /AC220V	D3-SCR (three-phase)
D6-33- 300PA	≤100KW	≤33.3KW	≤450A	≤150A	RS95H- 300A	MTC-300A- YJ	EC90 fan /AC220V	D3-SCR (three-phase)
D6-33- 400PA	≤133KW	≤44.3KW	≤600A	≤200A	RS95H- 400A	MTC-400A- YJ	EC90 fan /AC220V	D3-SCR (three-phase)
D7-33- 500PA	≤166KW	≤55.3KW	≤750A	≤250A	RS95H- 450A	MTC-500A- YJ	EC120 fan /AC220V	D3-SCR (three-phase)
D7-33- 600PA	≤200KW	≤66.6KW	≤900A	≤300A	RS95H- 500A	MTC-600A- YJ	EC120 fan /AC220V	D3-SCR (three-phase)

Note: 300PA-400PA built-in transformer is HB- 300/5A, 500PA-600PA built-in transformer is HB- 400/5A;

## SCR Installation and Ambient Conditions



When the SCR is working, the ratio of its radiator temperature to the used capacity decreases.

- SCR power regulator is in use, heat will be generated inside, so please install it vertically and leave a space on both sides to avoid damage to the SCR due to poor heat dissipation .
- The control box must have air convection ventilation holes. Please install the ventilation holes or install the exhaust fan according to the principle of hot air from bottom to top.
- Avoid installing in places with serious water vapor or acid, alkali and corrosive gas.
- Do not install in places with high temperature or poor ventilation

● Ambient temperature: -10°C~45 °C;

Ambient humidity: below 90% RH (no condensation) .

**Warning**

1. Three-phase three-wire input is used in the main circuit, and there is no phase sequence requirement .
2. SCR is wall-mounted, and vertical installation can achieve the best heat dissipation effect .
3. SCR is a high current product, please be sure to lock it (R, S, T) Input and (U, V, W) output terminals, otherwise it will cause the terminals to heat up and cause the SCR to burn out .
4. When the temperature of the radiator exceeds 85°C , the digital tube displays Err 4. SCR The output will be decreased by percentage (for every 1°C increase, the output will decrease by 10 %), and the body temperature will rise to  
At 89°C , the SCR stops outputting, (the fault may be: the fan stops working or the speed becomes slow , or the current of the used load exceeds the specified current ) After the fault is eliminated and the radiator cools down to below 84°C , the SCR returns to normal work .
5. When the SCR is in normal use, if there is dust on the surface, please clean it up in time, so as to prevent the power supply from igniting when the damp is wet, which will cause the SCR to burn out .
6. Use environment: Please use it in a well-ventilated environment, free from direct sunlight or heat radiation, non-corrosive and non-flammable .