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Part Numbers

GVTR/GVDR series 3 and single phase rectifier IPM modules

Rated Current	Single Phase	Three Phase
	480VAC	480VAC
50A	GVDR-50D	GVTR-50D
70A	GVDR-70D	GVTR-70D

150A	GVDR-150D	GVTR-150D
200A	GVDR-200D	GVTR-200D
250A	GVDR-250D	GVTR-250D
350A	GVDR-350D	GVTR-350D
500A	GVDR-500D	GVTR-500D
800A	GVDR-800D	GVTR-800D

Single phase GVDR

Single-phase Rectifier Voltage Regulation Module is a multifunctional power integrated module that encapsulates a thyristor power circuit, a microcontroller-controlled phase-shift trigger circuit, a signal detection sensor circuit, and a voltage regulation circuit. It can achieve precise control of the load voltage, featuring a built-in linear control circuit with high accuracy and good stability. The rated current ranges from 50 to 500A, and the rated voltage is 220V or 380V. It is widely used in various inductive and resistive loads, such as DC motors, electrolysis, temperature control, dimming, and DC voltage regulation.

Function	Single-phase AC Thyristor Rectification
Input Voltage Range	220V±20% / 380V±20%
Output Waveform Asymmetry	≤2%
Control Signal Voltage	0-10VDC (Input Impedance 10KΩ)
Control Current	4-20mA (Input Impedance 330Ω)
Manual Potentiometer Resistance	10KΩ
Cooling Method	Heat sink air cooling, air speed ≥6m/s
Operating Temperature	-30 ~ 40°C
Storage Temperature Range	-25 ~ 55°C

Main Circuit Electrical Parameters	Unit	Parameter Values
Nominal Current	Arms	50, 70, 100, 120, 200, 250, 350, 500
Thyristor Blocking Voltage	Vpk	800—1200
Off-state Leakage Current (Max.)	mArms	≤8, ≤10, ≤10, ≤10, ≤10, ≤15, ≤15, ≤20
On-state Voltage Drop (Max.)	Vrms	1.6, 1.6, 1.6, 1.8, 1.8, 1.8, 1.8, 1.8
Insulation Voltage (Terminal/Baseplate)	Vrms	≥2500
Weight	Kg	0.425, 2.2

Three phase GVTR

phase-shift open-loop control system that can achieve rectification and voltage regulation of three-phase power. The product is widely used in DC motor speed control, industrial automation, electric heating control, mechatronics, various power supplies, chemical, textile communications, and other fields. It can achieve manual and automatic control interfaces, with no phase sequence requirement for the main circuit AC input, and features a linear control circuit with high accuracy and good stability.

Input voltage	220V or 380V ±20%
Power source	12V,≤400mA
Controlling voltage	0-10VDC
Controlling current	4-20mA
Hand-control potentiometer resistance	10KΩ
Colling method	Wind-colling radiator,wind speed≤6m/s
Ambient temperature	-30~ 40℃
Output voltage	0-513VDC

Parameter	Unit	Value							
Load current	Arms	50	70	120	200	250	350	500	800
Max working current	Arms	3x50	3x70	3x120	3x200	3x250	3x350	3x500	3x800
TRIAC over voltage	Vpk	1200							
Frequency	Hz	50/60							
Off state voltage rising rate	V/sec	500							
On state voltage rising rate	A/sec	100							
Off state leakape current	mArms	≤8	≤10	≤10	≤10	≤15	≤15	≤20	≤20
On state leakape current	Vrms	1.6	1.6	1.8	1.8	1.8	1.8	1.8	1.8
Voltage drop insulating voltage	Vrms	≥2500							

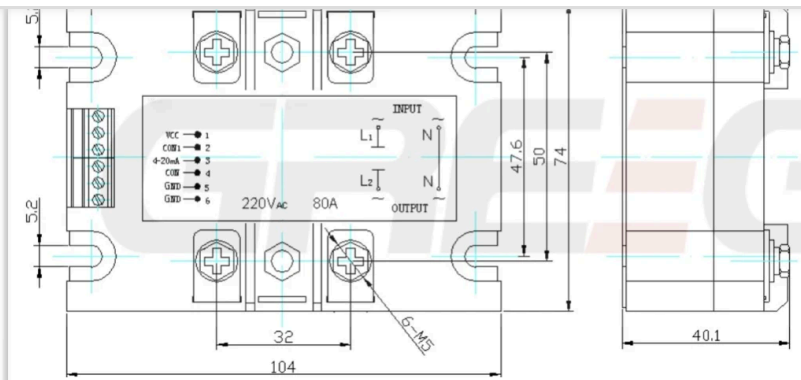
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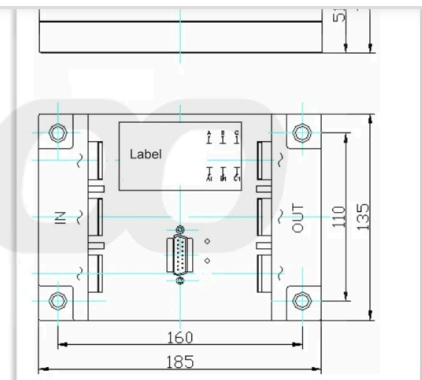
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Dimension

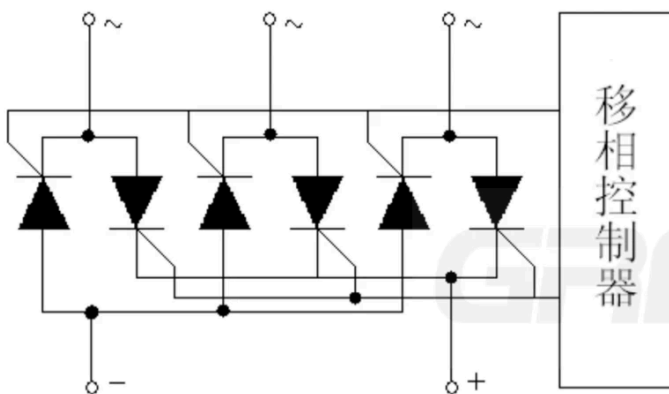


50A to 150A IPM Module

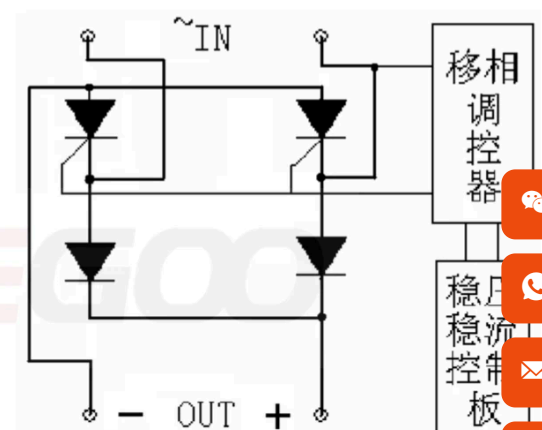


200A to 800A IPM Module

Circuit Diagram

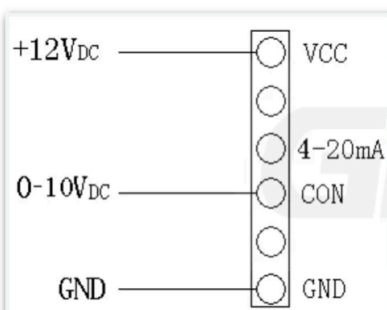


Thyristor Shift Phase Controller
Three phase GVTR

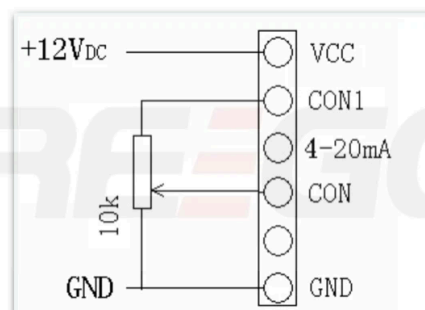


Thyristor Shift Phase Controller
Single phase GVDR

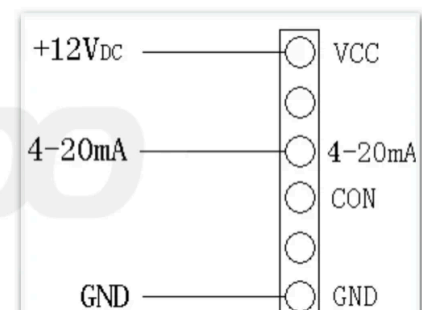
Control Signal Diagram



0-10V



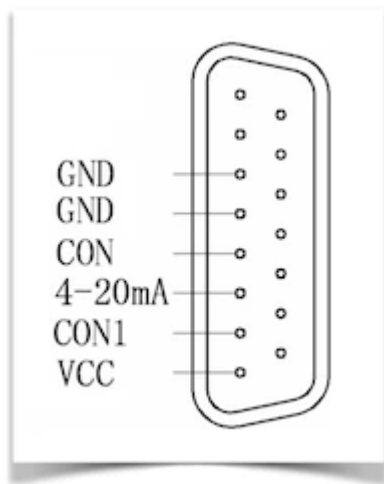
10K Potentiometer



4-20mA

- For the 220V module, the input and output neutral and live wires must not be reversed. Connect L1 to the live wire, L2 to the load, and N to the neutral wire, as labeled in Figure 1. For 380V and 440V modules, L1 and L2

- The red LED indicates a 12V power supply, and the green LED indicates operation. When using, first connect the 12V control power supply. At this time, the red LED will be on, and the green LED will be off. Then connect the AC main circuit. After a 1-second self-check by the microcontroller, the green LED will light up, indicating normal operation. Please use a 12V/1A switching power supply.
- This module uses a positive control method, meaning when the input control voltage (current) is 0V (or 4mA), the AC output is 0V. When the input control voltage is 10V (or 20mA), the AC output is approximately equal to the AC power supply voltage.
- The 200A—500A voltage regulation module terminals use a 232 socket wiring method. The ports are VCC (red), CON1 (orange), CON (yellow), 4-20mA (green), and GND (black). Other ports are empty pins. As shown in the diagram, the connection method is the same as in Figure 5.



- The diagram below shows the control output curves for inductive and resistive loads as measured on the module, provided for user reference.

