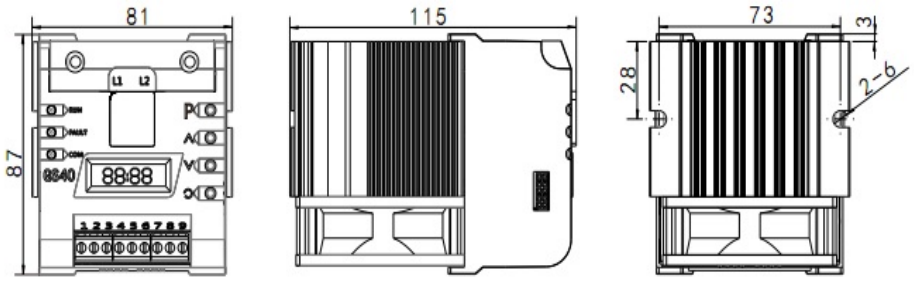
Xi'an Noker Electric Co.,Ltd.

GS40 Mini Single Phase Thyristor Power Regulator

1.Features

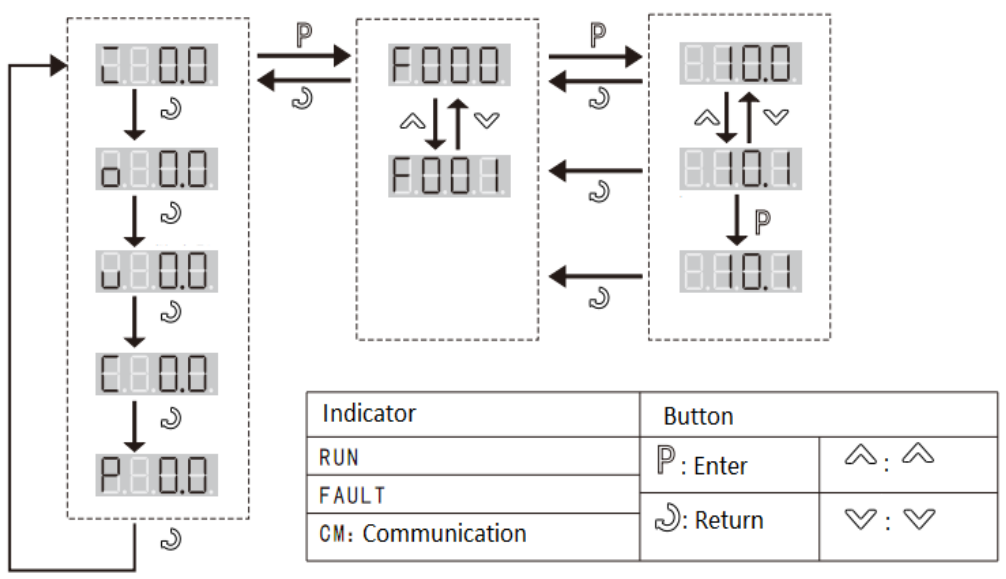
- Built-in high performance microcontroller.
- Low power consumption design.
- Wide main voltage input(AC110--440V).
- Compact design, small dimension.
- Support 4-20mA,0-10v analogue input.
- Perfect protection: Phase lose, overheat, overcurrent, load lose.
- Modbus communication(optional).

2.Dimension



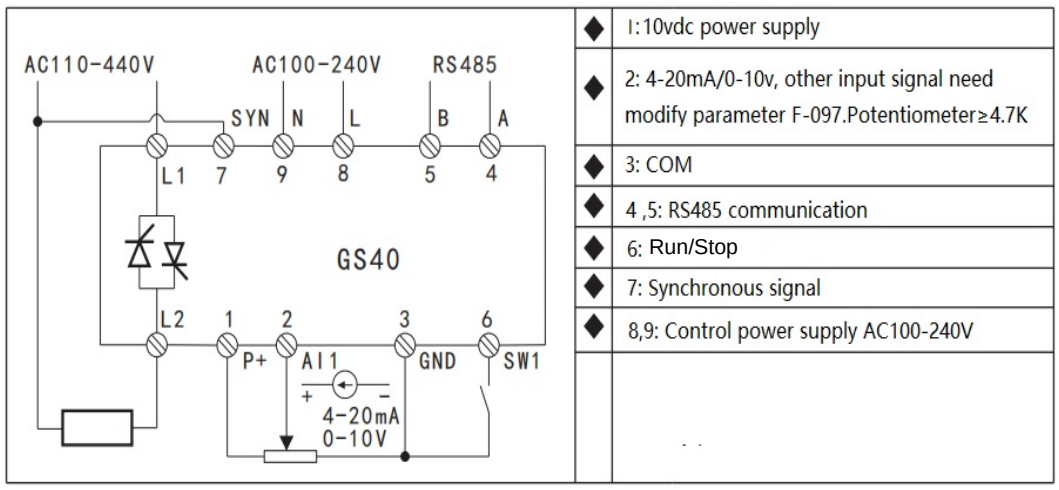
(Unit: mm)

3.Keyboard operation

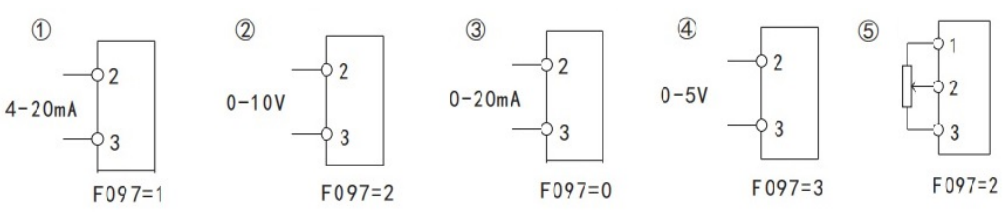


Indicator	Button	
RUN	P: Enter	^: ^
FAULT	↩: Return	v: v
CM: Communication		

4.Terminal description



- 1:10vdc power supply
- 2: 4-20mA/0-10v, other input signal need modify parameter F-097.Potentiometer≥4.7K
- 3: COM
- 4 ,5: RS485 communication
- 6: Run/Stop
- 7: Synchronous signal
- 8,9: Control power supply AC100-240V



5.Communication

GS40 Series power regulator supports Modbus protocols.Modbus supports 3、4、6、16, totally 4 functions, F-35: slave station address: 1-247,F-36 baud rate:2400 4800 9600 19200 38400.F-37: data format: 8n2 8e1 8o1, 3 types.Parameter value is 16bits no signal register, decimal point is not supported.For example, before writing 56.7, it should be adjusted as 567 and then re-write.

Notice: every frame cannot exceed 20 bytes, so every frame can maximum read 10 parameters, The register of the host computer starts from 1 and the register number is incremented by 1. If the register number is F004, it should be filled with 5.

- Read Holding Registers frame format

0	1	2	3	4	5	6	7
Addr	Function 03H	Starting Address Hi	Starting Address Lo	No. of Points Hi	No. of Points Lo	CRC H	CRC L

- Preset Single Register frame format

0	1	2	3	4	5	6	7
Addr	Function 06H	Starting Address Hi	Starting Address Lo	Preset Data Hi	Preset Data Lo	CRC H	CRC L

6.Basic parameters

Above chapter is the brief operation parameter, R: readable parameter,RW: readable and writeable parameter.Please change parameter when regulator stops.

parameter no.	description	range	default	Attributes	register
F-000	input value	0-100.0 [%] 0.1%	-	F-055=0 R	0
F-004	output voltage	0-3000.0 [V] 0.1V	-	F-055=0 R	4
F-005	output current	0-3000.0 [A] 0.1A	-	F-055=0 R	5
F-006	output power	0-3000.0 [KW]0.1KW	-	F-055=0 R	6
F-017	Current fault	0-100	-	F-055=35 R	17
F-030	Set-point through communication	0-100.0 % .1%	0	F-055=35 RW	30
F-055	Menu Authority 0:Read-only parameter is displayed 35:Display simple parameter and read-only parameter	0-3000	0	F-055=0 RW	55
F-061	Reference types 50 :Analog value set-point 51 :Set-point through communication	33-54	50	F-055=35 RW	61
F-065	Digital given type 0：Keypad set-point 1：communication	0-1	0	F-055=35 RW	65
F-066	Digital setting power saving 0：saving 1：not saving	0-1	0	F-055=35 RW	66
F-068	Given value top limit	0-100.0	100.0	F-055=35 RW	68
F-077	Rated voltage :The same as nameplate. Data can be changed according to actual load, for the purpose of protecting device	0-3000 [V] 1V	380	F-055=35 RW	77
F-086	Feedback signal type 7：voltage 8：current 9：power	0-33	7	F-055=35 RW	86
F-097	Analogue signal type 0:0-20mA, 1:4-20mA, 2:0-10V, 3:0-5V,4:4-20mA/0-10V	0-4 1	0	F-055=35 RW	99
F-111	Feedback Type 0：Open loop 1：closed loop	0-1 1	1	F-055=35 RW	111
F-114	Trigger Mode 0：Phase shifter 1：Zero trigger	0-1 1	1	F-055=35 RW	114
F-125	Previous fault type	-	-	F-055=0 RW	125
F-127	Power fault protection enables 0：Disable 1：alarm 2：alarm+relay 3：alarm+relay+stop	0-1 1	2	F-055=35 RW	-
F-128	Load fault protection enables 0：Disable 1：alarm 2：alarm+relay 3：alarm+relay+stop	0-1 1	0	F-055=35 RW	-
F-129	Load-off threshold	10-70 [%] 1%	70	F-055=35 RW	-
F-133	device address Setting address of Modbus and Profibus	1-247 1	123	F-055=35 RW	-
F-134	baud rate 0：2400 1：4800 2：9600 3：19200 4：38400	0-4 1	2	F-055=35 RW	-
F-135	Data format 0：8n2 Date bit 8 bits, no calibration, 2 stop bits 1：8e1 Date bit 8 bits, parity - checking, 1 stop bits 2：8o1 Date bit 8 bits, odd parity -checking, 1stop bits	0-2 1	1	F-055=35 RW	-
F-140	Hardware edition	-	-	F-055=0 R	-
F-141	Software edition	-	-	F-055=0 R	-

7.Fault and maintenance

fault code	description
E002	Main power fault, possible fault reason: 1、No voltage of mail loop or not the same of nameplate. 2、Synchronous cable of terminal 12 is not connected, please refer to the wiring drawing.
E003	Overcurrent, measured current exceeds 1.25 time of rated current, possible reason: 1、Load changes rapidly or short-circuit. 2、Thyristor breaks.
E004	Load-off, load off current = set-point percentage * rated current * load threshold, alarms when difference between set-pint and measured current is bigger than load off current. Possible reason: 1、Load off 2、Load current is small 3、Setting of(F-129)is small
E005	Overheat of regulator, heat-sink temperature is bigger than 85, possible reason: 1、Ambient temperature is higher than 45. 2、Fan breaks. 3、Dust on the ventilation path.
E009	Overload of regulator, load current is bigger than rated current of regulator.
E010	Thyristor breaks,Thyristor damage detected alarm is activated.

8.Daily maintenance

Fault might happen because of using temperature, humidity, dust and some other reason, daily maintenance is needed, user can do the check and maintain within 3~6 months, checking lists are as below:

1:Mainl loop connector.
2: Clean PCB board, ventilation, fans.
3: Regulator should be electricity every 3 months if not use.
4: Prevent from high temp. humidity and metal powder location.

9.Order no.

GS40 — □ □ □ — □

- GS40: Single-phase power regulator
- □ □ □: Rated current (A)
- □: Rated voltage (V)

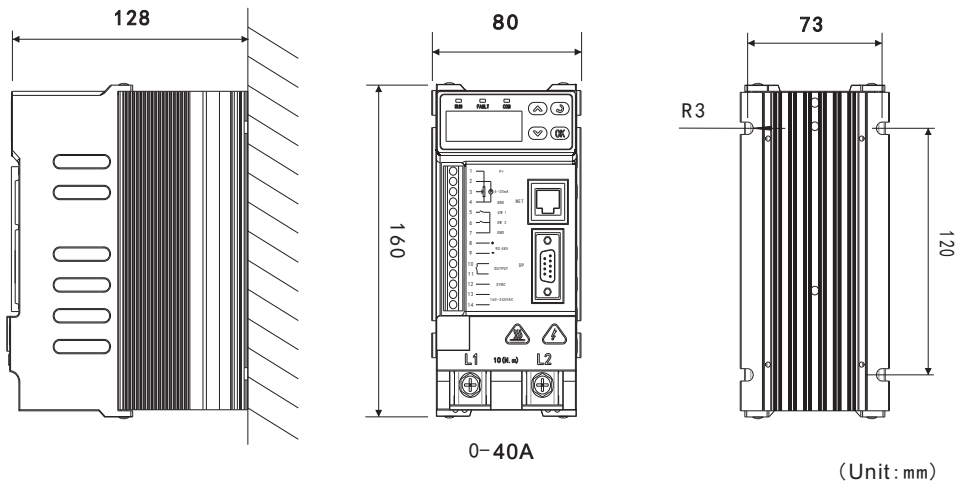
Xi'an Noker Electric Co.,Ltd.

NK10T Single Phase Thyristor Power Regulator

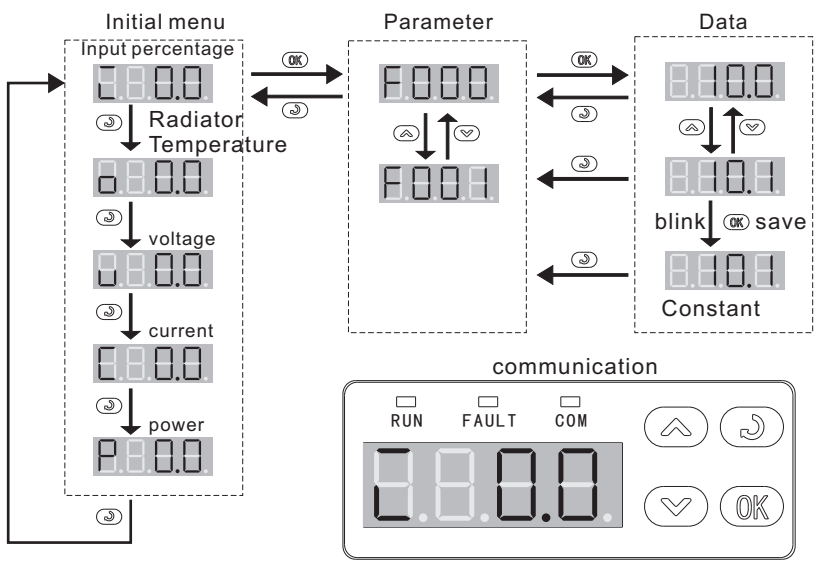
1.Features

- Built-in High-performance, Low-power Microcontroller
- Peripheral Features
  - Support 4-20mA and 0-5V/10Vtwo given
  - Two switch inputs
  - Wide Range Of Primary Loop Voltages（AC110-440V）
- To facilitate centralized control RS485 communication
- One relay output(3A AC250V 3A DC30V)
- Efficient cooling solution such small size, light weight
- Practical alarm function Phase failure, Overheat, Overcurrent, Load break

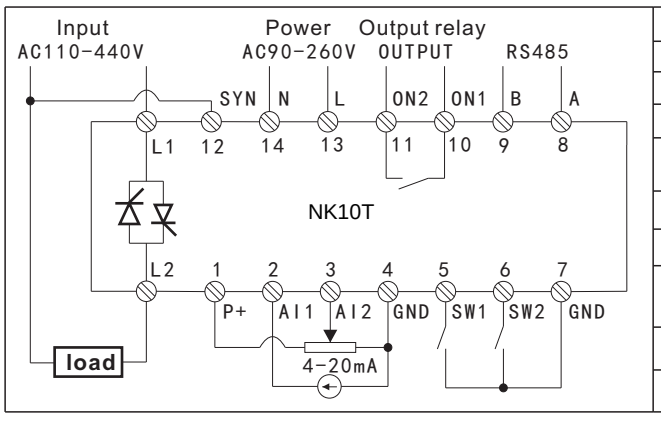
2.Dimension



3.Keyboard operation



4.Terminal description



◆	1：5VDC Potentiometer power
◆	2：0-20/4-20mA
◆	3：0-5V/10DC Resistance≥10K
◆	5：Run/Stop
◆	6：change0-5V/4-20mA open：4-20mA close：0-5V
◆	4、7：Common
◆	8、9：RS485communication
◆	10、11：output relay 3A 250VAC/3A 35VDC
◆	12：Synchronization signal
◆	13、14：powerAC100-240V

5.Communication

10T Series power regulator supports Modbus-RTU protocol.

► function：supports3、4、6、16 ► baud rate：2400 4800 9600 19200 38400

► data format：8n2、8e、8o1 ► station address：1-247 ► register：16 bit unsigned integer

Notice: every frame cannot exceed 20 bytes, so every frame can maximum read 10 parameters. decimal point is not supported.For example, before writing 56.7, it should be adjusted as 567 and then re-write.The register of the host computer starts from 1 and the register number is incremented by 1. If the register number is F004, it should be filled with 5.

► Read Holding Registers frame format

0	1	2	3	4	5	6	7
Addr	Function 03H	Starting Address Hi	Starting Address Lo	No. of Points Hi	No. of Points Lo	CRC H	CRC L

► Preset Single Register frame format

0	1	2	3	4	5	6	7
Addr	Function 06H	Starting Address Hi	Starting Address Lo	Preset Data Hi	Preset Data Lo	CRC H	CRC L

6.Basic parameters

Above chapter is the brief operation parameter, R: readable parameter,RW: readable and writeable parameter.Please change parameter when regulator stops.

parameter no.	description	range	default	Attributes	Register
F-000	input value	0-100.0 [%] 0.1%	–	F-055=0 R	0
F-004	output voltage	0-3000.0 [V] 0.1V	–	F-055=0 R	4
F-005	output current	0-3000.0 [A] 0.1A	–	F-055=0 R	5
F-006	output power	0-3000.0 [KW]0.1KW	–	F-055=0 R	6
F-017	Current fault	0-100	-	F-055=35 R	17
F-030	Set-point through communication	0-100.0 [%] 0.1%	0	F-055=35 RW	30
F-055	Menu Authority 0:Read-only parameter is displayed 35:Display simple parameter and read-only parameter	0-3000	0	F-055=0 RW	55
F-061	Reference types 50 :Analog value set-point 51 :Set-point through communication	33-54	50	F-055=35 RW	61
F-065	Digital given type 0：Keypad set-point 1：communication	0-1	0	F-055=35 RW	65
F-066	Digital setting power saving 0：saving 1：not saving	0-1	0	F-055=35 RW	66
F-077	Rated voltage :The same as nameplate. Data can be changed according to actual load, for the purpose of protecting device	0-3000 [V] 1V	380	F-055=35 RW	77
F-086	Feedback signal type 7：voltage 8：current 9：power	0-33 1	7	F-055=35 RW	86
F-099	AI2 Signal types 0：0-5V 1：0-10V	0-1 1	0	F-055=35 RW	99
F-111	Feedback Type 0：Open loop 1：closed loop	0-1 1	1	F-055=35 RW	111
F-114	Trigger Mode 0：Phase shifter 1：Zero trigger	0-1 1	1	F-055=35 RW	114
F-125	Previous fault type	–	–	F-055=0 RW	125
F-127	Power fault protection enables 0：Disable 1：alarm 2：alarm+relay 3：alarm+relay+stop	0-3 1	2	F-055=35 RW	127
F-128	Load fault protection enables 0：Disable 1：alarm 2：alarm+relay 3：alarm+relay+stop	0-3 1	0	F-055=35 RW	128
F-129	Load-off threshold	10-70 [%] 1%	70	F-055=35 RW	129
F-133	device address Setting address of Modbus and Profibus	1-247 1	123	F-055=35 RW	–
F-134	baud rate 0：2400 1：4800 2：9600 3：19200 4：38400	0-4 1	2	F-055=35 RW	–
F-135	Data format 0：8n2 Date bit 8 bits, no calibration, 2 stop bits 1：8e1 Date bit 8 bits, parity - checking, 1 stop bits 2：8o1 Date bit 8 bits, odd parity -checking, 1stop bits 3:8n1 Date bit 8 bits, no calibration, 1 stop bits	0-3 1	1	F-055=35 RW	–
F-140	Hardware edition	–	–	F-055=0 R	–
F-141	Software edition	–	–	F-055=0 R	–

7.Fault and maintenance

fault code	description
E002	Main power fault, possible fault reason: 1、No voltage of mail loop or not the same of nameplate. 2、Synchronous cable of terminal 12 is not connected, please refer to the wiring drawing.
E003	Overcurrent, measured current exceeds 1.25 time of rated current, possible reason: 1、Load changes rapidly or short-circuit. 2、Thyristor breaks.
E004	Load-off, current ＜set-point percentage * rated current * load threshold, Possible reason: 1、Load off 2、Load current is small 3、Setting of(F-129)is large
E005	Overheat of regulator, heat-sink temperature is bigger than 85, possible reason: 1、Ambient temperature is higher than 45. 2、Fan breaks. 3、Dust on the ventilation path.
E009	Overload of regulator, load current is bigger than rated current of regulator.
E010	Thyristor breaks,Thyristor damage detected alarm is activated.

8.Daily maintenance

Fault might happen because of using temperature, humidity, dust and some other reason, daily maintenance is needed, user can do the check and maintain within 3~6 months, checking lists are as below:

1:Mainl loop connector.
2:Clean PCB board, ventilation, fans.
3:Regulator should be electricity every 3 months if not use.
4:Prevent from high temp. humidity and metal powder location.

9.Order no.

NK10T — □ □ □ — □ — □

- NK10T: Single-phase power regulator
- Rated current (A)
- Rated voltage (V)
- Optional

Optional: P Profibus DP
C MODBUS TCP/IP
T Temperature function
R TRMS vaue

10 Temperature module

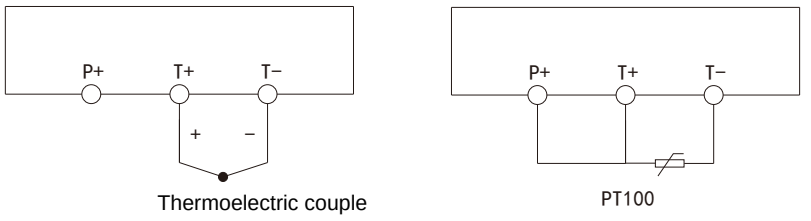
- Support sensor PT100, K, S, B, E, R, N seven types.
- Support self-tuning, optimal PID parameters.
- Supports MODBUS-RTU for centralized control.

parameter no.	description	range	default	Attributes	Register
F-143	Sensor 0:PT100、1:K 2:S 3:B 4:E 5:R 6:N	0-6	1	RW F-055=53	143
F-144	P	0-6000	299	RW F-055=53	144
F-145	I	0-6000	328	RW F-055=53	145
F-146	D	0-6000	4	RW F-055=53	146
F-147 ⋮ F-166	1-segment SV ⋮ 20-segment SV	0-2000 ℃	100	RW F-055=53	147 ⋮ 166
F-167 ⋮ F-186	1-segment execution time ⋮ 20-segment execution time	0-9999 Min	1	RW F-055=53	167 ⋮ 186
F-187	Starting self-tuning 0: Stop 1: Start	0-1	0	RW F-055=53	187
F-188	Cold end temperature calibration	0-40.0	20	RW F-055=53	188
F-189	Absolute upper limit alarm 1	0-3000	3000	RW F-055=53	189
F-190	Absolute upper limit alarm 2	0-3000	3000	RW F-055=53	190
F-191	Absolute lower value alarm 1	0-3000	0	RW F-055=53	191
F-192	Absolute lower value alarm 2	0-3000	0	RW F-055=53	192
F-193	Upper deviation value alarm	0-3000	3000	RW F-055=53	193
F-194	Lower deviation value alarm	0-3000	3000	RW F-055=53	194
F-195	Set temperature source 0:EEPROM(SV1-SV20) 1：RAM(F-199)	0-1	0	RW F-055=53	195
F-196	Number of execution segments	1-20	1	RW F-055=53	196
F-197	1:Multisegment end logic 0. The end of the segment is reset. 1. The end of the segment is held 2. Cycle running 2:Multi-segment startup logic 0. The first paragraph begins. 4. Automatic identification of the paragraph 3:Multi-wait logic 0. Don't wait. 8. Wait	0-15	0	RW F-055=53	197
F-198	Actual temperature PV	0-3000	-	R F-055=53	198
F-199	Communication temperature setting written	0-3000	0	RW F-055=53	199
F-200	Current execution segment	0-20	-	RW F-055=53	200
F-201	Countdown time for running the current segment	0-9999 Min	-	R F-055=53	201
F-202	Temperature regulator	0-10000	-	R F-055=53	202
F-203	The current temperature value	0-2000	-	R F-055=53	203

11 Temperature alarm

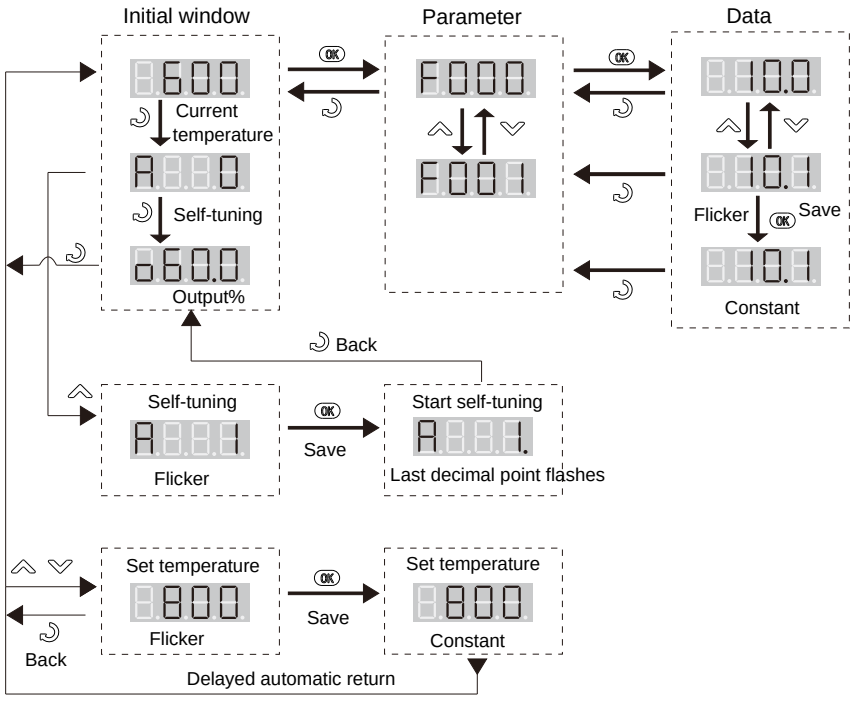
Fault	Description
E054	Absolute upper limit alarm 1
E055	Absolute upper limit alarm 2
E056	Absolute lower value alarm 1
E057	Absolute lower value alarm 2
E058	The deviation value on the temperature alarms, relative to the SV deviation value
E059	Temperature deviation value alarm, relative to SV deviation value
E060	The thermocouple is disconnected

12 Sensor connection



13 Operation

Support sensor PT100, K, S, B, E, R, N seven types, Support self-tuning.



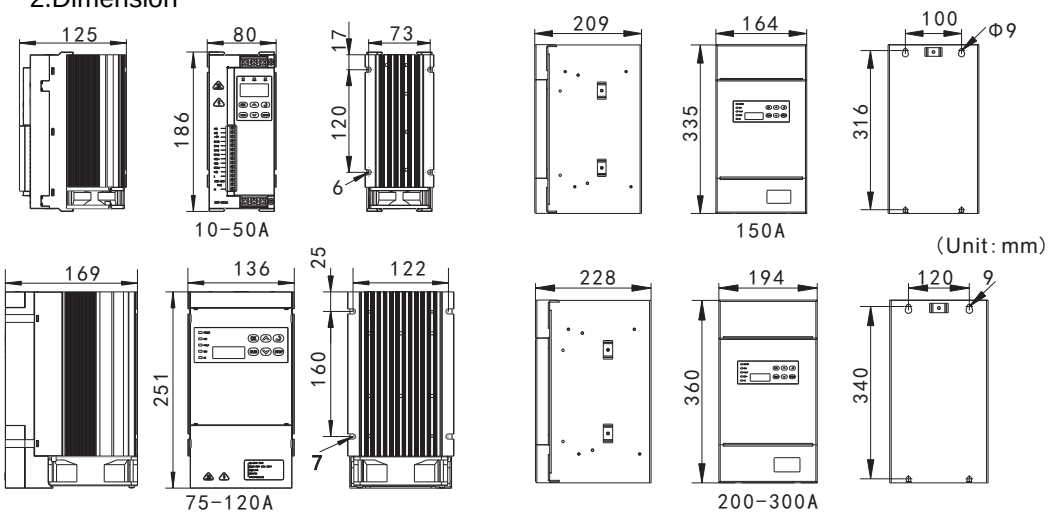
Xi'an Noker Electric Co.,Ltd.

NK30T Three Phase Thyristor Power Regulator

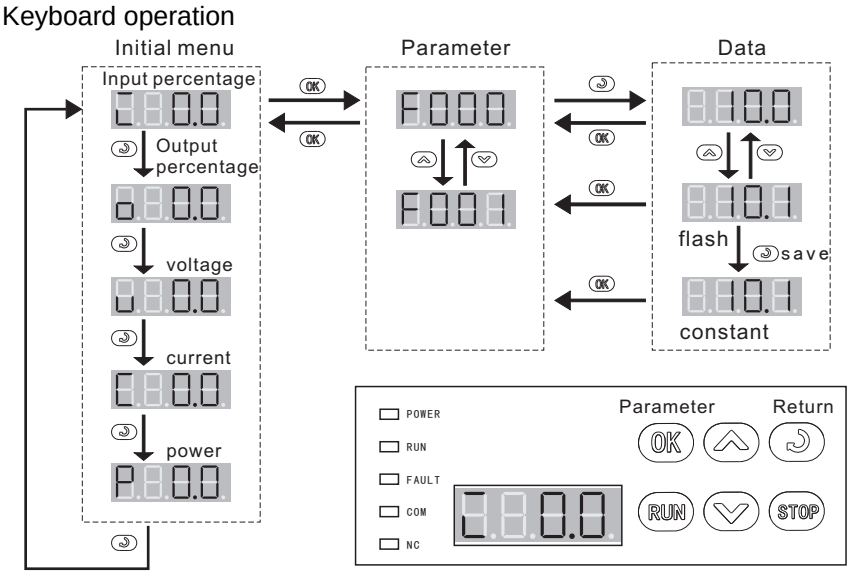
1.Features

- Built-in High-performance, Low-power Microcontroller
- Peripheral Features
  - Support 4-20mA and 0-5V/10Vtwo given
  - Two switch inputs
  - Wide Range Of Primary Loop Voltages（AC260-440V）
- To facilitate centralized control RS485 communication
- One relay output(3A AC250V 3A DC30V)
- Efficient cooling solution such small size, light weight
- Practical alarm function Phase failure, Overheat, Overcurrent, Load break

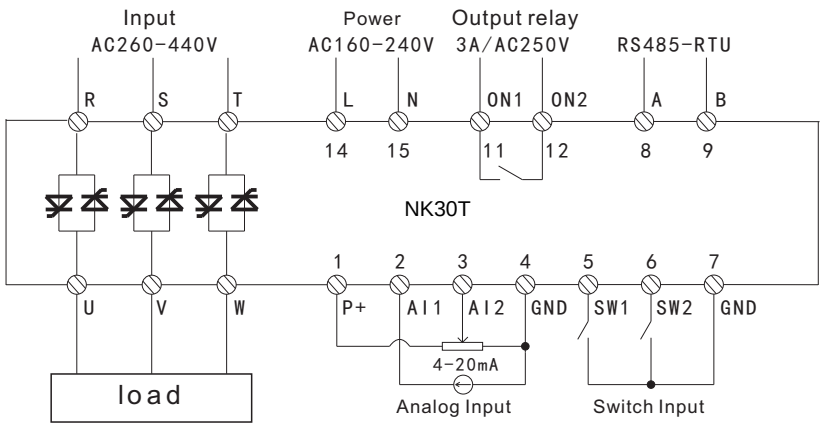
2.Dimension



3.Keyboard operation



4.Terminal description



The default is stop start signal SW1, SW2 default switch between AI1 and AI2, closed AI2 given signal is valid, disconnect AI1 given signal is valid.

5.Communication

30T Series power regulator supports Modbus protocols.Modbus supports 3、4、6、16, totally 4 functions, F-35: slave station address: 1-247,F-36 baud rate:2400 4800 9600 19200 38400.F-37: data format: 8n2 8e1 8o1, 3 types.Parameter value is 16bits no signal register, decimal point is not supported.For example, before writing 56.7, it should be adjusted as 567 and then re-write.

Notice: every frame cannot exceed 20 bytes, so every frame can maximum read 10 parameters, The register of the host computer starts from 1 and the register number is incremented by 1. If the register number is F004, it should be filled with 5.

▶ Read Holding Registers frame format

0	1	2	3	4	5	6	7
Addr	Function 03H	Starting Address Hi	Starting Address Lo	No. of Points Hi	No. of Points Lo	CRC H	CRC L

▶ Preset Single Register frame format

0	1	2	3	4	5	6	7
Addr	Function 06H	Starting Address Hi	Starting Address Lo	Preset Data Hi	Preset Data Lo	CRC H	CRC L

6.Fault and maintenance

fault code	description
E002	Main power fault, possible fault reason: 1、No voltage of mail loop or not the same of nameplate. 2、Synchronous cable of terminal 12 is not connected, please refer to the wiring drawing.
E003	Overcurrent, measured current exceeds 1.25 time of rated current,possible reason: 1、Load changes rapidly or short-circuit. 2、Thyristor breaks.
E004	Load-off, load off current = set-point percentage * rated current * load threshold, alarms when difference between set-pint and measured current is bigger than load off current. Possible reason: 1、Load off 2、Load current is small 3、Setting of(F-45)is small
E005	Overheat of regulator, heat-sink temperature is bigger than 85, possible reason: 1、Ambient temperature is higher than 45. 2、Fan breaks. 3、Dust on the ventilation path.

7.Basic parameters

Above chapter is the brief operation parameter, R: readable parameter,RW: readable and writeable parameter.Please change parameter when regulator stops.

parameter no.	description	range	default	Attributes	
F-000	Valid output	0-100.0 [%] 0.1%	-	R	0
F-001	Valid input	0-100.0 [%] 0.1%	-	R	1
F-002	Output voltage	0-3000.0 [V] 0.1V	-	R	2
F-004	A phase Output current	0-3000.0 [A] 0.1A	-	R	4
F-005	B phase Output current	0-3000.0 [A] 0.1A	-	R	5
F-006	C phase Output current	0-3000.0 [A] 0.1A	-	R	6
F-007	Output power	0-3000.0 [KW]0.1KW	-	R	7
F-008	Start/stop signal Signal source of start/stop 0: switch off 1: switch on	0-1 1	0	R	8
F-009	Digital setting signal input	0-100.0 [%] 0.1%	0	RW	9
F-010	Start-stop control mode selection 0：External switch 1：panel	0-1 1	0	RW	10
F-011	Given signal type selection 0：Analog 1：Digital	0-1 1	0	RW	11
F-012	Current analog type 0：0-20mA1：4-20mA 2：Integrated slope control	0-2 1	1	RW	12
F-013	Ramp-up time Signal processing before the ramp from 0.0% to 100% of the time required	0-120 1	2	RW	13
F-014	Ramp-down time Before the ramp signal processing dropped from 0.0% to 100% of the time required	0-120 1	2	RW	14
F-015	Output ceiling Maximum output limit	0-100.0 [%] 0.1%	100.0	RW	15
F-016	Output limit Output minimum value	0-100.0 [%] 0.1%	0	RW	16
F-017	Proportion PID control proportional factor	0-200 1	80	RW	17
F-018	Integral PID control integral time	0-200 1	5	RW	18
F-019	Differential PID control differential time	0-200 1	0	RW	19
F-020	Feedback signal source 0：Voltage 1：current 2：power	0-2 1	0	RW	20
F-021	Limiter signal source 0：Current 1：Voltage	0-1 1	0	RW	21
F-022	Limit percent Set as a percentage of the limit signal	0-100.0 [%] 0.1%	100	RW	22
F-023	Control mode 0：Closed-loop phase shift 1：Open loop phase shift 2：Zero trigger	0-2 1	0	RW	23
F-027	AI1 end correction This parameter is set so that 20mA corresponds to a given input 100%	50-150.0 [%] 0.1%	100.0	RW	27
F-029	AI2 end correction This parameter is set so that 5V /10Vcorresponds to a given input 100%	50-150.0 [%] 0.1%	100.0	RW	29
F-033	AI1 Signal selection 0：0-5V 1：0-10V	0-1 1	0	RW	33
F-035	Device Address This parameter sets the Modbus address	0-247 1	123	RW	35
F-036	Baud Rate 0：2400 1：4800 2：9600 3：19200 4：38400	0-4 1	2	RW	36
F-037	Data format 0：8n2 Date bit 8 bits, no calibration, 2 stop bits 1：8e1 Date bit 8 bits, parity - checking, 1 stop bits 2：8o1 Date bit 8 bits, odd parity -checking, 1stop bits	0-2 1	1	RW	37
F-040	Output relay 0：Fault 1：Start status	0-1 1	0	RW	40
F-041	Previous fault	0-100 1	-	RW	41
F-042	Allow overcurrent protection 0：Disable 1：Enable	0-1 1	1	RW	-
F-043	Phase protection permit 0：Disable 1：Enable	0-1 1	1	RW	-
F-044	Load fault protection enables 0：Disable 1：Enable	0-1 1	1	RW	-
F-045	Load-off threshold	10-70 [%] 1%	70	RW	-
F-046	Thyristor thermal protection allows 0：Disable 1：Enable	0-1 1	1	RW	-
F-048	Rated voltage :The same as nameplate. Data can be changed according to actual load, for the purpose of protecting device **Notice**: cannot exceed nominated value on the nameplate	0-3000 [V] 0.1V	380	RW	48
F-049	Rated current:The same as nameplate. Data can be changed according to actual load, for the purpose of protecting device **Notice**: cannot exceed nominated value on the nameplate	0-3000 [A] 0.1A	-	RW	49
F-050	Frequency 0：50HZ 1：60HZ 2：Automatic tracking	0-2 1	0	RW	50

8.Order no.

NK30T — □ □ □ — □ — □

Optional: P Profibus DP
C MODBUS TCP/IP
T Temperature function
R TRMS vaue

NK30T	□ □ □	□	□
Three-phase power regulator	Rated current (A)	Rated voltage (V)	Optional

Xi'an Noker Electric Co.,Ltd.

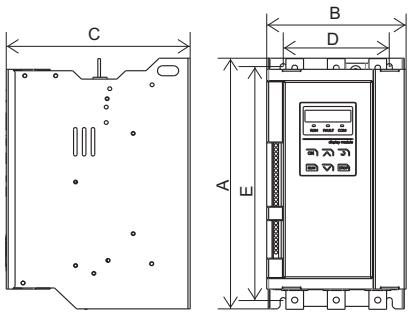
NK30E Three Phase Thyristor Power Regulator

1.Features

- Built-in High-performance, Low-power Microcontroller
- Peripheral Features
  - Support 4-20mA and 0-5V/10Vtwo given
  - Two switch inputs
  - Wide Range Of Primary Loop Voltages（AC260-440V）
- To facilitate centralized control RS485 communication
- One relay output(3A AC250V 3A DC30V)
- Efficient cooling solution such small size, light weight
- Practical alarm function Phase failure, Overheat, Overcurrent, Load break

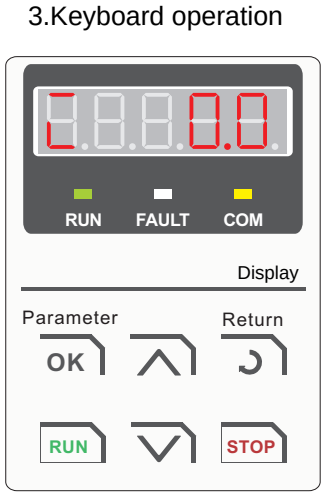
2.Dimension

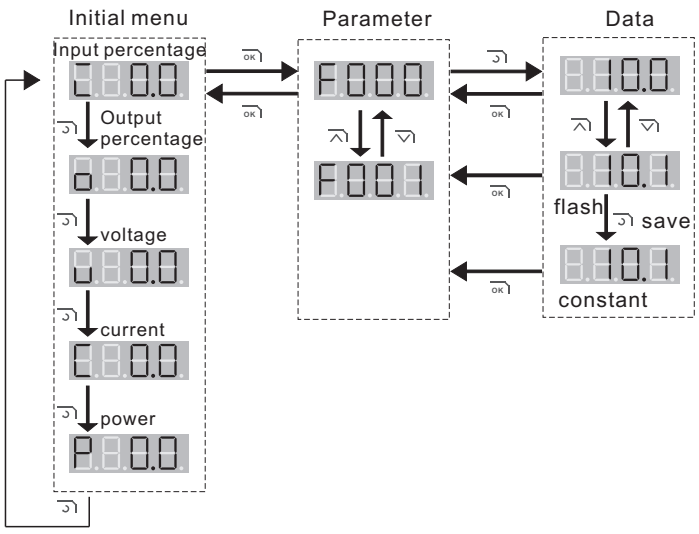
Model	A	B	C	D	E	Install	Cooling
NK30E-025-0.4	300	154	208	120	280	7	self cooling
NK30E-045-0.4							
NK30E-100-0.4							fan cooling
NK30E-170-0.4							
NK30E-270-0.4	360	194	241	140	340	9	
NK30E-320-0.4							
NK30E-450-0.4	550	395	220	300	520	9	
NK30E-600-0.4	570	479	292	400	554	10	
NK30E-800-0.4	680	479	292	400	654	11	



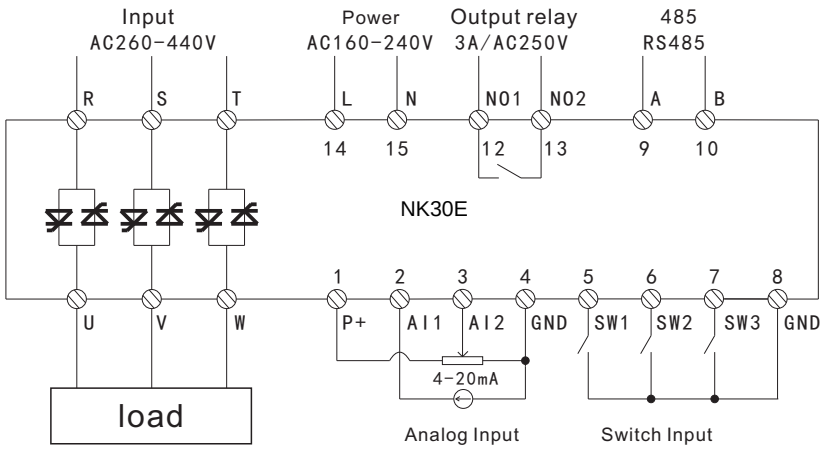
（Unit：mm）

3.Keyboard operation





4.Terminal description



The default is stop start signal SW1, SW2 default switch between AI1 and AI2, closed AI2 given signal is valid, disconnect AI1 given signal is valid.

5.Communication

30E power regulator supports Modbus-RTU protocols.Modbus supports 3、4、6、16, totally 4 functions, F-35: slave station address: 1-247,F-36 baud rate:2400 4800 9600 19200 38400.F-37: data format: 8n2 8e1 8o1, 3 types.Parameter value is 16bits no signal register, decimal point is not supported.For example, before writing 56.7, it should be adjusted as 567 and then re-write.

Notice: every frame cannot exceed 20 bytes, so every frame can maximum read 10 parameters

▶ Read Holding Registers frame format

0	1	2	3	4	5	6	7
Addr	Function 03H	Starting Address Hi	Starting Address Lo	No. of Points Hi	No. of Points Lo	CRC H	CRC L

▶ Preset Single Register frame format

0	1	2	3	4	5	6	7
Addr	Function 06H	Starting Address Hi	Starting Address Lo	Preset Data Hi	Preset Data Lo	CRC H	CRC L

6.Fault and maintenance

fault code	description
E002	Main power fault, possible fault reason: 1、No voltage of mail loop or not the same of nameplate. 2、Synchronous cable of terminal 12 is not connected, please refer to the wiring drawing.
E003	Overcurrent, measured current exceeds 1.25 time of rated current,possible reason: 1、Load changes rapidly or short-circuit. 2、Thyristor breaks.
E004	Load-off, load off current = set-point percentage * rated current * load threshold, alarms when difference between set-pint and measured current is bigger than load off current. Possible reason: 1、Load off 2、Load current is small 3、Setting of(F-53)is small
E005	Overheat of regulator, heat-sink temperature is bigger than 85, possible reason: 1、Ambient temperature is higher than 45. 2、Fan breaks. 3、Dust on the ventilation path.

7.Order no.

NK30E — □ □ □ — □ — □

Three-phase power regulator | Rated current (A) | Rated voltage (V) | Optional

Optional: P Profibus DP
C MODBUS TCP/IP
T Temperature function
R TRMS vaue
DA Analogue output

8.Basic parameters

Above chapter is the brief operation parameter, R: readable parameter,RW: readable and writeable parameter.Please change parameter when regulator stops.

parameter no.	description	range	default	Attributes &Register	
F-000	Valid output	0-100.0 [%] 0.1%	-	R	0
F-001	Valid input	0-100.0 [%] 0.1%	-	R	1
F-002	Output voltage	0-3000.0 [V] 0.1V	-	R	2
F-004	A phase Output current	0-3000.0 [A] 0.1A	-	R	4
F-005	B phase Output current	0-3000.0 [A] 0.1A	-	R	5
F-006	C phase Output current	0-3000.0 [A] 0.1A	-	R	6
F-007	Output power	0-3000.0 [KW]0.1KW	-	R	7
F-008	status: switch off 1: switch on	0-1	0	R	8
F-009	Digital setting signal input	0-100.0 [%] 0.1%	0	RW	9
F-010	Start-stop control mode selection 0：External switch 1：panel	0-1	0	RW	10
F-011	Given signal type selection 0：Analog 1：Digital	0-1	0	RW	11
F-012	analog type 0：AI1 0-20mA/AI2 0-5V 1：AI1 4-20mA/AI2 0-5V 2：AI1 4-20mA/AI2 0-5V Integrated slope control 3：AI1 4-20mA/AI2 0-10VIntegrated slope control 4：AI1 0-20mA/AI2 0-10V 5：AI1 4-20mA/AI2 0-10V	0-2	1	RW	12
F-013	Ramp-up time Signal processing before the ramp from 0.0% to 100% of the time required	0-120	2	RW	13
F-014	Ramp-down time Before the ramp signal processing dropped from 0.0% to 100% of the time required	0-120	2	RW	14
F-015	Output ceiling Maximum output limit	0-100.0 [%] 0.1%	100	RW	15
F-016	Output limit Output minimum value	0-100.0 [%] 0.1%	0	RW	16
F-017	Proportion PID control proportional factor	0-200	80	RW	17
F-018	Integral PID control integral time	0-200	5	RW	18
F-019	Differential PID control differential time	0-200	0	RW	19
F-020	Feedback signal 0：Voltage 1：current 2：power	0-2	0	RW	20
F-021	Limiter signal source 0：Voltage 1：Current	0-1	1	RW	21
F-022	Limit percent Set as a percentage of the limit signal	0-100.0 [%] 0.1%	100	RW	22
F-023	Control mode 0：Closed-loop phase shift 1：Open loop phase shift 2：Zero trigger 3:CM Mode	0-3	0	RW	23
F-027	AI1 end correction This parameter is set so that 20mA corresponds to a given input 100%	50-150.0 [%] 0.1%	100	RW	27
F-029	AI2 end correction This parameter is set so that 5V or 10V corresponds to a given input 100%	50-150.0 [%] 0.1%	100	RW	29
F-030	Power allocation amount	2-100	10	RW	30
F-031	Zero trigger cycle 0：2S 1：4S 2：8S	0-2	0	RW	31
F-032	CM Control mode 0：time 1：Swith	0-1	0	RW	32
F-033	save	0-1	0	RW	33
F-034	CM Switch time From the run started to set a time switch from phase shift to zero	0-6000 [M] 1M	120	RW	34
F-035	Device Address This parameter sets the Modbus address	0-247	2	RW	35
F-036	Baud Rate 0：2400 1：4800 2：9600 3：19200 4：38400	0-4	2	RW	36
F-037	Data format 0：8n2 Date bit 8 bits, no calibration, 2 stop bits 1：8e1 Date bit 8 bits, parity - checking, 1 stop bits 2：8o1 Date bit 8 bits, odd parity -checking, 1stop bits	0-2	1	RW	37
F-038	Analog output 1th (0:NO 1:input signal 2:Output percentage 3:Output voltage 4:A Phase current 5:B Phase current 6:C Phase current 7:Output power)	0-7	3	RW	38
F-039	Analog output 2th	0-7	4	RW	39
F-040	Analog output 3th	0-7	5	RW	40
F-041	Analog output 4th	0-7	6	RW	41
F-042	Analog output 1th signal type 0：0-20mA 1：4-20mA	0-1	1	RW	42
F-043	Analog output 2th signal type 0：0-20mA 1：4-20mA	0-1	1	RW	43
F-044	Analog output 3th signal type 0:0-20mA 1:4-20mA	0-1	1	RW	44
F-045	Analog output 4th signal type 0:0-20mA 1:4-20mA	0-1	1	RW	45
F-046	Programmable port SW3 0:NO 1:Run 2:Fault 3:External fault 4:Scram 5：CM Switch 6：C phase stop output	0-6	1	RW	46
F-048	Output relay 0：Fault 1：Start status	0-1	0	RW	48
F-049	Previous fault	0-100	0	R	49
F-050	Allow overcurrent protection 0：Disable 1：Enable	0-1	1	RW	-
F-051	Phase protection permit 0：Disable 1：Enable	0-1	1	RW	-
F-052	Phase protection permit 0：Disable 1：Warning 2：Warning+Stop	0-2	1	RW	-
F-053	Load-off threshold	10-70 [%] 1%	70	RW	-
F-054	Thyristor thermal protection allows 0：Disable 1：Enable	0-1	1	RW	-
F-055	Extend the functionality 0：No 1：Analog output	0-1	1	RW	-
F-056	Rated voltage :The same as nameplate. Data can be changed according to actual load, for the purpose of protecting device Notice: cannot exceed nominated value on the nameplate	0-3000 [V] 1V	380	RW	56
F-057	Rated current:The same as nameplate. Data can be changed according to actual load, for the purpose of protecting device Notice: cannot exceed nominated value on the nameplate	0-3000 [A] 1A	-	RW	57
F-058	Frequency 0：50HZ 1：60HZ 2：Automatic tracking	0-2	0	RW	58