

**(T6-SCR Series) (ST6-SCR Series) high performance power regulator
(T7-SCR Series) has no temperature control function)**

LED

T6-SCR T7-SCR

Power regulator

Multi function display settings

AR200
Loadt
SoftD
Error

Input signal display

Output% display

Output current monitoring

Output voltage monitoring

Fault alarm monitoring

Notes

Electrical wiring to complete the delivery controller, AC power supply before the assembly please make sure location is correct.

Errors can cause serious damage control. Serious permanent damage may Do not susceptible to the controller assembly in the high-frequency interference. Corrosion device body "

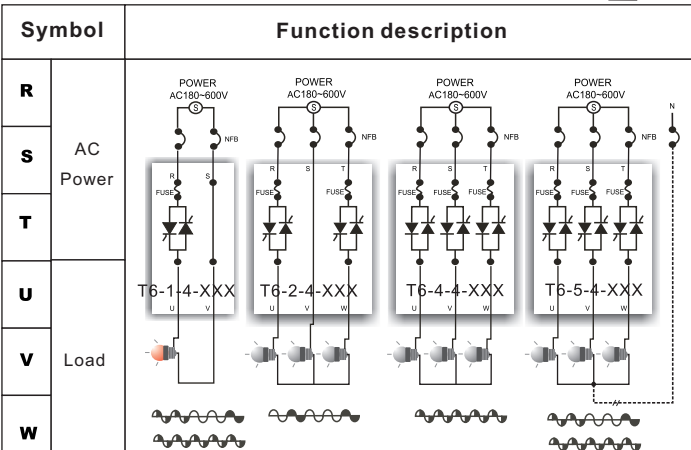
Normal working environment:: -55 ~ +55°C: 95% RH below" the use of

Load test

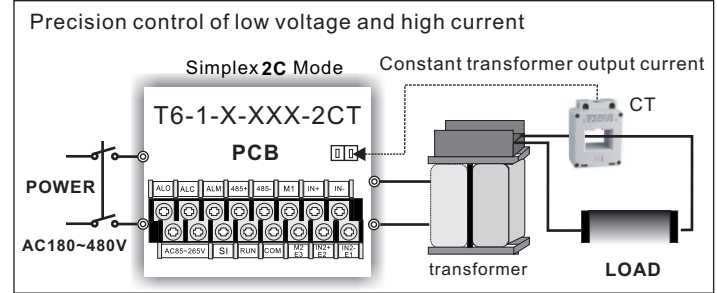
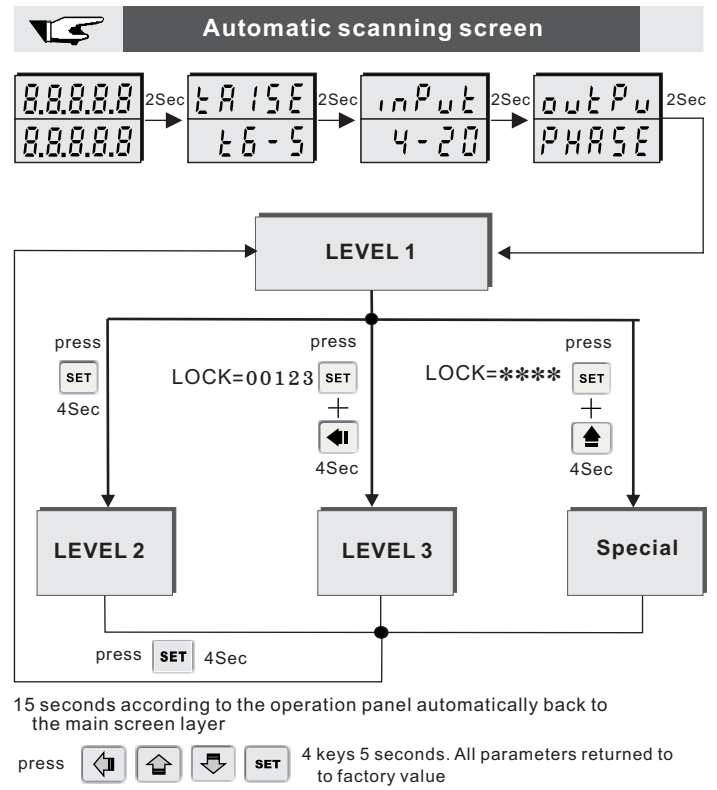
The load current >0.6A. ensures normal adjustment

380V recommends the use of three-phase 3 100W tungsten lamp

380V recommends the use of single-phase 2 100W tungsten lamp



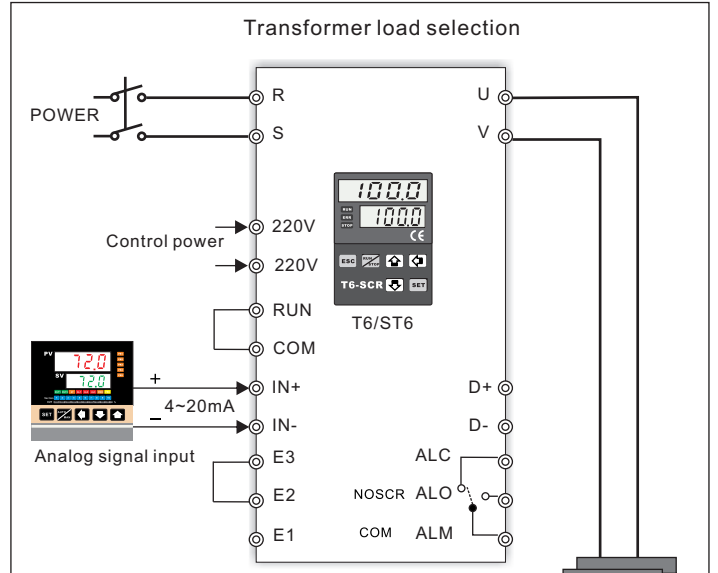
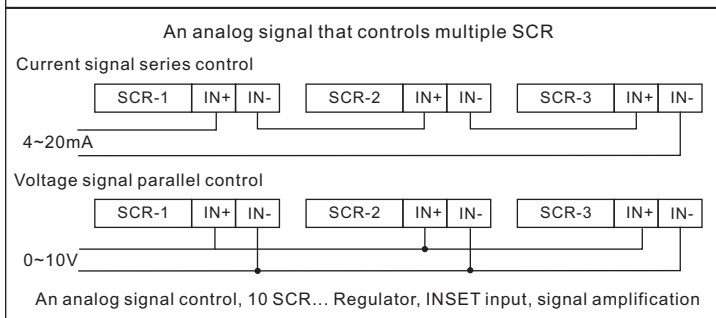
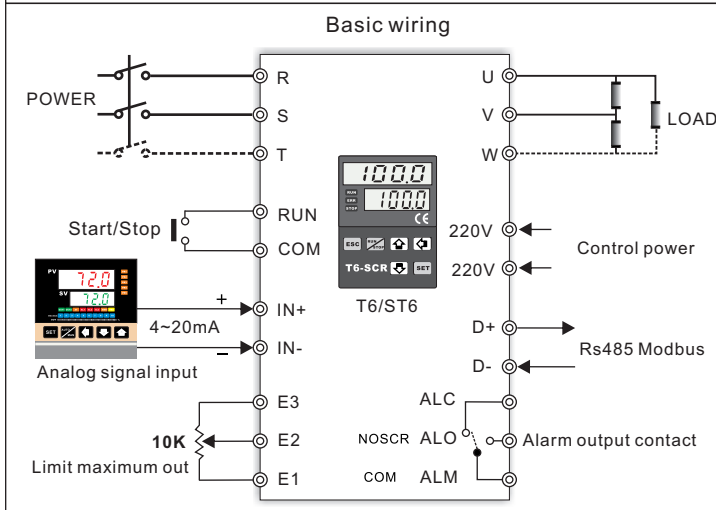
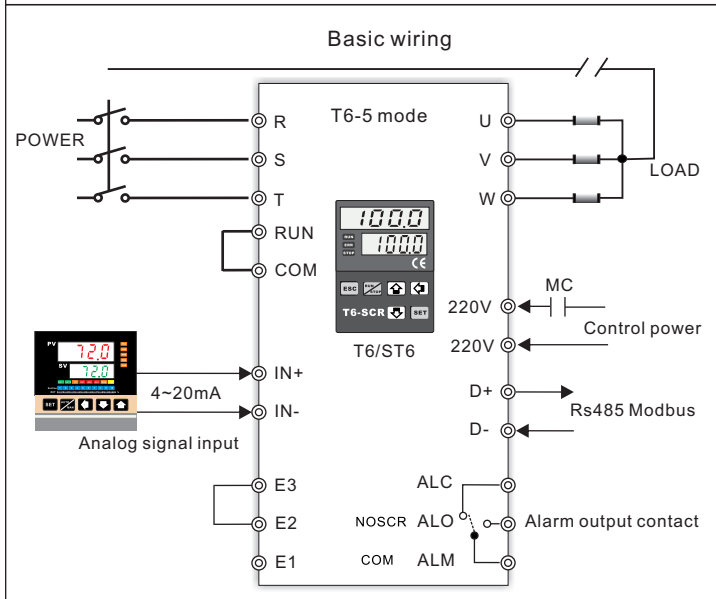
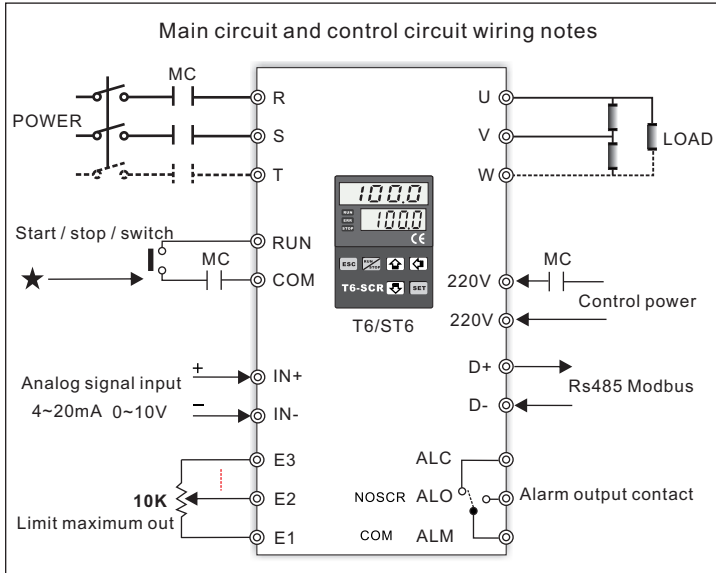
AC1	The working voltage of Pc board varies with the range model voltage -10%	
AC2		
COM	Start / stop / switch 	Start RUN light Stop STOP light
RUN		
M1	Reference voltage Input mode current signal: 4~20mA voltage =5V Input mode voltage signal: 0~10V voltage =10V	
IN+	Analog signal input The LEVEL 2 sets the input signal 4~20mA/0~10V/0~20mA/0~5V	
IN-		
E3	The external potentiometer limits the maximum output amplitude Example: limit maximum output 80% ----- Input signal ratio% ——— Output % 	
E2		
E1		
ALM	COM	Abnormal alarm output contact
ALO	NOSCR	
ALC		
D+	Rs485 Modbus Communications 256 simultaneous communication	
D-	The longest distance 1200M 	



Panel function description

Symbol	Name	Function description
	Set key (input)	Parameter setting (input confirmation key)
	Manual (start stop) key	Input mode selection KEY control panel Turn stop by alternating start
	Shift key (change selection)	Shift key (press blink)
	Decrease key (feature selection)	Parameter function change
	Add key (feature selection)	Parameter function change
RUN	Running light	
STOP	Stop light	
ERR	Alarm light	Controller alarm lights

T6-SCR three-phase **T6-SCR single phase** **ST6-SCR**



Cautions for transformer load

- 1.model selection must increase 30% (safety factor) capacity
- 2.step-down transformer model selection

Example: single phase transformer (input 380V)(output 100V)
load current 300A

Select model current

$$\left\{ \frac{(300)}{(380/100)} \right\} \times 1.3 = 102A$$
 Load(A) Transformer Multiple Type

Select model single-phase 100A

Mode:T6-1-4-100CT

- 3.step-up transformer model selection

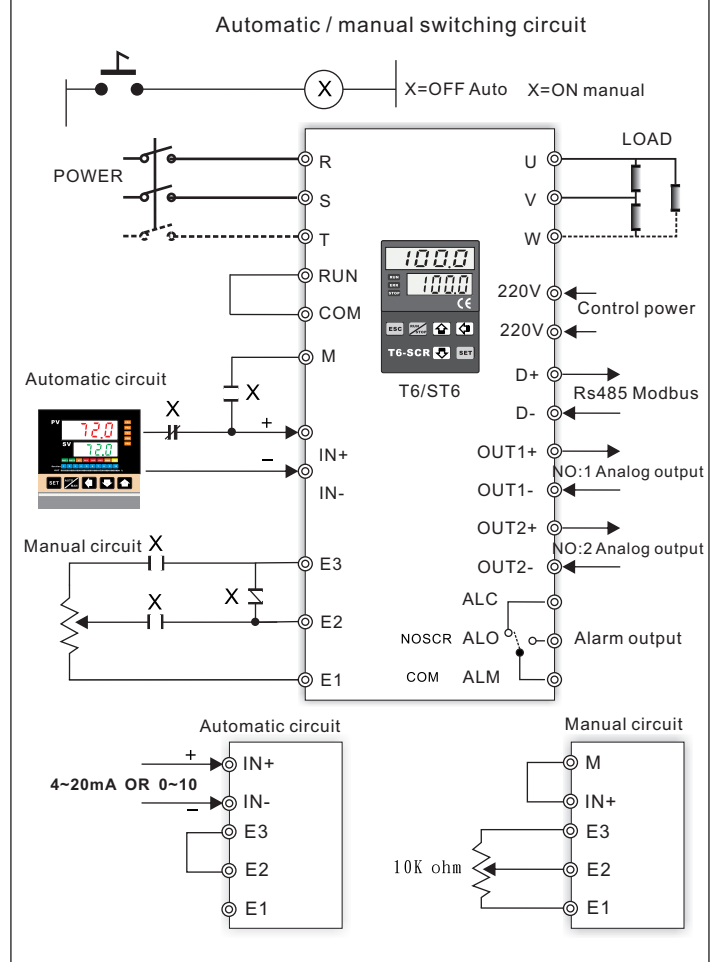
Example: single phase transformer (input 380V)(output 1000V)
load current 30A

Select model current

$$\left\{ (30) \times \frac{(1000/380)}{1} \right\} \times 1.3 = 102A$$
 Load(A) Transformer Multiple Type

Select model single-phase 100A

Mode:T6-1-4-100CT





Product selection and appearance size table

Specification type index

Type	Mode	Main power	Current	Output control mode	Commu	Analog output	Control Power
ST6 1Ø 28-60A 3Ø 28-40A	1	0 AC12-85V	028 28A	Z	R RS485	D Relay output	1 AC110V
		1 AC90-175V	030 30A	P		A Proportional output	AC220V
		4 AC180-440V	040 40A	Zero output Phase output		DC 4-20mA	
		6 AC450-660V	050 50A	CT		DC 0-10V	
T6 1Ø 50-1200A 3Ø 30-1200A	2	6 AC450-660V	060 60A	Constant current		V Proportional output	
		10 AC670-1000V	075 75A	Current limit		DC 4-20mA	
		12 AC1050-1200V	080 80A	Constant current		DC 0-10V	
			100 100A	AT		DC 0-10V	
			125 125A	ATV		DC 4-20mA	
			150 150A	VT		DC 0-10V	
			175 175A	V		DC 0-10V	
			200 200A	CV		DC 0-10V	
			225 225A	CKW		DC 0-10V	
			300 300A	KW		DC 0-10V	
			350 350A	CYC		DC 0-10V	
			400 400A			DC 0-10V	
	500 500A			DC 0-10V			
	600 600A			DC 0-10V			
	800 800A			DC 0-10V			
	1200 1200A			DC 0-10V			

Purchase formula calculation
 $1\phi (Kw/V) \cdot N=A$
 $3\phi \{(Kw/V) / 1.732\} \cdot N=A$

Kw Load W
 A Purchase current
 V Main power
 N Multiple
 1.2 Resistance
 1.3 Transformer

Model current is applied to load KW range control table

Model specification	Current	Kw		Image	Kg	Shape (mm)		Install (mm)		Screw and fixed torque		Cooling mode		
		220V	380V			L	D	L	W	M6	40kgfcm			
ST6 1 Phase Compact	ST6-1-4-028	28A	3	6	F1	1.8	185	110	155	95	105	M6	40kgfcm	
	ST6-1-4-030	30A	4	7	F1	2.0	185	110	155	95	105	M6	40kgfcm	
	ST6-1-4-040	40A	6	9	F1	2.1	185	110	155	95	105	M6	40kgfcm	
	T6-1-4-050	50A	7	12	F4	2.2	215	110	200	170	105	M6	50kgfcm	
	T6-1-4-060	60A	9	18	F4	2.2	215	110	200	170	105	M6	50kgfcm	
	T6-1-4-075	75A	14	24	F4	2.2	215	110	200	170	105	M6	70kgfcm	
	T6-1-4-080	80A	15	26	F5	2.6	250	110	200	170	105	M6	85kgfcm	
	T6-1-4-100	100A	18	33	F5	2.6	290	110	210	170	105	M6	85kgfcm	
	T6-1-4-125	125A	22	37	F5	2.6	290	110	210	170	105	M6	95kgfcm	
	T6-1-4-150	150A	26	45	F5	2.9	290	110	210	170	105	M8	170kgfcm	
	T6-1-4-175	175A	30	50	F5	2.9	290	110	210	170	105	M8	200kgfcm	
	T6 1 Phase Conventional	T6-1-4-200	200A	35	62	F8	2.9	290	110	210	170	140	M8	220kgfcm
T6-1-4-225		225A	38	65	F8	2.9	290	110	210	170	140	M8	220kgfcm	
T6-1-4-300		300A	52	90	F9	8.5	370	180	255	250	170	M10	250kgfcm	
T6-1-4-350		350A	60	105	F9	8.5	370	180	255	200	170	M10	250kgfcm	
T6-1-4-400		400A	70	120	F9	10	370	180	255	200	170	M14	280kgfcm	
T6-1-4-500		500A	90	150	F9	10	370	180	255	200	170	M14	300kgfcm	
T6-1-4-600		600A	100	175	F9	10	370	180	255	200	170	M14	320kgfcm	
T6-1-4-800		800A	120	220	F11	15.5	520	250	250	515	195	M16	350kgfcm	
T6-1-4-1200		1200A	160	300	F11	20	520	250	250	515	195	M16	400kgfcm	
ST6 3 Phase Compact		ST6-5-4-028	28A	5	12	F1	1.8	185	110	195	95	105	M6	40kgfcm
		ST6-5-4-030	30A	6	15	F2	2.1	185	110	195	95	105	M6	40kgfcm
		ST6-5-4-040	40A	9	18	F3	2.1	220	110	195	95	105	M6	40kgfcm
T6 3 Phase Conventional	T6-5-4-040	40A	9	18	F6	3.5	215	150	155	170	140	M6	40kgfcm	
	T6-5-4-050	50A	14	26	F7	3.5	250	150	220	170	140	M6	50kgfcm	
	T6-5-4-060	60A	16	30	F7	4.5	250	150	220	170	140	M6	60kgfcm	
	T6-5-4-075	75A	22	40	F7	4.5	250	150	220	170	140	M6	70kgfcm	
	T6-5-4-080	80A	25	43	F7	4.5	250	150	220	170	140	M6	70kgfcm	
	T6-5-4-100	100A	32	56	F8	5	290	150	220	170	140	M6	85kgfcm	
	T6-5-4-125	125A	38	67	F8	5	290	150	220	170	140	M8	95kgfcm	
	T6-5-4-150	150A	45	80	F8	6	290	150	220	170	140	M8	170kgfcm	
	T6-5-4-175	175A	50	90	F9	9	370	180	255	200	170	M10	200kgfcm	
	T6-5-4-200	200A	55	100	F9	11	370	180	255	200	170	M10	220kgfcm	
	T6-5-4-225	225A	68	120	F9	11	370	180	255	200	170	M10	220kgfcm	
	T6-5-4-300	300A	89	160	F10	15.5	420	250	250	410	195	M12	250kgfcm	
T6-5-4-350	350A	108	190	F10	15.5	420	250	250	410	195	M12	250kgfcm		
T6-5-4-400	400A	120	220	F11	22.5	520	250	250	510	195	M14	280kgfcm		
T6-5-4-500	500A	150	270	F11	22.5	520	250	250	510	195	M14	300kgfcm		
T6-5-4-600	600A	180	329	F11	22.5	520	250	250	510	195	M14	320kgfcm		
T6-5-4-800	800A	260	450	F12	51	620	350	300	610	295	M14	350kgfcm		
T6-5-4-1200	1200A	300	550	F12	51	620	350	300	610	295	M14	400kgfcm		

Output control mode

Output Function	Z	P	ZP	CT	C	AT	VT	V	CV	KW	CKW	CYC
Function	Zero	Phase	Zero Phase	Limit Current	Constant Current	Limit Current	Limit Voltage	Constant Voltage	Voltage Current	Constant KW	Limit KW	Change cycle
Display panel	●	●	●	●	●	●	●	●	●	●	●	●
Zero output mode	●	●	●	●	●	●	●	●	●	●	●	●
Phase output mode	---	●	●	●	●	●	●	●	●	●	●	●
Phase constant current	---	---	---	●	●	●	---	---	●	●	●	●
Load break detection	---	---	---	---	---	---	---	---	---	---	---	---
Grounding detection	---	---	---	---	---	●	---	---	---	---	---	---
Alarm contact output	●	●	●	●	●	●	●	●	●	●	●	●

ST6-SCR (1P 28~40A)(3P 28)

F1

1Ø	28A 30A 40A
3Ø	28A

Appearance L=185 W=110 D=158
 Install L=95 W=100
 PCB Power AC220V 30VA

ST6-SCR (1P 50~60A)(3P 30A)

F2

1Ø	50A 60A
3Ø	30A

Appearance L=185 W=110 D=195
 Install L=95 W=100
 PCB Power AC220V 30VA

ST6-SCR (3P 40~50A)

F3

3Ø	40A 50A
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Appearance L=220 W=110 D=195
 Install L=95 W=100
 PCB Power AC220V 30VA

T6-SCR (1P 50~75A)

F4

1Ø	50A 60A 75A
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Appearance L=215 W=110 D=200
 Install L=170 W=100
 PCB Power AC220V 30VA

T6-SCR (1P 100~225A)

F5

1Ø	100A 125A 150A 175A 200A
----	--------------------------

Appearance L=290 W=110 D=200
 Install L=170 W=100
 PCB Power AC220V 80VA

T6-SCR (3P 30~40A)

F6

3Ø	30A 40A
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Appearance L=210 W=150 D=155
 Install L=170 W=140
 PCB Power AC220V 40VA

T6-SCR (3P 50~80A)

F7

3Ø	50A 60A 75A 80A
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Appearance L=250 W=150 D=220
 Install L=170 W=140
 PCB Power AC220V 80VA

T6-SCR (3P 100~150A)

F8

3Ø	100A 125A 150A
----	----------------

Appearance L=290 W=150 D=220
 Install L=170 W=140
 PCB Power AC220V 80VA

T6-SCR (1P 300~600A)(3P 175~225A)

F9

1Ø	300A 350A 400A 500A
3Ø	175A 200A

Appearance L=320 W=180 D=255
 Install L=200 W=170
 PCB Power AC220V 150VA

T6-SCR (1P 800~1200A)(3P 300~350A)

F10

1Ø	800A 1200A
3Ø	300A 350A

Appearance L=420 W=250 D=250
 Install L=410 W=195
 PCB Power AC220V 200VA

T6-SCR (3P 400~600A)

F11

3Ø	400A 500A 600A
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Appearance L=520 W=250 D=250
 Install L=510 W=195
 PCB Power AC220V 250VA

T6-SCR (3P 800~1200A)

F12

3Ø	800A 1200A
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Appearance L=620 W=250 D=250
 Install L=610 W=195
 PCB Power AC220V 250VA

Input display	
mA 00	mA mA analog signal input: input (shows the current mA value)
V 00	V DC V analog signal input: (displays the voltage input V value)
SET	i Panel input control: (set output%)
	r RS485 (communication control output%)
Input mode change by LEVEL2 c a n t L	
Output display	
0 (zero) (phase) output display mode (display 0.0~100.0)	
V (limit voltage) (constant voltage) voltage display	
A (limited current) (constant current) current display	
L (current limiting constant voltage)voltage display	
C (constant current limiting voltage) current display	
K (limited power Kw) (constant power Kw) power Kw display	
Input mode change by LEVEL3 n o d E	

The maximum output current limit																			
ct-A 400	CT-A Maximum output current limit																		
SET	Limiting current type (maximum current limit setting) Constant current type (output current range setting)																		
	Type: C, K, CT, AT, CV, KW																		
ct-V 400	CT-V Maximum output voltage limit																		
SET	Limiting voltage type (maximum voltage limit setting) Constant voltage type (output voltage range setting)																		
	Type: V, VT, CV																		
<table border="1"> <tr> <th>ct-A Current set</th> <th>ct-V voltage set</th> <th>ct-h voltage set</th> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>current limited model</td> <td>voltage limited model</td> <td>current Constant model</td> </tr> <tr> <td>Limiting current 60A</td> <td>Limiting voltage 220V</td> <td>Constant current 60A</td> </tr> <tr> <td>constant Constant model</td> <td>voltage Constant model</td> <td>Constant voltage 220V</td> </tr> <tr> <td>Limiting current 60A</td> <td>Constant voltage 220V</td> <td>Constant voltage 220V</td> </tr> </table>		ct-A Current set	ct-V voltage set	ct-h voltage set				current limited model	voltage limited model	current Constant model	Limiting current 60A	Limiting voltage 220V	Constant current 60A	constant Constant model	voltage Constant model	Constant voltage 220V	Limiting current 60A	Constant voltage 220V	Constant voltage 220V
ct-A Current set	ct-V voltage set	ct-h voltage set																	
current limited model	voltage limited model	current Constant model																	
Limiting current 60A	Limiting voltage 220V	Constant current 60A																	
constant Constant model	voltage Constant model	Constant voltage 220V																	
Limiting current 60A	Constant voltage 220V	Constant voltage 220V																	

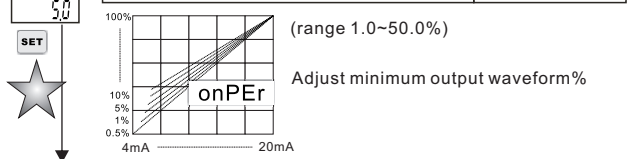
(current type) load short circuit alarm setting	
Err.oc 2	Err.oc Load current (CT-A) multiple set
	(CT-A) X (Err.oc) = overcurrent value
	Type: C, K, CT, AT, CV, KW
tim.oc 500	tim.oc Load overcurrent delay time
	Over current time (20~1000ms)
cot.oc 1	cot.oc The number of load current
SET	Setting range (0~5) Set=0 function cancelled
(current) > {(CT-A) x (Err.oc set)} will more than tim.oc time immediately shut down the output again from 0% start. To reach cot.oc times. Stop alarm display Error OC output.	

ct-A2 400	CT-A2 Simplex 2C Mode
SET	secondary current range setting Control constant output current
TEMP 0	TEMP Controller core temperature detection
SET	Show only Temperature is over 85°C, stop output over temperature alarm
hi.out 1000	hi.out Limited maximum output%
SET	Factory 1000
PWR.AL 0	The abnormal power contact output alarm
SET	Factory 0 n0 Show only 455 display and alarm
AL.TIM 0	AL.TIM Power anomaly detection delay time
SET	Factory 0 Setting range (0~30 seconds)
PW.ALL 0	PW.ALL Power abnormal output control
SET	Factory 0 n0 COM / run short circuit / alarm output 455 Power supply abnormal alarm output
R-A 00	R-A Display R output current
SET	
S-A 00	S-A Display S output current
T-A 00	T-A Display T output current
	AT Mode
o-v 00	o-v Display output voltage
SET	
Return	

Set input mode	
contL 4-20n	Panel input control 0.0~100.0
SET	
0-20n	0-20n mA analog signal input: (0.0~20.0mA)
4-20n	4-20n mA analog signal input: (4.0~20.0mA)
0-5V	0-5V DC V analog signal input: (0.0~5.0V)
1-5V	1-5V DC V analog signal input: (1.0~5.0V)
0-10V	0-10V DC V analog signal input: (0.0~10.0V)
2-10V	2-10V DC V analog signal input: (2.0~10.0V)
rS485	RS485: (communication control output%)

t.soft 50	t.soft Soft start
SET	Range 0.0~199 sec Sec 5.0
t.dwon 00	t.dwon Soft stop
SET	Range 0.0~199 sec Sec 5.0

t.RESP 10	t.RESP Input signal response time
SET	Factory 0.3
onPER 50	onPER Starting voltage (minimum output%)
SET	Factory 10



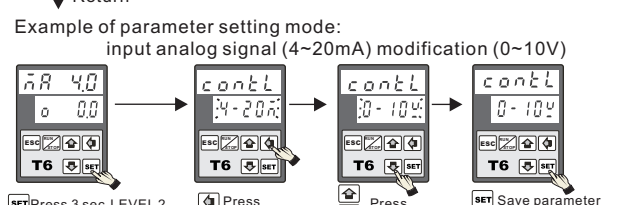
Loch 00000	Lock Password setting
SET	Factory 00000
Password = 00123 Press 3Sec enter LEVEL3	

Load break alarm function settings (current type)	
n0	=NO (function off) =YES (function on)
SET	Factory n0
(three-phase AT model) (single-phase current type)	
Example: load < 85%	
currE 1	currE Load current setting
SET	Factory 1
=0 (function off) Example: three-phase 380V 45Kw 45000/380/√3 = 68.3 current setting 68.8	
ErrSc 85	ErrSc Load current low% setting
SET	Factory 85
(set current) and (detecting current comparison set%)	
Example: three-phase 380V 20Kw single-phase 380V 20Kw 20000/380/√3 = 30.3 20000/380 = 52.7 three-phase (CurrE) set 30.3 single-phase (CurrE) set 52.7 (ErrSC) set 85 During the output process, check the current < set current 85% alarm	
Display: Error LoAd	

LoErr 00	Lo.Err Load break stop output setting
SET	Factory n0
=NO (continue output) =YES (stop output)	
oPERn 30	oPERn Load break detection start start% setting
SET	Factory 30
30 The output above 30%. start test	

Load short circuit detection (current type)	
PERcE 0	PERcE Load short-circuit detection% set
SET	Factory 0
10 Output 10% below. Detection =0 (function cancelled)	
AMPER 0	AMPER Output load current setting
SET	Factory 0
=0 (function cancelled)	
PERcE set 10 AMPER set 30 The output below 10% (current more than 30A) Alarm Stop output Display: Error OC	
Set the load short-circuit function. The current must be filled correctly Otherwise, the controller will not output properly	

25h0v 0FF	2.Show Display output current voltage
SET	Factory 0FF
=OFF (conventional) ; =ON (current voltage)	
Input signal mA 4.0	Out voltage V 238.0
Out current A 10.0	Out current A 10.0
CV Mode	
run-t 00	run-t Total controller use time
SET	Factory 00
Display unit 0.1 days	
Return	



Communication data address

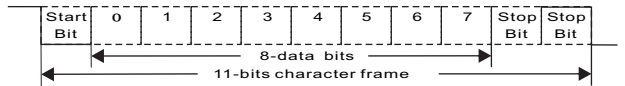
Definition	addr	Read/Write	Function description
SCR output %	000H	R/W	Enter mode RS485. to write to output%
Output% mode			Write 000H=0~1000 Out 0.0~100.0%
Output current set	001H	R/W	(1. current limit) (2. constant current) Write 000H=0~1000 Out 0.0~100.0A
Output voltage set	00FH	R/W	(1. voltage limit) (2. constant voltage) Write 000H=0~1000 Out 0.0~100.0V
Control ON-OFF	003H	R/W	bit 0 =1 ON =0 OFF
Limited output%	004H	R/W	Limited maximum output%
Minimum output%	005H	R/W	No analog signal input. Minimum output setting
Soft start time	006H	R/W	Output soft start time setting
Soft stop time	007H	R/W	Soft stop time setting
Input signal	008H	R/W	Analog input signal sampling average
Set input mode	009H	R/W	01H KEY Manual panel input 03H 0~20mA IN+ IN- Analog signal 04H 4~20mA IN+ IN- Analog signal 05H 0~5V IN+ IN- Analog signal 06H 1~5V IN+ IN- Analog signal 07H 0~10V IN+ IN- Analog signal 08H 2~10V IN+ IN- Analog signal 09H Rs485 Write 000H
Input signal read	00AH	R	Enter analog signal% read
Output% read	00BH	R	Output% read (0~100.0)
Controller temper	00CH	R	The controller core temperature read
Fault alarm code	00DH	R	bit 0 No power supply =0 normal =1 Abnormal bit 1 R phase no power =0 normal =1 Abnormal bit 2 S phase no power =0 normal =1 Abnormal bit 3 S phase no power =0 normal =1 Abnormal bit 4 Internal temperature =0 normal =1 Abnormal bit 5 Open temperature =0 normal =1 Abnormal bit 6 Over load =0 normal =1 Abnormal bit 7 Open load =0 normal =1 Abnormal bit 8 Load short bit 9 Load leakage
R phase current	014H	R	Three phase current AT model
S phase current	015H	R	
T phase current	016H	R	
Output voltage	017H	R	Voltage models
Output current	018H	R	Current models

Communication format and mode of communication

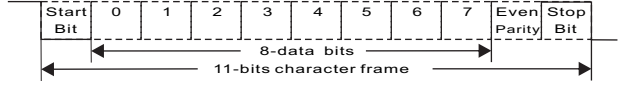
Modbus Rs485 Set selection (4800 9600 19200 38400)

Communication format: (11-bit) Character structure: (8-bit data)

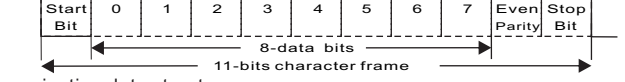
<8: N: 2:>
<8: N: 1:>



<8: E: 1:>



<8: 0: 1:>



Communication data structure:

Start	More than 10ms quiescent time
ADR	Communication address: 8-bit address
CMD	Instruction code: 8-bit address
DATA (n-1)	Data content
.....	N* 8-bit address N<=25
DATA0	
CRC CHK Low	CRC error detection code
CRC CHK High	16-bit detection code (2+2 8-bit) characters
END	More than 10ms quiescent time

Read: read the output format is 0BH

RTU instruction message

0	ADR		01H
1	CMD		03H
2		MSB	00H
3	Data address	LSB	0BH
4	Data length	MSB	00H
5	WORD calculations	LSB	01H
6		LSB	F5H
7	CRC debug code	MSB	C8H

RTU response message

0	ADR		01H
1	CMD		03H
2	In byte calculations	LSB	02H
3	Start address content	MSB	03H
4		LSB	E8H
5		LSB	B8H
6	CRC debug code	MSB	FAH

Write format: write to the controller, output input 00H

RTU instruction message

0	ADR		01H
1	CMD		06H
2		MSB	00H
3	Data address	LSB	00H
4		MSB	02H
5	Data content	LSB	BCH
6		LSB	89H
7	CRC debug code	MSB	1BH

RTU response message

0	ADR		01H
1	CMD		06H
2		MSB	00H
3	Data address	LSB	00H
4		MSB	02H
5	Data length	LSB	BCH
6		LSB	89H
7	CRC debug code	MSB	1BH

CRC debug code

RTU uses CRC (Cyclical, Redundancy, Check) to detect errors, and the CRC debugger is calculated by the following steps:

- Step 1: loads a 17 bit register (called CRC send register) with the content of FFFFH
- Step 2: performs the Exclusive OR operation of the first byte of the instruction message and the low bit word of the 17-BIT CRC send register, and saves the result back to the CRC register
- Step 3: move the contents of the CRC register to the right 1bit, fill in the 0 at the leftmost bit and check the CRC scratchpad
- Step 4: if the minimum bit of the CRC register is 0, repeat step 3; otherwise, the CRC register A001H will be Exclusive
- Step 5: repeat step 3 and step 4; the content of CRC has left shift register until the 8-bit the byte has finished processing
- Step 6: the command message the next byte repeat step 2 to step 5 until all processing is complete all byte CRC register content is CRC, the instructions must be low byte CRC exchange sequence that is the low byte is transmitted first

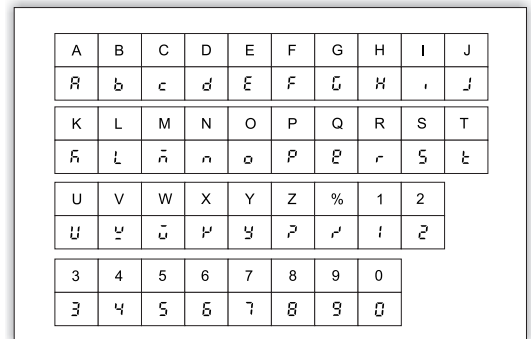
Examples of computing CRC values: (CRC calculation example written in C language)

That is, the function needs two arguments:
 Unsigned char* data; pointer to the message buffer
 Unsigned char length; number of bytes in the message buffer
 The function returns the Unsigned integer; the CRC value
 Unsigned integer CRC_check(unsigned char* data, unsigned char length)

```

int x;
Unsigned int reg_crc=0XFFFF
While(length--)
{
    reg_crc^=*data++;
    for(x=0;<8;x++)
    {
        if((reg_crc&0x01) //LSB(b0)==1
        {reg_crc=(reg_crc>>1)^0xa001;}
        else
        {reg_crc=reg_crc>>1; }
    }
}
return reg_crc;
    
```

Display meter



Panel size chart

