杭申电气
HANGSHEN ELECTRIC

HSY1D

1

1 1

HSY1D

/

/

SCADA

1 2

GB/T 22264

-
- PT/CT
-
-
-
-
- PLC Modicon, GE, Simens…
- Intouch, Fix,
-

1 3

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-
-
-

-
-
-

2

RS485 MODBUS-RTU

LED

3

3.1

	HSY1D-Z3/3W3 HSY1D-Z4/3W3	80 × 80	76 × 76	+ + + / + + /
	HSY1D-Z3/9W3 HSY1D-Z4/9W3	96 × 96	88 × 88	
	HSY1D-Z3/2W3 HSY1D-Z4/2W3	120 × 120	108 × 108	
	HSY1D-BP3/3W3 HSY1D-BP4/3W3	80 × 80	76 × 76	+ + + / +
	HSY1D-BP3/9W3 HSY1D-BP4/9W3	96 × 96	88 × 88	
	HSY1D-BP3/2W3 HSY1D-BP4/2W3	120 × 120	108 × 108	
	HSY1D-E3/3W3 HSY1D-E4/3W3	80 × 80	76 × 76	+
	HSY1D-E3/9W3 HSY1D-E4/9W3	96 × 96	88 × 88	
	HSY1D-E3/2W3 HSY1D-E4/2W3	120 × 120	108 × 108	
	HSY1D-B3/3W3 HSY1D-B4/3W3	80 × 80	76 × 76	+ +
	HSY1D-B3/9W3 HSY1D-B4/9W3	96 × 96	88 × 88	

	HSY1D-B3/2W3 HSY1D-B4/2W3	120×120	108×108	
	HSY1D-Z2/3W1	80×80	76×76	+ + + / + + /
	HSY1D-Z2/9W1	96×96	88×88	
	HSY1D-Z2/2W1	120×120	108×108	
	HSY1D-BP2/3W1	80×80	76×76	+ + + / +
	HSY1D-BP2/9W1	96×96	88×88	
	HSY1D-BP2/2W1	120×120	108×108	
	HSY1D-B2/3W1	80×80	76×76	+ +
	HSY1D-B2/9W1	96×96	88×88	
	HSY1D-B2/2W1	120×120	108×108	

mm

3.2

Tf1 0 TD 0 TD 0.0029 Tc( )Tj/T7×1 TD-0.0029 Tc<45e14e763.f47a3e11cc4
AC100V AC1~100V AC400V AC20~400V

1.2 ' .

MODBUS-RTU

3.5

10℃ +45℃

20℃ +70℃

5% 95%

≤2500m

3.6

>AC2kV/min

>AC1.5kV

>5

3.7

AC85~264V DC100~350V

<4W

4

:

5

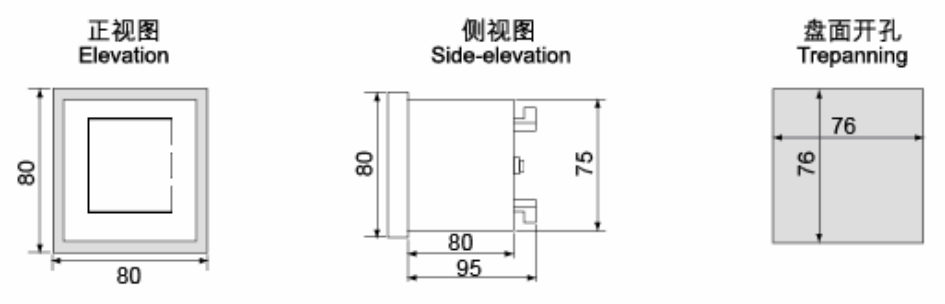
5.1

AC/DC

5.2

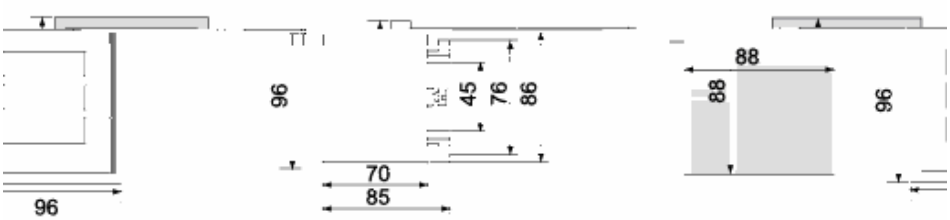
5.3

HSY1D 80



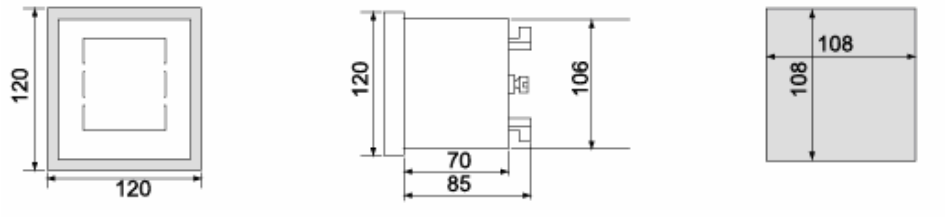
1 mm

HSY1D 96



2 mm

HSY1D 42



3 mm

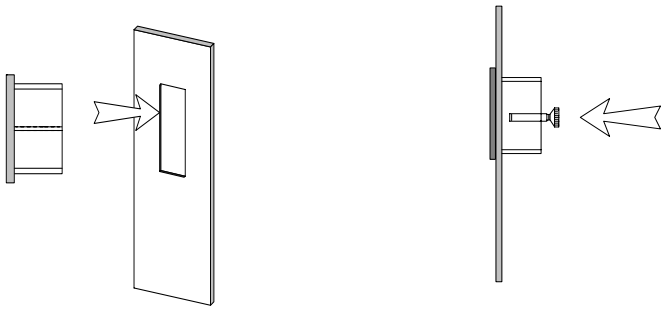
5.4

a

b

c

d



4

5. 5

5.5.1

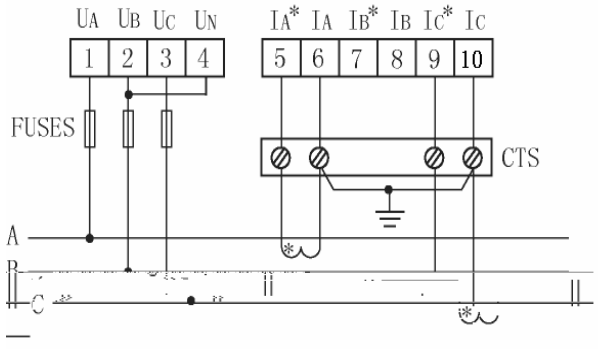
12	13		23	21	22	17	18	19	20
L	N	NC	GND	A	B	Ep -	Ep +	Eq -	Eq +

24	25	26	27	28		34	35	36	37	38	39
DI_1	DI_2	DI_3	DI_4	COM	NC	DO_1		DO_2		DO_3	

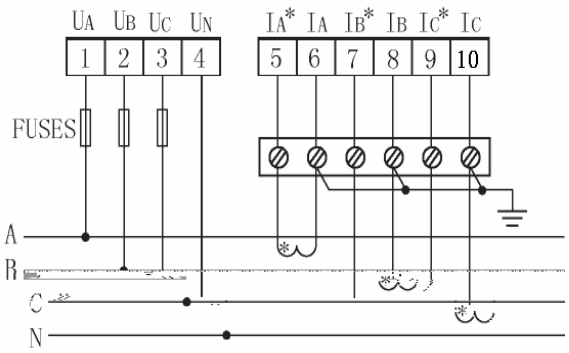
1	2	3	4	5	6	7	8	9	10
U_A	U_B	U_C	U_N	I_A^*	I_{AN}	I_B^*	I_{BN}	I_C^*	I_{CN}
三相电压输入				三相电流输入					

5

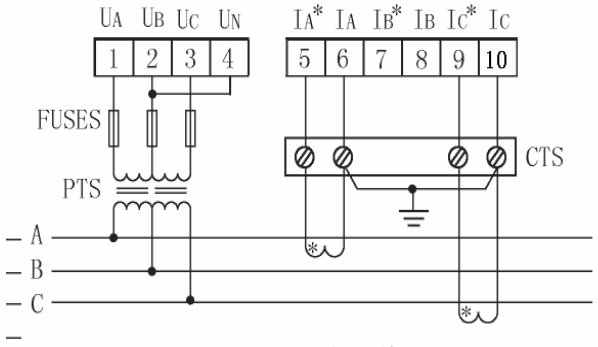
5.5.2



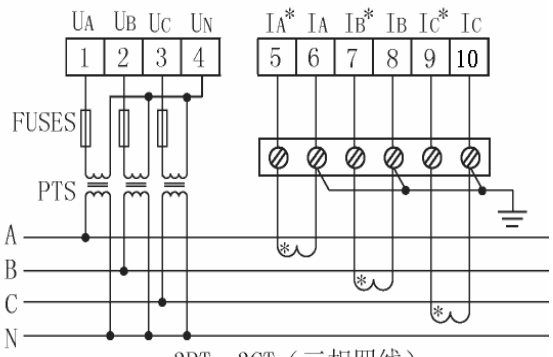
2CT（三相三线）



3CT（三相四线）



2PT、2CT（三相三线）



3PT、3CT（三相四线）

6

*

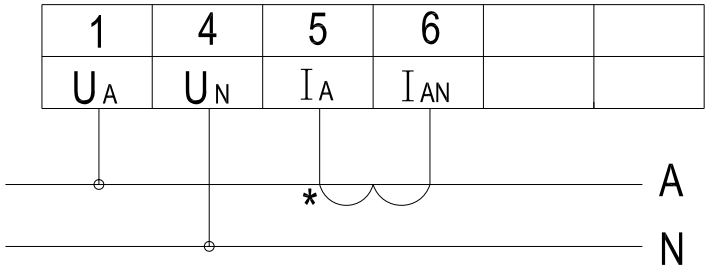
5. 5.3

12	13		23	21	22	17	18	19	20
L	N	NC	GND	A	B	Ep -	Ep +	Eq -	Eq +

1	4	5	6		
U_A	U_N	I_A	I_{AN}		

7

5.5.4



8

*

6

6.1

100V 400V 120% PT

1A

(3P3L 3P4L)

5.5.2

6.2

5A 1A CT

CT

CT

6.3 CT

CT

6.4

RS-485 MODBUS-RTU

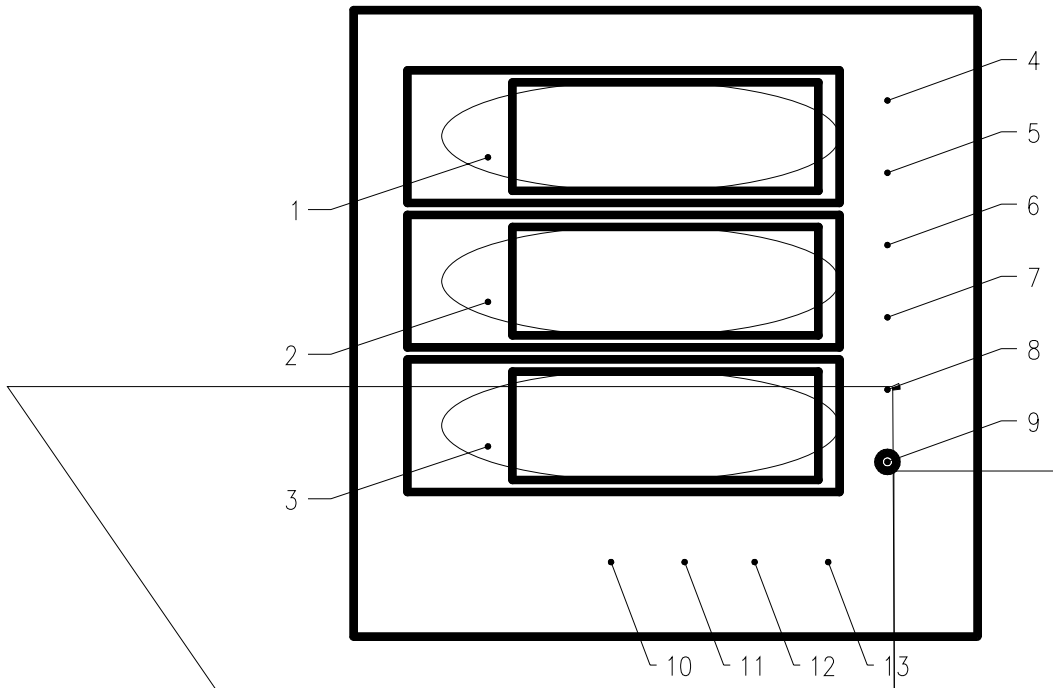
247

Addr

$0.5mm^2$

1

1.1



1.2

2

3

3.1

V I PQ λ

Ep Eq F di

do

- V k k kV
- A k k kA
- W var k k kW kvar M M MW Mvar LEDA LEDB LEDC
- Epq LEDB LEDC LEDC LEDB Ep kWh 0.01 kWh k k M 1000*kWh M k M 1000000*kWh Eq kvarh 0.01 kvarh k k M 1000*kvarh M k M 1000000*kvarh
- F F LEDA LEDB Hz LEDC
- di di LEDA LEDC LEDB
- do do LEDA LEDC LEDB

3.2

V I P Q λ Ep Eq F

- V k k kV λ /V
- A k k kA F/I

- W k k kW M M MW Ep/P
- var k k kvar M M Mvar Eq/Q
- λ /V
- F F/I
- Ep/P Ep kWh 0.01 kWh k k M 1000*kWh M k M 1000000*kWh
- Eq/Q EQ kvarh 0.01 kvarh k k M 1000*kvarh M k M 1000000*kvarh

4

SET		OU	
PASS		LU	
Pro		OC	
LinE		EPQ	
3P4L		CLr.E	
3P3L		EP	
In.U		Eq	
In.I		F	
In.PT		HZ	Hz
In.CT		di	
Addr		do	
bAUd			

5

5.1 /

SET

PASS 0001

(1) SET

(2) (

0~9)

(3) ENTER

-
- 0001
- SET
- ENTER
- SET

ENTER

-

5.2

SET

ENTER LinE

In.U In.I In.PT In.CT

Addr bAUd OU LU

OC do CLr.E PASS

5.2.1 LinE—

LEDB LinE

LinE

LEDA	SET Pro	
LEDB	LinE	
LEDC	3P3L	3P3L 3P4L

5.2.2 In.U—

In.U

LEDA	SET Pro	
LEDB	In.U	
LEDC	400	400 100

5.2.3 In.I—

In.I

LEDA	SET Pro	
LEDB	In.I	
LEDC	5A	5A 1A

5.2.4 In.PT—

In.PT

LEDA	SET Pro	
LEDB	In.PT	
LEDC	0001	1~9999

5.2.5 In.CT—

In.CT

LEDA	SET Pro	
LEDB	In.CT	
LEDC	0001	1~9999

5.2.6 Addr

Addr

LEDA	SET Pro	
LEDB	Addr	
LEDC	1	1~247

5.2.7 bAUd—

bAUd

LEDA	SET Pro	
LEDB	bAUd	
LEDC	9.6	4.8 9.6 19.2 38.4

5.2.8 OU—

OU

, PT

LEDA	SET Pro	
LEDB	OU	
LEDC	999.9	0~999.9

5.2.9 LU—

LU

, PT

LEDA	SET Pro	
LEDB	LU	
LEDC	0	0~999.9

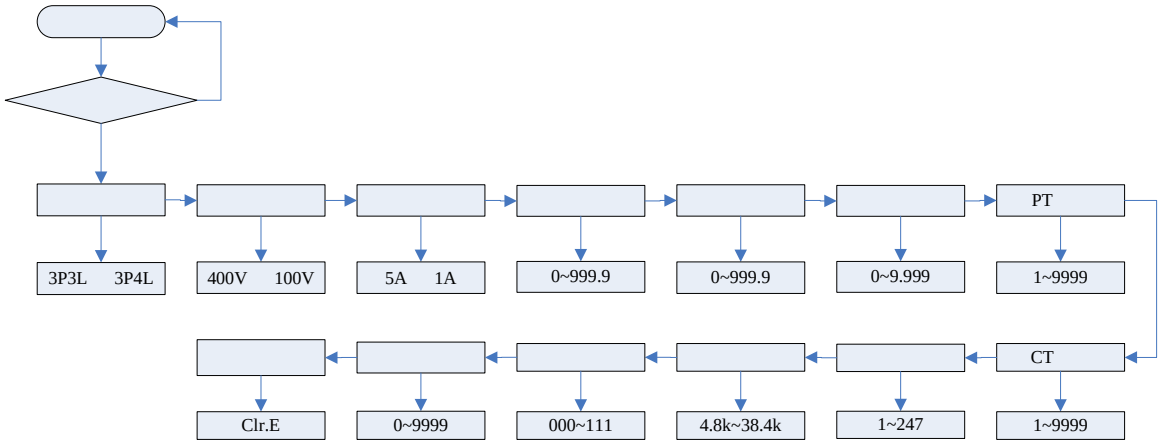
5.2.10 OC

OC

, CT

LEDA	SET Pro	
LEDB	OC	

5.3


PT
3P3L 3P4L
400V 100V
5A 1A
0~999.9
0~999.9
0~9.999
1~9999
CT
Clr.E
0~9999
000~111
4.8k~38.4k
1~247
1~9999

1

HSY1D MODBUS-RTU MODBUS

MODBUS

MODBUS PC PLC

1.1

11

1 8 2

1.2

			CRC
1	1	n	2

8 0 255

1~247,

03		
06		

CRC CRC 16 CRC

CRC

CRC

CRC

) 16 0FFFFH 1 CRC

2) 8 CRC CRC

) CRC 0

) 0 1 CRC

0A001H

) 8

) 2 5

) CRC CRC

CRC

2

2.1

2.1.1 03

●

01 3 2

UA UB UC UA 0025H, UB 0026H, UC 0027H

						CRC	CRC
01H	03H	00H	25H	00H	03H	14H	00H

●

CRC

UA UB UC (UA=082CH UB=082AH UC=082CH

									CRC	CRC
01H	03H	06H	08H	2CH	08H	2AH	08H	2CH	94H	4EH

2.1.2 06

●

06

1 (2)

01 PASS 0001 16 0001H PASS 0000H PASS

16 2

						CRC	CRC
01H	06H	00H	00H	00H	01H	48H	0AH

●

CRC

						CRC	CRC
01H	06H	00H	00H	00H	01H	48H	0AH

2.1.3

1 128

1

1 1

1

CRC 2

0×01 0x03 0x06

0×02

0×03

0×05

0×06

0×07

0×08

0×09 CRC

2.2

Modbus-RTU 03

Val_t Val_s

UA UB UC	Val_s Val_t /10 *PT	(V)
IA IB IC	Val_s Val_t /1000 *CT	A

P Q	Val_s -1 sign Val_t * PT * CT	W var
EP EQ	Val_s Val_t/100	kWh kvarh
PF	Val_s -1 sign Val_t / 1000	
F	Val_s Val_t / 100	Hz

sign PQ PF P sign

UA 08C6H(2246) PT 20 UA

Va = 2246/10 * 20 = 4.492KV

IA 0FA0H(4000) CT 20 IA

Ia = 4000/1000 * 20 = 80.00A

2.3

03H 06H				
0000H	Pass	R/W	0001~9999	word
0001H	Addr	R/W	0001~0247	word
0001H	Baud	R/W	0-3 38400 19200 9600 4800bps	
0002H		R/W	0 - (0- ;1-); 7 - (0-400V,1-100V ; 2 - (0-5A,1-1A)	word
0003H	PT	R/W	1~9999	word
0004H	CT	R/W	1~9999	word
0005H	OVol	R/W	0~9999(OVol/10)	word
0006H	LVol	R/W	0~9999(LVol/10)	word
0007H	OCur	R/W	0~9999(OCur/1000)	word
0008H		R	8~0 C_OI,B_OI,A_OI,C_LV,B_LV, A_LV,C_OV,B_OV,C_OV ;1 ,0	word
0009H		R	0~3 1~4 0- 1-	word
0009H		R/W	0~2 1~3 0- 1-	

000AH-001FH				
0020H		W	0x1111 0x0000	word
0020H	PQ	R	7~0 Q Qc Qb Qa P Pc Pb Pa ;0 ,1	word
0021H	UA	R	0-9999	word
0022H	UB	R	0-9999	word
0023H	UC	R	0-9999	word
0024H	UAB	R	0-9999	word
0025H	UBC	R	0-9999	word
0026H	UAC	R	0-9999	word
0027H	IA	R	0-9999	word
0028H	IB	R	0-9999	word
0029H	IC	R	0-9999	word
002AH	PA	R	0-9999	word
002BH	PB	R	0-9999	word
002CH	PC	R	0-9999	word
002DH	P	R	0-9999	word
002EH	QA	R	0-9999	word
002FH	QB	R	0-9999	word
0030H	QC	R	0-9999	word
0031H	Q	R	0-9999	word
0032H	PFA	R	0-1000	word
0033H	PFB	R	0-1000	word
0034H	PFC	R	0-1000	word
0035H	PF	R	0-1000	word
0036H	SA	R	0-9999	word
0037H	SB	R	0-9999	word
0038H	SC	R	0-9999	word

0039H	S	R	0-9999	word
003AH	F	R	4500-6500	word
003BH-003CH	EP_imp	R	0-99999999999	Dword
003DH-003EH	EP_exp	R	0-99999999999	Dword
003FH-0040H	EQ_imp	R	0-99999999999	Dword
0041H-0042H	EQ_exp	R	0-99999999999	Dword
0043H-0044H	EpI	R	0-99999999999	Fword
0045H-0046H	EpE	R	0-99999999999	Fword
0047H-0048H	EqL	R	0-99999999999	Fword
0049H-004AH	EqC	R	0-99999999999	Fword
004BH-004CH	EP	R	0-99999999999	Fword
004DH-004EH	Eq	R	0-99999999999	Fword

a “BYTE” 1 “word” 16 “Dword” 32
“Fword” 32

b “R” 03H “R/W” 06H

c 4800 bps,9600 bps,19200 bps,38400 bps.
9600 bps

d

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