Kinco-KS PLC PLC

KS PLC K5/K2

CPU CAN /

CPU101	KS101M-04DX	DC24V DI 4*DC24V 1*MicroUSB 1 1*RS232 1*RS485 2*CAN CAN1 -- 14 CAN2 Kinco CANOpen
CPU105	KS105-16DT	DC24V DI 8*DC24V DO 8*DC24V 1*RS232 1*RS485 14
	KS105C1-16DT	DC24V DI 8*DC24V DO 8*DC24V 1*RS232 1*RS485 1*CAN Kinco CANOpen CANopen CAN
	KS105C2-16DT	DC24V DI 8*DC24V DO 8*DC24V 1*RS232 1*RS485 2*CAN CAN1 -- 14 CAN2 Kinco CANOpen

PM121	KS121-16DX	DC24V DI 16*DC24V
PM122	KS122-12XR	DC24V DO 12*
PM122	KS122-14DT	DC24V DO 14*
PM123	KS123-14DR	DC24V DI 8*DC24V DO 6*
PM131	KS131-04RD	4 PT100 PT1000 Cu50 R
PM133	KS133-06IV	DC24V 4 /2 4-20mA/1-5V/0-20mA/0-10V

Kinco-KS GB/T 15969.3-2007 idt IEC61131-2 2007

Kinco-KS PLC

		-40 +70
		10% 95%
		0 3000
		1 5
		-10 55
		10% 95%
		2000
		2
		5<f<8.4Hz : 3.5mm : 1.75mm 8.4<f<150 : 1.0g : 0.5g
		15g 11ms 6
		8KV 4KV B

(EMC)		2KV CM 1KV DM 0.5KV CM 0.5KV DM IO 1KVCM A
		2KV 5KHz IO 1KV 5KHz A
		50Hz 0% 1 40% 10 75% 20 A
		IP20

CPU

Kinco-KS CPU

	256 1ms 4 10ms 16 100ms 236
	2 0.1ms
	256
	25 5 /

	DC24V USB CPU
	DC20.4V 28.8V
	5W
	4*DI
	14
	USB2.0 micro USB
	1 Modbus TCP Server
CAN	2 CAN CAN1 CAN CAN2 CANOpen Kinco CAN
	1 RS232 1 RS485 PORT0 PORT1 115.2Kbps PORT0 Modbus RTU PORT1 Modbus RTU
	2 200KHz 200KHz
	8K

2 PLC /

a.PLC PLC

b. PLC PLC

c. RUN PLC STOP

PLC RUN STOP PLC STOP

d. PLC /

CPU

Run Err 2

KS101M-04DX IEEE802.3 Ethernet

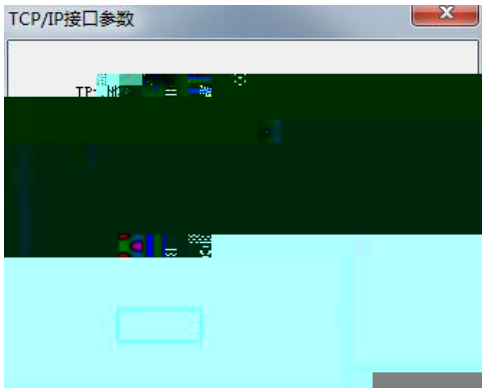
Bus TCP Sever “ ”

KS101M-04DX

“ ” KS101M-04DX

USB KincoBuilder

-- TCP/IP



IP PLC PC

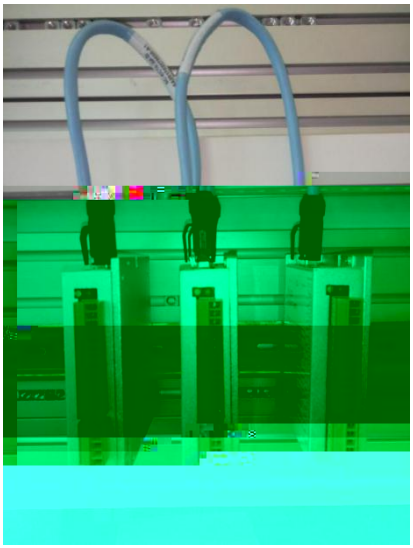
KS105C1-16DT 1 CAN CAN Kinco CANĎ ξ

KS105-16DT KS

KS105C2-16DT/KS101M-04DX CAN1 KS

CAN PLC

CPU



KincoBulider

KS123-14DR CPU KS133-06IV

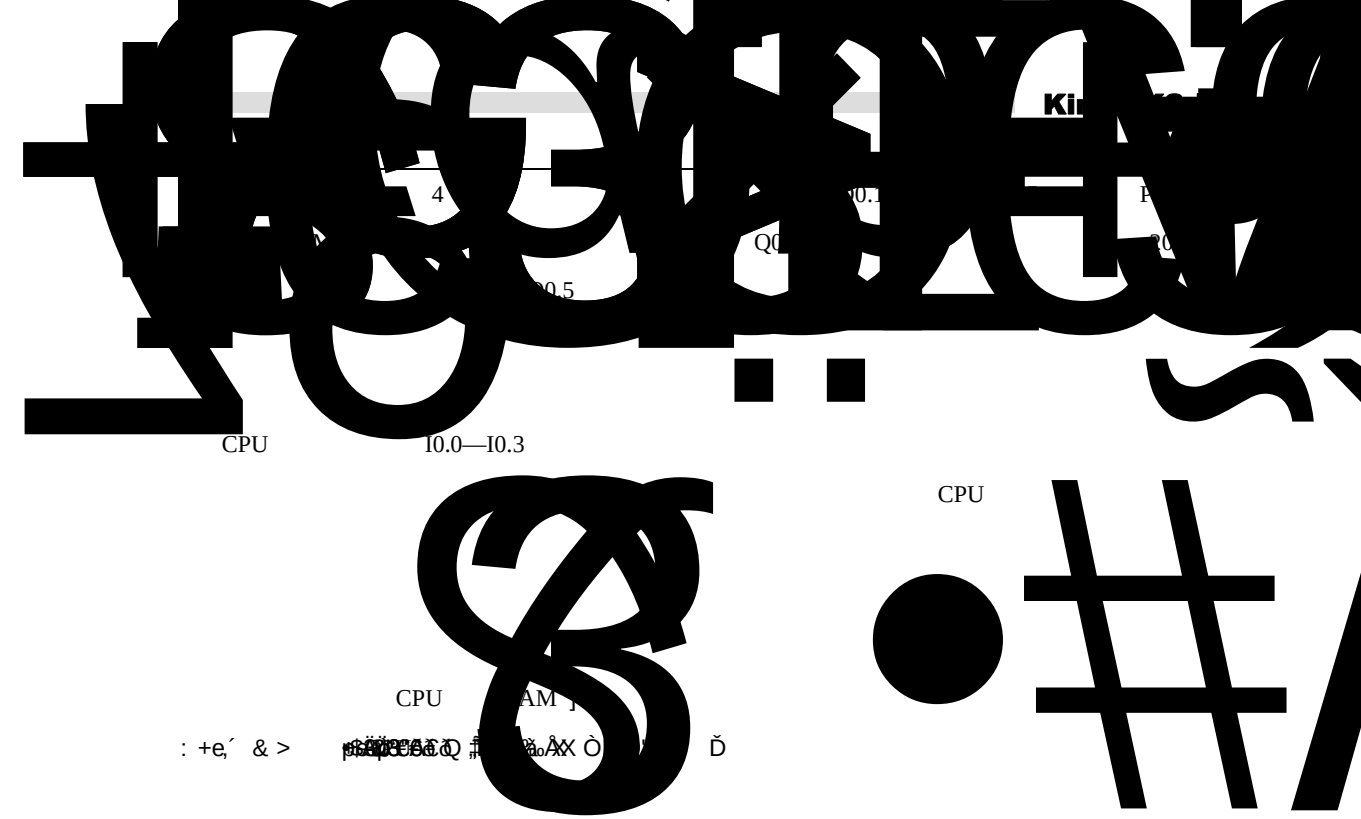
CPU KS123-14DR

硬件配置

	模块名称	输入区地址	输出区地址	扩展 +5V	扩展 +24V	备 注
1	KS105-16DT	0...0	0...0	---	---	CPU模块, DC24V供电, DI 8*DC24V, DO 8*DC24V
2	KS123-14DR	1...1	1...1	---	---	KS123, DI 8*DC24V, DO 6*继电器
3	KS133-06IV	0...7	0...非	---	---	KS133, AI*4, AO*2, 4-20mA/0-20mA/1-5V/0-10V

KS 4 HSC0 HSC3

Up/Down AB 1 4 , 200KHz AB



CPU I0.0—I0.3

CPU

CPU AM

: +e,´ & > Ð

CPU (RTC) / RTC

KincoBuilder PLC -> CPU …

READ_RTC SET_RTC RTC_W RTC_R

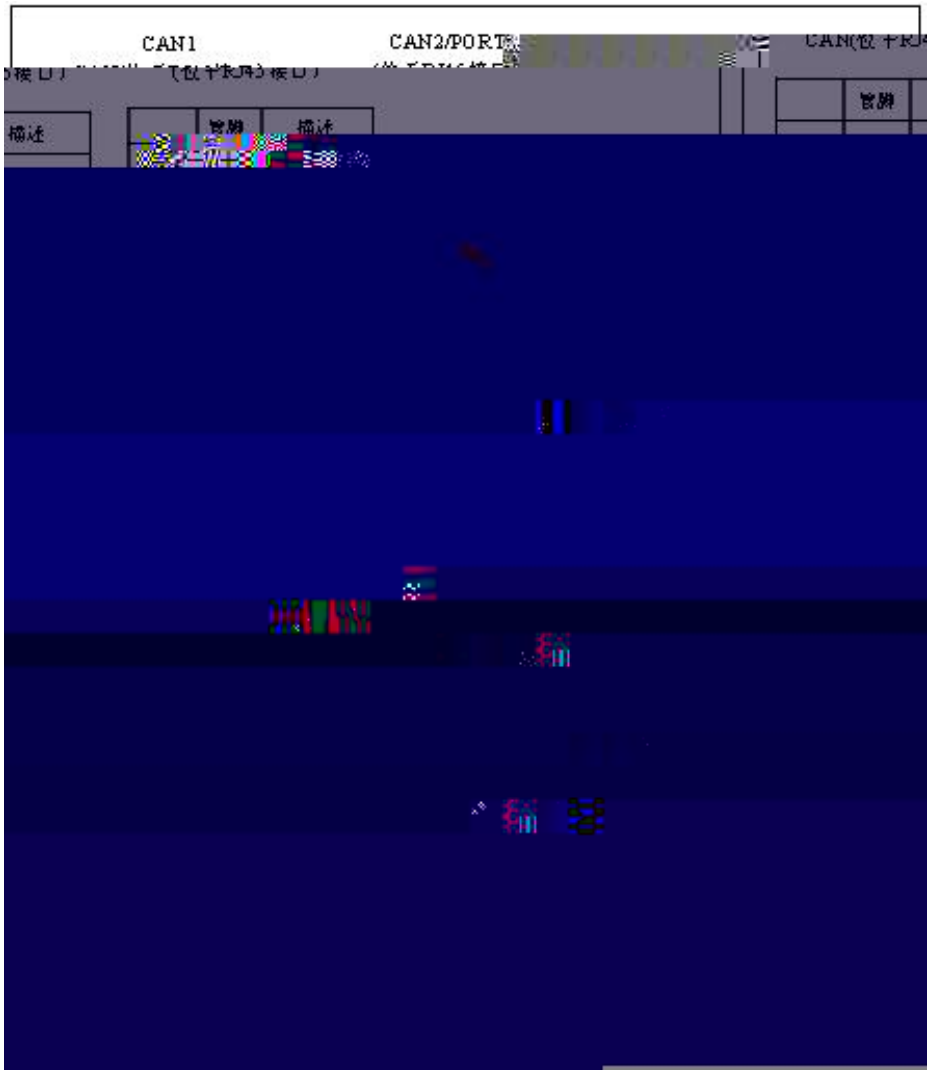
CPU 5 ,

3

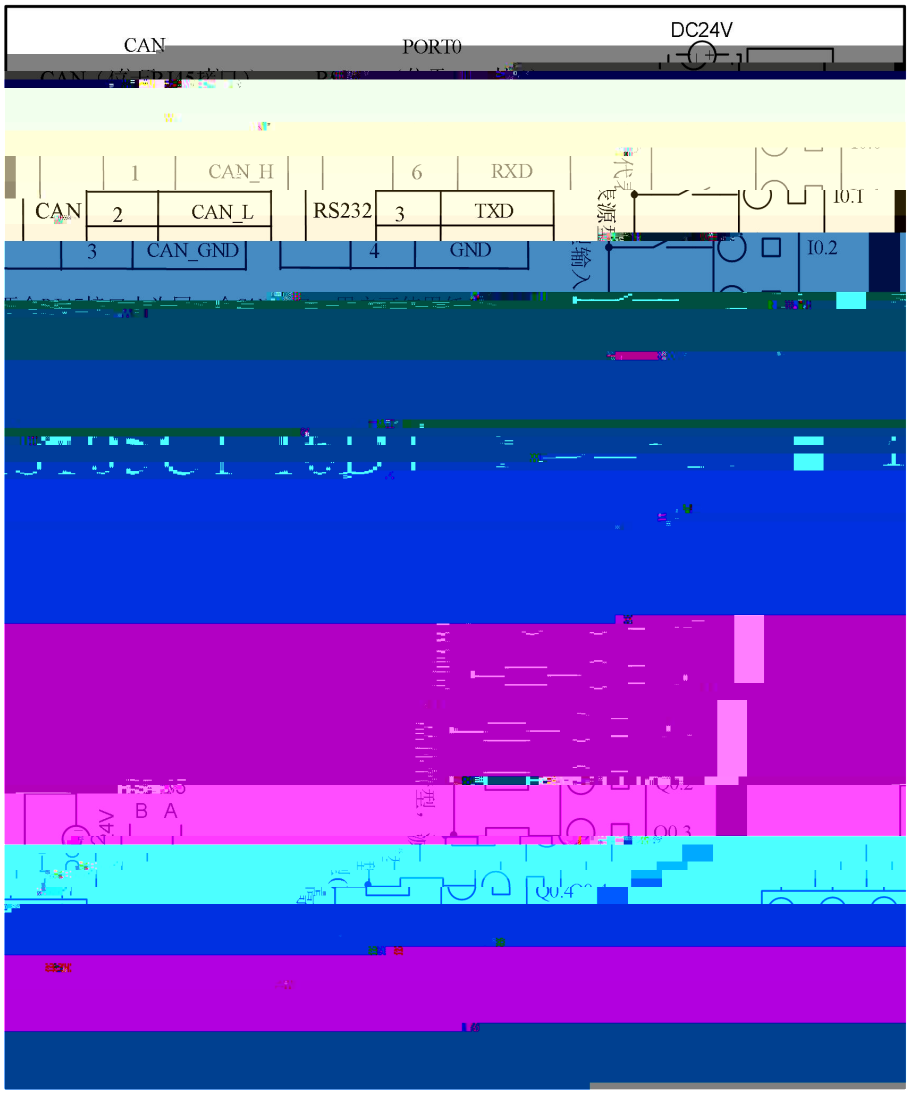
KS

RAM

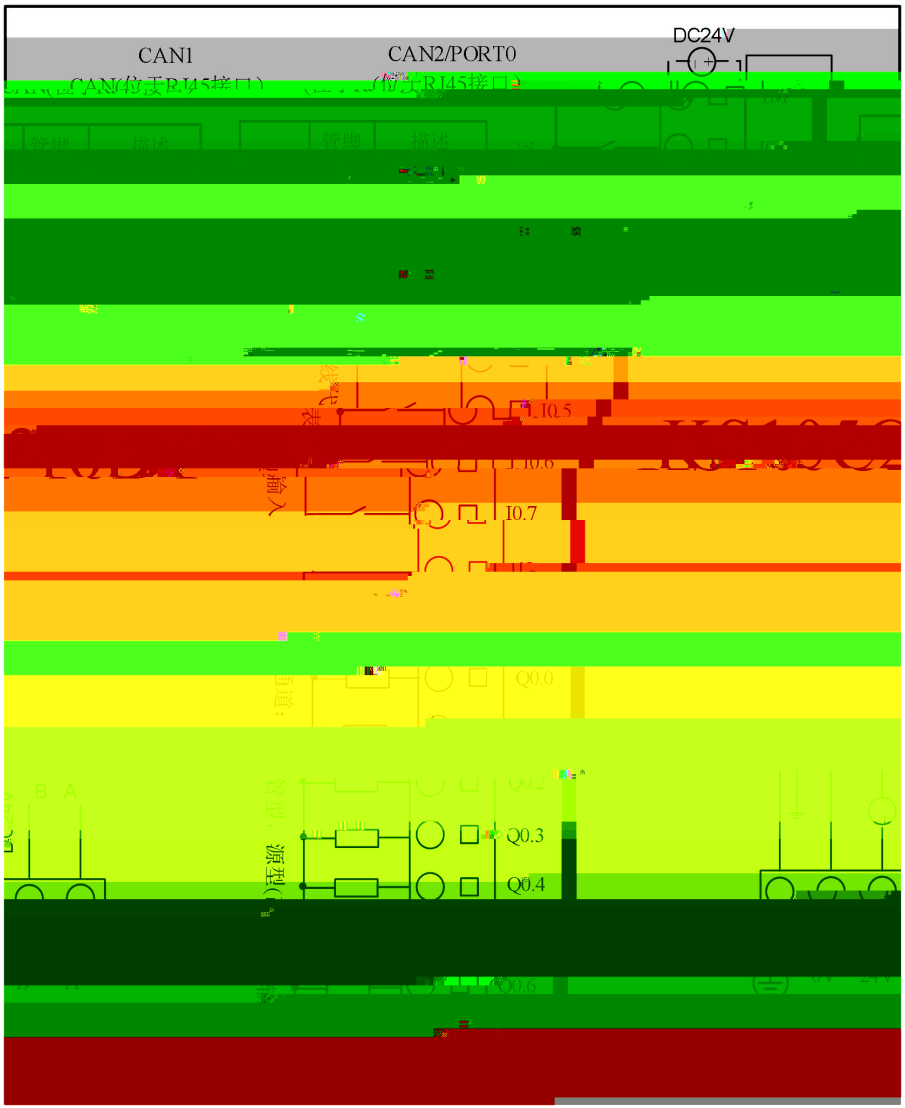
CR2032 3V



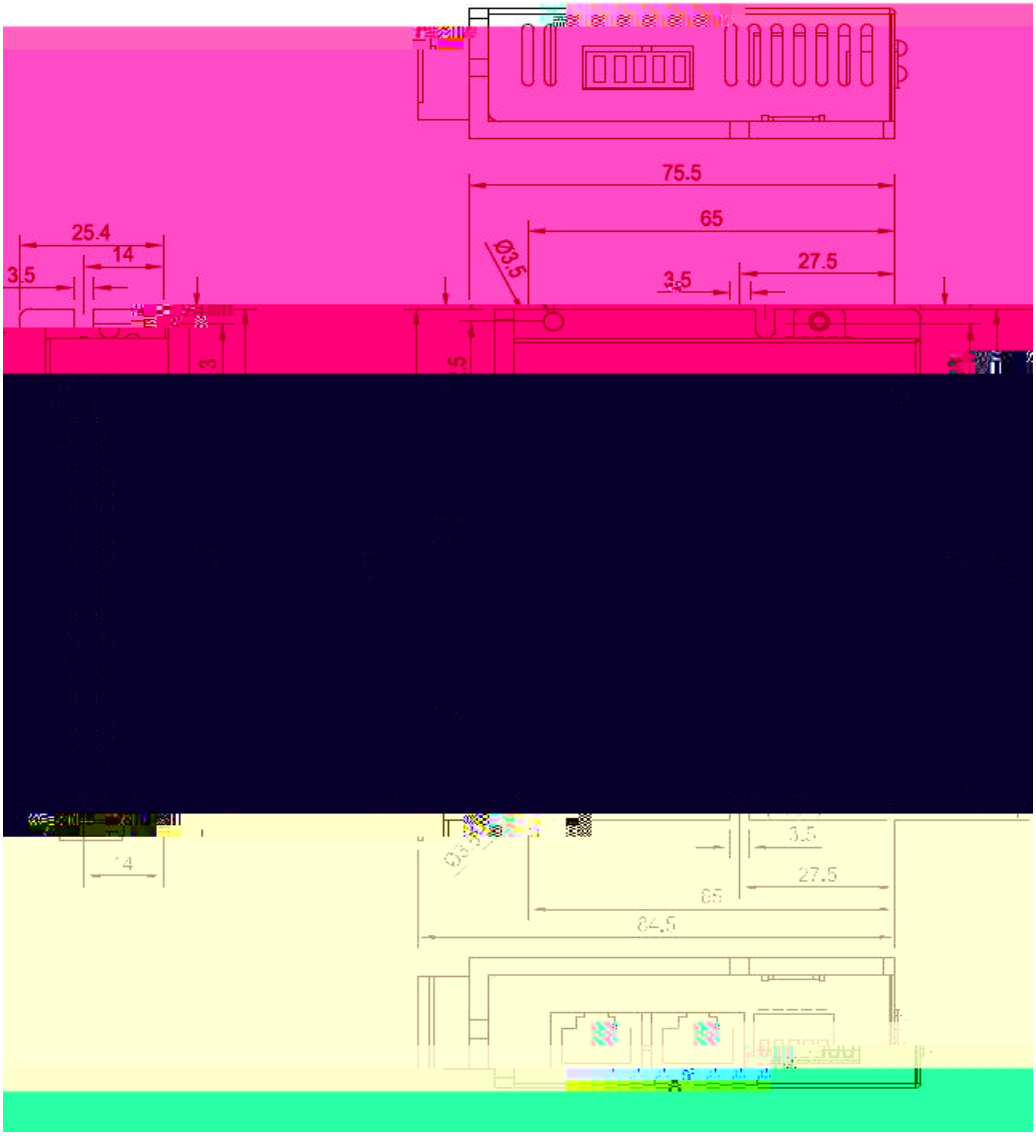
2-1 KS101M-04DX



2-3 KS105C1-16DT



2-4 KS105C2-16DT


75.5
65
25.4
14
3.5
Ø3.5
27.5
3.5
3
5
3.5
27.5
65
84.5

DI

	/
	DC24V DC30V
	3.5mA@24VDC
“ 0 ”	5V@0.7mA
“ 1 ”	11V@2.0mA
·	1.2μs
·	0.5μS
·	
·	500VAC/1

DO

	DC24V : DC20.4V—DC28.8V
	200mA 300mA @24VDC
	1A, 1S
	0.5цA
	0.2Ω
·	12μs 0.5μs
·	35μS 1μS
·	
·	

· ·	10s
· ·	500VAC/1

KS KS CPU 2.2.4

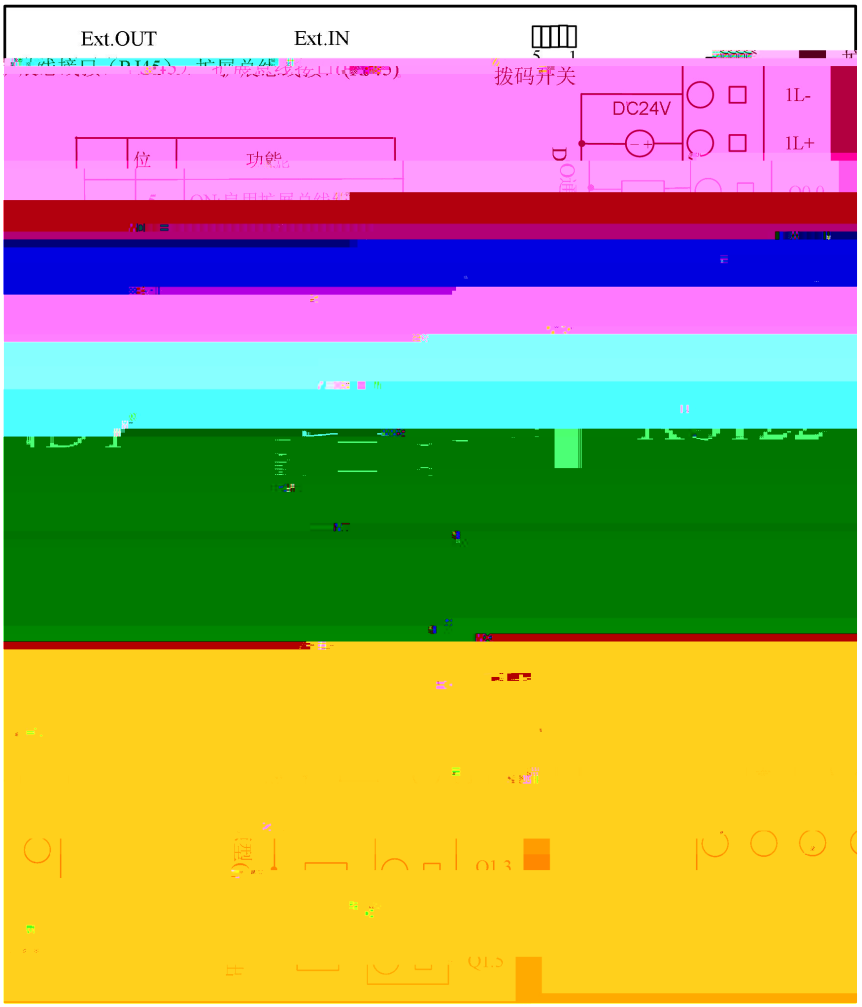
KS DC24V

KS RS485 Modbus Λ

×

Kinco-KS122-14DT

14 DO DO 14 ×



A

	DC 24V ≥ 100mA

14 8 /

C24V : DC20.4V—DC28.8V

500mA@24VDC

0.5 ц A

0.2 Ω

· 0.3--5 μ s

· 5 μ s

·

·

·

· 10s ů

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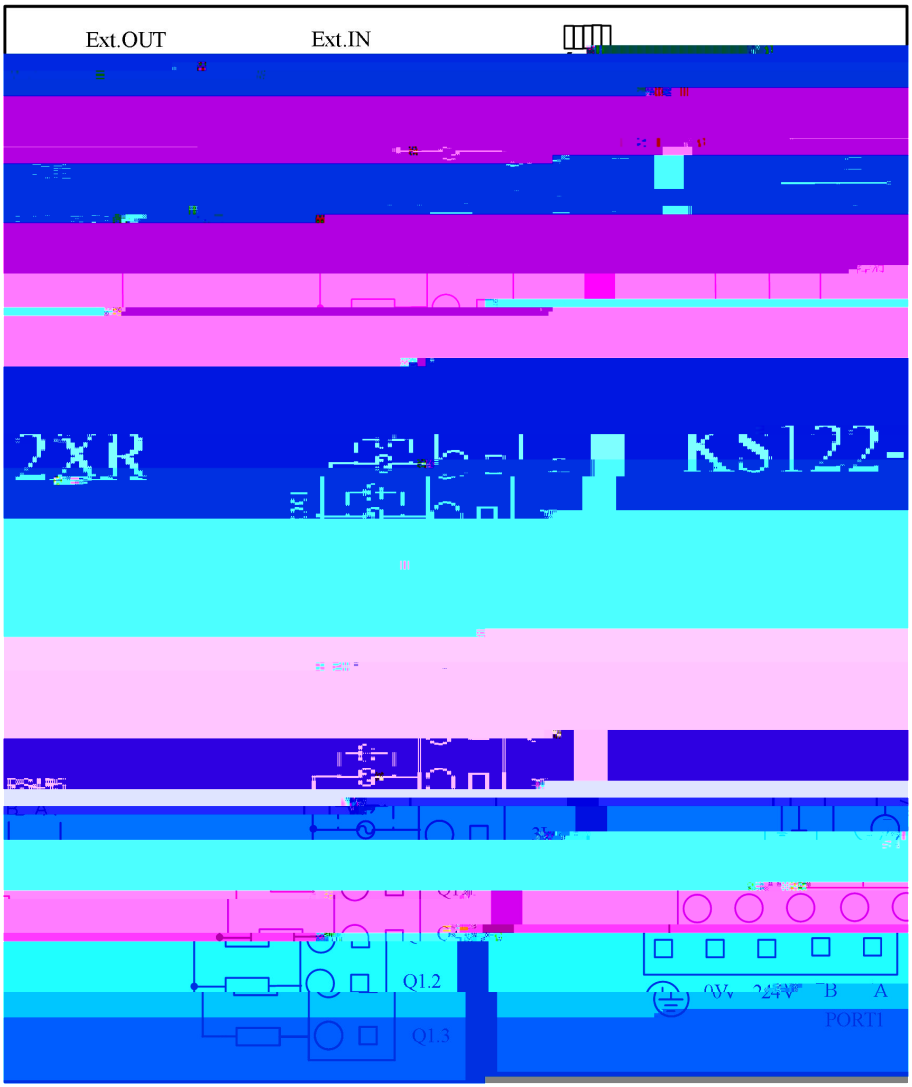


	DC 24V ≥ 100mA
	12 4 /
	DC 30V/AC250V

	2A DC 30V/AC250V
	10A
	10ms
	5ms
· ·	20 000 000 1200 / 100 000 6 /
· ·	2000Vrms
(× ×)	100 × 84.5 × 25.4mm
	200g

×

Kinco-KS121-16DX

16 DI DI 16 × DC24V

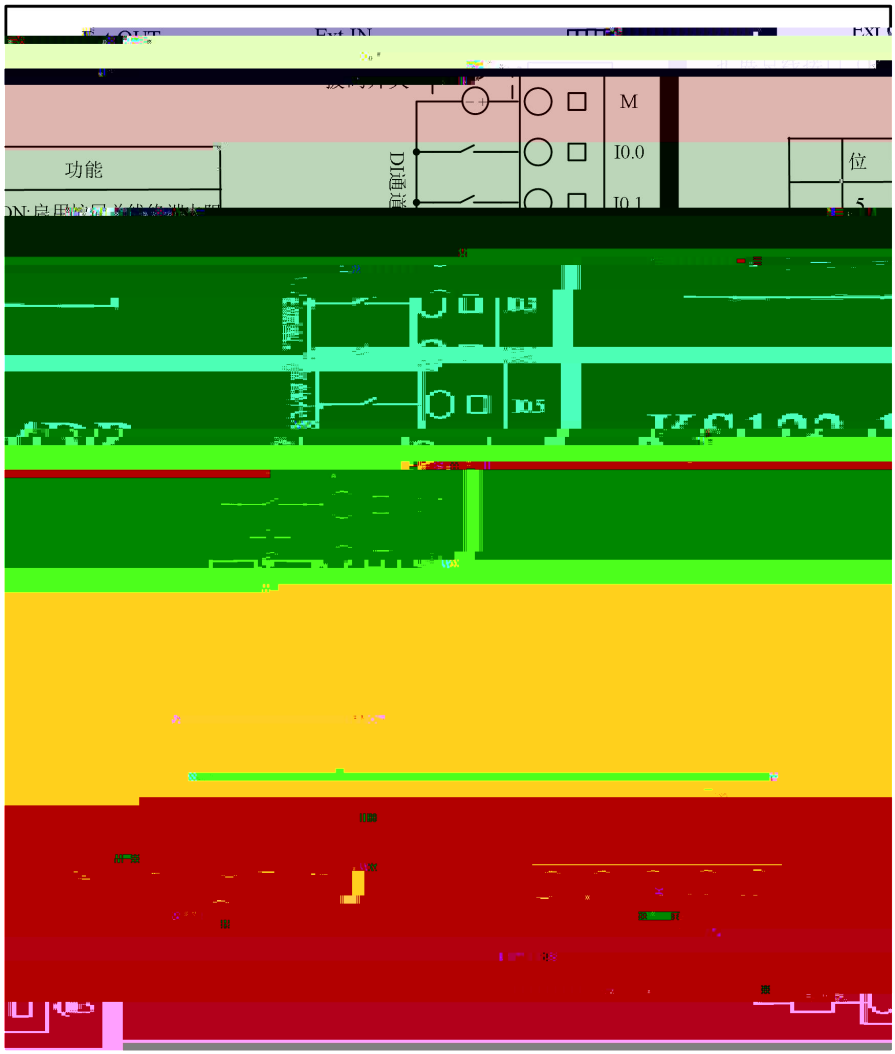
	DC 24V ≥ 100mA
	16 8 /

	/
	DC 24V
	3.5mA@24VDC
“ 0 ”	5V
“ 1 ”	11V@2.0mA
. .	12 μ s 40 μ S
. .	500VAC/1
(× ×)	100 × 84.5 × 25.4mm
	200g

× ×

Kinco-KS123-14DR

14 IO DI 8 × DC24V DO 6 ×



	DC 24V ≥ 100mA
	8 8 /
	/

	DC 24V
	3.5mA@24VDC
“ 0 ”	5V
“ 1 ”	11V@2.0mA
. .	 500VAC/1
	6 3 /
	DC 30V/AC250V
	2A DC 30V/AC250V
	10A
	10ms
	5ms
. .	 20 000 000 1200 / 100 000 6 /
. .	 2000Vrms
(× ×)	100 × 84.5 × 25.4mm
	200g

×

Kinco-KS131-04RD

4 Pt100 Pt1000 Cu50 R

ADC -

CPU AI

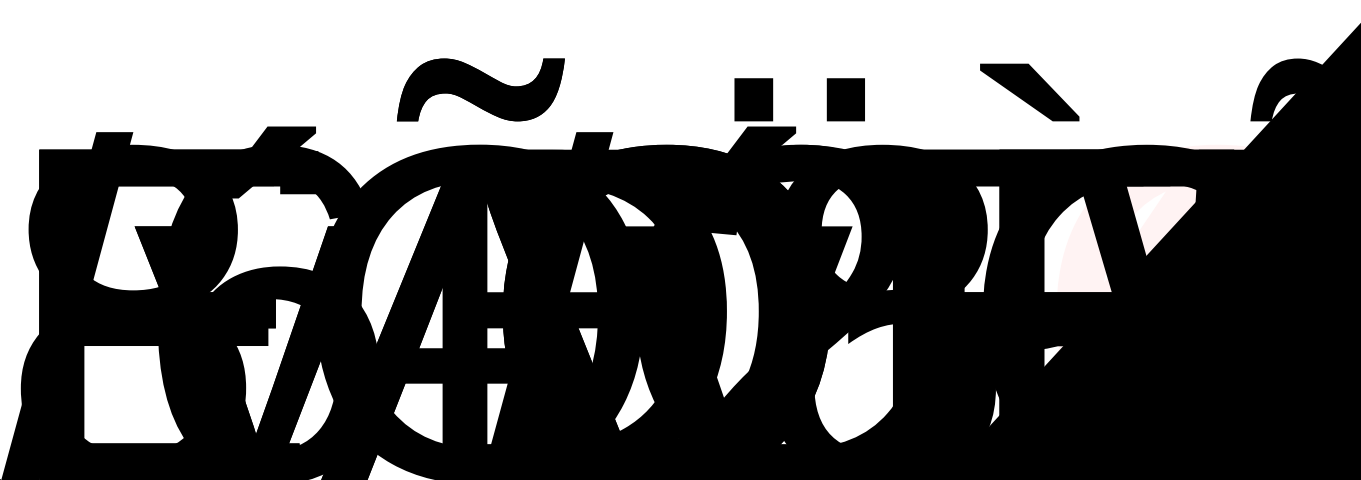
AI

CPU

T R

		<=250Ω
		>4MΩ
AO	2	
	DC 24V	≥100mA

PV “ = ”



	SM57.3		
9	A/B	B	A

0	/ SM127.3		
9	A/B	B	A

SM

SM37.0	SM47.0	SM57.0	SM127.0	0= 1=
SM37.1	SM47.1	SM57.1	SM127.1	0= 1=
SM37.2	SM47.2	SM57.2	SM127.2	0=1x 1=4x
SM37.3	SM47.3	SM57.3	SM127.3	0= 1=
SM37.4	SM47.4	SM57.4	SM127.4	HSC 0= 1=
SM37.5	SM47.5	SM57.5	SM127.5	HSC 0= 1=
SM37.6	SM47.6	SM57.6	SM127.6	HSC 0= 1=
SM37.7	SM47.7	SM57.7	SM127.7	0= 1=
SMD38	SMD48	SMD58	SMD128	
SMD42	SMD52	SMD62	SMD132	

SM141.0	SM151.0	SM161.0	SM171.0	0= 1=
SM141.1	SM151.1	SM161.1	SM171.1	0 = 1=
SM141.2	SM151.2	SM161.2	SM171.2	“CV=PV” 0= 1=

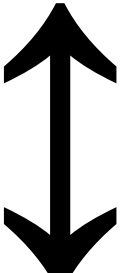
SM141.3	SM151.3	SM161.3	SM171.3	
SM141.4	SM151.4	SM161.4	SM171.4	0= 1=
SM141.5	SM151.5	SM161.5	SM171.5	0= 1=
SM141.6	SM151.6	SM161.6	SM171.6	
SM141.7	SM151.7	SM161.7	SM171.7	
SMW142	SMW152	SMW162	SMW172	VB0

“ ” “

HSC ” 0 1 2 /

SM

SM36.0	SM46.0	SM56.0	SM126.0
SM36.1	SM46.1	SM56.1	SM126.1
SM36.2	SM46.2	SM56.2	SM126.2
SM36.3	SM46.3		



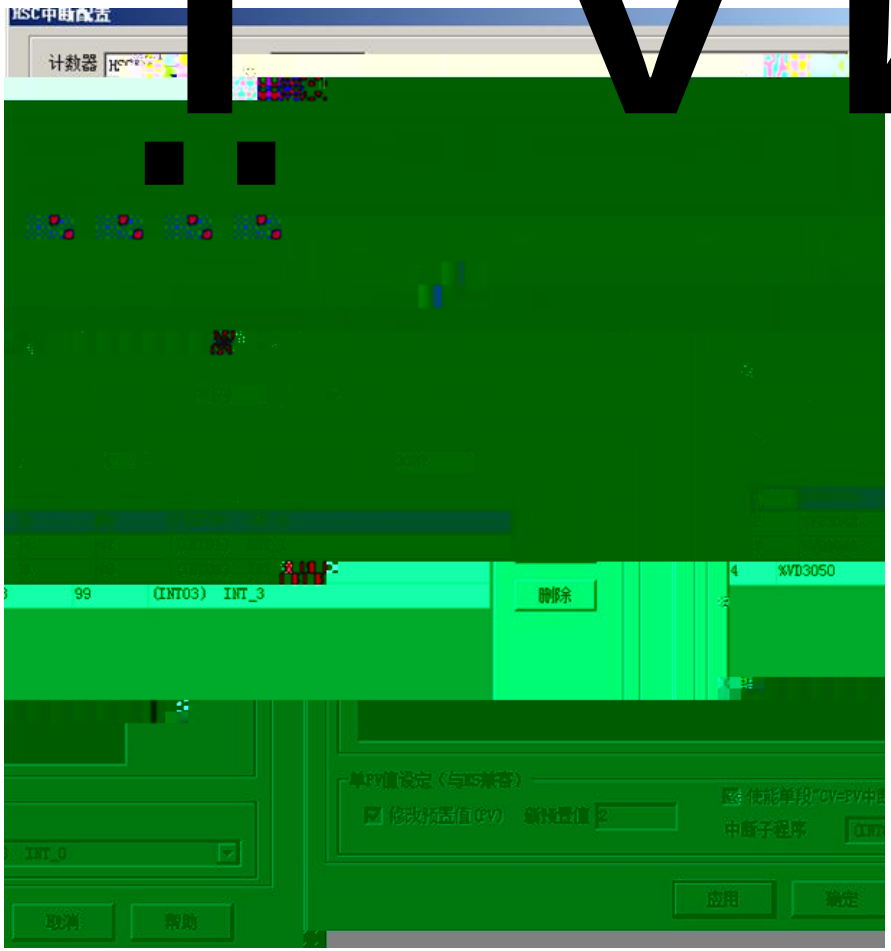
HSC0 SM141.0

SM141.0 0 PV K5 SMD42 PV SM37.5 PV

SM141.0 1 PV SM37.5 SMD42 PV PV SMW142 SM141.4 PV

	64	1	PV	“ CV=PV”
HSC0	65	2	PV	“ CV=PV”
	…	…	1	
	95	32	PV	“ CV=PV”
	96	1	PV	“ CV=PV”
HSC1	97	2	PV	“ CV=PV”
	…	…	1	
	127	32	PV	“ CV=PV”

=o



HSC

1 û m "

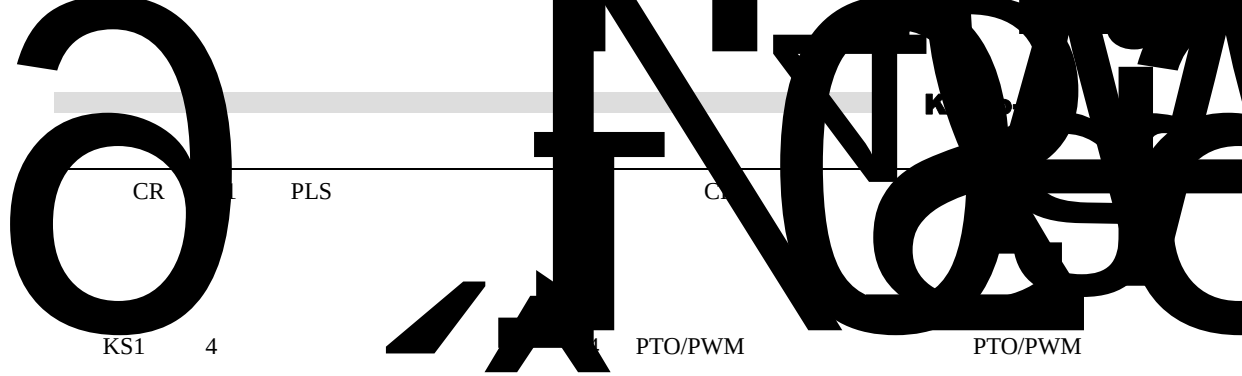
3 PFLO_F

( )

PLS PTO PWM

PTO Pulse Train Output

PWM Pulse-Width Modulation



CR 1 PLS C

KS1 4 1 PTO/PWM PTO/PWM

Q0.0 PWM0 PTO0 Q0.1 PWM1

PTO1 Q0.4 PWM2 PTO2 Q0.5 PWM3 PTO3

PTO/PWM DO Q0.0 Q0.1 Q0.4 Q0.5

PTO/PWM DO

PWM

μs ms 65535

100% 0 0%

PTO 50%

μs ms 65535

2 4,294,967,295 2 KS1

PTO

PLS

Ű ¾ 6 Ď

SMW168 PTO0 SM178 PTO1 SMW218 PTO2
SMW248 PTO3 SM67.3 PT SM77.3 PTO1 SM97.3
PTO2 107.3 PTO3

0	8		1 6
1	16		65535
3	16	1	
5	32		1 4,294,967,295
9	16		2 65535
11	16	2	
13	32		1 4,294,967,295
…		…	…

SM

}

				WM	0=
SMW68	SMW78	SMW88	SMW108	PTO WM	2~65535
SMW80	SMW80	SMW100	SMW110	PWM	0~65535
SMD72	SMD82	SMD102	SMD112	PTO	1~4,294,967,295
SMW168	SMW178	SMW218	SMW248	PTO	VB0

0 PTO/PWM

PTO PLS

SM PTO/PWM

PTO/PWM

SM66.0 SM76.0 SM2 2 2

SMB67 = B#16#84

PTO/PWM

PTO

1μs

2) SMD72

3) PLS PTO0

1) SMB67

SMB67 = B#16#A0

PTO/PWM

PTO

1μs

2) VB0 SMW168

3)

4) “ PTO0 ” 27

5) PLS PTO0

PWM0 PWM

PWM PLS

SM0.1

CPU CPU

1) SMB67

SMB67 = B#16#D3

PTO/PWM

PWM

1μs

2) SMW68

3) SMW70

4) PLS PWM0

PWM0

1) SMB67

SMB67 = B#16#D2

PTO/PWM

PWM

1μs

2) SMW70

3) PLS PWM0

KS1 SM

DINT

SMD212	SMD242	SMD262	SMD226	
SMD208	SMD238	SDM258	SMD222	
SM201.7	SM231.7	SM251.7	SM221.7	1 PSTOP 1 0
SM201.6	SM231.6	SM251.6	SM221.6	1 - 0 -
SM201.5	SM231.5	SM251.5	SM221.5	
SM201.4	SM231.4	SM251.4	SM221.4	1 - 0 -
SM201.3	SM231.3	SM251.3	SM221.3	1- D0 0 -
SM201.0 ~ SM201.2	SM231.0 ~ SM231.2	SM251.0 ~ SM251.2	SM221.0 ~ SM221.2	

4 SMD212 SMD242 SMD262 SMD226

0

4 SM201.6 SM231.6 SM251.6 SM221.6

1 PLC 0

1

PHOME PREL PABS PJOG PFLO_F

0

```
(* Network 0 *)
(*                                                    0.*)
LD      %SM0.0
PHOME
0, %M0.0, %M0.1, %M0.2, %VW0, %VW2, %VW4, %VD6, %VW10, %M0.4, %M0.5, %MB1
(* Network 1 *)
(*PHOME                    DONE                    0    *)
LD      %M0.4
R_TRIG
ST      %SM201.6
```

SMD208	SMD238	SDM258	SMD222	
SM201.4	SM231.4	SM251.4	SM221.4	1 - 0 -

0 SM201.4 0 SMD212 SM201.4 1

SMD208 SMD212 PHOME PREL PABS PJOG PFLO_F

0

```
(* Network 0 *)
(*                                                    100.*)
LD      %SM0.0
PHOME
0, %M0.0, %M0.1, %M0.2, %VW0, %VW2, %VW4, %VD6, %VW10, %M0.4, %M0.5, %MB1
(* Network 1 *)
(*PHOME                    DONE                    *)
LD      %M0.4
R_TRIG
```

KS105C1-16DT CPU CAN RJ45

2.3

KS105C2-16DT CPU CAN RJ45 2.3

CAN PLC

CAN CAN

CPU 14 CPU

30 KS

CPU ID

CPU CPU

CPU EX_ADDR

EX_ADDR 4.4.7.4

CPU

EX_ADDR

PLC

1)

EX_ADDR N

2) U CPU

CPU

3) CPU CPU EX_ADDR 181

EX_ADDR ID

4) PLC CPU

CPU CPU

5) EX_ADDR 99

EX_ADDR

Kinco CANOpen PLC

CANOpen

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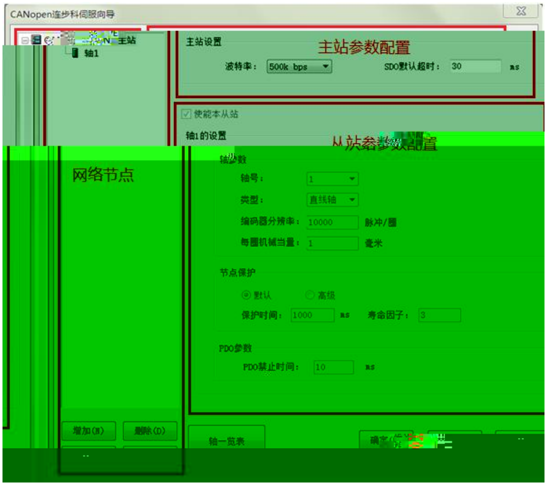
Kincobuilder Kinco



:

CANOpen

Ctrl+C

Ctrl+P

DELETE

CANOpen

SDO PLC SDO

Ď

Kin

SDO “ - ”

index sub-index SDO CANOpen

CANOpen

SDO 4 4

SDO

Client -> Server

COB-ID	Byte 0	Byte 1-2	Byte 3	Byte 4-7
0x600 + Node ID	SDO			

Server -> Client

COB-ID	Byte 0	Byte 1-2	Byte 3	Byte 4-7
0x580 + Node ID	SDO			

PDO PDO 8

PDO “ - ”

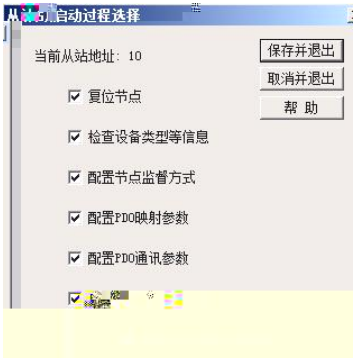
PDO 8

SYNC 0 “
” 1-240 “ ”
RTR-Only TPDO RTR PDO
252 SYNC RTR PDO 253 RTR
PDO
CANOpen PDO 254
255
PDO

PDO PDO

16 mr

K



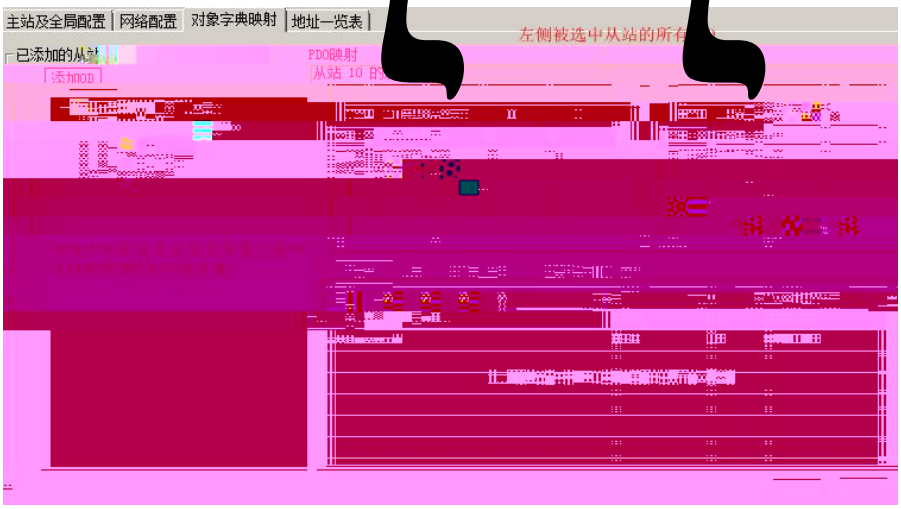
“ ”

PDO PDO

PDO PDO

“ ”

PDO RPDO 0



PDO

PDO PDO ￥ π Z Ď TPDO

PDO PDO

PDO PLC

PDO

PLC

KS CANOpen

CAN CAN2.0A

DS301 V4.2.0 DS405 V2.0

NMT

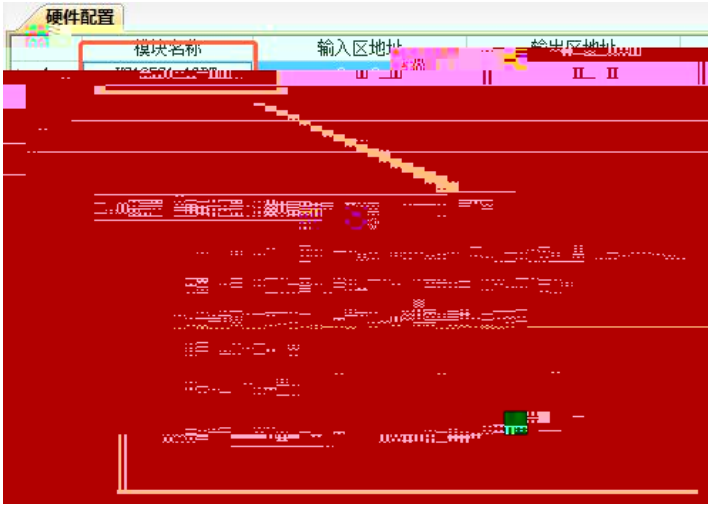
SDO Server

16 TPDO 16 RPDO PDO

PDO TPDO1 TPDO2 TPDO3

TPDO1 TPDO3 TPDO4

PLC CPU CANOpen



CANOPEN

0xA54	INT16	AQW0	AQW18	10
0xA550	INT16	VW0	VW18	10
0xA641	I 32	VD1016	VD1052	10
	FLO			

0
1
2
3
4 PLC CAN CAN
5 PLC SDO
6 PLC SDO
7 PLC

		0x60F90110	UINT16	DEC	[0,32767]
		0x60F90210	UINT16	DEC	[0,32767]
		0x60FB0110	REAL	HZ	[0,32767]
		0x60FB0210	REAL	%	[0,1024]
		0x23400410	UINT16	DEC	[0,32767]
		0x23400510	UINT16	DEC	[0,32767]
		0x23400610	REAL	HZ	[0,32767]
		0x60730010	UINT16	DEC	[0,2048]
		0x607F0020	REAL	mm/min /min	[-2147483648, 2147483647]
		0x60990508	UINT8		[0,255]
		0x607E0008	UINT8		0 1
		0x64100110	UINT16		[0,65535]
		0x607D0120	REAL	mm	[-2147483648, 2147483647]
		0x607D0220			
		0x60FB0510	UINT8		[0,255]
		0x60650020	UINT32	DEC	[0,268435455]
		0x60670020	UINT32	DEC	[0,268435455]
		0x60680010	UINT16	DEC	[0,32767]
		0x60F90508	REAL	HZ	[0,45]
		0x60F90608	UINT8		[0,85]
		0x20100110	UINT8		[0,255]
		0x20100310	UINT16		[0,65535]
		0x20100410	UINT16		[0,65535]
		0x20100510	UINT16		[0,65535]
		0x20100610	UINT16		[0,65535]
		0x20100710	UINT16		[0,65535]

		0x20100810	UINT16		[0,65535]
		0x20100910	UINT16		[0,65535]
		0x20101D10	UINT16		[0,65535]
		0x20100D10	UINT8		[0,255]
		0x20100F10	UINT16		[0,65535]
		0x20101010	UINT16		[0,65535]
		0x20101110	UINT16		[0,65535]
		0x20101210	UINT16		[0,65535]
		0x20101310	UINT16		[0,65535]
		0x20101E10	UINT16		[0,65535]
		0x20101F10	UINT16		[0,65535]
		0x25080420	INT32	DEC	[-2147483648, 2147483647]
		0x25080308	UINT8		[0,255]
		0x10100120	UINT32		16#65766173
		0x10110120	UINT32		16#64616f6C

	ERRID bit0 1 bit1 2 1

4 VB100

VD1200 3 VB100 VB101 VB102 3

3

```
LD          %SM0.0
MOVE        B#0, %VB100
MOVE        B#3, %VB101
MOVE        B#8, %VB102
(* Network 1 *)
(*                    AXIS   NUM                                              *)
LD          %M0.0
MC_RPARAS %M1.1, 1, %VB100, 3, %M1.2, %M1.3, %MD8, %VD1200
(* Network 2 *)
(*                           PARAS                              1                    1
        0                REAL                                  *)
LD          %SM0.0
MOVE        %VR1200, %VR300
(* Network 3 *)
(*         2                    2                    0                      8              PLC
                                                 *)
LD          %SM0.0
DI_TO_I %VD1204, %VW304
(* Network 4 *)
(*         3                    3                   8                    16                  32767
               INT        WORD                                                      *)
LD          %SM0.0
DI_TO_I %VD1208, %VW308
```

	/			
EXEC		BOOL	M V L SM	
AXIS		INT	V M L	CANOpen
ID		BYTE	V M L	
PARAS		DWORD	V M L	
NUM		INT	V M L	
DONE		BOOL	M V L	0 1
ERR		BOOL	M V L	1
ERRID		DWORD	V M L	

3

“ ” 1

4

LD

1

PARAS SDO

0 SDO 1

DONE 1 ERR ERRID

EN 0 EN 0 ,

DONE 1 ERR ERRID

PLC

DONE ERR 1 ERRID

IL Kincobuilder IL

LD LD

```
(* Network 0 *)
(*                    0  3   8.*)
LD      %SM0.0
MOVE    B#0, %VB100
MOVE    B#3, %VB101
MOVE    B#8, %VB102
(* Network 1 *)
(*                                *)
LD      %SM0.0
MOVE    1200.0, %VR1000
MOVE    DI#8, %VD1004
MOVE    DI#2000, %VD1008
(* Network 2 *)
(*          *)
LD      %SM0.0
MC_WPARAS %M0.1, 1, %VB100, %VD1000, 8, %M0.2, %M0.3, %MD4
```

LD	MC_POW ER		KS KW103 KW203

	/			
EXEC		BOOL	M V L SM	
AXIS		INT	V M L	CANOpen
DONE		BOOL	M V L	0 1
ERR		BOOL	M V L	1
ERRID		BYTE	V M L	

LD	MC_RESET		KS KW103 KW203

	/			
EXEC		BOOL	M V L SM	
AXIS		INT	V M L	CANOpen
DONE		BOOL	M V L	0 1
ERR		BOOL	M V L	1
ERRID		BYTE	V M L	

MC_POWER

LD

1

PLC 2

DONE 1 ERR 0 ERRID 0

DONE 1 ERR 1 ERRID

0

LD	MC_HOME		KS KW103 KW203

	/			
EXEC		BOOL	M V L SM	
AXIS		INT	V M L	CANOpen
POS		REAL	V M L	mm °
TIME		DWORD	V M L	
DONE		BOOL	M V L	0 1
ERR		BOOL	M V L	1
ERRID		BYTE	V M L	

LD

1

PLC

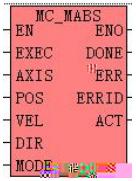
ms

DONE 1 ERR 0 ERRID 0

DONE

1 ERR 1 ERRID

0 0

LD	MC_MABS		KS KW103 KW203

	/			
EXEC		BOOL	M V L SM	
AXIS		INT	V M L	CANOpen
POS		REAL	V M L	mm °
VEL		REAL	V M L	>0 mm/min °/min
DIR		INT	V M L	0
MODE		INT	V M L	0 1
DONE		BOOL	M V L	0 1
ERR		BOOL	M V L	1
ERRID		BYTE	V M L	

ACT		BOOL	M V L	MODE=0, ACT 1 0 MODE=1, ACT 1 0

LD

1

PLC

0

PLC

DONE 1 ERR 0 ERRID 0

DONE 1 ERR 1 ERRID

0 0

LC

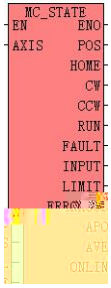
POS		REAL	V M		°	
VEL		REAL	V M L	>0	mm/min	° /min
DONE		BOOL	M V L		0	1
ERR		BOOL	M V L		1	
ERRID		BYTE	V M L			
ACT		BOOL	M V L	1	0	

LD	MC_JOG		KS KW103 KW203

/

EXEC	BOOL	M V L SM	
AXIS	INT	V M L	CANOpen
VEL	REAL	V M L	mm/min ° /min
DIR	INT	V M L	0
DONE	BOOL	M V L	0 1
ERR	BOOL	M V L	, ˘

BOO E

LD	MC_STATE		KS KW103 KW203

PLC

Bit 7	0 1
Bit 6	0 1

2

PLC S 0

IIT	0x2FF010	UINT8	1	0
	0x60F70B	UINT16	2	1
	0x2FF700	UINT32	4	3

PLC

Bit 5	0 1
Bit 4	0 1

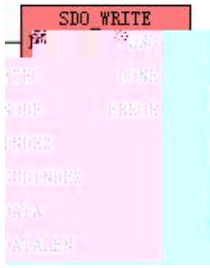
PDO

	0x60410	T16	2	0
	0x2601	NT1	2	2
1	0x260200	INT	2	4
	0x607800	NT16	2	
	0x606C00	T32	4	
	0x606300	I 2	4	

RES

1 ƫĀĦή

Bit 7 Œ

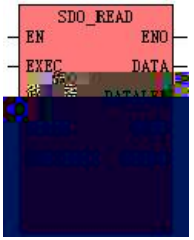
LD	SDO_WRITE		KS KW103 KW203

/		
EXEC	BOOL	I Q V M L SM
NODE	BYTE	I Q V M L SM
INDEX	WORD	I Q V M L SM
SUBINDEX	BYTE	I Q V M L SM
DATA	BYTE	I Q V M L SM
DATALEN	BYTE	I Q V M L SM
DONE	BOOL	Q M V L SM
ERROR	DWORD	Q M V L SM

SubIndex	OD
Data	
DataLen	
DONE	SDO DONE 0 SDO DONE 1
ERROR	

SDO

0
1
2
3
4
5 PLC
6

LD	SDO_READ		KS KW103 KW203

	/	
EXEC	BOOL	I Q V M L SM
NODE	BYTE	I Q V M L SM

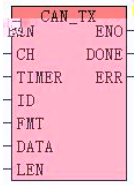
DataLen	
DONE	SDO DONE 0 SDO DONE 1
ERROR	

SDO

0	
1	
2	
3	
4	- 7 8²!q(!&"ÑÕ9 6RÄCµ
5	PLC
6	 - [illegible]

LD	CAN_INIT		KS KW103 KW203

/

LD	CAN_TX		KS KW203

	/		
CH		INT	
TIMER		INT	L M V
ID		DWORD	L M V
FMT		INT	L M V
DATA		BYTE	M V
LEN		BYTE	L M V
DONE		BOOL	L M V
ERR		BOOL	L M V

EN	
CH	CAN 0 CAN1 1 CAN2 2 K541
TIMER	ms 0
ID	ID
FMT	0 1
DATA	
LEN	
DONE	DONE 1
ERR	1

DONE

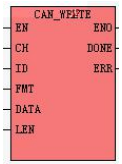
ERR

CAN_TX

( )

ms 0

PLC

LD	CAN_WRITE		KS KW103 KW203

	/		
CH		INT	
ID		DWORD	L M V
FMT		BYTE	L M V
DATA		BYTE	L M V
LEN		BYTE	L M V
DONE		BOOL	L M V
ERR		BOOL	L M V

EN	
CH	CAN 0 CAN1 1 CAN2 2 K541
ID	ID

FMT	0 1
DATA	
LEN	
DONE	DONE 0 DONE 1
ERR	ERR 1

CAN (

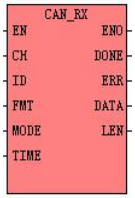
)

PLC

PLC CAN

1 0

1

LD	CAN_RX		KS KW103 KW203

	/		
CH		INT	
ID		DWORD	L M V
FMT		INT	L M V
MODE		INT	L M V
TIME		INT	L M V
DONE		BOOL	L M V
ERR		BOOL	L M V
DATA		BYTE	M V

		BYTE	L M V

EN	
CH	CAN 0 CAN1 1 CAN2 2 K541
ID	ID
FMT	0 1
MODE	0 1
TIME	ms
DONE	DONE
ERR	
DATA	
LEN	

ID

1

0

PLC

0 1

1

CAN

CAN PLC

ID (

) LEN DONE 1

ERR 1

CAN_READ CAN

CANOpen

CAN

LD	EX_ADDR		KS KW103 KW203

	/		
EXEC		BOOL	M V L SM
OP		INT	M V L

EXEC

	99 --- ID

181 ID

CPU

CPU

99 ID CPU

ID

EN 1 EXEC

EN 0