Q Q

-

-

.....1

1. EIP 1

2. EIP 1 Class1 1

3. EIP 3 Class3 1

4. EIP —IP 1

5. EIP —Extended Status 16#112 2

6. EIP —Extended Status Invalid O->T size 16#127 2

7. EIP —Extended Status Target for connecttion not confingured 16#110 2

8. EIP —Extended Status null forword open not supported 16#132 2

9. EIP —Extended Status Invalid O->T Fix/var value 16#11F 2

10. Modbus 3

11. ModbusTCP Connection aborted:socket keep-alive expired 3

12. ModbusTCP IP 3

13. ModbusTCP 4

14. Modbus 4

15. HCQX-RS02-D4-M 5

16. ModbusTCP 5

17. Socket 5

18. Socket 0 5

19. Socket TCP_Cilent TIME_OUT 5

20. Q0 COM 5

.....6

1. 6
2. PLC U 6
OL ” 6
4. 6
5. 6
6. IP 6
..... 7
8. 7
9. ASCII 7
10. .

1. 1

1. _MC_CHANGE_MOTION_ORDER 1

1. 1

4. MC_Home 17

5. MC_Home 7 µ@ 16#8000 0 17

6. e MC_Home SMC_FB_WASNT_CALLED_DURING_MOTION 17

7. 18

8. 18

9. 18

10. 18

11. Codesys Port....

24. NC 25
therCAT 25
26. therCAT 26
27. 26
28. EtherCAT 27
29. DXF CNC 28
..... 30
1. —— ER0000 30
2. —— ER0051 30
3. —— ER0102 ER0152 30
Q
4. —— HCFA 30
5. EtherCAT —— 0
6. EtherC —— “ ” 30
7. EtherCAT —— 30
8. EtherCAT —— 30
9. ——Download Denied on Application from CmpCoreDump 31
10. —— 31
11. —— 'sm3basic,4.10.0.0... 32
12. ——Internal error:System.NullReferenceException 32
13. ——The Library *** is only supported in t

2. PID 35

3.

EIP

2

3 .3.0

4 1514 IO <=1400

5 61 505 /509

6 253 255- -

2. EIP 1 Class1

EIP EtherNet

EDS

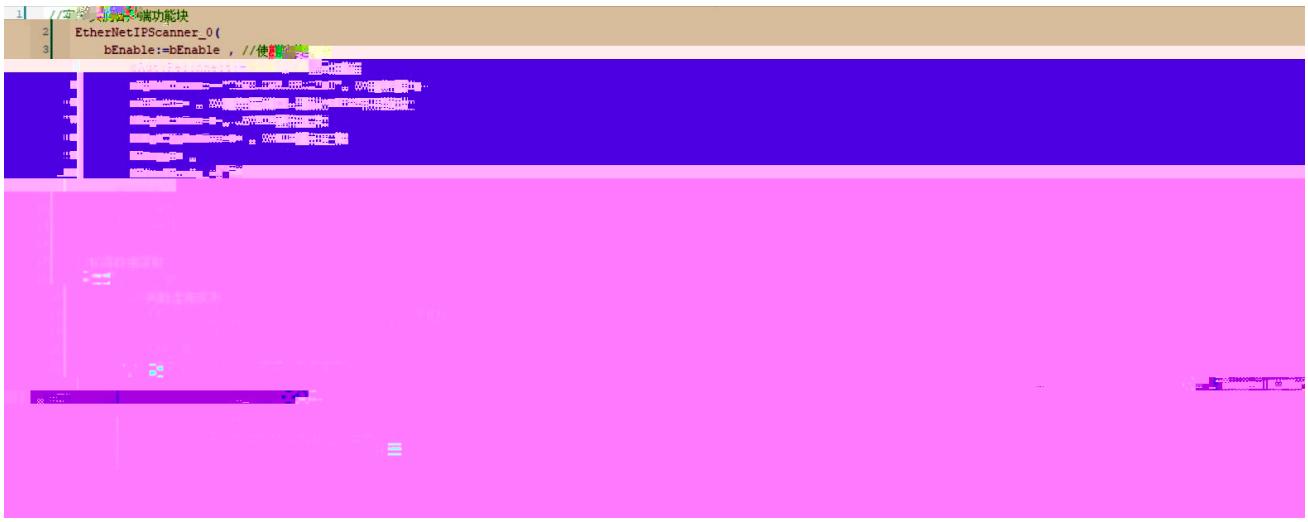
EIP EDS EtherNet

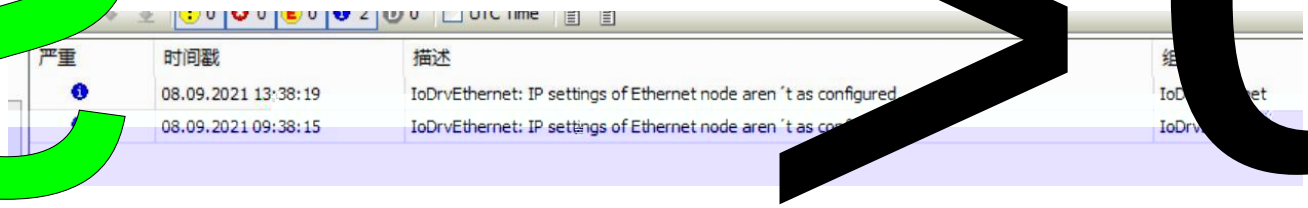
IP

Q EIP

3. EIP 3 Class3

EtherNetIP_Tag_V1.0.3 EtherNetIPScanner Case



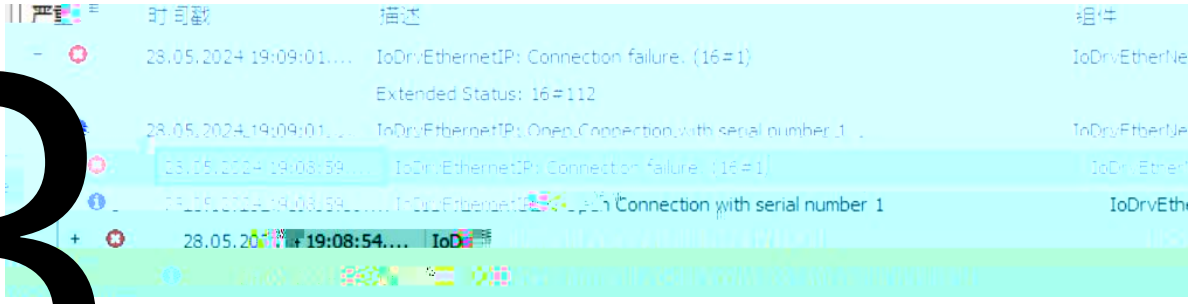


5. EIP —Extended Status 16#112

RPI RPI Adapter IOtask

1 Adapter RPI>=n*IOTask(n 0)

2 Scanner Adapter RPI>=n*ScannerIOtask(n 0)



6. EIP —Extended Status Invalid O->T size 16#127

O->T

10. Mod s

1 ModbusTCP

2 IP ModbusTCP

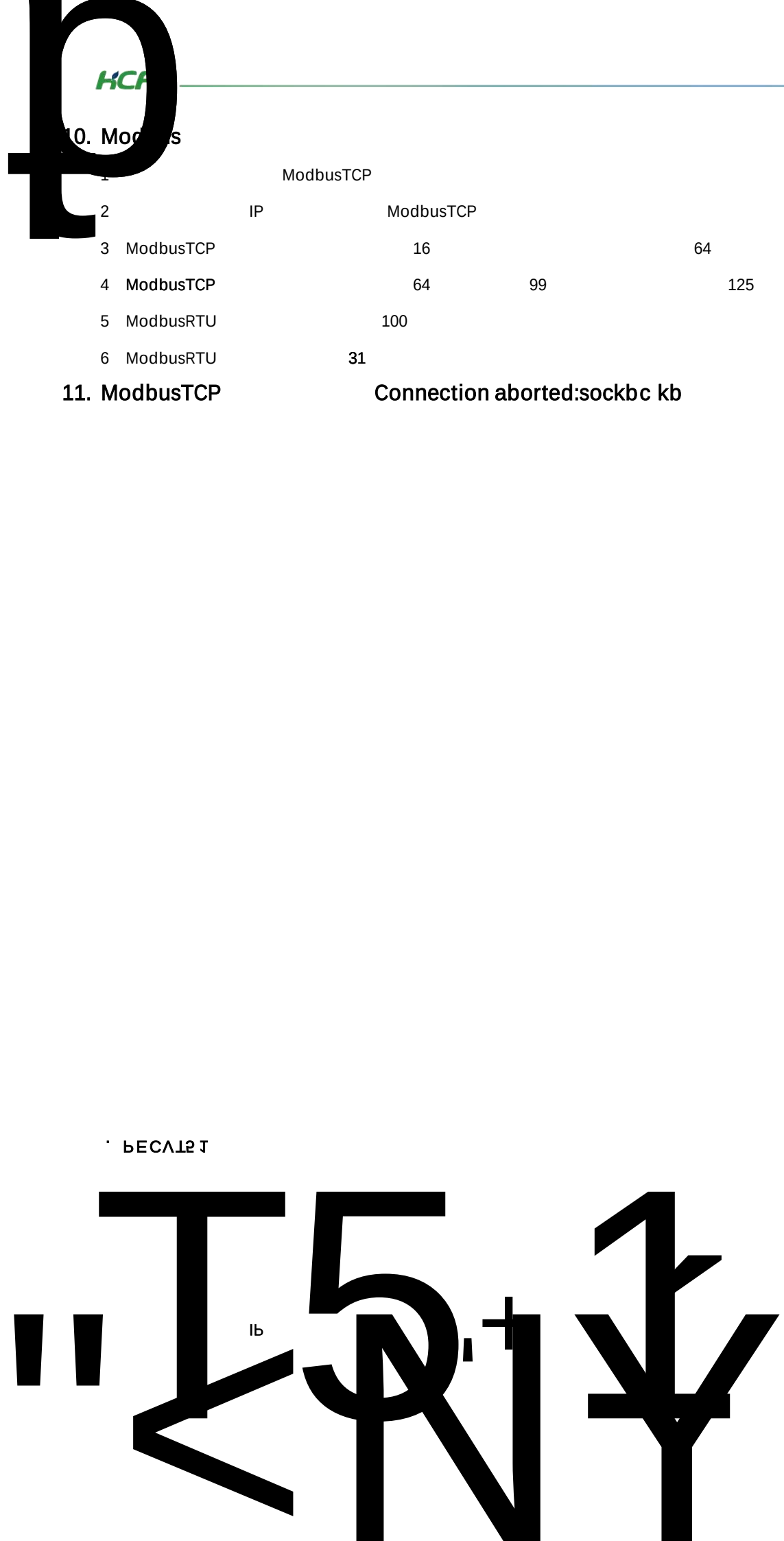
3 ModbusTCP 16 64

4 ModbusTCP 64 99 125 123

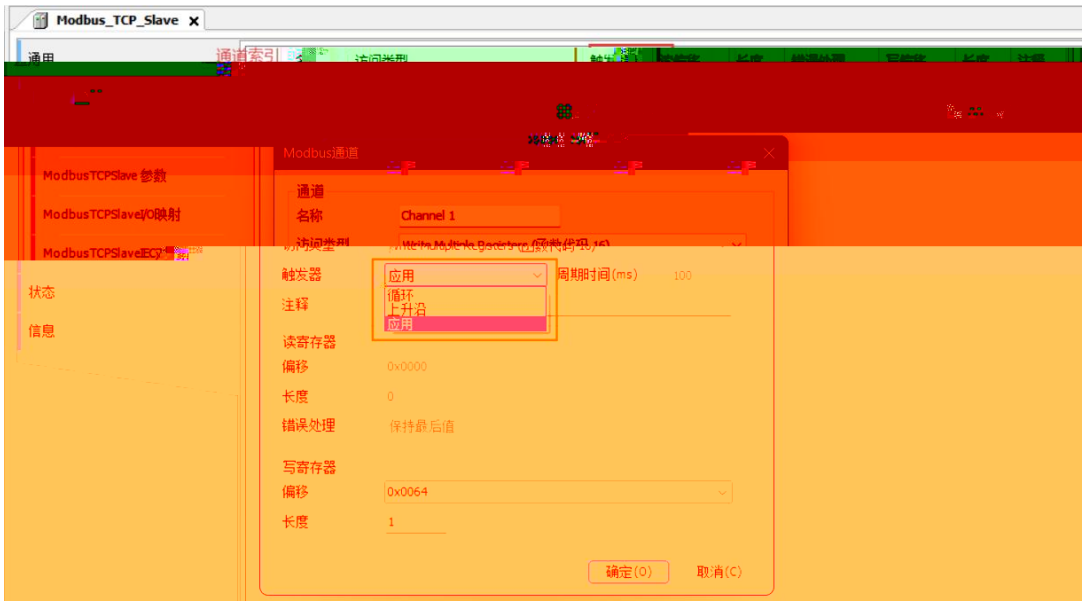
5 ModbusRTU 100

6 ModbusRTU 31

11. ModbusTCP Connection aborted:sockbc kb



13. ModbusTCP



ModbusChannel



14. Modbus

15. HCQX-RS02-D4-M

RS485 ID

16. ModbusTCP

STOP PLC Stopping STOP

17. Socket

1 TCP_Read.pData TCP_Read.szSize

2 TCP_Read.xEnable TCP_Client.xActive

3 TCP_Client.xEnable NOT TCP_Read.XError

18. Socket 0

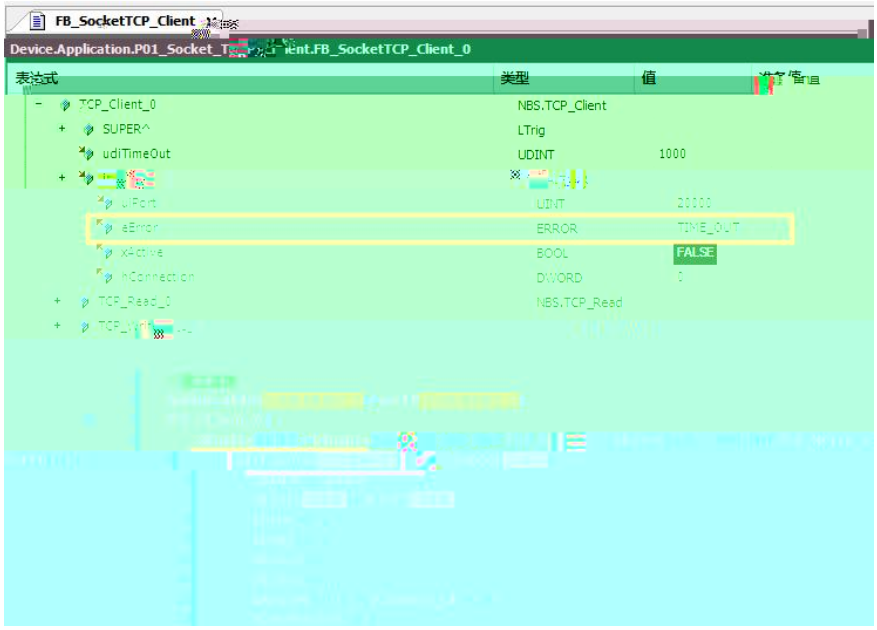
TCP_Write szSize SIZEOF

szSize LEN szSize

19. Socket TCP_Cilent TIME_OUT

TCP_Write udiTimeOut 1000us

TIME_OUT udiTimeOut



20. Q0 COM

Q0 COM1 COM2 COM2

COM1 COM2

1.

1 Retain/Persistent

2 Persistent Retain /

3 IO 2

2. PLC U U

U U PORT0

3. BOOL “ ”

1

2

3

4.

Q0 V1.04.03.01

Q1 V3.40.20.00

Q0P/Q1P

Q3P V1.00.01.14

Q5P/Q7P/Q9P V1.01.00.02

5.

STRING WSTRING

1 STRING 80 81 + 1

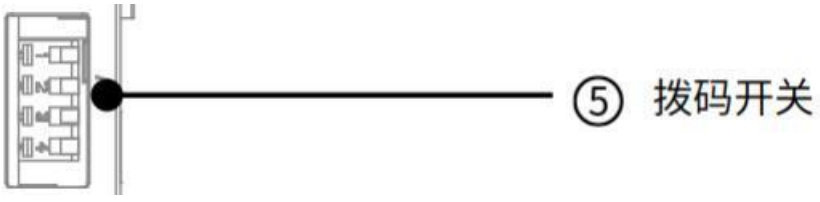
2 WSTRING 80 162 + 2

10 STRING(10)

11

6. IP

Q0 SW1 SW2 FN



Q1-322 5

Q1-330+ 5 0000

0

Q5 5

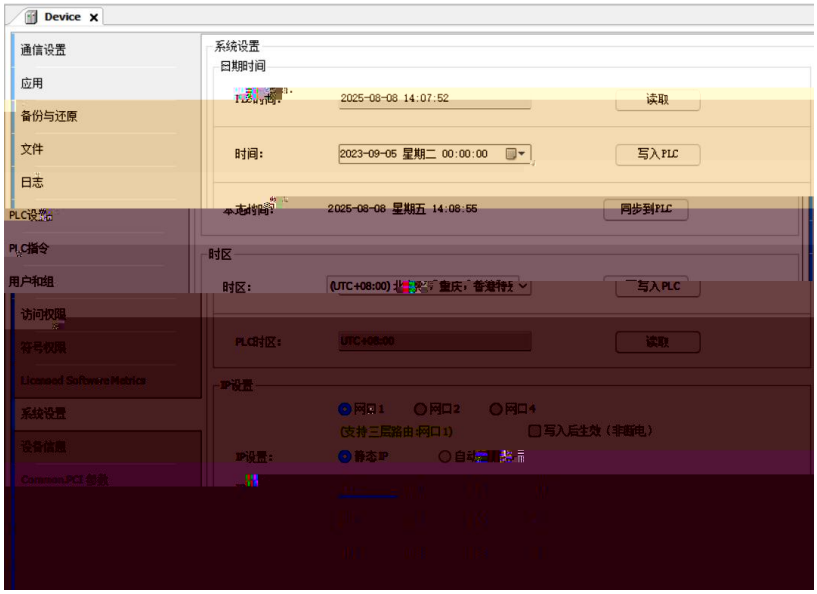
			功能拨码，向左为控制器停止状态，中间为运行状态，
10	ST	STOP/RUN/-N dial switch	向右拨至FN开启状态。

7.

		_XWORD/_XINT/_UXINT	32	4	64

8.

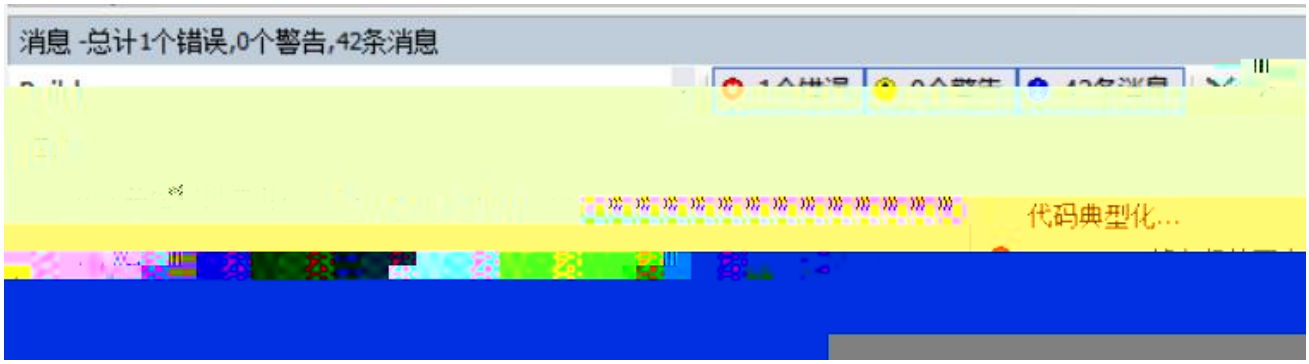
	16		





11.

POINTER TO



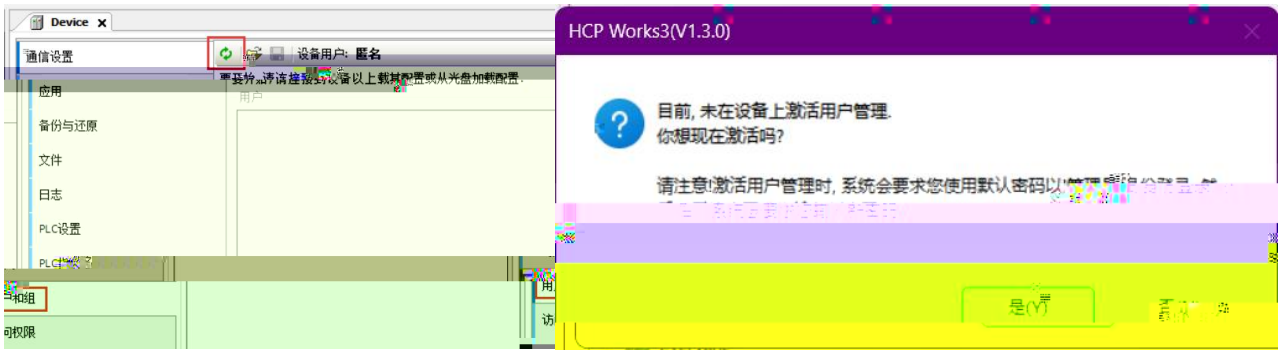
12. **‘ $ ’**

\r\n CODESYS $L/$l $N/$n

定义组合	解释
$<两个十六进制数>	8位编码字符的十六进制表示。
$$	美元符号
$'	单直引号
$L或$l	换行
$N 或$n	新行
$P 或$p	换页
$R 或	回车
	标签

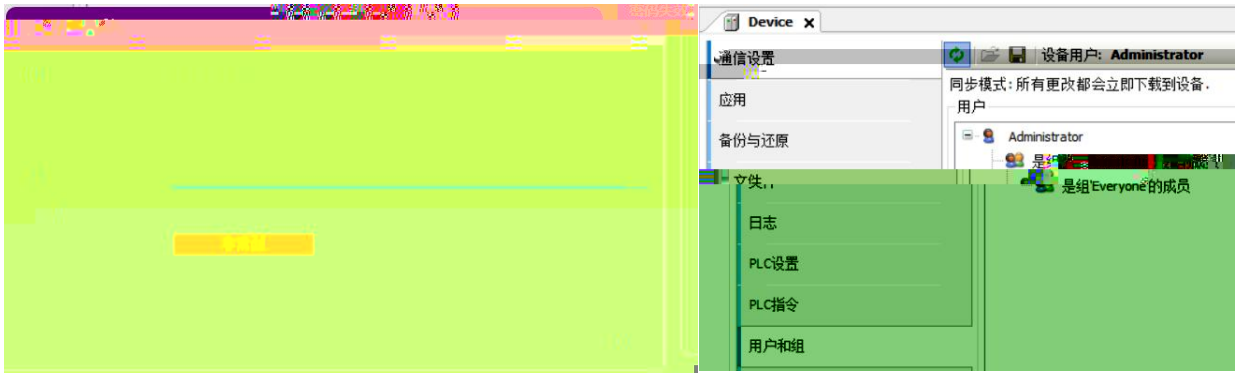
13.

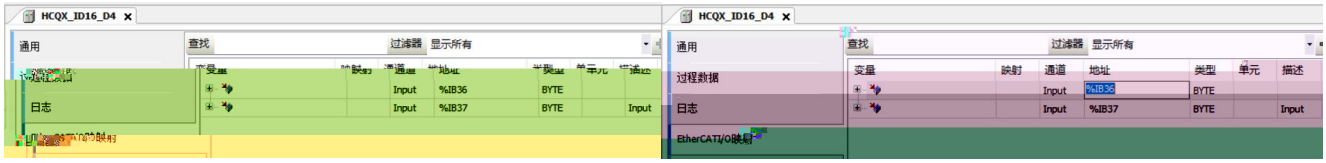
Device

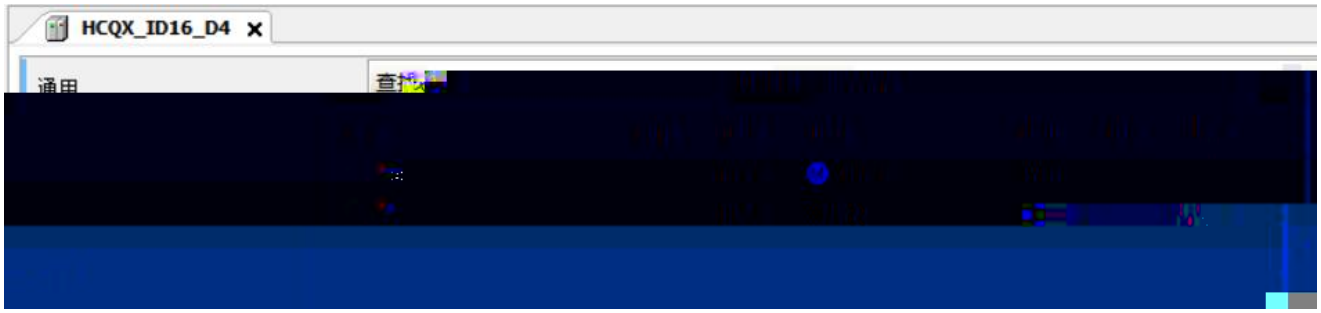


“ ” Administrator







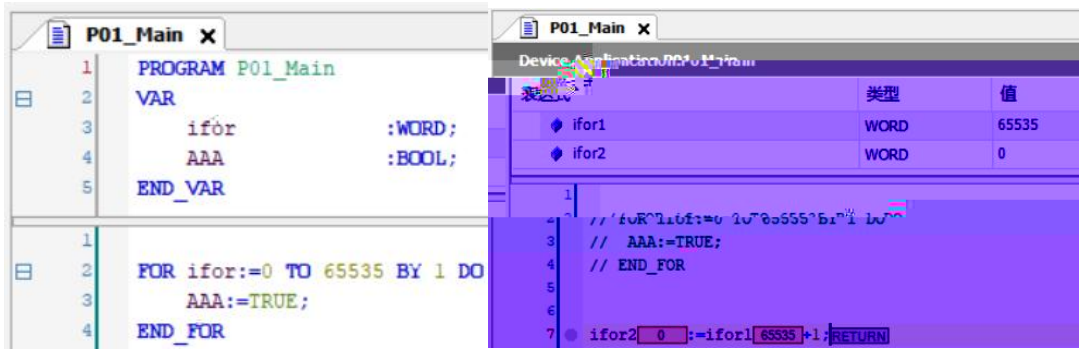


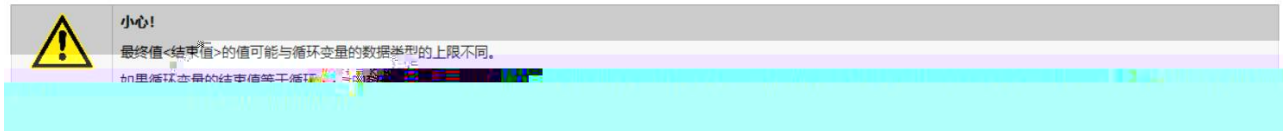


17. FOR

ifor 65535 word FOR +1 ifor

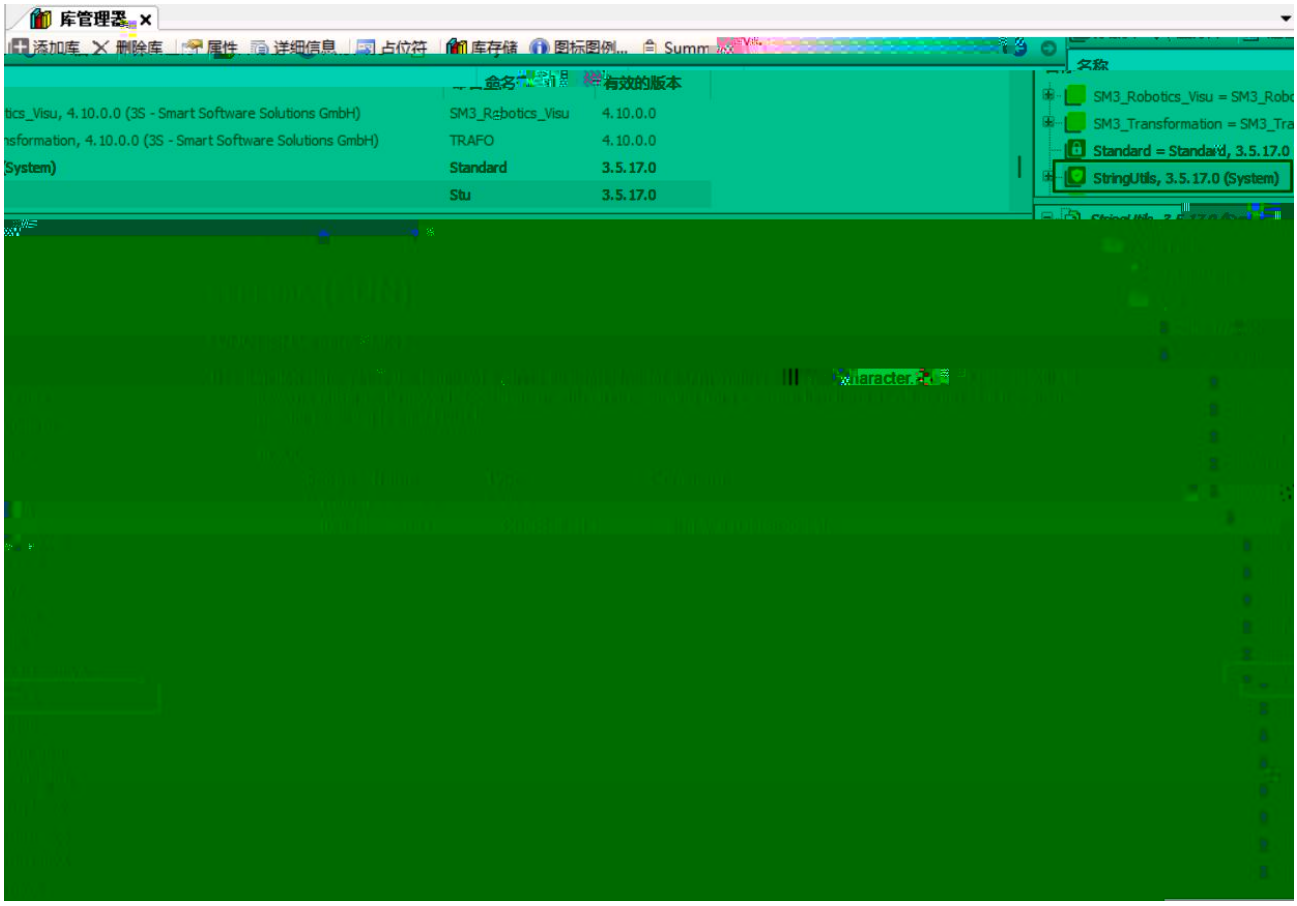
+1 65535+1 ifor 0 word 0~65535



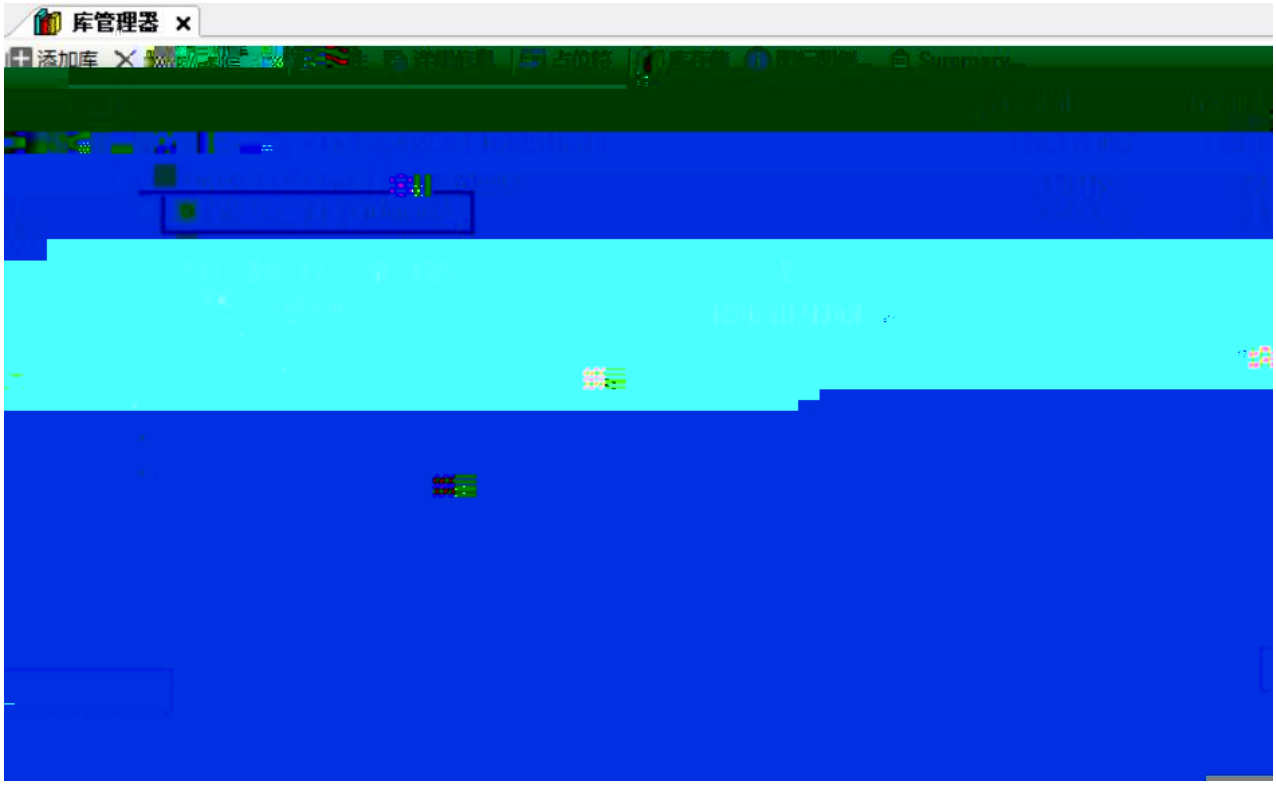


18. 2

Standard LN 25 5 25 5



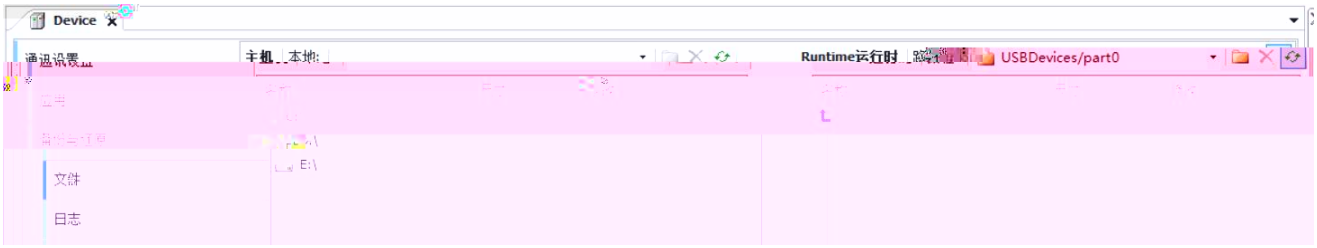
2 Collectiobs PstrLen pSting ADR



3 0

U USBDevices part0 U PLC

U Codesys U



21. SMC3_ETC_ReadParameter CoE DWORD SDO

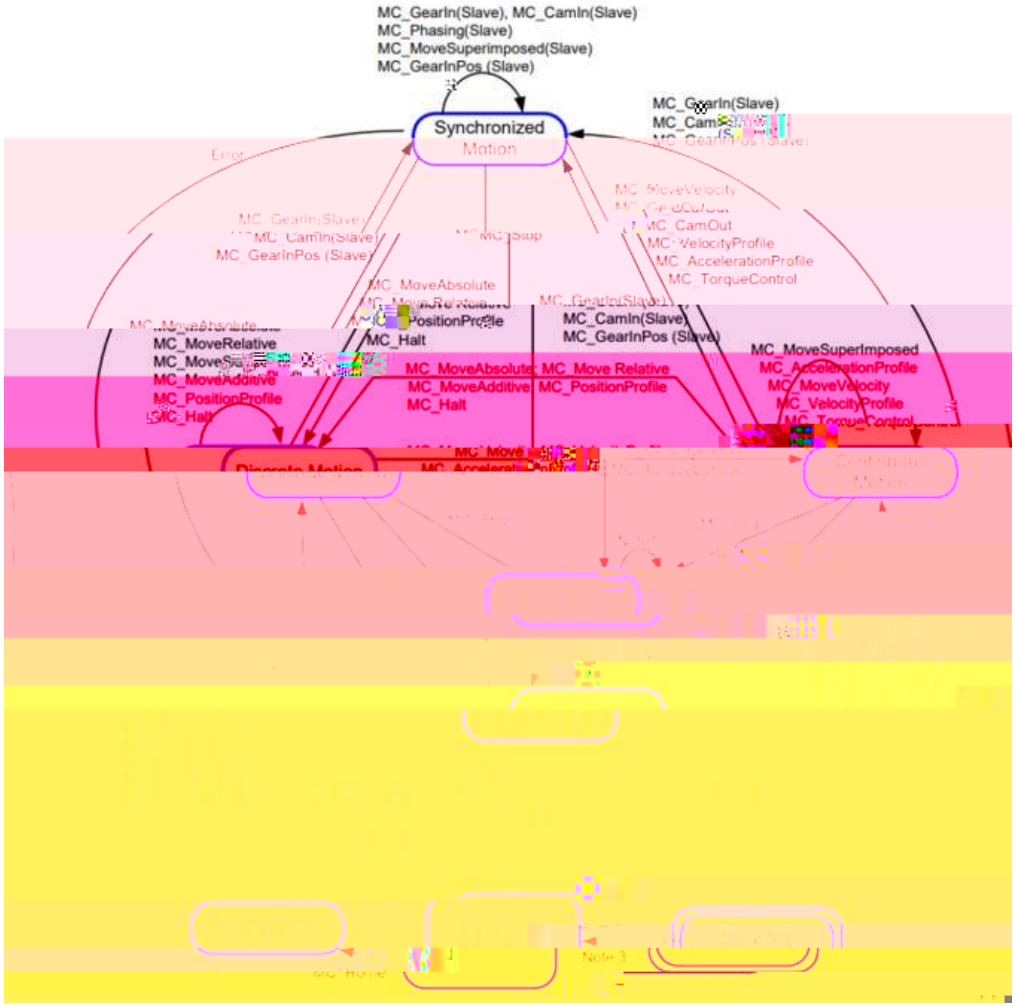
ETC_co_sdoRead



22. STRING MOVE

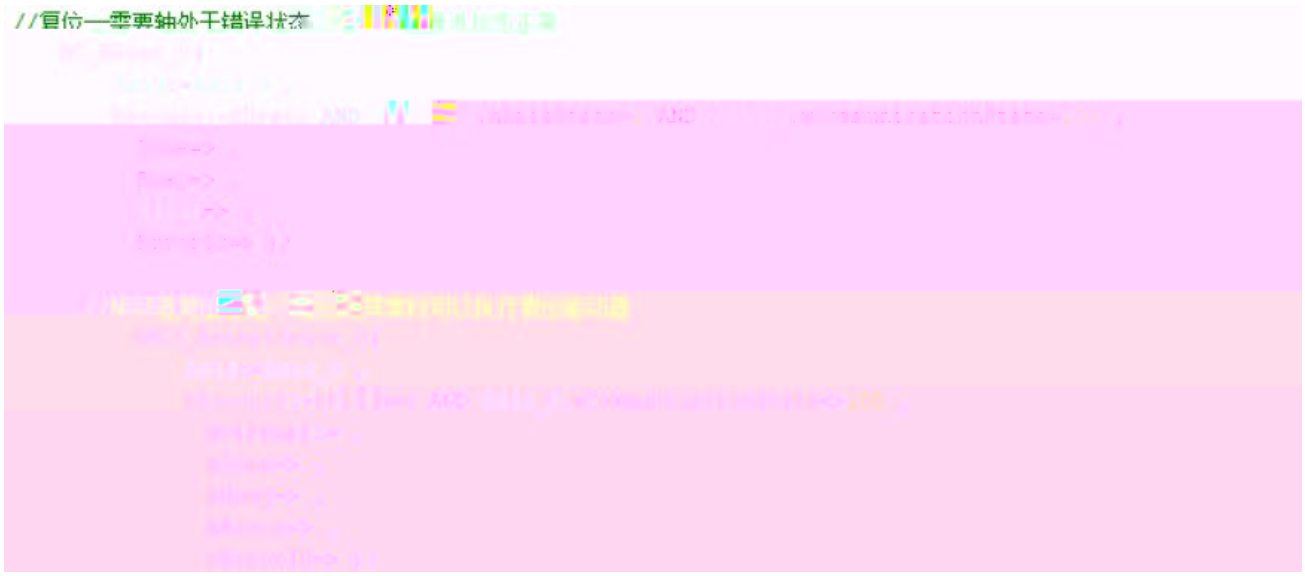
STRING .

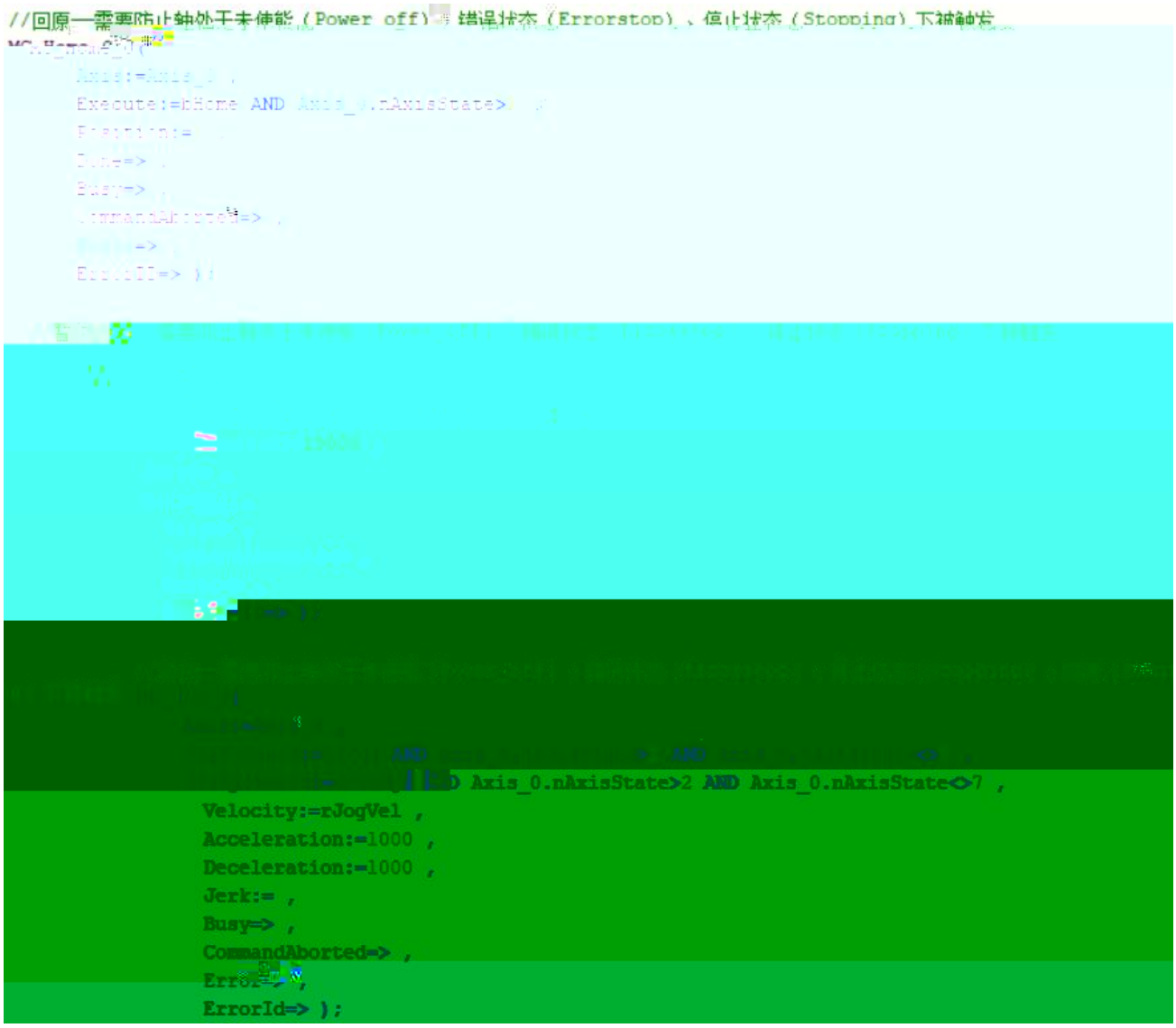
1.




```
//使能
MC_Power_0(
    Axis:=Axis_0 ,
    Enable:=TRUE ,          //此引脚是给
```

```
    //停止 需要轴处于未使能（Power_0.2）、错误状态（Errorstop）下被触发
    MC_Stop_0(
        Axis:=Axis_0 ,
        Execute:=Axis_0.nAxisState>1 ,
        Deceleration:=10000 ,
        Jerk:= ,
        Done=> ,
        Busy=> ,
        Error=> ,
        ErrorID=> );
```



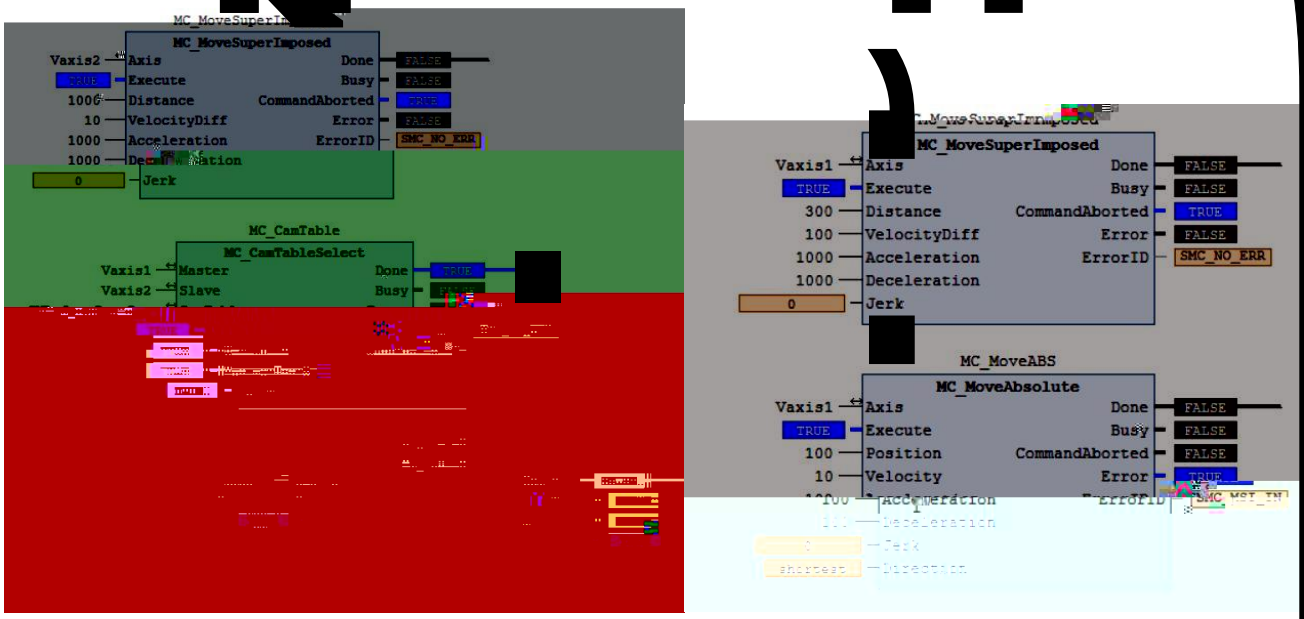


MC_MoveAbsolute MC_MoveRelative MC_MoveSuperImpsed MC_MoveAdditive MC_Jog ,

Power_off Errorstop Stopping Homing

MC_M rl ec

2. MS



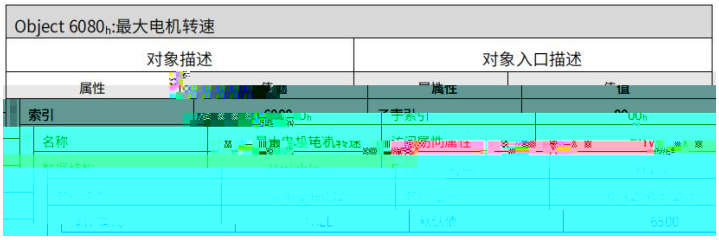
3. **standstill** a d 1 € &£

a c 9 B?

Q t3 #= 0 stands

9t vÚ

EtherCAT PDO 16#607F 16#6080 t8



softmotion

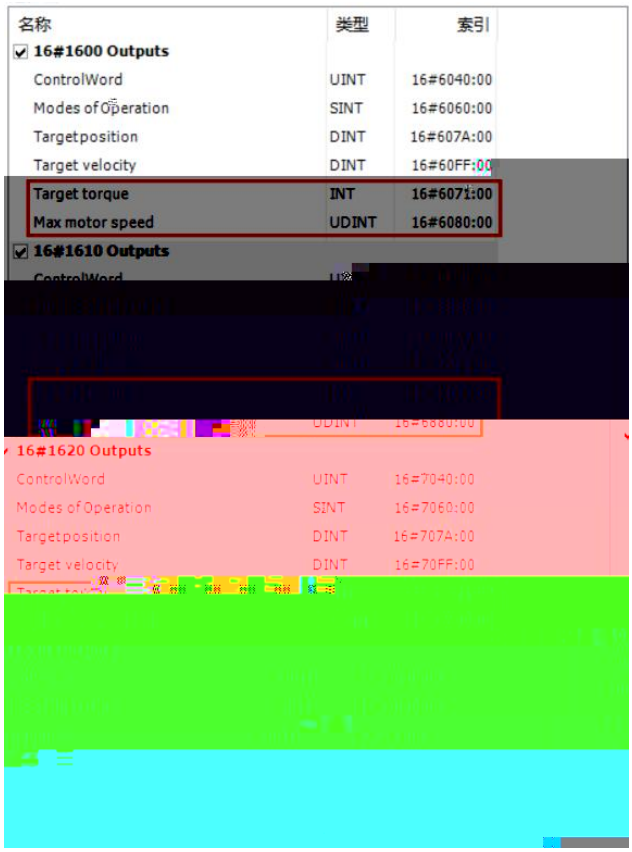


11. Codesys Port4 Port3

Codesys EtherCAT EtherCAT EtherCAT

Port3 EtherCAT

12.


名称
类型
索引
16#1600 Outputs
ControlWord
UINT
16#6040:00
Modes of Operation
SINT
16#6060:00
Target position
DINT
16#607A:00
Target velocity
DINT
16#60FF:00
Target torque
INT
16#6071:00
Max motor speed
UDINT
16#6080:00
16#1610 Outputs
16#1620 Outputs
ControlWord
UINT
16#7040:00
Modes of Operation
SINT
16#7060:00
Target position
DINT
16#707A:00
Target velocity
DINT
16#70FF:00

14.

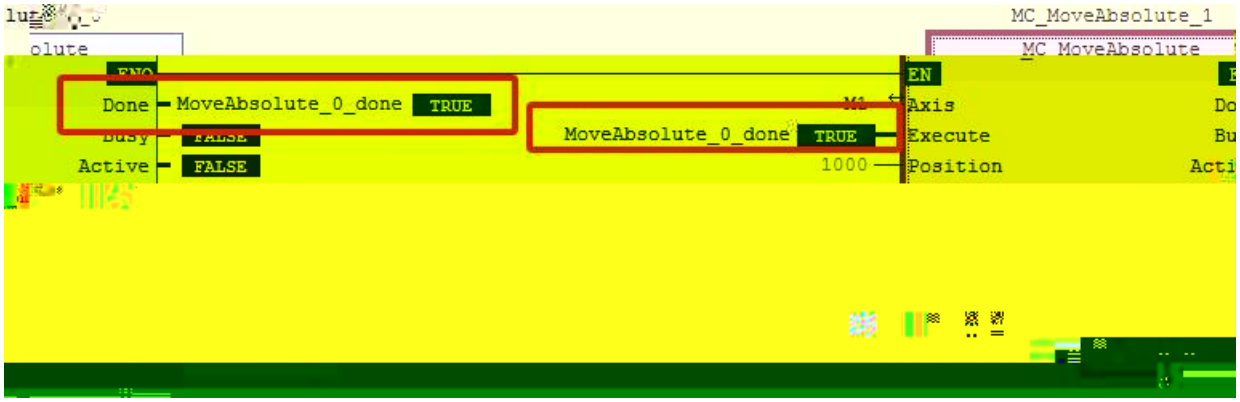
2

15.

X Nm Y7 X 6076 Y7

6076 6071 6076 0

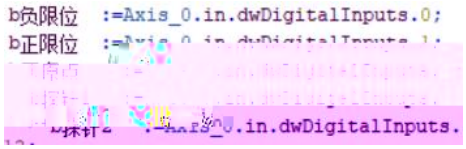
16. BufferMode



17.

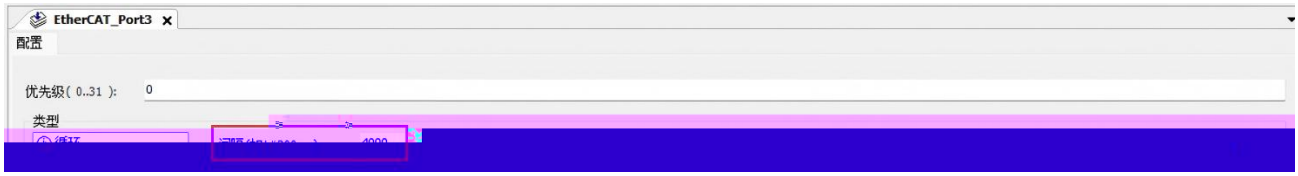
IO 16#60FD Axis.in.dwDigitalInputs

Y7S



18. EtherCAT

EtherCAT EtherCAT



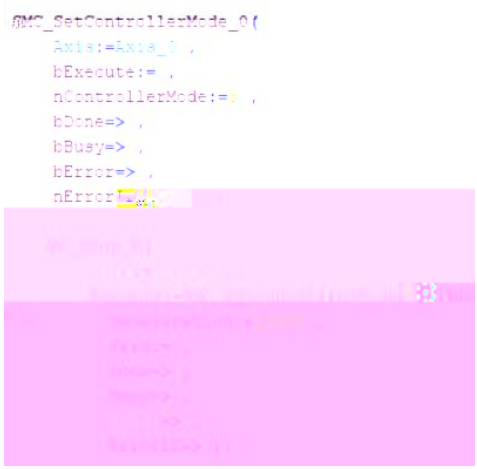


19. SMC_MOVING_WITHOUT_ACTIVE_MOVEMENT

SMC_SetControllerMode Done

Done Halt Stop Softmotion 4.4.0.2

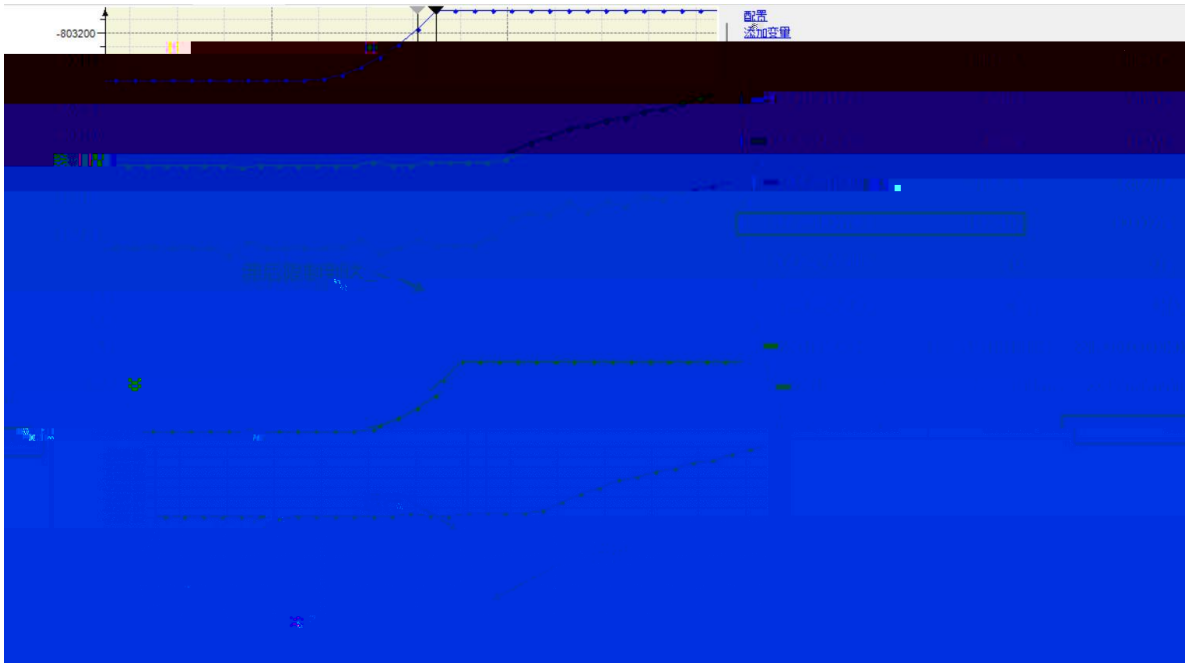
softmotion 4.10.0.0 softmotion

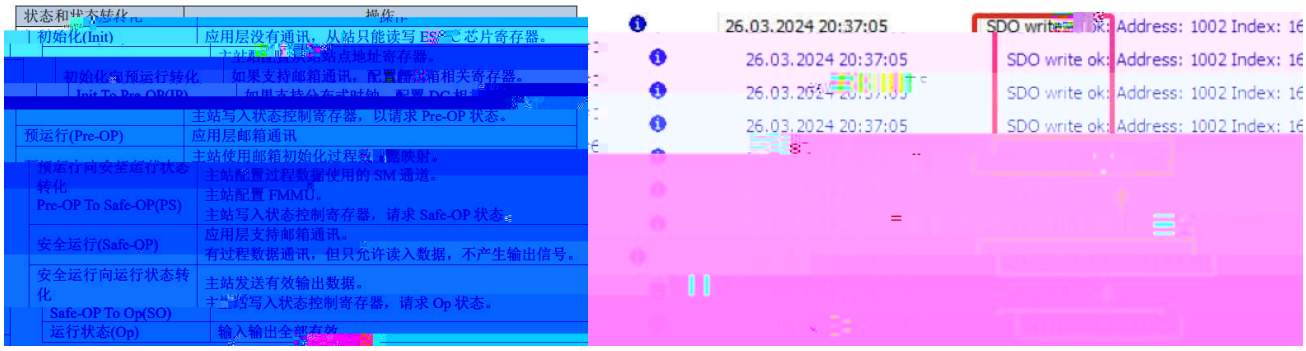


20. SMC_DI_POSITIONLAGERROR

abs(fSetPositon-fActPositon)>




-803200
配置
添加变量



1020 SDO SDO

softmotion 4.10.0.0 14 17 SMC3_ReinitDrive

SMC3_ReinitDrive SDO MC_ReadAxisError 603F 20

1020

22. SMC_CGR_INVALID_POSPERIOD

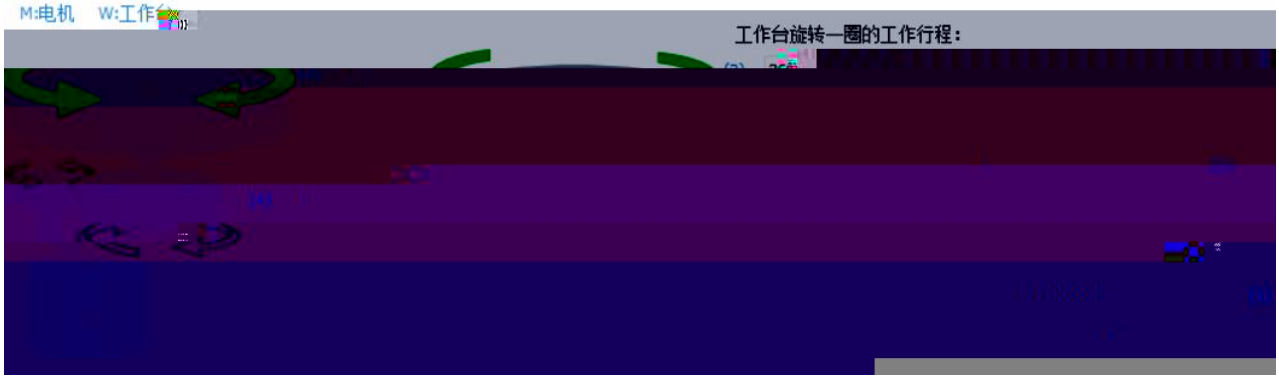
$$= \frac{2^{32} \times \quad \times}{\times} \div 2$$

18432

轴类型为旋转模式

单位换算公式：

参考 脉冲数(pulse) = (1) 电机旋转一圈的指令脉冲数[DINT] / (2) 工作台旋转一圈的工作行程[LREAL] * (4) 齿轮比分子[DINT] / (3) 齿轮比分母[DINT] * 移动距离[用户单位]



23. CNC DXF

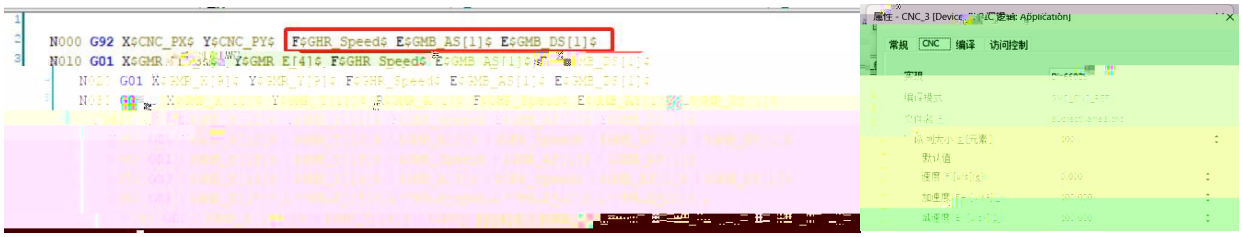
Codesys CAD DXF G CNC-

CNC - DXF - DXF

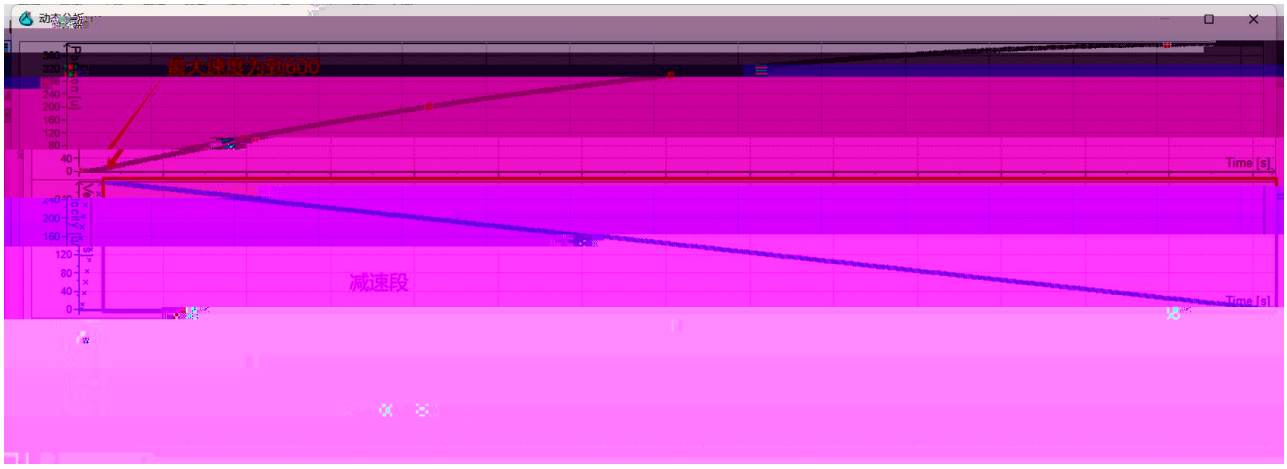


24. CNC

100



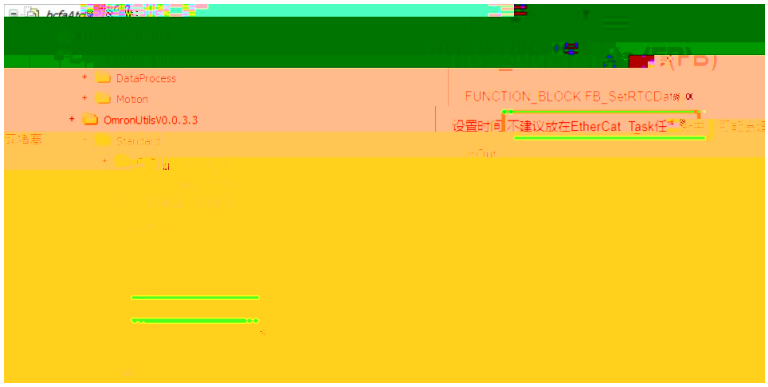
600 6



25. EtherCAT

FB_SetRTCDate EtherCAT EtherCAT

SMC_DI_FIELDBUS_LOST_SYNCRONICITY



26. EtherCAT

26.

EtherCAT F2 hC E

28. EtherCAT

hcfaAtcLib FB_EtherCATManager stECATSlave

LocalEtherCATDevice

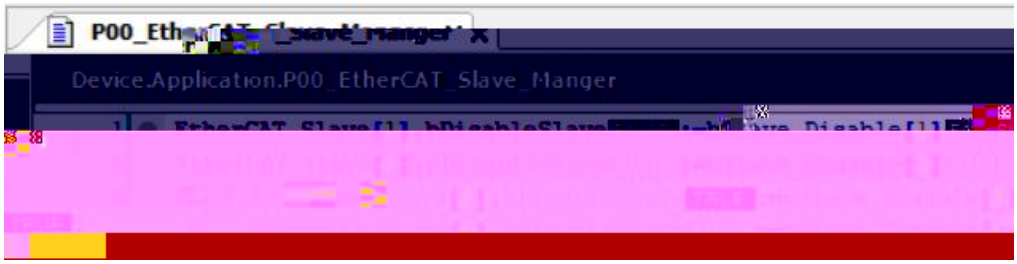
GVL_PersVars

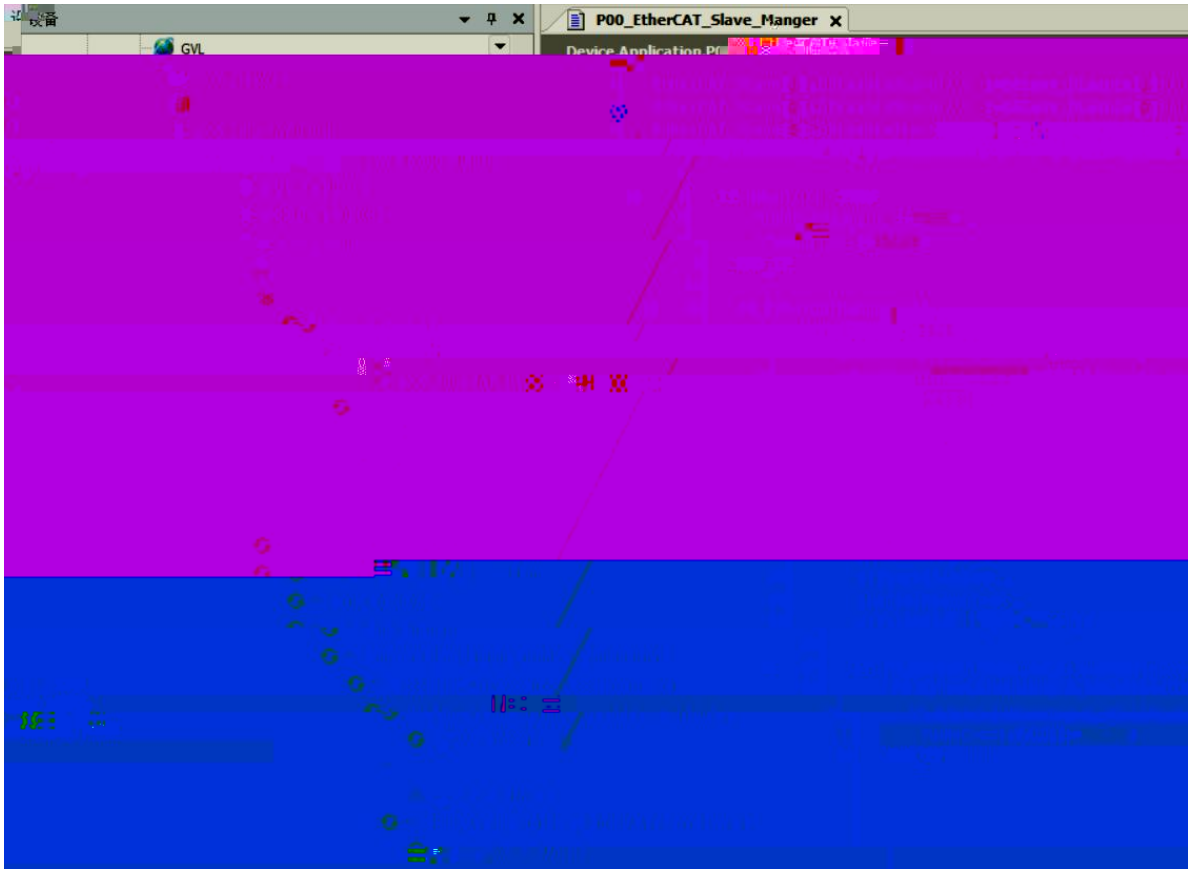
```
1  //{attribute 'qualified_only'}
2  VAR_GLOBAL RETAIN PERSISTENT
3      bSlave_Disable AT %MB131072 : ARRAY [1..4] OF BOOL;
4  END_VAR
```

P00_EtherCAT_Slave_Manger

```
1  PROGRAM P00_EtherCAT_Slave_Manger
2  VAR
3      FB_EtherCATManager_0          :FB_EtherCATManager;
4      EtherCAT_Slave                :ARRAY[1..4] OF stECATSlave
5      bRun                          :BOOL:=TRUE;
6      hbReConfig                    :BOOL;
7  END_VAR
```

```
1  EtherCAT_Slave[1].bDisableSlave:=bSlave_Disable[1];
2  EtherCAT_Slave[2].bDisableSlave:=bSlave_Disable[2];
3  EtherCAT_Slave[3].bDisableSlave:=bSlave_Disable[3];
4  EtherCAT_Slave[4].bDisableSlave:=bSlave_Disable[4];
5
6  IF bRun THEN
7      hbReConfig:=TRUE;
```





SetEnabled

```
EtherCAT_Port3(
    xRestart:=estart ,
      xStopBus:= ,
      xConfigFinished=> ,
      xDistributedClockInSync=> ,
      xError=> ,
      xSyncInWindow=> );

  HCFA_Y7_Servo_Driver_1.SetEnabled(pConnector:=HCFA_Y7_Servo_Driver_1.m_pConnector,xEnabled:=NOT bEnable)
  HCFA_Y7_Servo_Driver_1.SetEnabled(pConnector:=Axis_1.m_pConnector,xEnabled:=NOT bEnable);
```

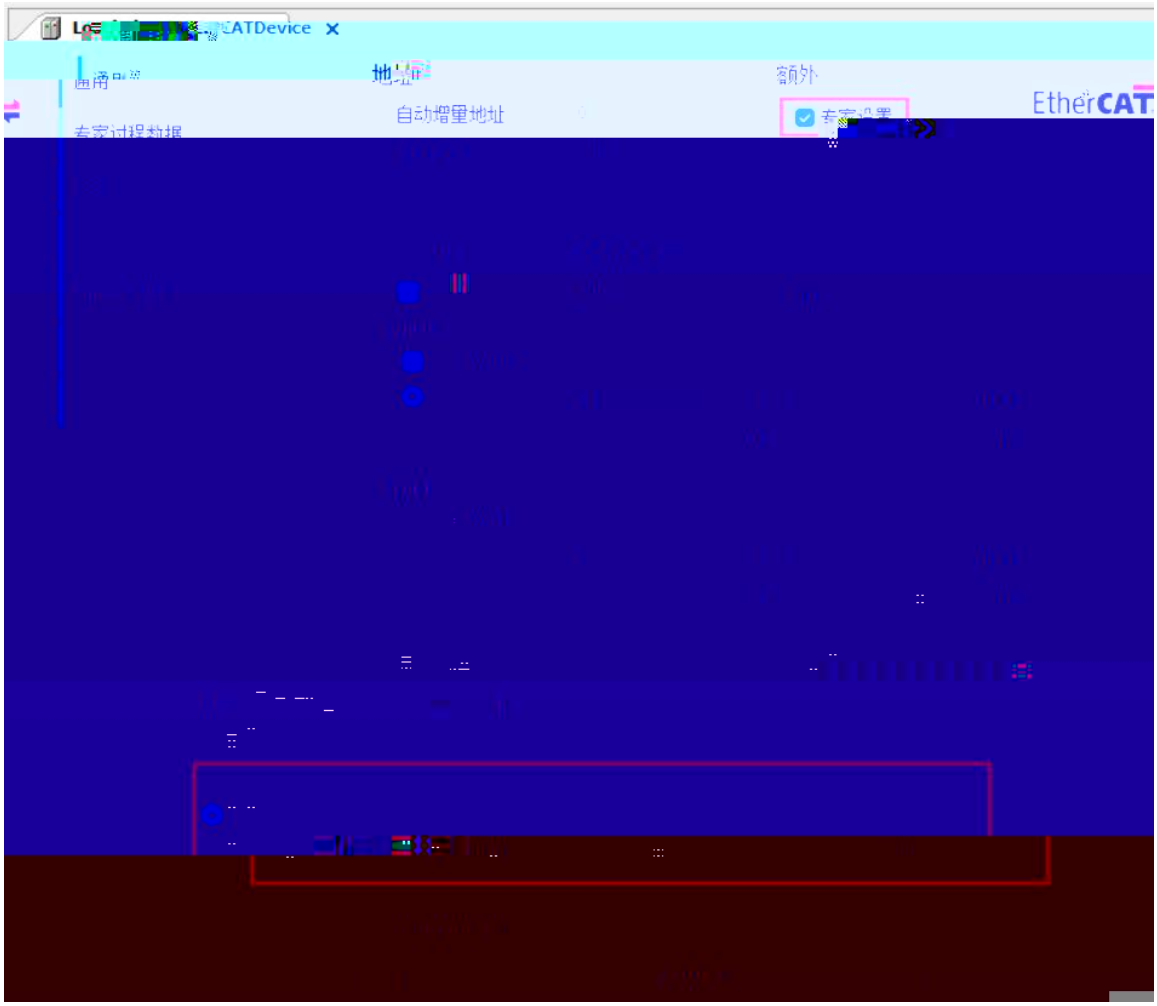
29. DXF CNC

CAM DXF CNC CNC U \SD CNC

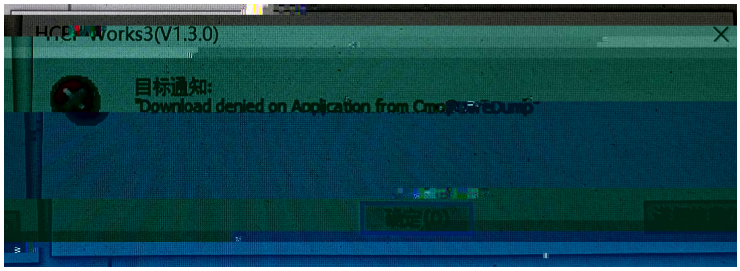
1. —— ER0000

Q0P/Q1P ERR

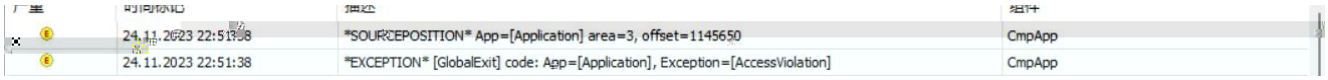
LocaEtherCATDevice EtherCAT EtherCAT 1001



9. ——Download Denied on Application from CmpCoreDump



“ EXCEPTION ”



1 PLC STOP

2 PLC Device→

3

10. ——

/



1.

/ / Codesys

POU / / /Lrange

/

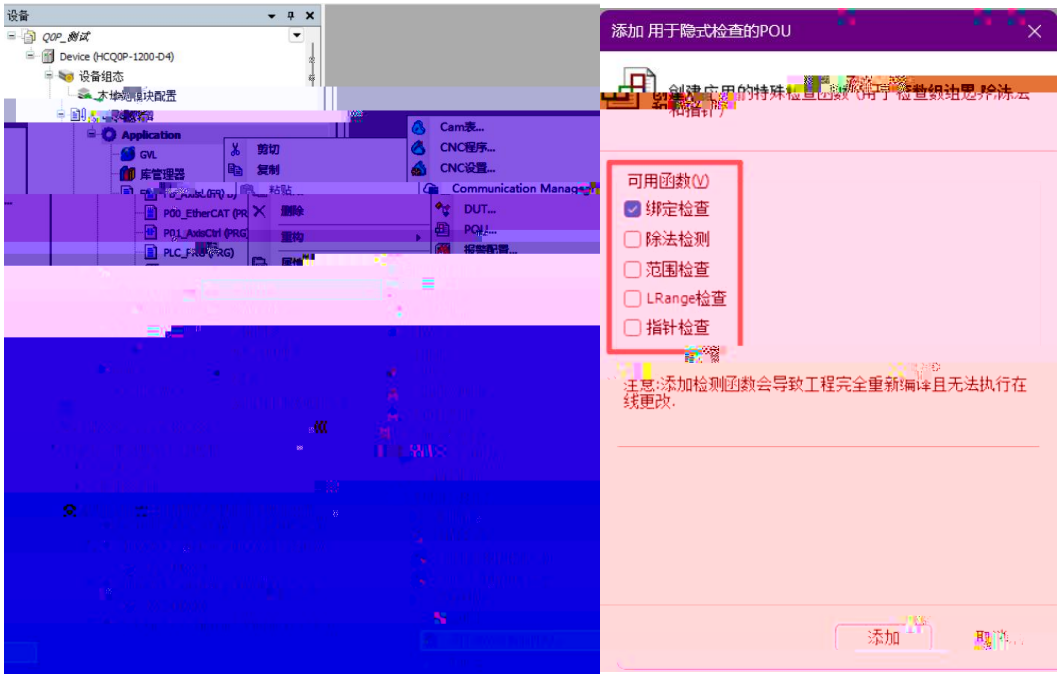
CPU

POU “ no_check ” POU

POU POU

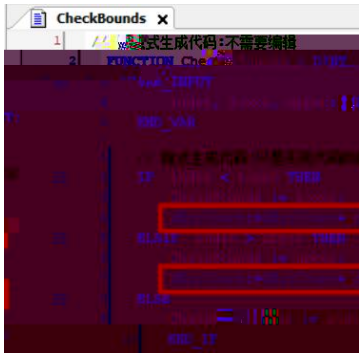
```
{attribute 'no_check'}
PROGRAM P00_EtherCAT
VAR
    tonEtherCAT             :TON;
    SMC3_PersistPosition_0  :SMC3_PersistPosition;
    FB_GetEtcSlaveState_0   :FB_GetEtcSlaveState;
    EtherCAT_SlaveState     :ARRAY[0..9] OF _stEtcSlaveState;
    bRestart                :BOOL;
    bEnable                 :BOOL;
END_VAR
```

POU Application→ → POU, →



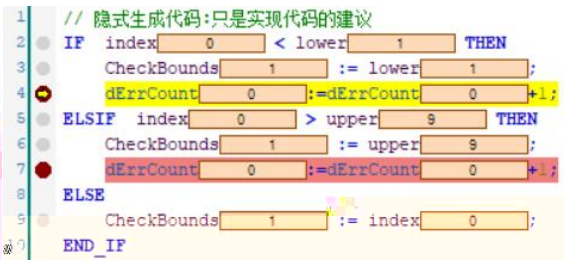
dErrCount dErrCount

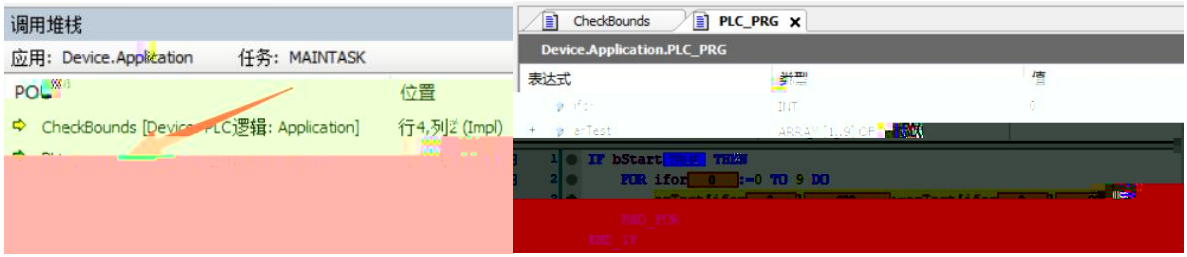
1 dErrCount



dErrCount 0







PLC

2. PID

PIDLIB 2.0.0.0.compiled-library PID PWS PID

```
rActValue:=TO_REAL(%IW2)/10;

PID_0(
    RUN:=bRun ,
```

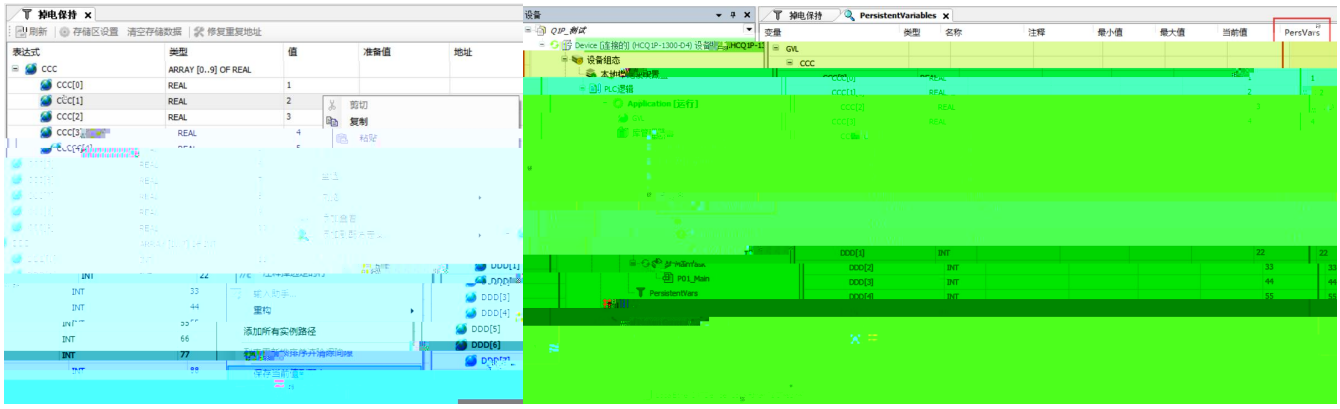


```
    Out=>%QX0.0 );
```

3.

PersistentVars PersistentVars

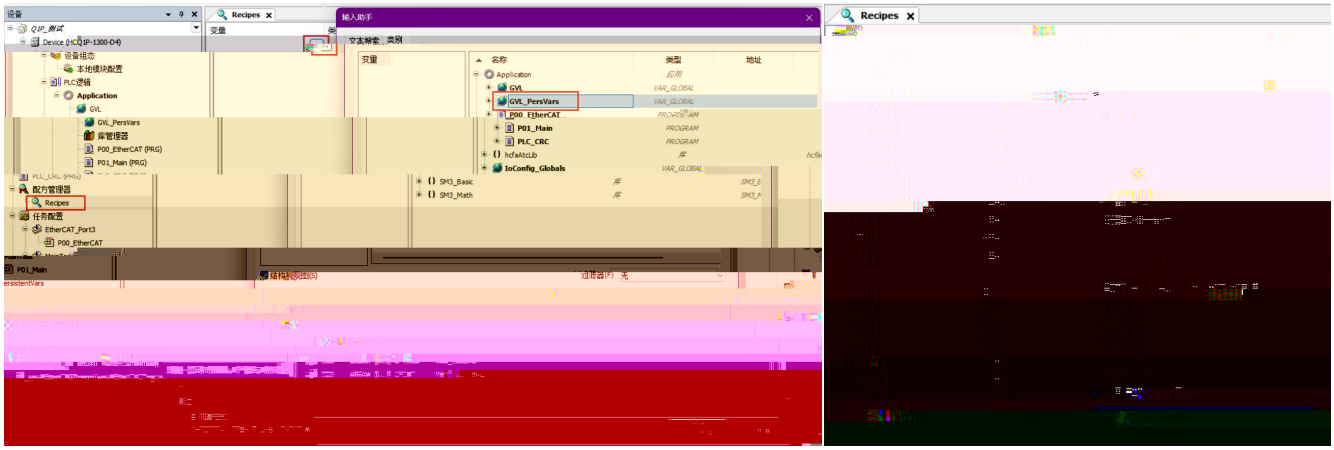
PersistentVariables PersVars



PersistentVars Application →

→





→ PLC RecipeManagement.library

RecipeManCommands “ FlashFiles/ ”

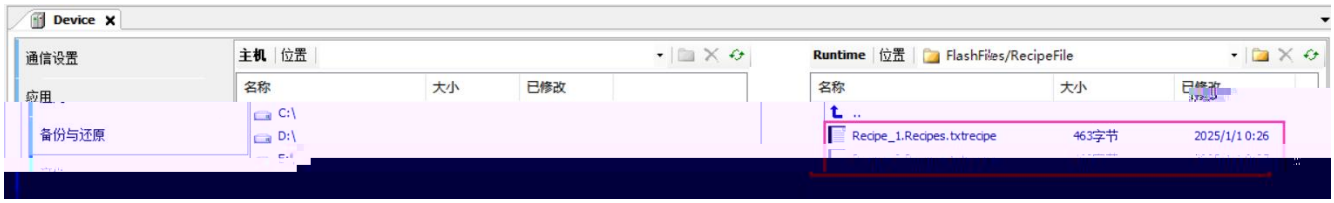
```
//实例调用
RecipeManCommands_0();

//设置存储路径
IF bSetStoragePath THEN
    IF RecipeManCommands_0.SetStoragePath(stPath:='FlashFiles/RecipeFile/') THEN
        bSetStoragePath_OK:=TRUE;
        bSetStoragePath:=FALSE;
    END_IF
END_IF

//生成配方名称
strRecipeNum:=TO_STRING(wRecipeNum);
strRecipeName:=CONCAT('Recipe_',strRecipeNum);

//创建配方文件
IF bCreateRecipe AND bSetStoragePath_OK THEN
    IF RecipeManCommands_0.CreateRecipe(RecipeDefinitionName:='Recipes'
        END_IF
    END_IF

//读取PLC设置到配方，并保存配方到配方文件
IF bReadSaveRecipe AND bSetStoragePath_OK THEN
    IF
        END_IF
    END_IF
```



1 EtherCAT PLC 100ms

2

3 “ FlashFiles/RecipeFile/ ” FlashFiles

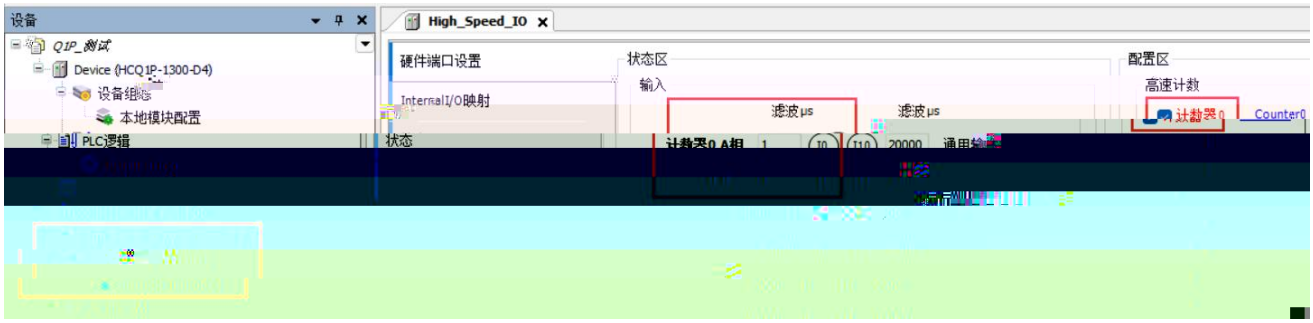
RecipeFile

4 FlashFiles

4.

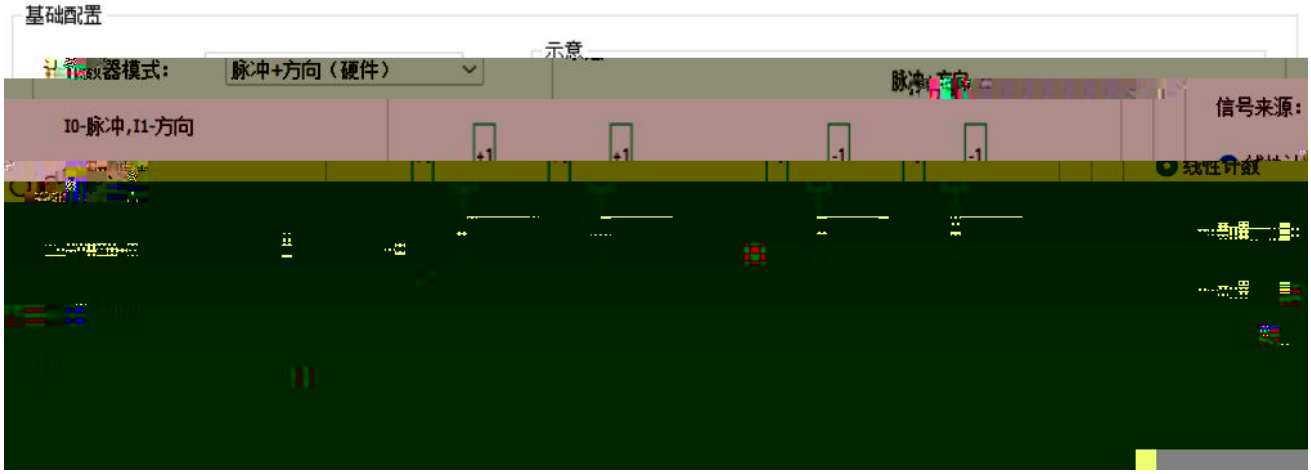
—— High_Speed_IO 0

Counter0 Encoder Encoder_0



Counter0 A/B 1 2 4 CW/CCW +

-2147483648~2147483647



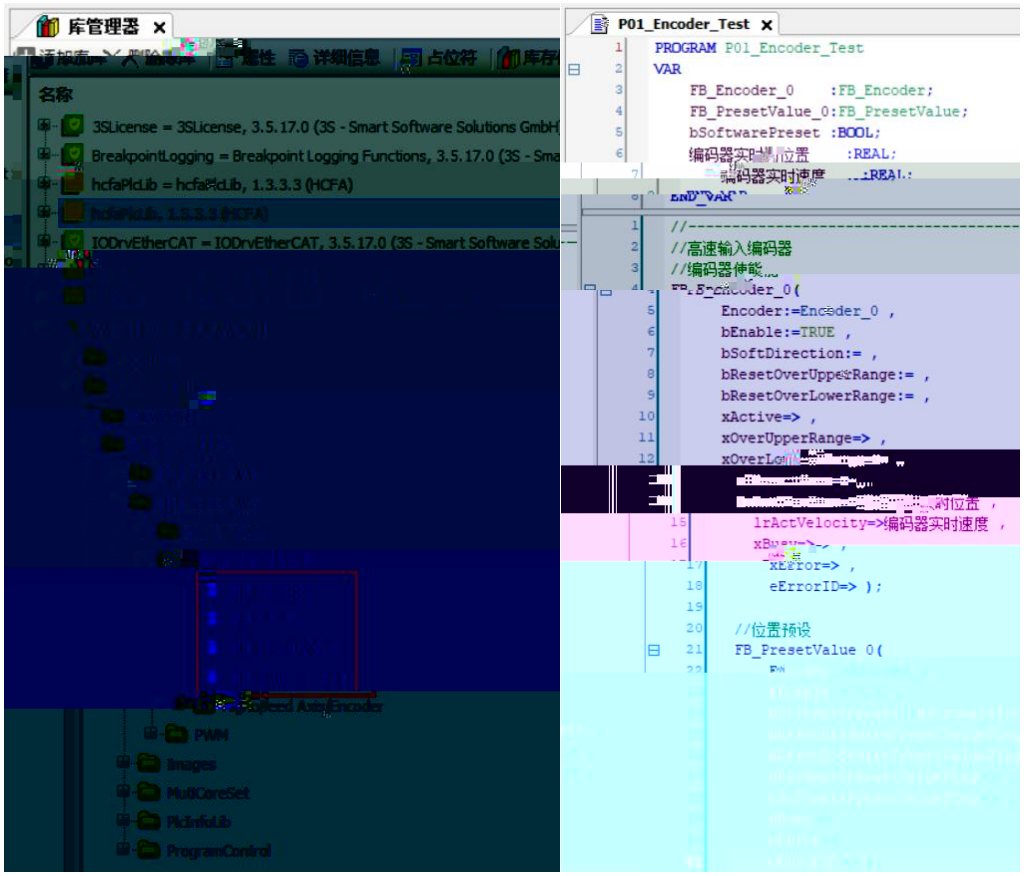
IO



IO FB_PresetValue

Encoder 2 FB_Latch



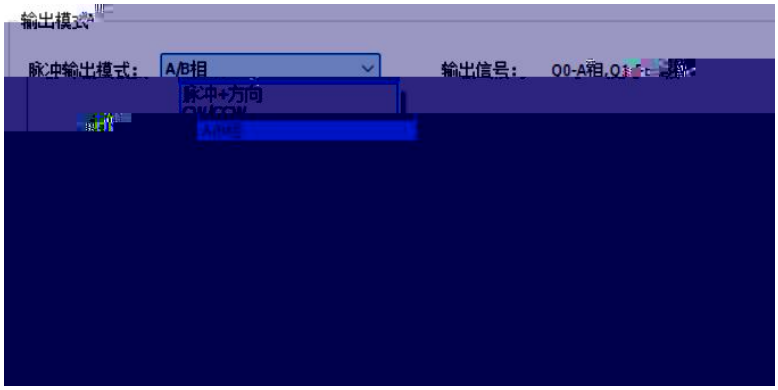


—— High_Speed_IO 0

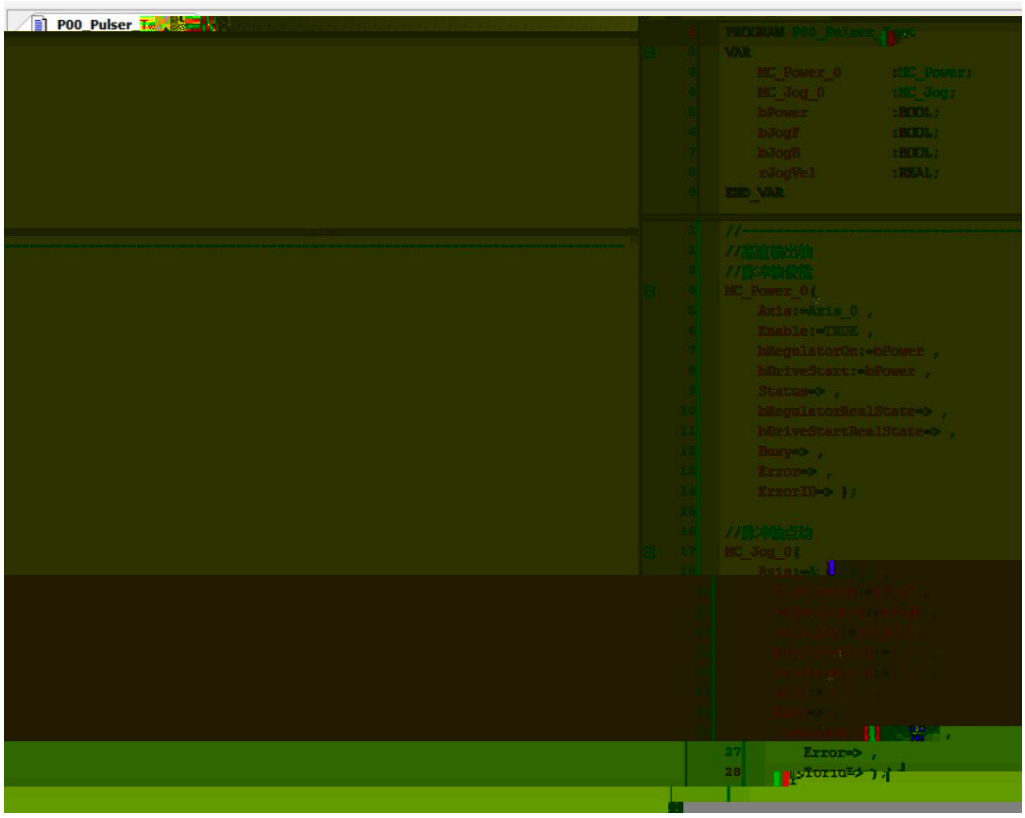
Pulser0 Axis



Pulser0 + CW/CCW A/B



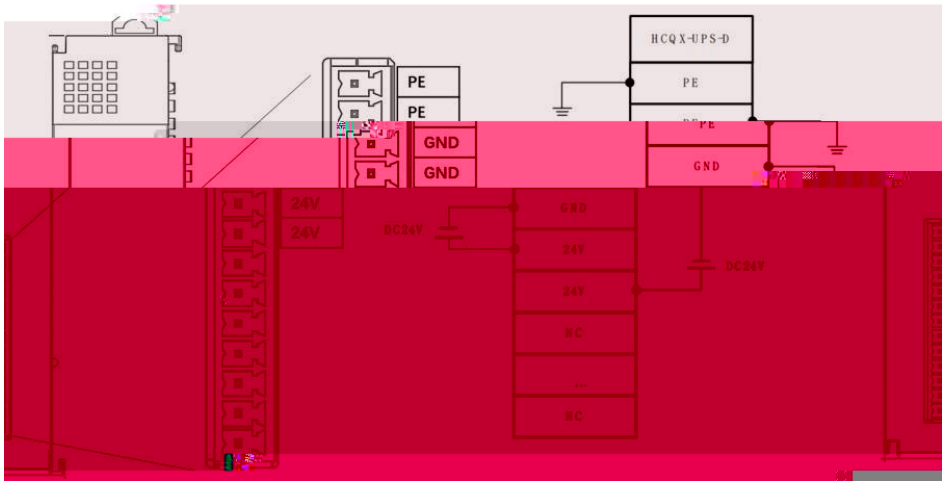
Codesys MC MC_Home EtherCAT



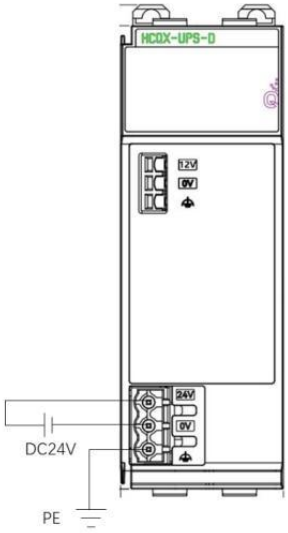
5. UPS

UPS

HCQX-UPS-D-T05		96W(MAX)



HCQX-UPS-D-T09	16	60.48W(MAX)



HCQX-UPS-D-T09　　HCQX-UPS-D-TRF　　16

HCQX-UPS-D-TRF

表三 中转模块 HCQX-UPS-D-TRF 端子排列说明

说明	NO.		说明
GND	0	10	12V
	1	11	
	2	12	
	3	13	
	4	14	
	5	15	
	6	16	
	7	17	
PE	8		

