TECO Frequency Inverter 7200 MA/JA PROFIBUS-DP Slave Communication Interface

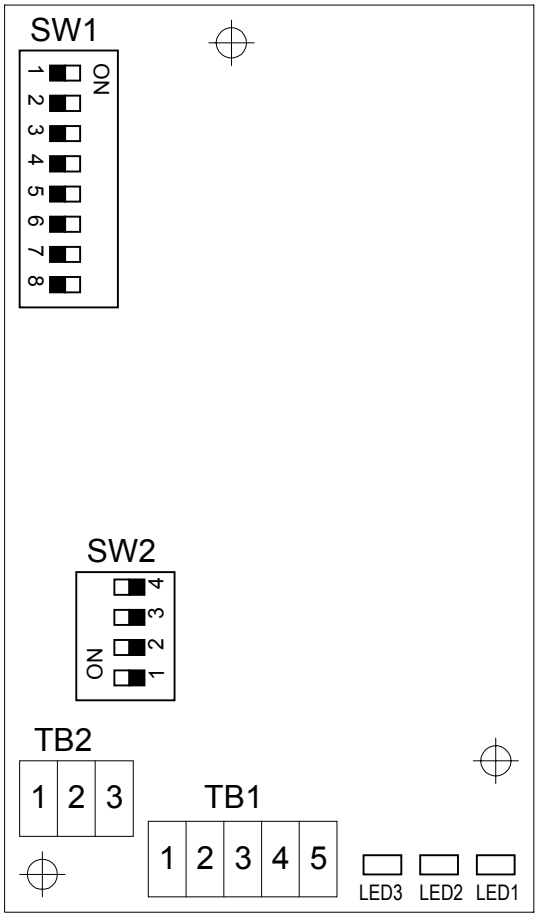
Technical Manual

Contents Page

1.1.Features

Item	Specification								
Main Function	Convert 7200MA/JA RS-485 Modbus Protocol to Profibus-DP								
Inverter Link	7200MA: 1 Unit				7200JA: 1 or 2 Units				
Mounting Base	7200MA: 3 Screws Built in				7200JA: External Socket				
Maximum Connection	32 DP-Slaver Nodes								
Auto-Baud Search(bit/Sec)	9.6K	19.2K	93.75K	187.5K	500K	1.5M	3M	6M	12M
Transmission Distance(m)	1200	1200	1200	1000	400	200	100	100	100
Connection Medium	Shielded Twisted Pair Cable								
Optic Coupler Isolation	Common Mode Rejection Vcm=50V,dV/dt=5000V/uSec								
Access Parameters	16 Words In,16 Words Out								
Terminal Resistors	On Board Switch Setting								
Communication Status	3 LED Indication								
External Power Source	10~30Vdc(24Vdc Recommended)								
Power Consumption	2.4W(24V,100mA)								

1.2.Outline



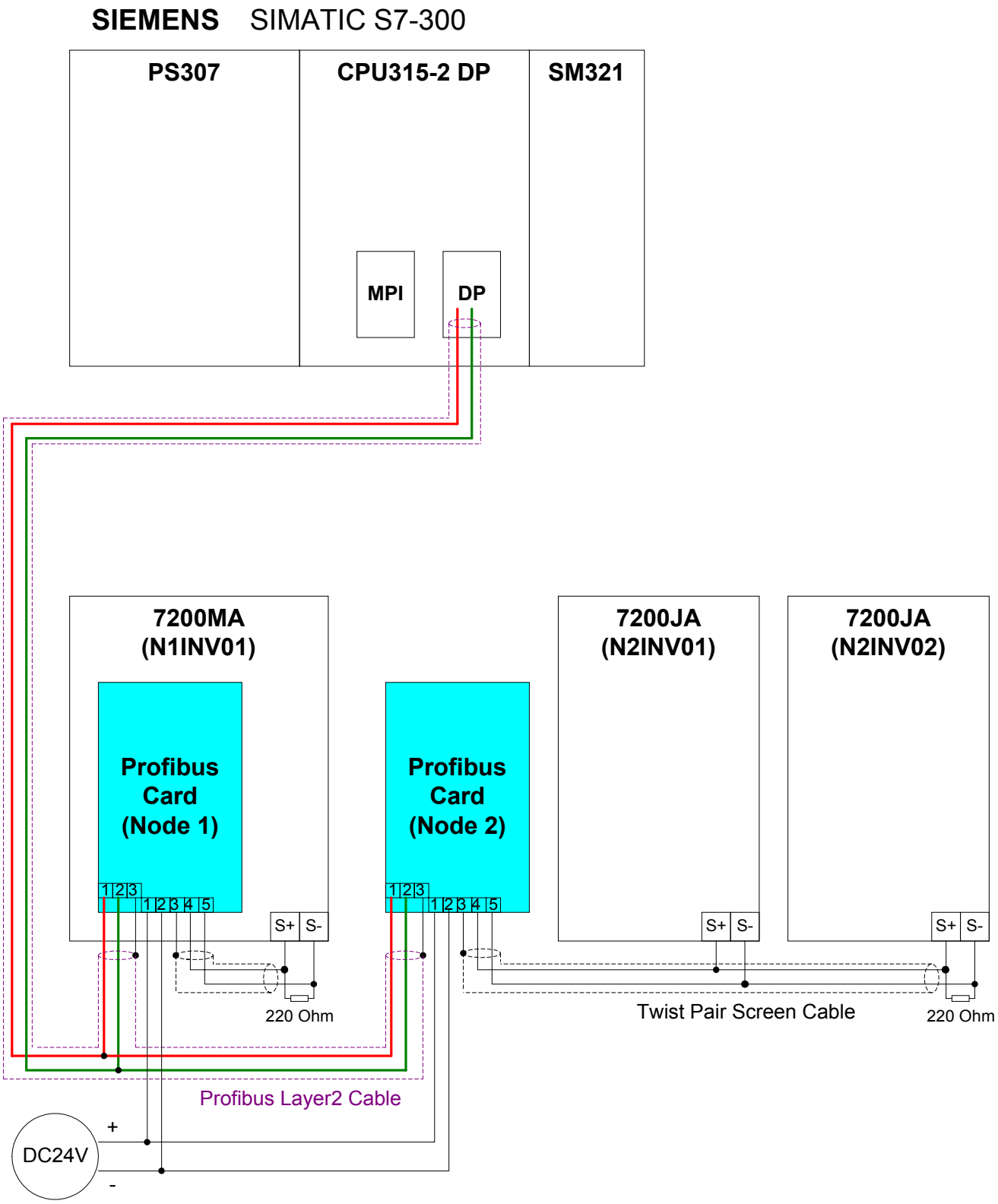
1.3.Terminal Function

Terminal	Name	Function
TB1-1	VCC	External Power Source (+24V)
TB1-2	VSS	External Power Source (0V)
TB1-3	GND1	Shielding Connection for Inverter RS-485 Cable
TB1-4	S+	Modbus Transceiver Positive Signal
TB1-5	S-	Modbus Transceiver Negative Signal
TB2-1	B+	Profibus Transceiver Positive Signal
TB2-2	A-	Profibus Transceiver Negative Signal
TB2-3	GND2	Shielding Connection for Profibus Cable

1.4.Led Status

LED	Description	Normal Status
1(Red)	Transmitting Data to Inverter	Flash Quickly (Light above 90%)
2(Yellow)	Receiving Data from Inverter	Flash Quickly (Light above 90%)
3(Yellow)	Profibus Data Exchanging	Light 100%

2.System Wiring



3.1.DP-Slaver Card Node Address

SW1-5	SW1-4	SW1-3	SW1-2	SW1-1	NO.
OFF	***OFF***	***OFF***	***OFF***	***OFF***	***1***
OFF	OFF	OFF	OFF	ON	2
OFF	OFF	OFF	ON	OFF	3
OFF	OFF	OFF	ON	ON	4
…	…	…	…	…	…
ON	ON	ON	ON	ON	32

3.2.Inverter Type Select

SW1-6	Inverter
OFF	***7200MA***
ON	7200JA

3.3.Inverter 7200JA Connection Select

SW1-7	Link Units
OFF	***1 Inverter***
ON	2 Inverters

3.4.Terminal Resistor

SW2-2	SW2-1	Status
OFF	***OFF***	***Disable***
ON	ON	Enable

3.5.SW1-8 (Reserved)

3.6.SW2-3,SW2-4 (Not Used)

4.1.Input Tag for Inverter 7200MA

Tag	Name	Bit	Value=0	Value=1
TAG00	Inverter Operation Status	0	Stopped	Running
		1		Zero Speed
		2	Forward	Reverse
		3		Inverter Ready
		4	DRV Mode	PRG Mode
		5	440V Class	220V Class
		6		Inverter Alarm
		7		Inverter Fault
		8		
		9		
		10		
		11		
		12		
		13		
		14		
		15		
TAG01	Inverter Fault Status	0		Under Voltage(UV1)
		1		Over Current(OC)
		2		Over Voltage(OV)
		3		Over Heat(OH)
		4		Motor Over Load(OL1)
		5		Inverter Over Load(OL2)
		6		Output Over Torque(OL3)
		7		External Fault3(EF3)
		8		External Fault5(EF5)
		9		External Fault6(EF6)
		10		External Fault7(EF7)
		11		External Fault8(EF8)
		12		EEPROM Fault(CPF04)
		13		CPU A/D Fault(CPF05)
		14		Ground Fault(GF)
		15		

4.1.Input Tag for Inverter 7200MA (Conti.)

Tag	Name	Bit	Value=0	Value=1
TAG02				
TAG03	Inverter Alarm Status	0		Under Voltage(UV)
		1		Over Voltage(OV)
		2		Over Heat(OH)
		3		Over Torque(OL3)
		4		External Fault(EF)
		5		Base Block(BB)
		6		EEPROM Alarm
		7		External Alarm3(EF3)
		8		
		9		
		10		
		11		
		12		
		13		
		14		
		15		

Tag	Name	Function	Description
TAG04	Fref	Frequency Reference	30000=100.00%
TAG05	Fout	Output Frequency	30000=100.00%
TAG06	PG	Encoder Feedback	
TAG07	Cout	Output Current	100=10.0A
TAG08	Vdc	DC Voltage	310=310V
TAG09	Ain1	Analog Input Vin Value	1000=10V
TAG10	Ain2	Analog Input Ain Value	0=4mA ; 1000=20mA
TAG11	Ain3	Analog Input Aux Value	1000=10V

4.1.Input Tag for Inverter 7200MA (Conti.)

Tag	Name	Bit	Description
TAG12	Digital Input Status	0	DI 1
		1	DI 2
		2	DI 3
		3	DI 4
		4	DI 5
		5	DI 6
		6	DI 7
		7	DI 8
		8	
		9	
		10	
		11	
		12	
		13	
		14	
		15	

Tag	Name	Function	Description
TAG13	Ao1	Analog Output1 Value	1000=10V
TAG14	Ao2	Analog Output2 Value	1000=10V

Tag	Name	Bit	Description
TAG15	Digital Output Status	0	Relay Output
		1	Digital Output1
		2	Digital Output2
		3~15	-

4.2.Output Tag for Inverter 7200MA

Tag	Name	Bit	Value=0	Value=1
TAG00	Inverter Operation Command	0	Stop	Run
		1	Run Forward	Run Reverse
		2		External Fault
		3		Fault Reset
		4		
		5		
		6		
		7		
		8		
		9		
		10		
		11		
		12		
		13		
		14		
		15		

Tag	Name	Function	Description
TAG01	Fcmd	Host Link Frequency Command	30000=100.00%
TAG02			
TAG03			
TAG04			
TAG05	Ao1Cmd	Host Link Analog Output1 Command	1000=10V
TAG06	Ao2Cmd	Host Link Analog Output2 Command	1000=10V

Tag	Name	Bit	Description
TAG07	Digital Output Command	0	Relay Output
		1	Digital Output1
		2	Digital Output2
		3~15	-

4.2.Output Tag for Inverter 7200MA (Conti.)

Tag	Name	Function	Description
TAG08			
TAG09			
TAG10			
TAG11			
TAG12			
TAG13			
TAG14			
TAG15			

5.1.Input Tag for Inverter 7200JA

Tag	Name	Bit	Value=0	Value=1
TAG00	INV01	0	Stopped	Running
	Operation	1	Forward	Reverse
	Status	2		Zero Speed
		3		Fault
		4		
		5		
		6	DO 11,12 Status OFF	DO 11,12 Status ON
		7	DO A,B,C Status OFF	DO A,B,C Status ON
		8	DRV Mode	PRG Mode
		9		
		10		EEPROM R/W Fault
		11		
		12		
		13	Digital Operator Connected	
		14		
		15	220V Class	440V Class
TAG01	INV01	0		Under Voltage(UV1)
	Fault	1		Over Current(OC)
	Status	2		Over Voltage(OV)
		3		Over Heat(OH)
		4		Motor Over Load(OL1)
		5		Inverter Over Load(OL2)
		6		Output Over Torque(OL3)
		7		External Fault(E3)
		8		External Fault(E4)
		9		External Fault(E5)
		10		EEPROM Fault(F02)
		11		CPU A/D Fault(F03)
		12		RS-485 Fault(F04)
		13		RS-485 Fault(F05)
		14		Ground Fault(GF)
		15		

5.1.Input Tag for Inverter 7200JA (Conti.)

Tag	Name	Bit	Value=0	Value=1
TAG02	INV01	0		Under Voltage(UV)
	Alarm	1		Over Voltage(OV)
	Status	2		Over Heat(OH)
		3		Over Torque(OL3)
		4		External Fault(EF)
		5		Base Block(bb)
		6		RS-485 Fault(F04)
		7		RS-485 Fault(F05)
		8		
		9		
		10		
		11		
		12		
		13		
		14		
		15		
TAG03	INV01	0		
	RS-485	1		
	Error	2		Overrun Error
	Status	3		
		4		Framing Error
		5		
		6		
		7		Parity Check Error
		8		
		9		
		10		
		11		
		12		
		13		
		14		
		15		

5.1.Input Tag for Inverter 7200JA (Conti.)

Tag	Name	Description
TAG04	INV01 Fref	Frequency Reference(30000=100.00%)
TAG05	INV01 Fout	Output Frequency (30000=100.00%)
TAG06	INV01 Cout	Output Current(100=10.0A)
TAG07	INV01 Vdc	DC Voltage(310=310V)

5.1.Input Tag for Inverter 7200JA (Conti.)

Tag	Name	Bit	Value=0	Value=1
TAG08	INV02	0	Stopped	Running
	Operation	1	Forward	Reverse
	Status	2		Zero Speed
		3		Fault
		4		
		5		
		6	DO 11,12 Status OFF	DO 11,12 Status ON
		7	DO A,B,C Status OFF	DO A,B,C Status ON
		8	DRV Mode	PRG Mode
		9		
		10		EEPROM R/W Fault
		11		
		12		
		13	Digital Operator Connected	
		14		
		15	220V Class	440V Class
TAG09	INV02	0		Under Voltage(UV1)
	Fault	1		Over Current(OC)
	Status	2		Over Voltage(OV)
		3		Over Heat(OH)
		4		Motor Over Load(OL1)
		5		Inverter Over Load(OL2)
		6		Output Over Torque(OL3)
		7		External Fault(E3)
		8		External Fault(E4)
		9		External Fault(E5)
		10		EEPROM Fault(F02)
		11		CPU A/D Fault(F03)
		12		RS-485 Fault(F04)
		13		RS-485 Fault(F05)
		14		Ground Fault(GF)
		15		

5.1.Input Tag for Inverter 7200JA (Conti.)

Tag	Name	Bit	Value=0	Value=1
TAG10	INV02	0		Under Voltage(UV)
	Alarm	1		Over Voltage(OV)
	Status	2		Over Heat(OH)
		3		Over Torque(OL3)
		4		External Fault(EF)
		5		Base Block(bb)
		6		RS-485 Fault(F04)
		7		RS-485 Fault(F05)
		8		
		9		
		10		
		11		
		12		
		13		
		14		
		15		
TAG11	INV02	0		
	RS-485	1		
	Error	2		Overrun Error
	Status	3		
		4		Framing Error
		5		
		6		
		7		Parity Check Error
		8		
		9		
		10		
		11		
		12		
		13		
		14		
		15		

5.1.Input Tag for Inverter 7200JA (Conti.)

Tag	Name	Description
TAG12	INV02 Fref	Frequency Reference(30000=100.00%)
TAG13	INV02 Fout	Output Frequency (30000=100.00%)
TAG14	INV02 Cout	Output Current(100=10.0A)
TAG15	INV02 Vdc	DC Voltage(310=310V)

5.2.Output Tag for Inverter 7200JA

Tag	Name	Bit	Value=0	Value=1
TAG00	INV01 Command1	0	Stop	Run
		1	Forward	Reverse
		2	DI 3 Input Result Clear	DI 3 Input Result Set
		3	DI 4 Input Result Clear	DI 4 Input Result Set
		4	DI 5 Input Result Clear	DI 5 Input Result Set
		5		Fault Reset
		6	Digital Operator Stop Key Valid	Digital Operator Stop Key Invalid
		7	DI 3,4,5 Result Control Invalid	DI 3,4,5 Result Control Valid
		8		
		9		
		10		
		11		
		12		
		13		
		14		
		15		
TAG01	INV01 Fcmd		Host Link Frequency Command	30000=100.00%
TAG02	INV01 Command2	0	DO 11,12 Output Clear	DO 11,12 Output Set
		1	DO A,B,C Output Clear	DO A,B,C Output Set
		2		DRV Mode ➔ PRG Mode
		3		PRG Mode ➔ DRV Mode
		4	Bit 2,3 Invalid	Bit 2,3 Valid
		5		
		6		
		7	DO 11,12,A,B,C Set Disable	DO 11,12,A,B,C Set Enable
		8		
		9		
		10		
		11		
		12		
		13		
		14		
		15		

5.2.Output Tag for Inverter 7200JA (Conti.)

Tag	Name	Description	Resolution	Unit
TAG03				
TAG04				
TAG05				
TAG06				
TAG07				

5.2.Output Tag for Inverter 7200JA (Conti.)

Tag	Name	Bit	Value=0	Value=1
TAG08	INV02 Command1	0	Stop	Run
		1	Forward	Reverse
		2	DI 3 Input Result Clear	DI 3 Input Result Set
		3	DI 4 Input Result Clear	DI 4 Input Result Set
		4	DI 5 Input Result Clear	DI 5 Input Result Set
		5		Fault Reset
		6	Digital Operator Stop Key Valid	Digital Operator Stop Key Invalid
		7	DI 3,4,5 Result Control Invalid	DI 3,4,5 Result Control Valid
		8		
		9		
		10		
		11		
		12		
		13		
		14		
		15		
TAG09	INV02 Fcmd		Host Link Frequency Command	30000=100.00%
TAG10	INV02 Command2	0	DO 11,12 Output Clear	DO 11,12 Output Set
		1	DO A,B,C Output Clear	DO A,B,C Output Set
		2		DRV Mode ➔ PRG Mode
		3		PRG Mode ➔ DRV Mode
		4	Bit 2,3 Invalid	Bit 2,3 Valid
		5		
		6		
		7	DO 11,12,A,B,C Set Disable	DO 11,12,A,B,C Set Enable
		8		
		9		
		10		
		11		
		12		
		13		
		14		
		15		

5.2.Output Tag for Inverter 7200JA (Conti.)

Tag	Name	Description	Resolution	Unit
TAG11				
TAG12				
TAG13				
TAG14				
TAG15				

6.GSD File

```
;/*************************************************************/
;/* Filename:    TECO7200.GSD
;/* ModelName:   TECO AC DRIVES 7200 GA/PA
;/* CreateDate:  2000.09.21
;/*************************************************************/
#Profibus_DP
GSD_Revision         = 1
Vendor_Name          = "TECO"
Model_Name           = "TECO 7200 GA/PA"
Revision             = "Version0.0"
Ident_Number         = 0x7200
Protocol_Ident       = 0                  ;Profibus-DP
Station_Type         = 0                  ;DP Slaver
FMS_supp             = 0                  ;Pure DP Device
Hardware_Release     = "HW_V0.0"
Software_Release     = "SW_V0.0"
;
9.6_supp             = 1
19.2_supp            = 1
93.75_supp           = 1
187.5_supp           = 1
500_supp             = 1
1.5M_supp            = 1
3M_supp              = 1
6M_supp              = 1
12M_supp             = 1
MaxTsdr_9.6          = 60
MaxTsdr_19.2         = 60
MaxTsdr_93.75        = 60
MaxTsdr_187.5        = 60
MaxTsdr_500          = 100
MaxTsdr_1.5M         = 150
MaxTsdr_3M           = 250
MaxTsdr_6M           = 450
MaxTsdr_12M          = 800
Redundancy           = 0              ;Not Redundancy Supported
Repeater_Ctrl_Sig    = 2              ;TTL
24V_Pins             = 0              ;Not Connected
;
Implementation_Type  = "SPC3"
Bitmap_Device        = "DP_NORM"
Bitmap_Diag          = "bmpdia"
Bitmap_SF            = "bmpsf"
;
Freeze_Mode_supp     = 1              ;Supported
Sync_Mode_supp       = 1              ;Supported
Auto_Baud_supp       = 1              ;Supported
Set_Slave_Add_supp   = 0              ;can not change via profibus
;
```

6.GSD File (Conti.)

```
Fail_Safe            = 0
Slave_Family         = 1              ;Drives Family
Min_Slave_Intervall  = 10             ;PollingCycle:10*100uS=1mS
;
Max_Diag_Data_Len          = 16
Max_User_Prm_Data_Len      = 5
Modul_Offset               = 255
Ext_User_Prm_Data_Const(0) = 0x00,0x00,0x00,0x00,0x00
;
Modular_Station      = 1              ;Modular Device
Max_Module           = 1              ;Only 1 Module can be inserted
Max_Input_Len        = 32
Max_Output_Len       = 32
Max_Data_Len         = 64
Module="32 Byte In,32 Byte Out" 0x3f,0x3f

EndModule
```

7.1.Profibus Card Setting

7.1.1.Node1

SW1-8	SW1-7	SW1-6	SW1-5	SW1-4	SW1-3	SW1-2	SW1-1
OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW2-4	SW2-3	SW2-2	SW2-1				
OFF	OFF	OFF	OFF				

7.1.2.Node2

SW1-8	SW1-7	SW1-6	SW1-5	SW1-4	SW1-3	SW1-2	SW1-1
OFF	ON	ON	OFF	OFF	OFF	OFF	ON
SW2-4	SW2-3	SW2-2	SW2-1				
OFF	OFF	ON	ON				

7.2.Inverter Parameter Setting

7.2.1.N1INV01(7200MA)

Parameter	Set Value	Description
Sn-04	2	Run Command by RS-485
Sn-05	2	Frequency Reference by RS-485
Sn-36	1	Inverter RS-485 Node Address 1
Sn-37	3	Inverter RS-485 Baud Rate 9600
Sn-38	1	Inverter RS-485 Even Parity

7.2.2.N2INV01(7200JA)

Parameter	Set Value	Description
P01	4	Run Command , Frequency Reference by RS-485
P65	1	Inverter RS-485 Node Address 1
P66	3	Inverter RS-485 Baud Rate 9600
P67	1	Inverter RS-485 Even Parity

7.2.3.N2INV02(7200JA)

Parameter	Set Value	Description
P01	4	Run Command , Frequency Reference by RS-485
P65	2	Inverter RS-485 Node Address 2
P66	3	Inverter RS-485 Baud Rate 9600
P67	1	Inverter RS-485 Even Parity

7.3.PLC Memory Map

7.3.1.Profibus Input Memory

Item	Address	Name	Description
1	PIW400	N1Inv01OpSts	N1INV01 Operation Status
2	PIW402	N1Inv01FltSts	N1INV01 Fault Status
3	PIW404		
4	PIW406	N1Inv01AlmSts	N1INV01 Alarm Status
5	PIW408	N1Inv01Fref	N1INV01 Frequency Reference
6	PIW410	N1Inv01Fout	N1INV01 Output Frequency
7	PIW412	N1Inv01PG	N1INV01 PG Feedback
8	PIW414	N1Inv01Cout	N1INV01 Output Current
9	PIW416	N1Inv01DcVolt	N1INV01 DC Voltage
10	PIW418	N1Inv01Ai1	N1INV01 Analog Input Vin Value
11	PIW420	N1Inv01Ai2	N1INV01 Analog Input Ain Value
12	PIW422	N1Inv01Ai3	N1INV01 Analog Input Aux Value
13	PIW424	N1Inv01DiSts	N1INV01 Digital Input Status
14	PIW426	N1Inv01Ao1	N1INV01 Analog Output Ao1 Value
15	PIW428	N1Inv01Ao2	N1INV01 Analog Output Ao2 Value
16	PIW430	N1Inv01DoSts	N1INV01 Digital Output Status
17	PIW432	N2Inv01OpSts	N2INV01 Operation Status
18	PIW434	N2Inv01FltSts	N2INV01 Fault Status
19	PIW436	N2Inv01AlmSts	N2INV01 Alarm Status
20	PIW438	N2Inv01EorSts	N2INV01 RS-485 Error Status
21	PIW440	N2Inv01Fref	N2INV01 Frequency Reference
22	PIW442	N2Inv01Fout	N2INV01 Output Frequency
23	PIW444	N2Inv01Cout	N2INV01 Output Current
24	PIW446	N2Inv01DcVolt	N2INV01 DC Voltage
25	PIW448	N2Inv02OpSts	N2INV02 Operation Status
26	PIW450	N2Inv02FltSts	N2INV02 Fault Status
27	PIW452	N2Inv02AlmSts	N2INV02 Alarm Status
28	PIW454	N2Inv02EorSts	N2INV02 RS-485 Error Status
29	PIW456	N2Inv02Fref	N2INV02 Frequency Reference
30	PIW458	N2Inv02Fout	N2INV02 Output Frequency
31	PIW460	N2Inv02Cout	N2INV02 Output Current
32	PIW462	N2Inv02DcVolt	N2INV02 DC Voltage

7.3.PLC Memory Map (Conti.)

7.3.2.Profibus Output Memory

Item	Address	Name	Description
1	PQW400	N1Inv01OpCmd	N1INV01 Operation Command
2	PQW402	N1Inv01Fcmd	N1INV01 Frequency Command
3	PQW404		
4	PQW406		
5	PQW408		
6	PQW410	N1Inv01Ao1Cmd	N1INV01 Host Link Analog Output1 Command
7	PQW412	N1Inv01Ao2Cmd	N1INV01 Host Link Analog Output2 Command
8	PQW414	N1Inv01DoCmd	N1INV01 Digital Output Command
9	PQW416		
10	PQW418		
11	PQW420		
12	PQW422		
13	PQW424		
14	PQW426		
15	PQW428		
16	PQW430		
17	PQW432	N2Inv01Cmd1	N2INV01 Command1
18	PQW434	N2Inv01Fcmd	N2INV01 Frequency Command
19	PQW436	N2Inv01Cmd2	N2INV01 Command2
20	PQW438		
21	PQW440		
22	PQW442		
23	PQW444		
24	PQW446		
25	PQW448	N2Inv02Cmd1	N2INV02 Command1
26	PQW450	N2Inv02Fcmd	N2INV02 Frequency Command
27	PQW452	N2Inv02Cmd2	N2INV02 Command2
28	PQW454		
29	PQW456		
30	PQW458		
31	PQW460		
32	PQW462		

7.3.PLC Memory Map(Conti.)

7.3.3.Digital Input Module Memory

Item	Address	Name	Description
1	I0.0	N1Inv01RunStop	N1INV01 Run/Stop Button
2	I0.1	N1Inv01FwdRev	N1INV01 Fwd/Rev Button
3	I0.2	N2Inv01RunStop	N2INV01 Run/Stop Button
4	I0.3	N2Inv01FwdRev	N2INV01 Fwd/Rev Button
5	I0.4	N2Inv02RunStop	N2INV02 Run/Stop Button
6	I0.5	N2Inv02FwdRev	N2INV02 Fwd/Rev Button
7	I0.6	Estop	Emergency Stop Button
8	I0.7	FastSlow	Inverter Speed Fast/Slow Switch Button

7.3.4.Data Memory

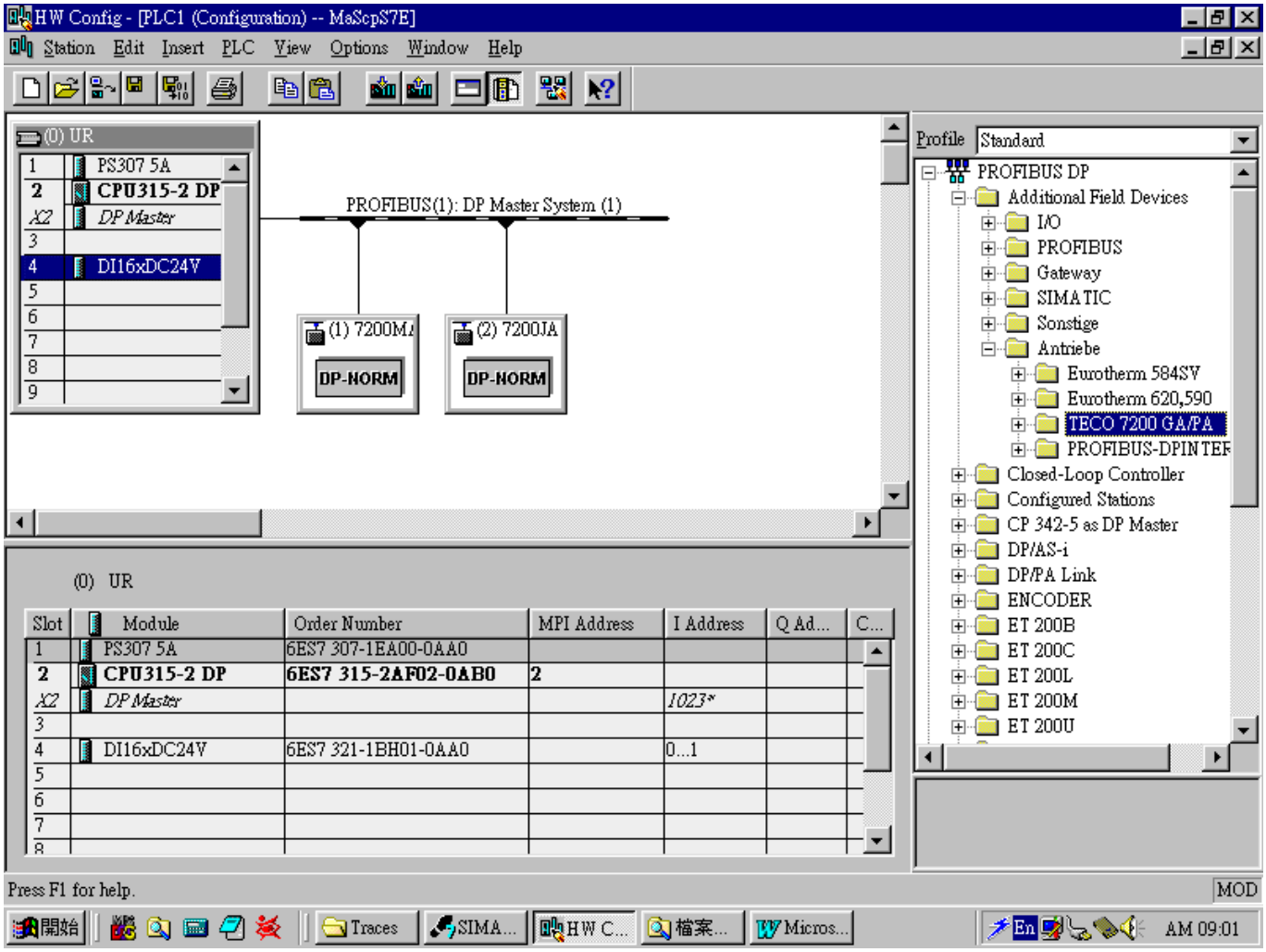
Item	Address	Name	Description
1	MW0	PQW400Map	Output to N1INV01 Operation Command
2	MW2	PQW402Map	Output to N1INV01 Frequency Command
3	MW4	PQW432Map	Output to N2INV01 Command1
4	MW6	PQW434Map	Output to N2INV01 Frequency Command
5	MW8	PQW448Map	Output to N2INV02 Command1
6	MW10	PQW450Map	Output to N2INV02 Frequency Command
7	MW20	PIW408Map	Input from N1INV01 Frequency Reference
8	MW22	PIW410Map	Input from N1INV01 Output Frequency
9	MW24	PIW414Map	Input from N1INV01 Output Current
10	MW26	PIW416Map	Input from N1INV01 DC Voltage
11	MW28	PIW440Map	Input from N2INV01 Frequency Reference
12	MW30	PIW442Map	Input from N2INV01 Output Frequency
13	MW32	PIW444Map	Input from N2INV01 Output Current
14	MW34	PIW446Map	Input from N2INV01 DC Voltage
15	MW36	PIW456Map	Input from N2INV02 Frequency Reference
16	MW38	PIW458Map	Input from N2INV02 Output Frequency
17	MW40	PIW460Map	Input from N2INV02 Output Current
18	MW42	PIW462Map	Input from N2INV02 DC Voltage

7.4.PLC Hardware Configuration

This example uses SIMATIC STEP 7 configuration tool.

Start STEP 7 configuration software and install/import the GSD File TECO7200.gsd

Hardware Configuration



7.5.Relocate Tag Address

According to the description of Chapter 7.3, you must relocate the PLC memory map.

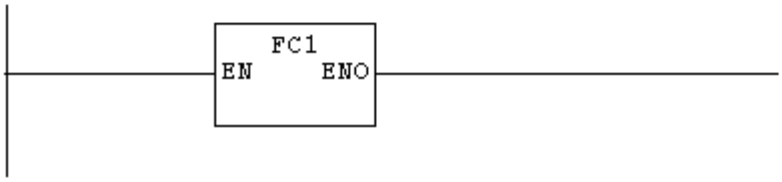
7.6.STEP 7 Program Example

OB1 : Cyclic Program

This is only an example.

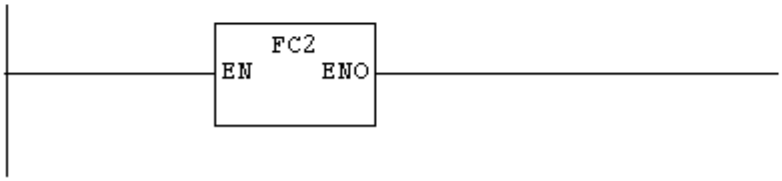
Network 1: PQW Output Function Call

Comment:



Network 2 : PIW Input Function Call

Comment:



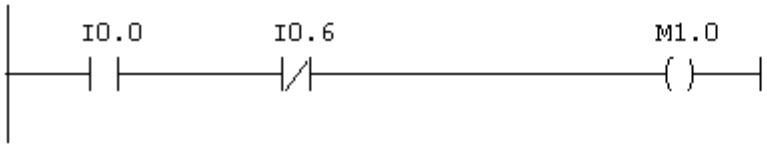
7.6.STEP 7 Program Example (Conti.)

FC1 : PQW Output Function Call

Comment:

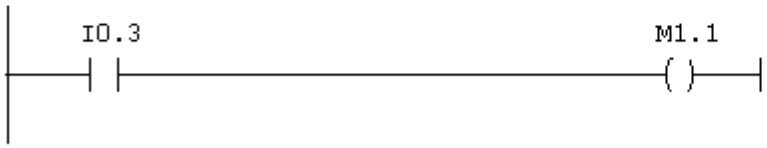
Network 1: N1InvO1RunStop

Comment:



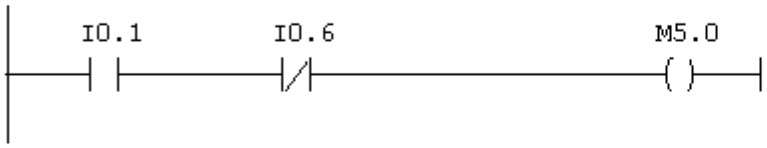
Network 2 : N1InvO1FwdRev

Comment:



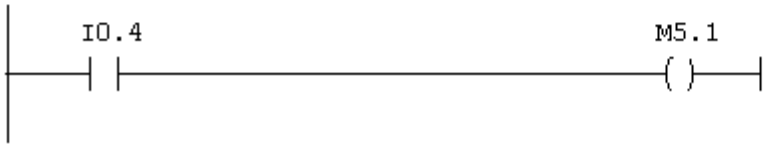
Network 3 : N2InvO1RunStop

Comment:



Network 4 : N2InvO1FwdRev

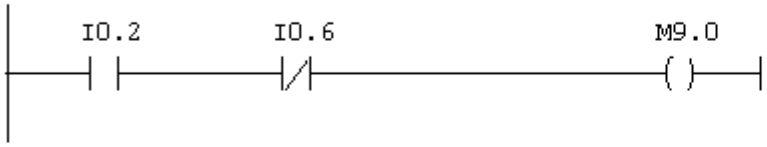
Comment:



7.6.STEP 7 Program Example (Conti.)

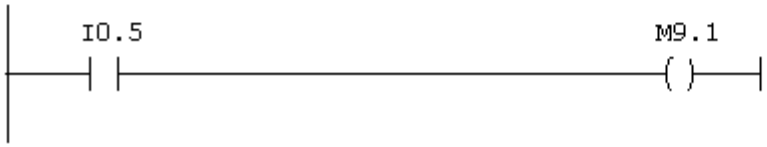
Network 5 : N2InvO2RunStop

Comment:



Network 6 : N2InvO2FwdRev

Comment:



Network 7 : Run/Stop,Fwd/Rev Command to Inverter via Profibus

Comment:

```
      L     MW     0
      T     PQW  400
      L     MW     4
      T     PQW  432
      L     MW     8
      T     PQW  448
```

Network 8 : Speed Reference

I0.7	Speed	Command
OFF	50 %	15000
ON	100 %	30000

```
      A     I      0.7
      JC    Fast
      L     15000
      JU    N8LO
Fast: L     30000
N8LO: T     MW     2
      T     MW     6
      T     MW    10
```

7.6.STEP 7 Program Example (Conti.)

Network 9 : Speed Command to Inverter via Profibus

Comment:

```
L     MW     2
T     PQW  402
L     MW     6
T     PQW  434
L     MW    10
T     PQW  450
```

7.6.STEP 7 Program Example (Conti.)

FC2 : PIW Input Function Call

Comment:

Network 1: N1INV01

Comment:

```
      L     PIW  408
      L     6000
      *D
      L     30000
      /D
      T     MW    20                  //xx.xx Hz
      L     PIW  410
      L     6000
      *D
      L     30000
      /D
      T     MW    22                  //xx.xx Hz
      L     PIW  414
      T     MW    24                  //xx.x A
      L     PIW  416
      T     MW    26                  //xxx V
```

Network 2: N2INV01

Comment:

```
      L     PIW  440
      L     600
      *D
      L     30000
      /D
      T     MW    28                  //xx.x Hz
      L     PIW  442
      L     600
      *D
      L     30000
      /D
      T     MW    30                  //xx.x Hz
      L     PIW  444
      T     MW    32                  //xx.x A
      L     PIW  446
      T     MW    34                  //xxx V
```

7.6.STEP 7 Program Example (Conti.)

Network 3 : N2 INV02

Comment:

```
L     PIW  456
L     600
*D
L     30000
/D
T     MW    36                  //xx.x Hz
L     PIW  458
L     600
*D
L     30000
/D
T     MW    38                  //xx.x Hz
L     PIW  460
T     MW    40                  //xx.x A
L     PIW  462
T     MW    42                  //xxx V
```