

CONFIGURATION OF DRIVE AND CONTROL OF DRIVE FROM OPERATING STATION

AIM:

To configure and control the drive using operating station.

SOFTWARE REQUIRED:

Starter, Simatic manager.

PROCEDURE:

1. In Starter create a new project, get to accessible nodes and select the drive g120 and configure the drive unit, give the motor name plate readings as inputs and setup the communication.
2. Connect to the target device. In control unit → commissioning → control panel → assume control priority and enable it then give the speed for the motor.
3. And pressing '1' the motor gets power and by pressing '0' we can stop the motor. Now give up the control priority.
4. In Simatic manager create a sample project.
5. Insert a new object → Simatic 400 station.
6. In hardware window set the profile as standard and select the Rack, Power module and CPU in the DCS controller.
7. After selecting the CPU unit give the first Ethernet's IP address as 172.17.3.55 and in network settings set transmission rate as 1.5 Mbps and create the PROFIBUS.
8. The select the PROFINET IO → drives → Sinamics → g120 → last version.
9. Change profile to PCS7 and in PROFIBUS DP → ET200M → IM 153-2 HF → DI-300 → select the input module with address- 1BL00-0AA0.
10. Click on Edit symbols then save and compile and add symbols and give names for every address.
11. Download the process and click view button to select the CPU 410-5H with IP address.
12. View -> Plant view -> Insert new object -> Hierarchy folder -> Process cell CFC
13. Design the circuit using the required blocks
14. Create WinCC application and add a Picture to it.
15. Then run and observe the output.

Configure Drive Unit

SINA ST7 STARTER - batch1 Project Edit Target system View Options Window Help

Configuration - Control_Unit - Motor data

Drive: Control_Unit.DDS 0, CDS 0

Select the connection type of your motor and 87 Hz operation:

Star ☐ 87 Hz operation

Please enter the following motor data:

Parameter	Parameter text	Value	Unit
p305[0]	Rated motor current	1.90	Arms
p307[0]	Rated motor power	0.75	kW
p311[0]	Rated motor speed	1415.0	1 rpm

The following motor data is pre-assigned and can be changed if required:

Parameter	Parameter text	Value	Unit
p304[0]	Rated motor voltage	415	Vrms
p310[0]	Rated motor frequency	50.00	Hz
p335[0]	Motor cooling type	[0] N	

Application class ☒ Further functions ☒ I/O configuration ☒ Drive setting ☒ Motor ☒ Motor data ☐ Important parameters ☐ Drive functions ☐ Summary

Project

batch1

- Insert single drive unit
- Drive_unit_1
 - Configure drive unit
 - Control_Unit
 - Documentation
 - SINAMICS LIBRARIES
 - Insert DCC library
 - MONITOR
 - Insert watch table
 - >Watch_table_temp <

Level Message

Level	Message
1	Information

Drive_unit_1 h

Target system output BICO server

SINA ST7

Microsoft Hyper-V Network Adapter.TC Offline mode

NUM

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Configure Drive Unit

SINA STARTER - batch1

Project Edit Target system View Options Window Help

Configuration - Control_Unit - Summary

Drive: Control_Unit.DDS 0, CDS 0

Please check the selected settings and finish the configuration:

☒ Application class
☒ Further functions
☒ I/O configuration
☒ Drive setting
☒ Motor
☒ Motor data
☒ Important parameters
☒ Drive functions
☐ Summary

Motor data:

- Motor configuration: 0000H
- Rated motor current: 1.90 Arms
- Rated motor power: 0.75 kW
- Rated motor speed: 1415.0 1 rpm
- Rated motor voltage: 415 Vrms
- Rated motor frequency: 50.00 Hz
- Motor cooling type: [0] Non-ventilated

Important parameters:

- Current limit: 2.85 Arms
- Minimum speed: 0.000 1 rpm
- Maximum speed: 1500.000 1 rpm
- Ramp-function generator ramp-up time: 10.000 s
- Ramp-function generator ramp-down time: 10.000 s
- OFF3 ramp-down time: 0.000 s

Drive functions:

- Technological application (standard drive control): [0] Constant load (linear characteristic)
- Motor data identification and rotating measurement: [0] Inhibited
- Automatic calculation motor/control parameters: [1] Complete calculation

Copy text to clipboard

< Back Finish Cancel Help

batch1

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Project

0 error(s) 0 warn

Level	Message
1 Information	Drive_unit_1 h

Target system output BICO server

Microsoft Hyper-V Network Adapter.TC Offline mode

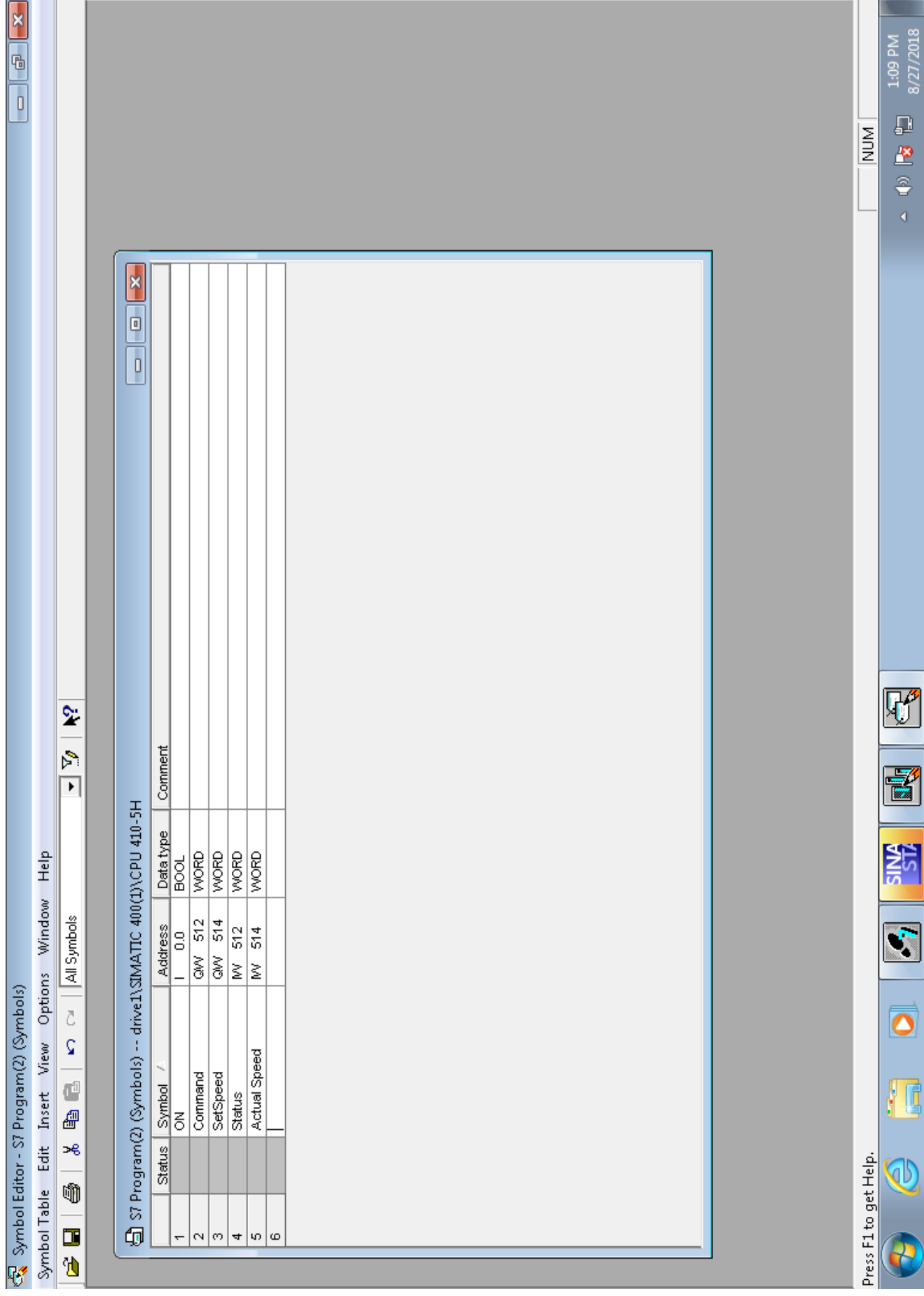
NUM

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Interfacing with Ethernet

[illegible]

Symbols



CFC Program

CFC - [CFC(1) -- eeb11\Process cell(1)]

Chart Edit Insert CPU Debug View Options Window Help

Press F1 for help.

0B35 CFC(1) CFC(1)\8

A/Sheet 1

1:30 PM 9/24/2018

1 BO_W 0B35 4/1

OUT

1 IN0 1 IN1 1 IN2 1 IN3 1 IN4 1 IN5 1 IN6 1 IN7 0 IN8 0 IN9 1 IN10 0 IN11 1 IN12 0 IN13 0 IN14 0 IN15

6 TimerP Impulse 0B35 4/6

1.0 Ti 2 Mode 0 Reset TimeRena In

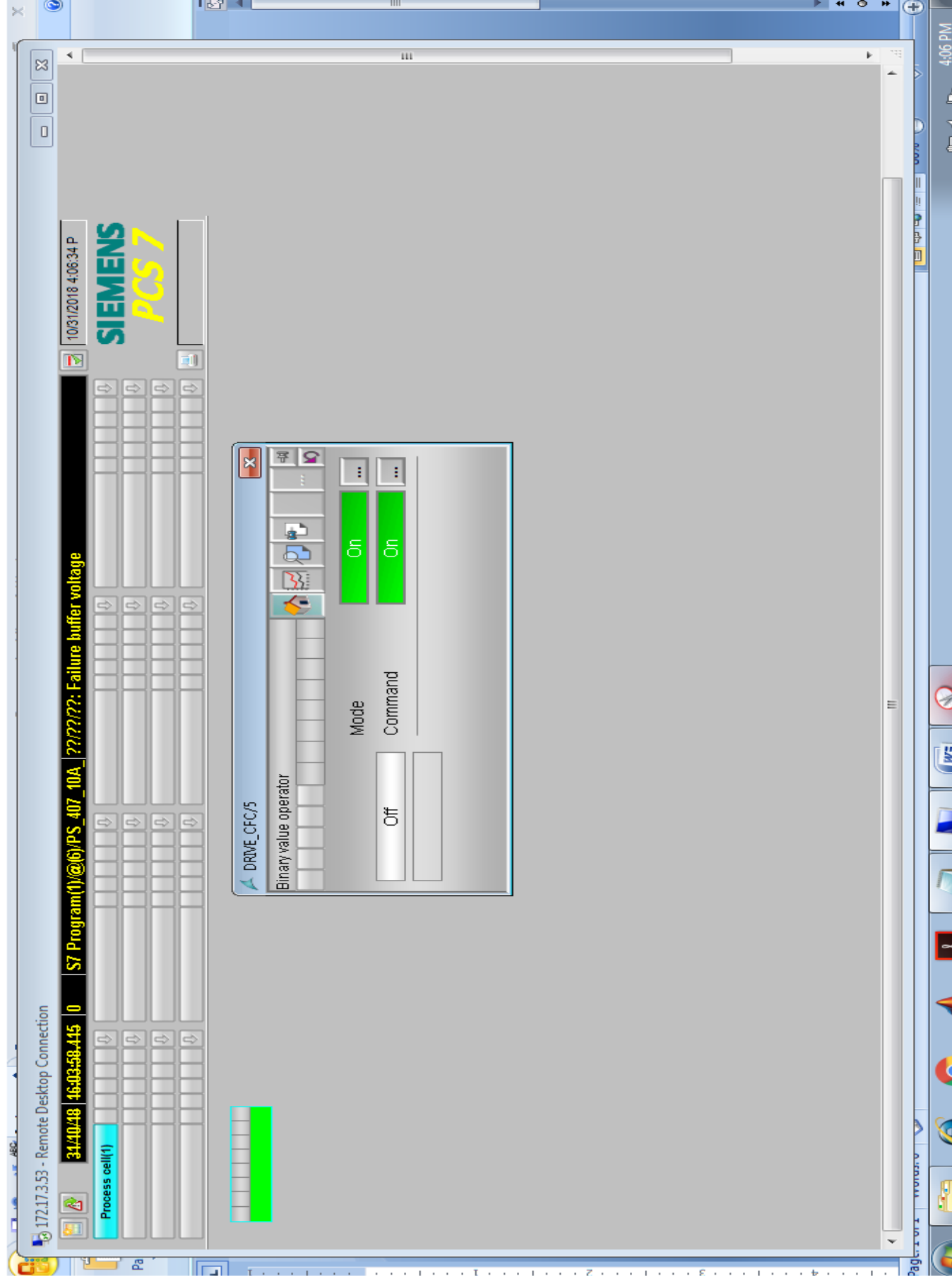
7 Pcs70iIn Digital 0B35 4/7

Bad PV_In PV_Out 0 SimOn 0 SimPU_In 0 SubPV_I MS_Req 0 MS_Relea 16#0 MS 16#0 MS_Ext 16#0 MS_Ext 16#0 TextRef 16#0 Mode 16#0 DataXchs 16#0 DataXchs 16#0 MS_Xchs

8 I_W 1000 IN OUT

0N 10.0

Output in CFC



RESULT:

Thus the drive unit is configured and controlled using Operating station.