

台達電子

VFD-C2000 programmable multi-speed

Eden

Preface

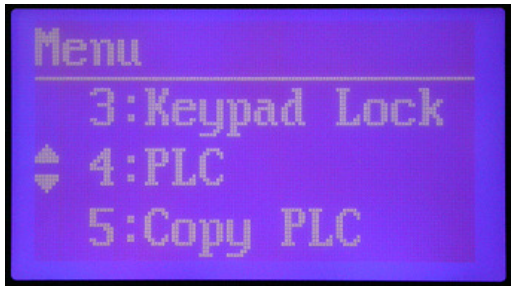
Most of modern automation equipment use the PLC as the core doing the process control , and Delta new series inverter VFD-C2000 has build-in PLC with 10K steps , it make the application more flexible and save the cost and wiring .

The multi-speed function can be used in some application that need running with many different expect speed periodically , in following explanation will describe how to do in with build-in PLC .

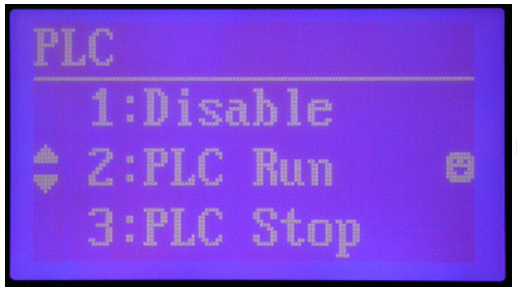


Enable the PLC in C2000

Before using the PLC in C2000 , we have to enable it first :



Select PLC in menu



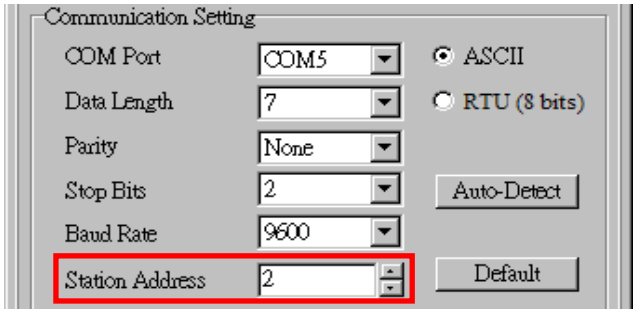
Select PLC run or PLC stop , if the PLC run is chosen then the status of PLC will be running every time when power on

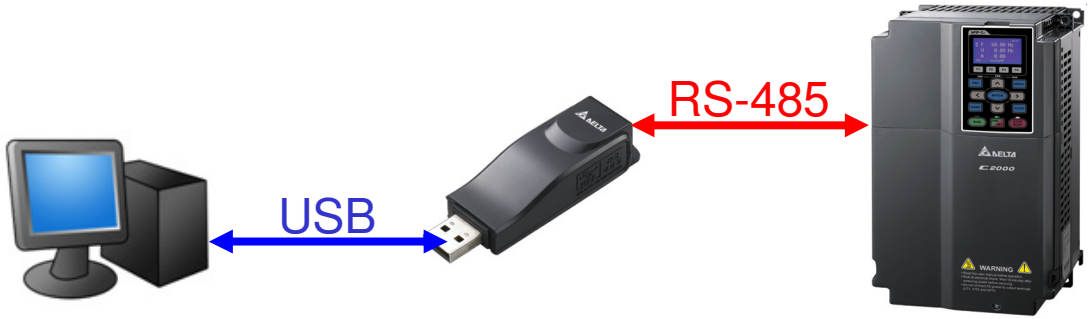


The PLC status will show on the top of screen at the first page

Communicate with WPL software :

Cause the default station number of build-in PLC is 2 , so do not forget to setup the station number to 2 in WPL software , and the interface of VFD-C2000 is RS485 so we need a converter for it .

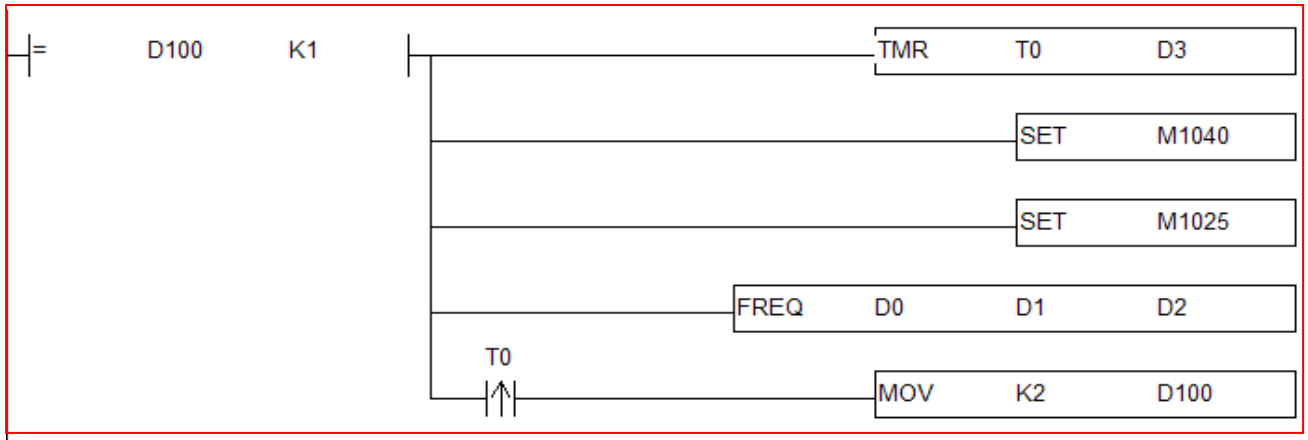




PLC program

Below is the description for PLC program :

First step



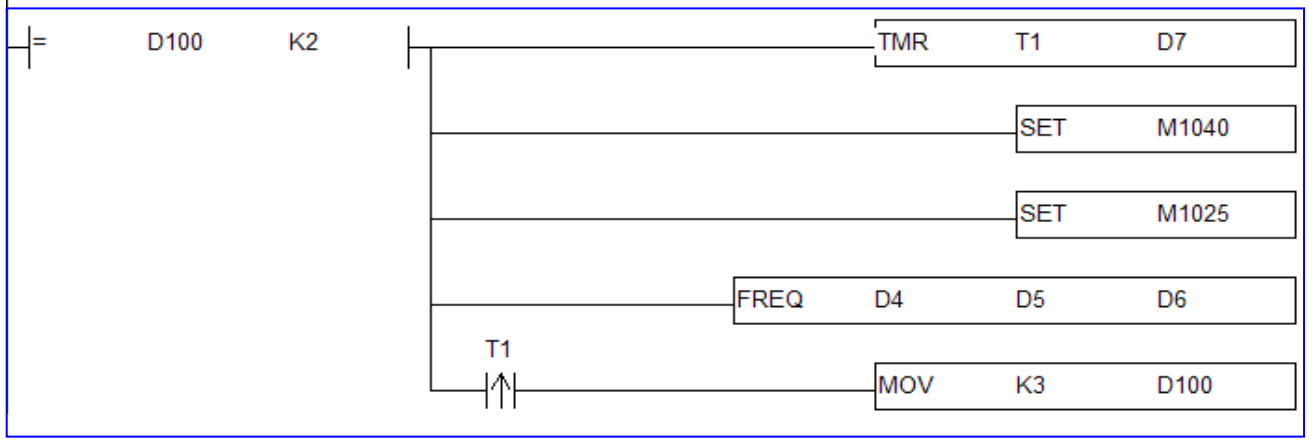
D0:Freq for 1st step(0.01Hz)

D1:Acc time for 1st step(0.01s)

D2:Dec time for 1st step(0.01s)

D3:Holding time for 1st step(0.1s)

Second step



D4:Freq for 2nd step(0.01Hz)

D5:Acc time for 2nd step(0.01s)

D6:Dec time for 2nd step(0.01s)

D7:Holding time for 2nd step(0.1s)

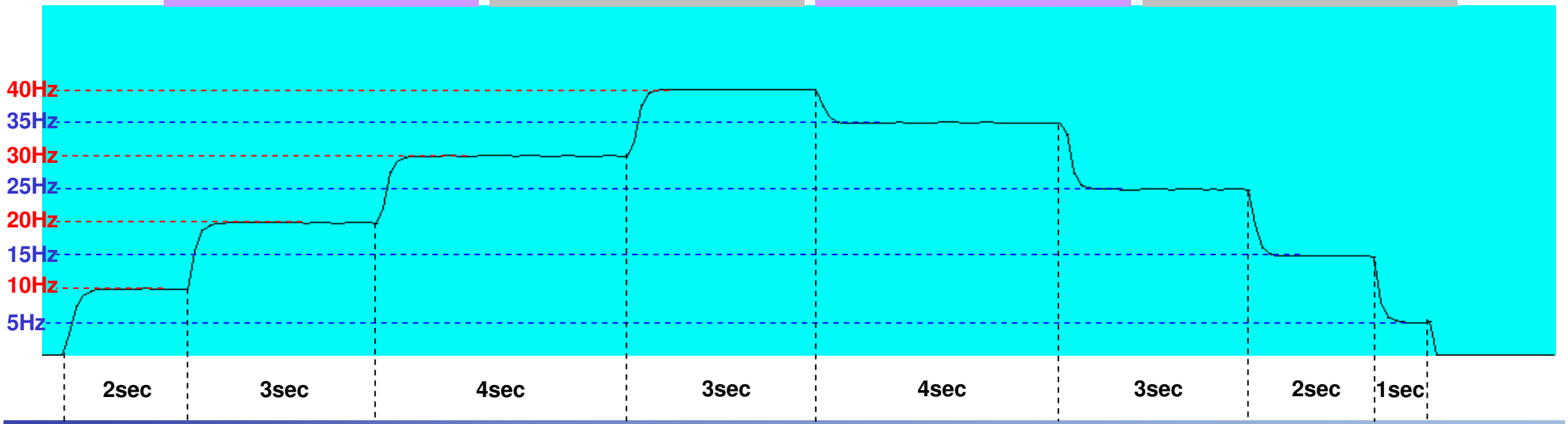
The rest of program may be deduced by analogy , and the attached program is 8 steps .

P.S.The Acc/Dec time is decided by parameter 1-45 , the default is 0.01s

Running result

Run the attached program with below condition and the result is like below shows .

D0 = 1000 (10Hz) D1 = 10(0.1sec) D2 = 10(0.1sec) D3 = 20 (2sec)	D4 = 2000 (20Hz) D5 = 10(0.1sec) D6 = 10(0.1sec) D7 = 30 (3sec)	D8 = 3000 (30Hz) D9 = 10(0.1sec) D10 = 10(0.1sec) D11 = 40 (4sec)	D12 = 4000 (40Hz) D13 = 10(0.1sec) D14 = 10(0.1sec) D15 = 30 (3sec)
D16 = 3500 (35Hz) D17 = 10(0.1sec) D18 = 10(0.1sec) D19 = 40 (4sec)	D20 = 2500 (25Hz) D21 = 10(0.1sec) D22 = 10(0.1sec) D23 = 30 (3sec)	D24 = 1500 (15Hz) D25 = 10(0.1sec) D26= 10(0.1sec) D27 = 20 (2sec)	D28 = 500 (5Hz) D25 = 10(0.1sec) D26= 10(0.1sec) D31 = 10 (1sec)



Run with power cut

Same condition with previous running but with power cut during the process , cause D0~D399 can hold the data while power down , so after the power is back , the program is able to continue the process like below shows .

