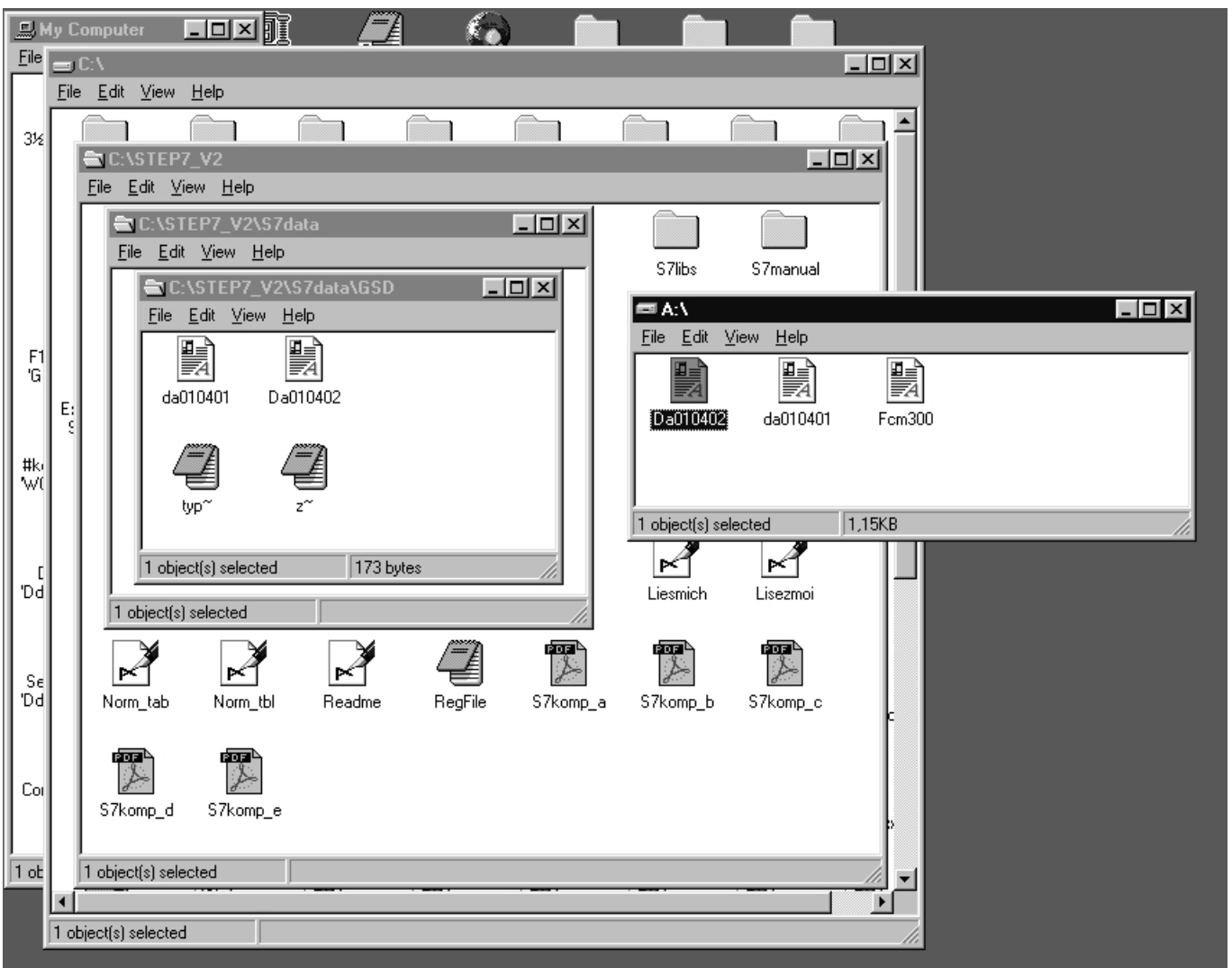


- Incorporating a VLT 5000 Profibus into a Siemens Simatic S7-315-2 DP PLC system

This document is an instruction containing six steps which will help you incorporate a VLT 5000 into a Siemens Simatic S7-315-2 DP PLC system. Only the steps which are required in order to establish communication between the VLT 5000 Profibus and the Simatic S7-315-2 DP PLC are shown. It is assumed that you are already familiar with the Simatic S7 system. In this instruction, the STEP 7 software version 3.x is used.

- Step 1  
Copy the GSD file for Danfoss VLT 5000 to the Siemens S7 directory which is located either at:  
C:\Siemens\Step7\S7data\Gsd or at  
C:\STEP7\_V2\S7data\GSD



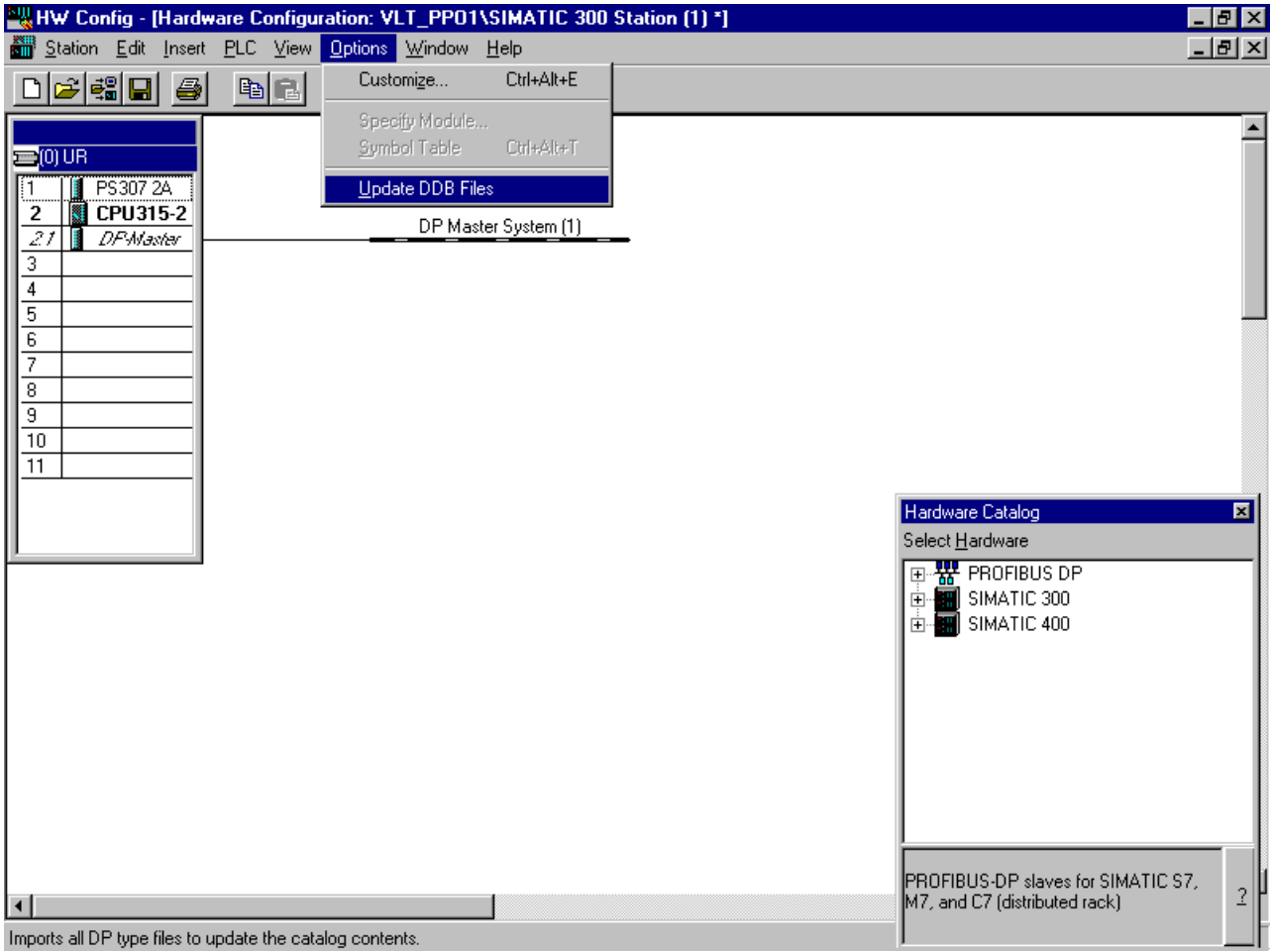
The file can be ordered from your local Danfoss representative.

Simatic and STEP 7 are registered Siemens trademarks.

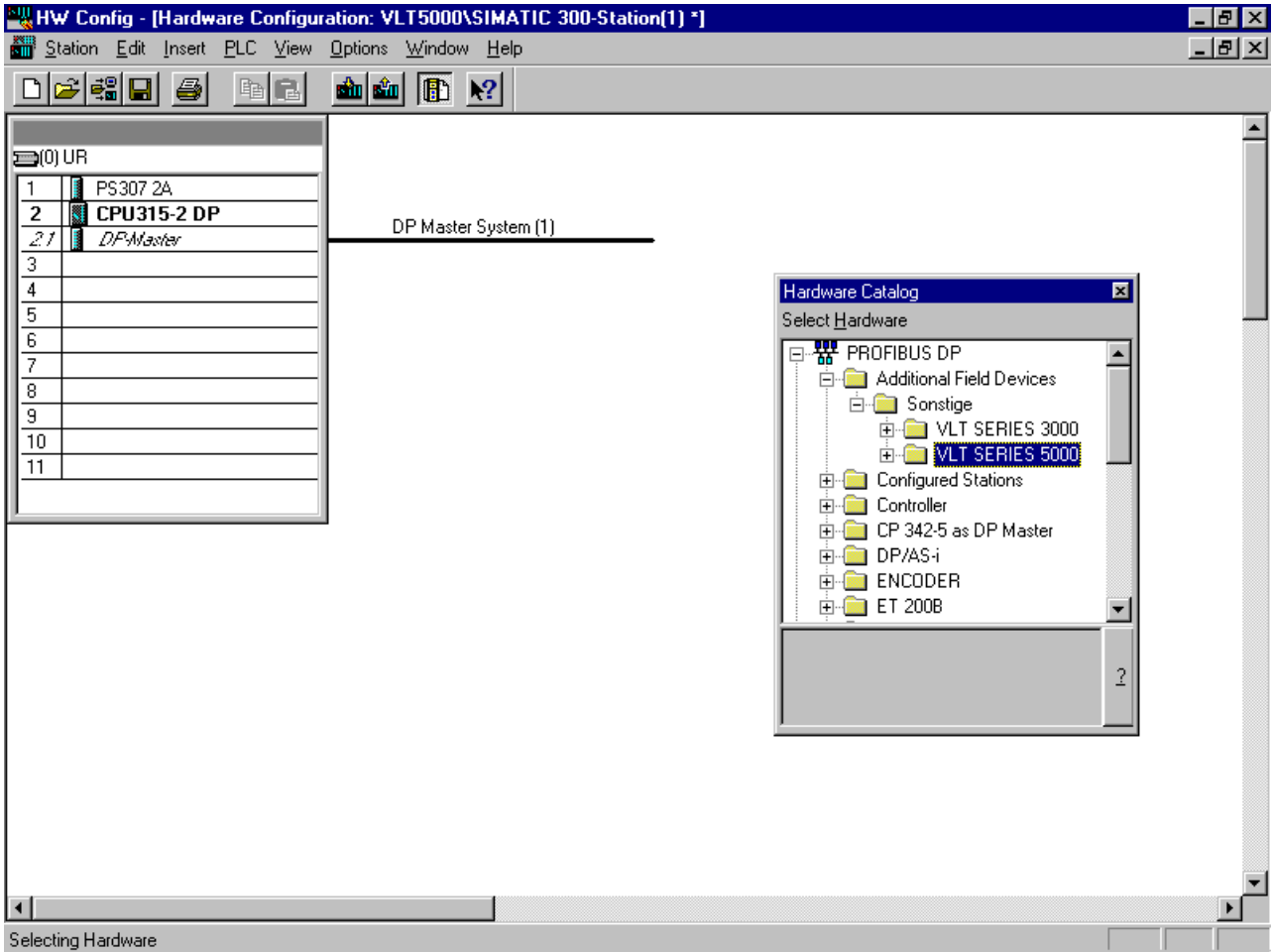
MC.50.A1.02 - VLT is a registered Danfoss trademark

Step 2

- Step 2  
Update the DDB files under Hardware Configuration:

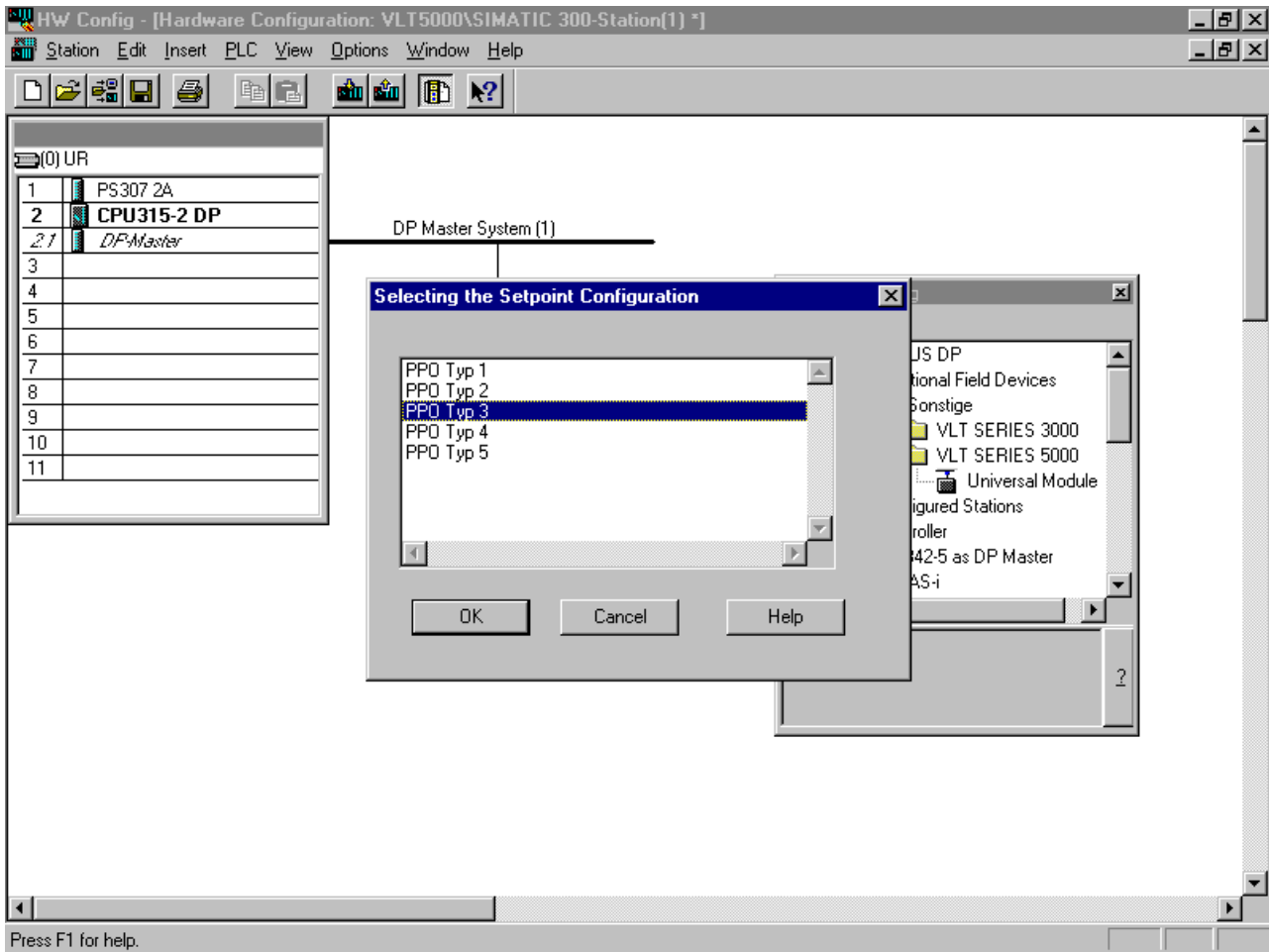


- Step 3  
Insert the VLT 5000.



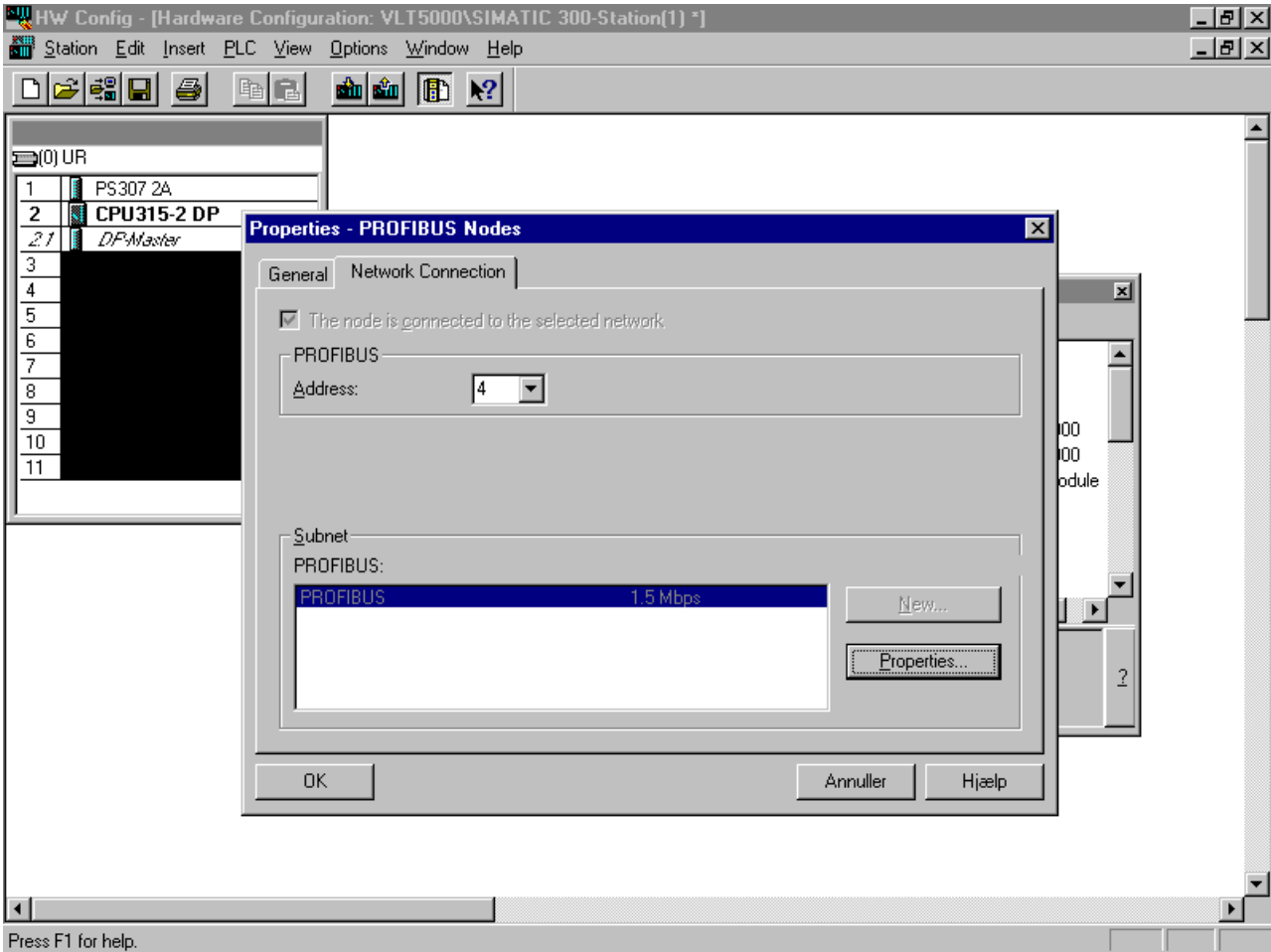
Step 4

- Step 4  
Select the desired PPO type (Parameter 904):



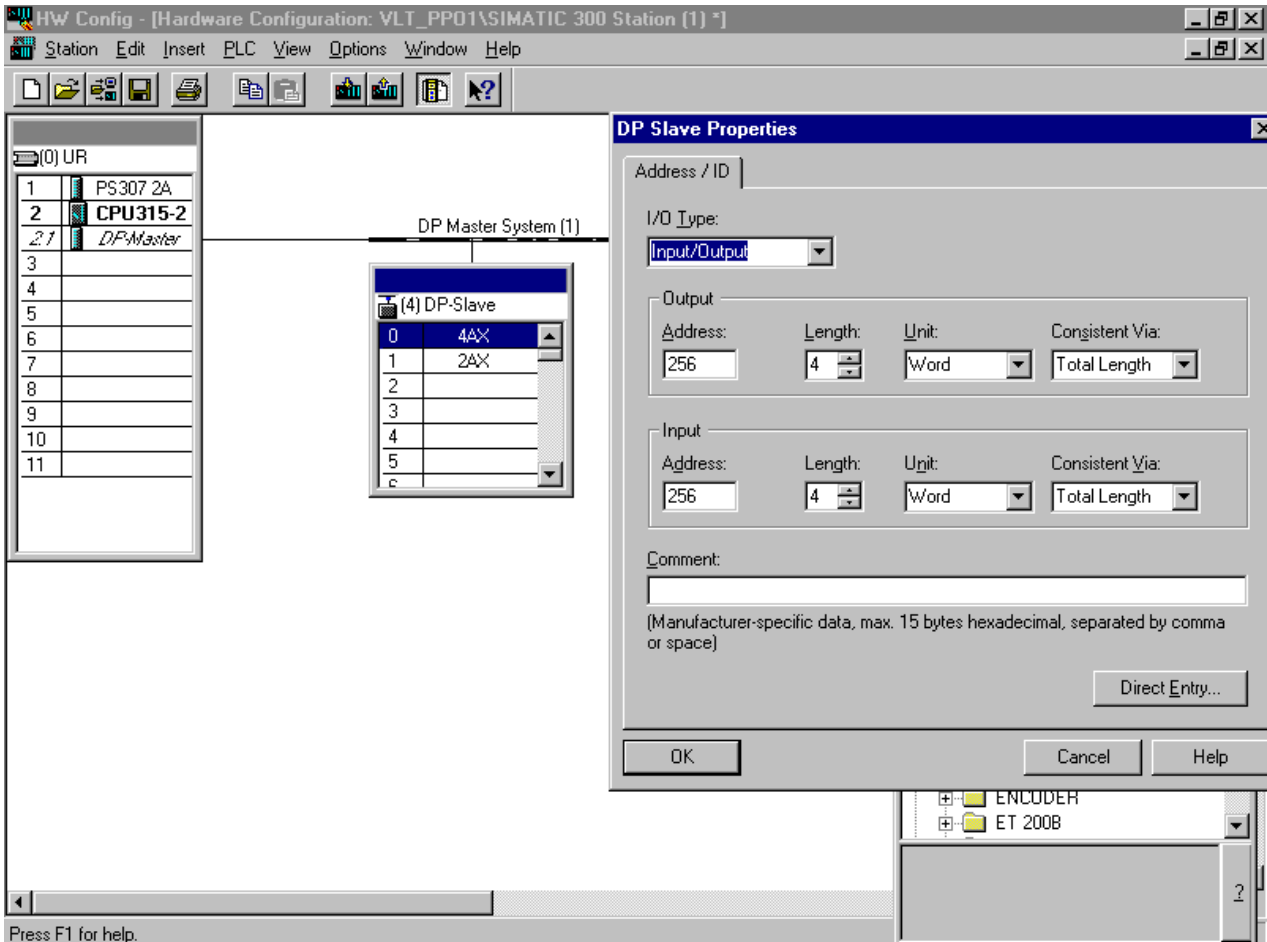
■ Step 5

Select the address of the VLT 5000 (Parameter 918).



Step 6

- Step 6  
Select an I/O address in your Simatic S7-315-2 DP PLC. By double clicking the first module (4AX in the DP-Slave) in the Slave Station, you can either select the address in the Simatic S7 PLC or use the default addresses. In this example we have chosen the start address 256 for PPO1 for communication with VLT 5000.



Now your system is set up to use the PPO1 communication and the following information is available in the Simatic S7-315-2 DP PLC:

4AX				2AX	
PCA	IND	PVA	PVA	CTW	MRV
PAW 256	PAW 258	PAW 260	PAW 262	PAW 264	PAW 266

4AX				2AX	
PCA	IND	PVA	PVA	STW	MAV
PEW 256	PEW 258	PEW 260	PEW 262	PEW 264	PEW 266

The Simatic S7-315-2 DP System can only send and receive up to 4 bytes of I/O without special commands. The first module (4AX) cannot be handled without System Functions Call (SFCs), see example on the next page. For this module, Danfoss provides a small demo program. This demo program (ARJ File) can be loaded to your system and downloaded to your Simatic S7-315-2 DP PLC system.

The program copies information from DB11.0 - DB11.6 to PAW 256 -262 and from PEW 256 - 262 to DB10.0 - DB10.6. The second module (2AX) can be handled without the use of SFCs.

- Example of how to programme the Simatic S7-315-2 DP

Example of how to programme the Simatic S7-315-2 DP

**Network 1 : READ PCV**

Get DATA from PCV-Part of PPO1  
Copy Byte 1 to 8 to DB11 Byte 0 to 8

```

graph LR
    EN((EN)) --- SFC14[SFC14]
    IN0[IN0: W#16#100] --- SFC14
    SFC14 --- ENO((ENO))
    SFC14 --- RET_VAL[RET_VAL: MW0]
    SFC14 --- OUT1[OUT1: 8]
    SFC14 --- P[DB11.DBX 0.0 BYTE]
  
```

**Network 2 : WRITE PCV**

Send DATA to PCV-Part of PPO1  
Copy DB10 Byte 0 to 8, to PCV Byte 1 to 8

```

graph LR
    EN((EN)) --- SFC15[SFC15]
    IN0[IN0: W#16#100] --- SFC15
    IN1[IN1: P#DB10.DBX 0.0 BYTE 8] --- SFC15
    SFC15 --- ENO((ENO))
    SFC15 --- RET_VAL[RET_VAL: MW2]
  
```

By using the above program, the following information can be found on these PLC Addresses:

4AX				2AX	
PCA	IND	PVA	PVA	CTW	MRV
DBW10.0	DBW10.2	DBW10.4	DBW10.6	PAW 264	PAW 266

4AX				2AX	
PCA	IND	PVA	PVA	STW	MAV
DBW11.0	DBW11.2	DBW11.4	DBW11.6	PEW 264	PEW 266

In order to control the VLT 5000 from the Profibus only, set parameter 502 - 509 for Serial. If reversing is required, set also parameter 200 for 132Hz Both directions.