GW-7552 (Modbus RTU Master) Example for SIMATIC STEP 7

- Before connecting
- Example 1:Reads and Writes DO module data
- Example 2:Reads DI module data
- Example 3:Reads and Writes AO module data
- Example 4:Reads AI module data

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Before connecting

Set the parameters of device as shown as below



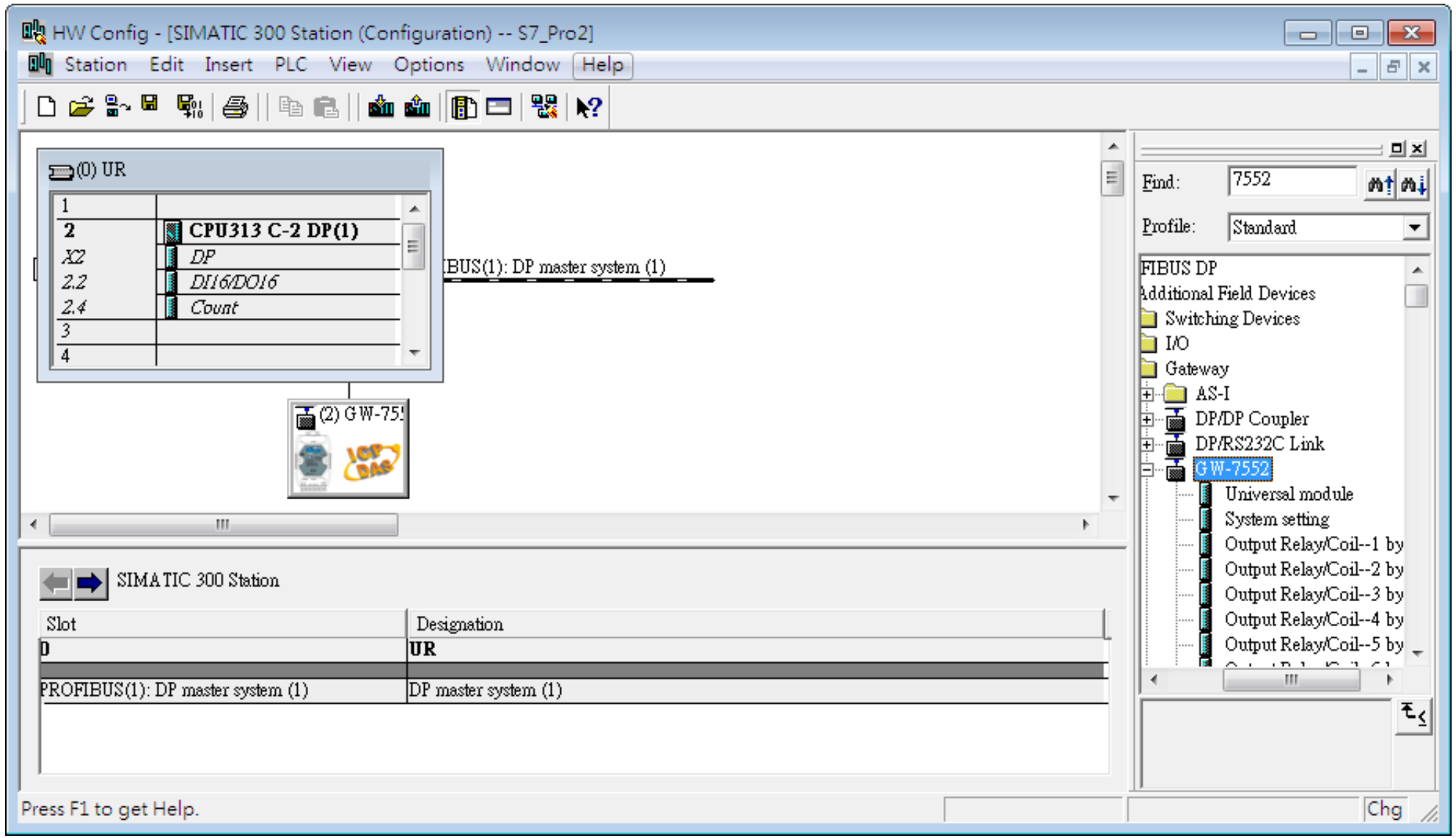
SIMATIC PLC
* PROFIBUS Device 0(Master)



GW-7552
- PROFIBUS Device 2 (Slave)
- Modbus Device (RTU Master)

Comport Settings:
- Baud rate:115200
- Data bit: 8
- Stop bit : 1
- Parity: None
- Byte order: Big Endian
- Output Data Mode: Auto

Add a profibus master system and a profibus slave (GW-7552)



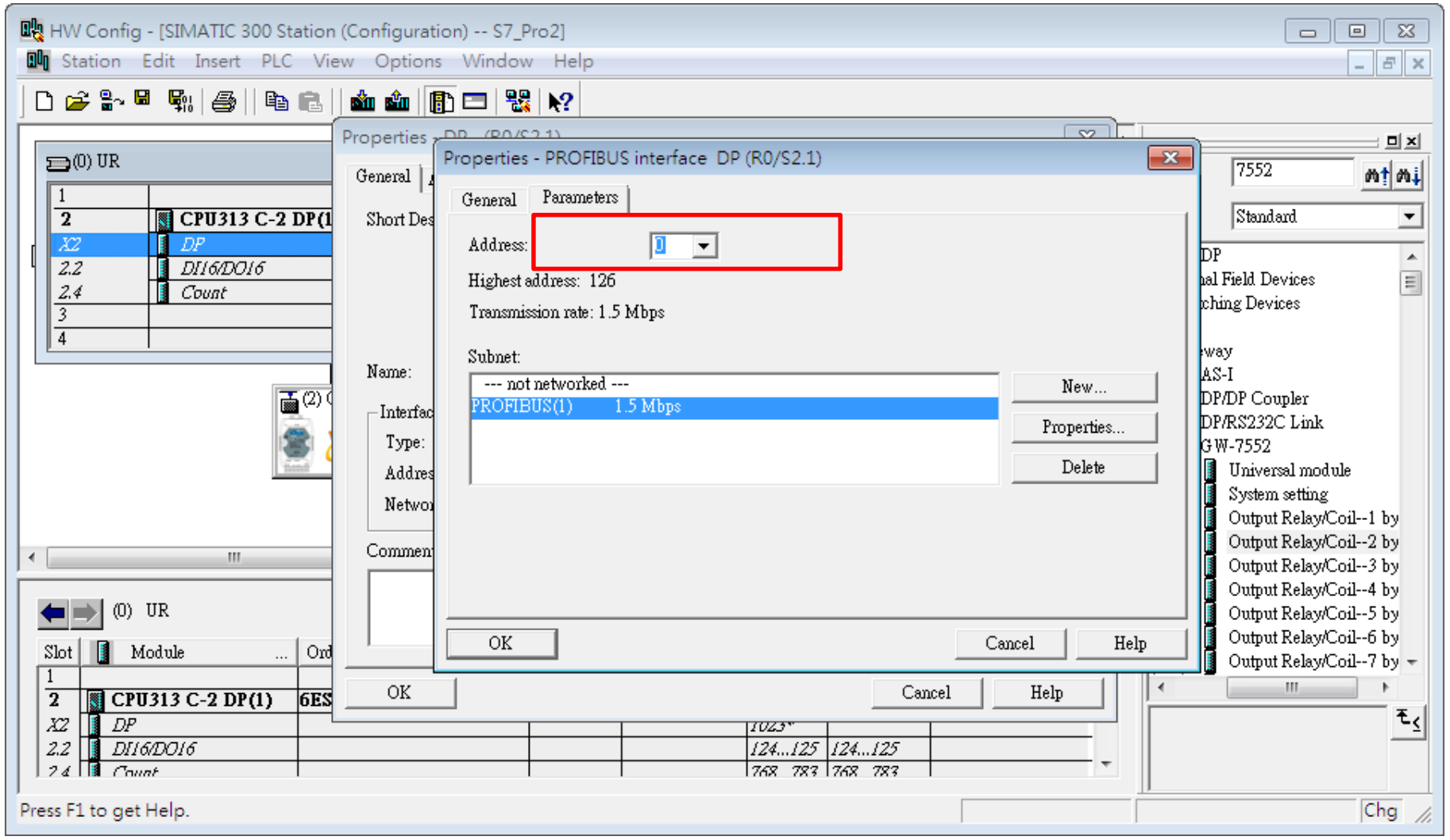
Before connecting

Set the address of PLC in profibus as below



SIMATIC PLC
* PROFIBUS Device **0** (Master)

1.Double Click DP icon
2.Click “Properties”
3.Change address
4. Click OK



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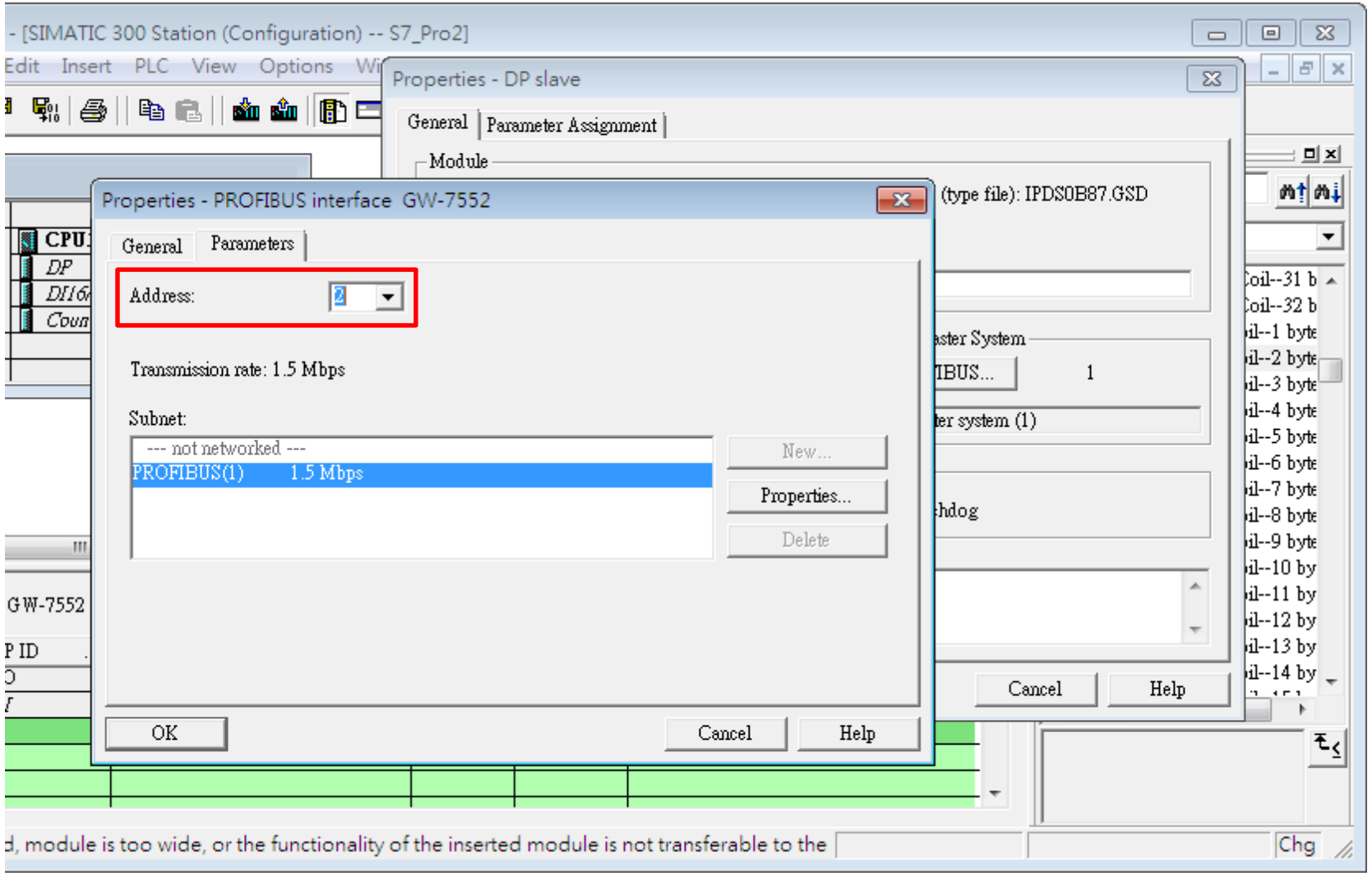
Before connecting

Set the address of GW-7552 as below



GW-7552
- PROFIBUS Device **2** (Slave)
- Modbus Device (RTU Master)

1.Double click GW7552 icon
2.Click PROFIBUS
3. Change the address
4.Click OK



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Before connecting

Set Gw-7552 comport setting as below

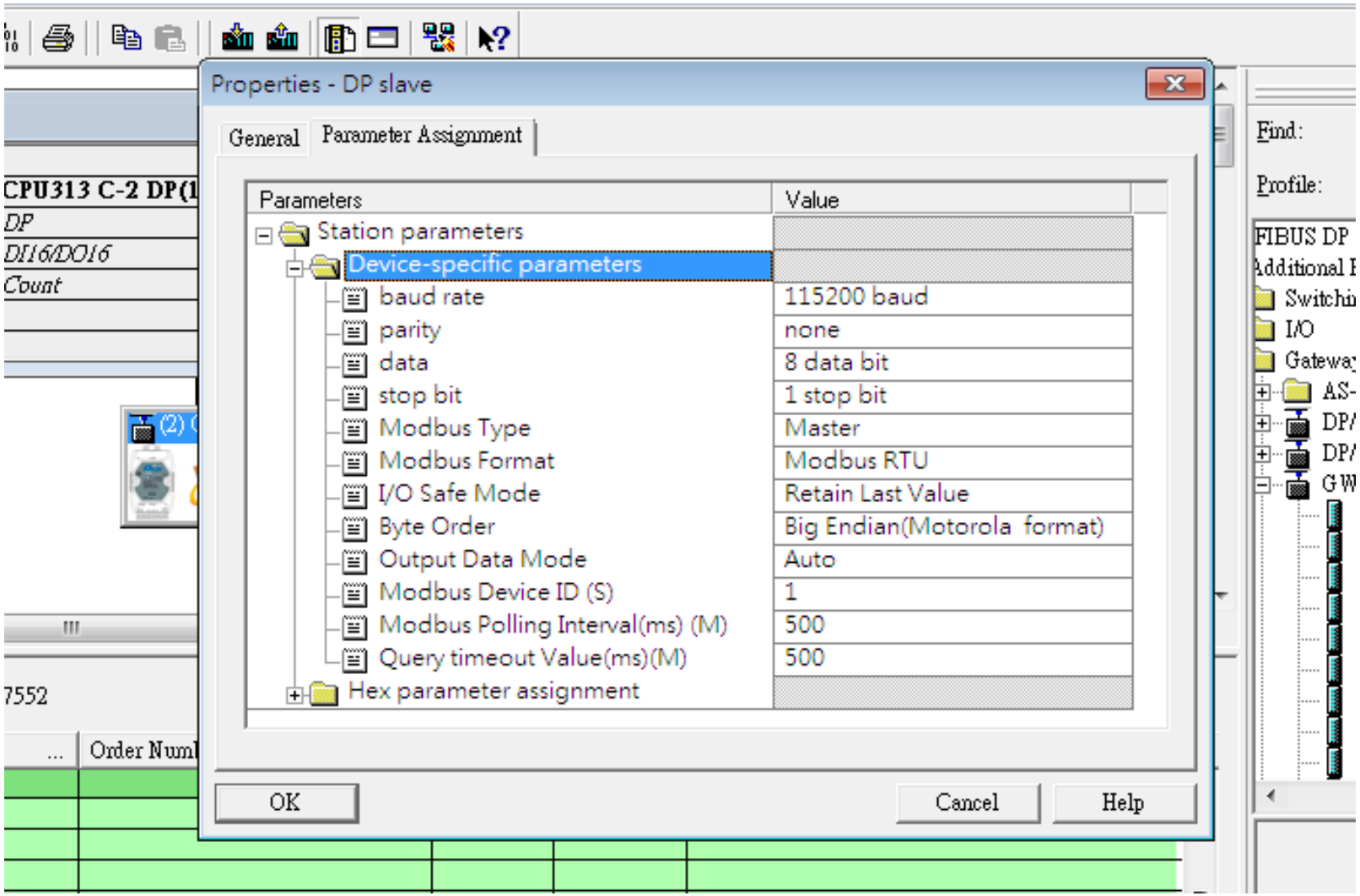


Comport Settings:

- Baudrate:115200
- Data bit: 8
- Stop bit : 1
- Parity: None
- Byte order: Big Endian
- Output Data Mode: Auto

1.Double click GW7552 icon
2.Click Parameter Assignment
3.Change
Baud rate：115200
Data bit ：8
Stop bit ：1
Parity ：None
Byte order: big Endian
Output Data Mode: Auto
4.Click “OK”

You can change parameters here



Before connecting

Make sure the switch of the GW-7552 is at Normal mode.

Refer to GW-7552 user manual 2.6



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Before connecting

Setup the address by the DIP switch to set GW-7552's address as 2 in PROFIBUS

Refer to GW-7552 user manual 2.4

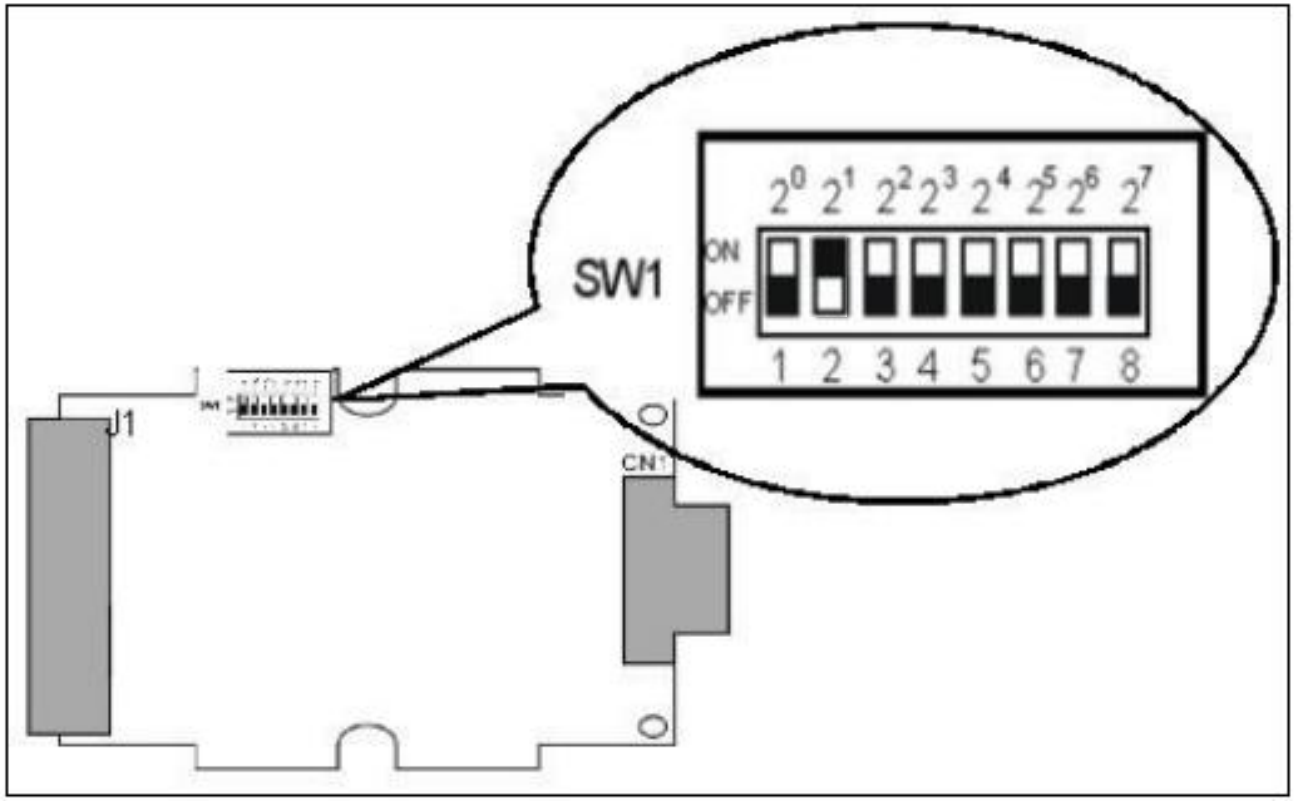


Figure 12: DIP switch

Read 16-channel DO and Write 16-channel DO

SIMATIC Manager



SIMATIC PLC
* PROFIBUS Device 0 (Master)

PROFIBUS DP



GW-7552
- PROFIBUS Device 2 (Slave)
- Modbus Device (RTU Master)

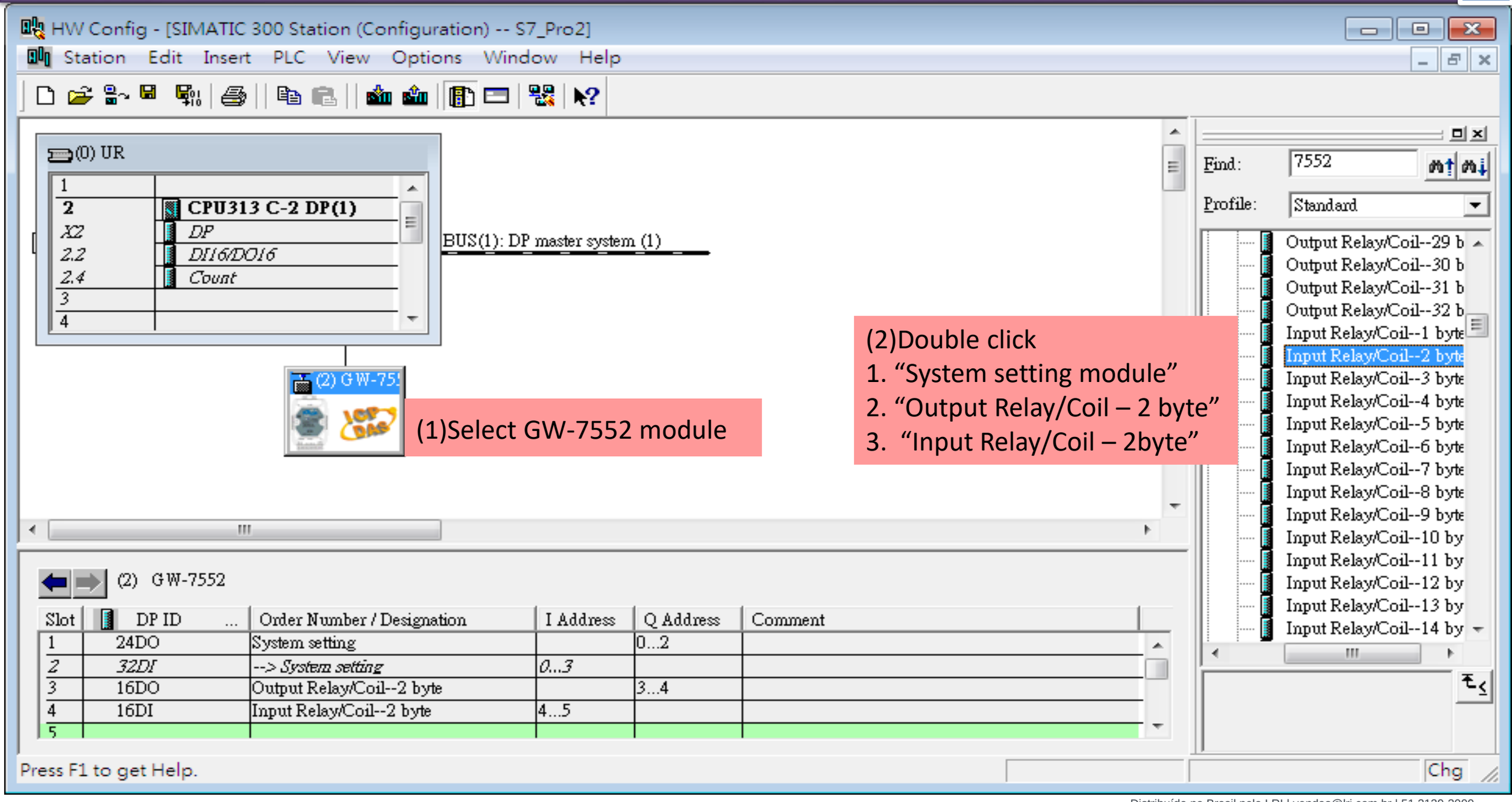
MODBUS RTU

16-channel DO module
* Modbus Device **10** (RTU Slave)
* Data Address: **000018~00033**
* Data Length: 2



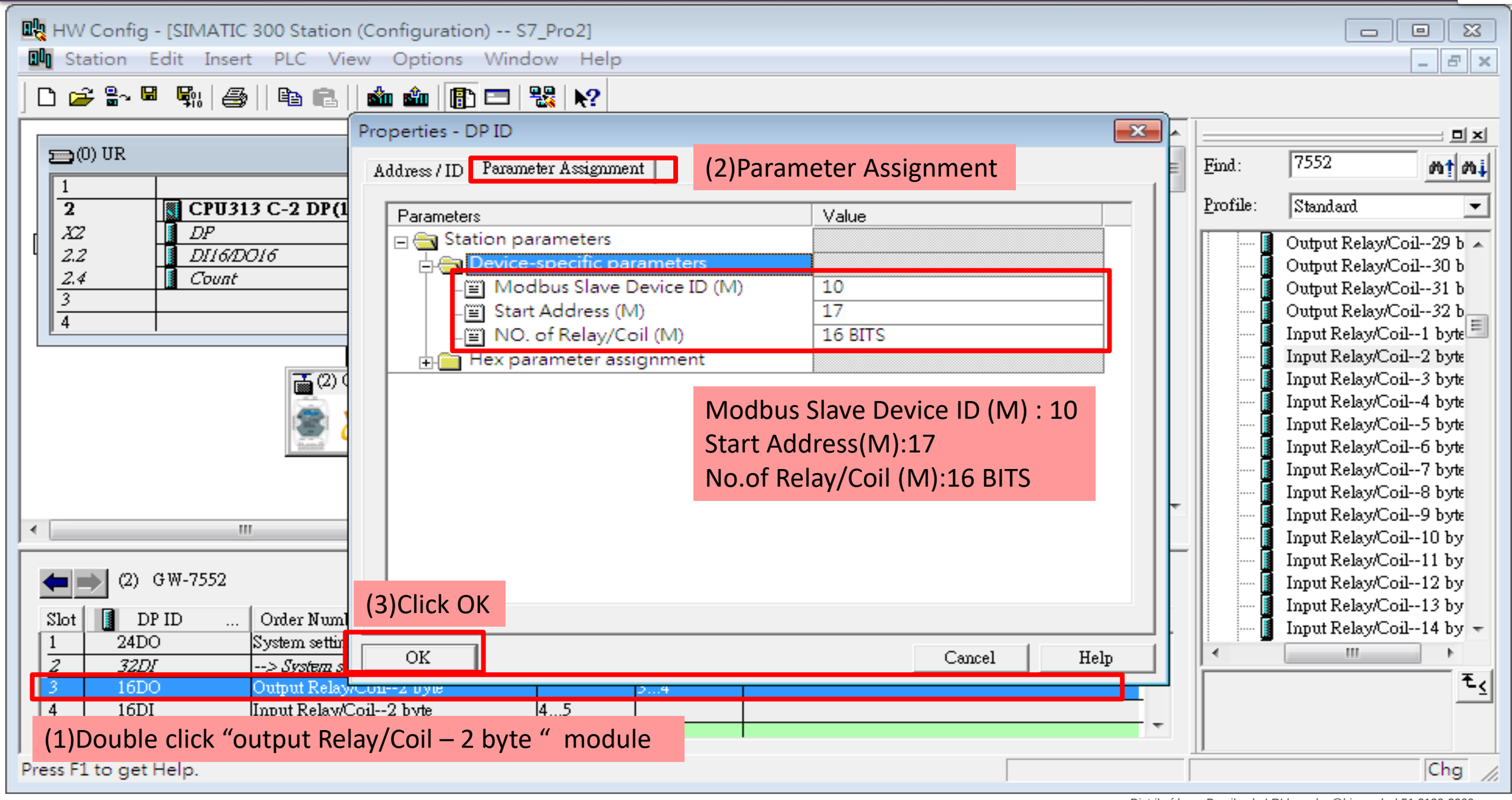
Comport Settings:
- Baudrate:115200
- Data bit: 8
- Stop bit : 1
- Parity: None

Read 16-channel DO and Write 16-channel DO



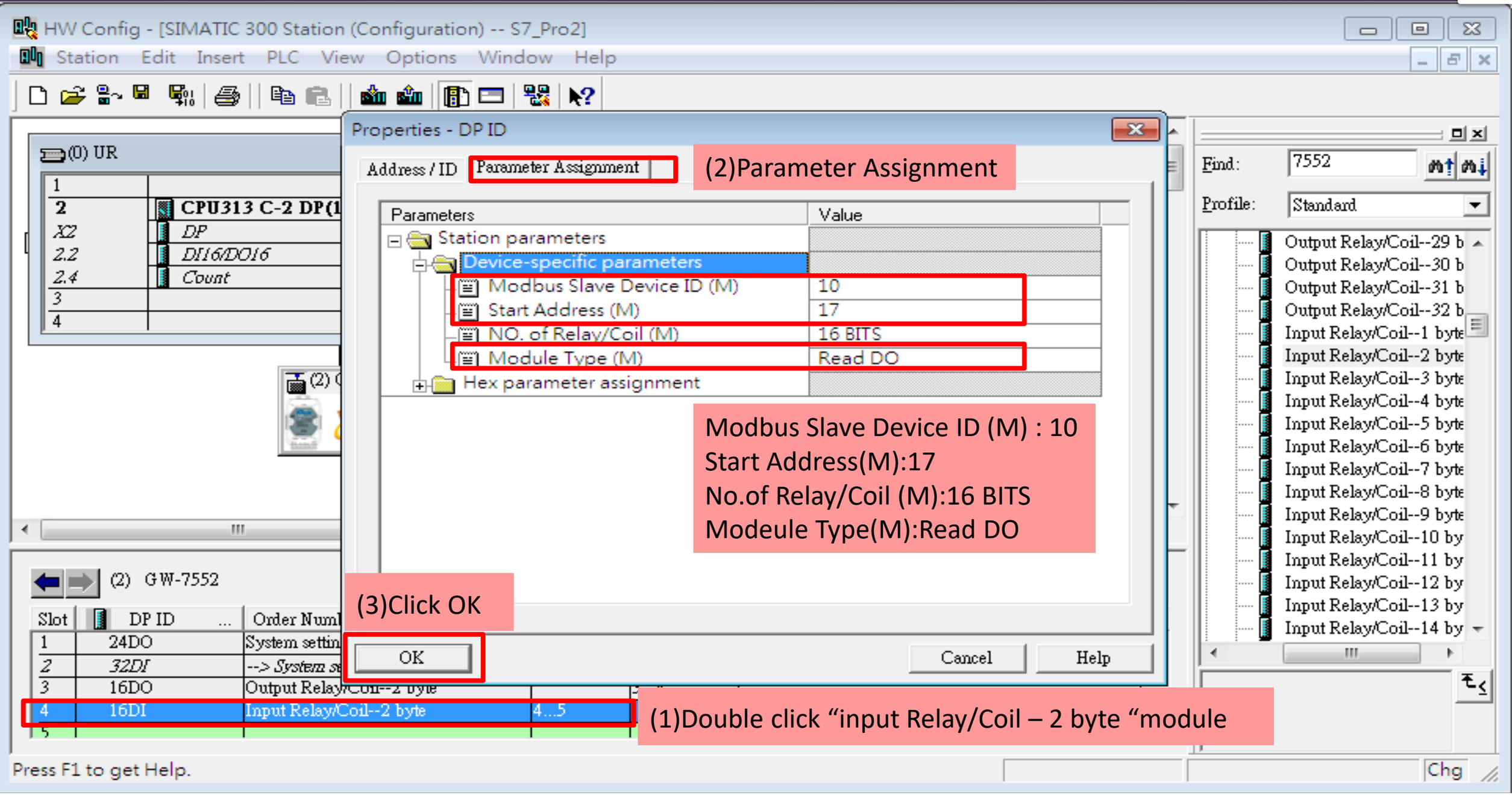
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Read 16-channel DO and Write 16-channel DO



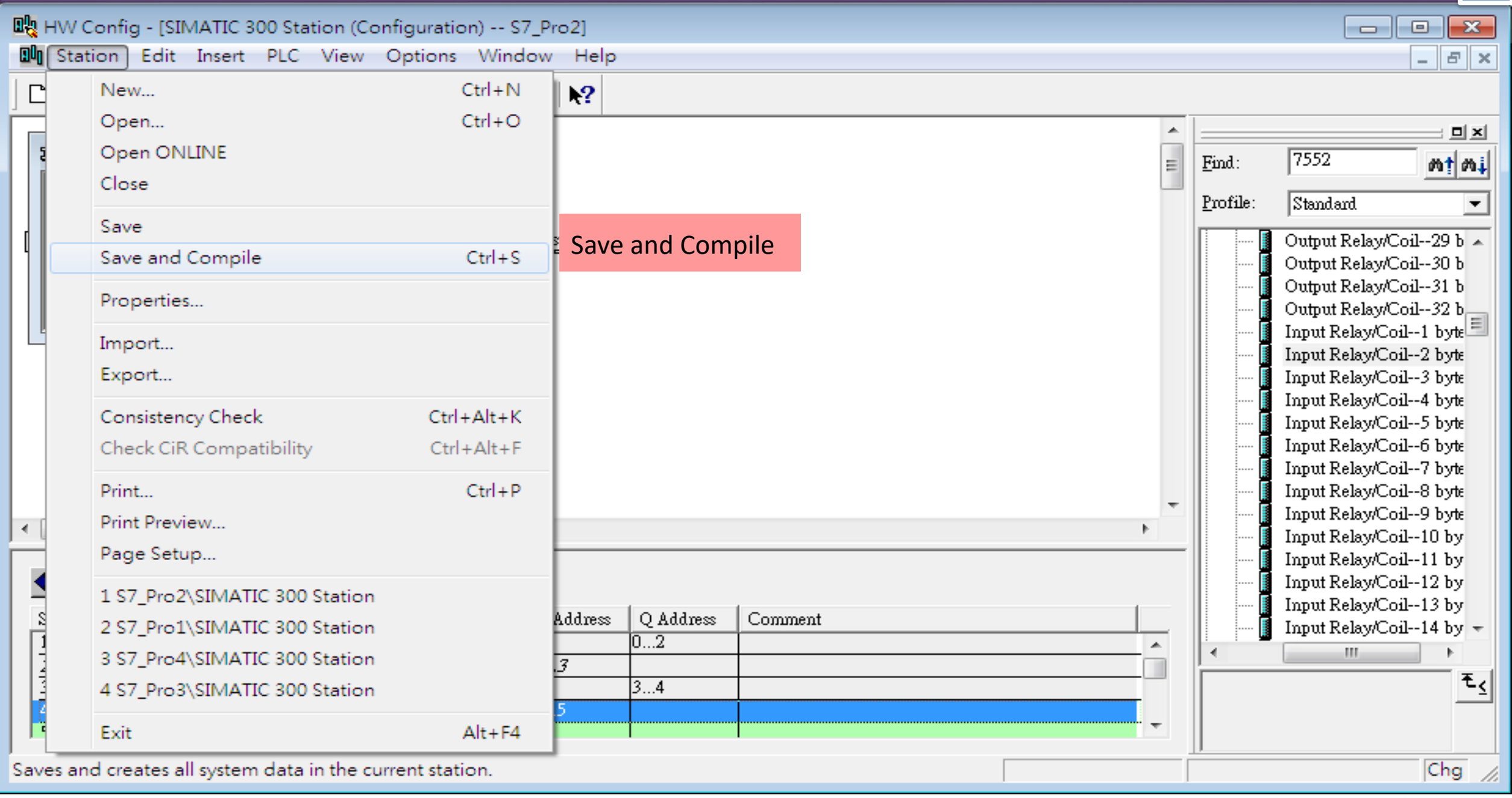
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Read 16-channel DO and Write 16-channel DO



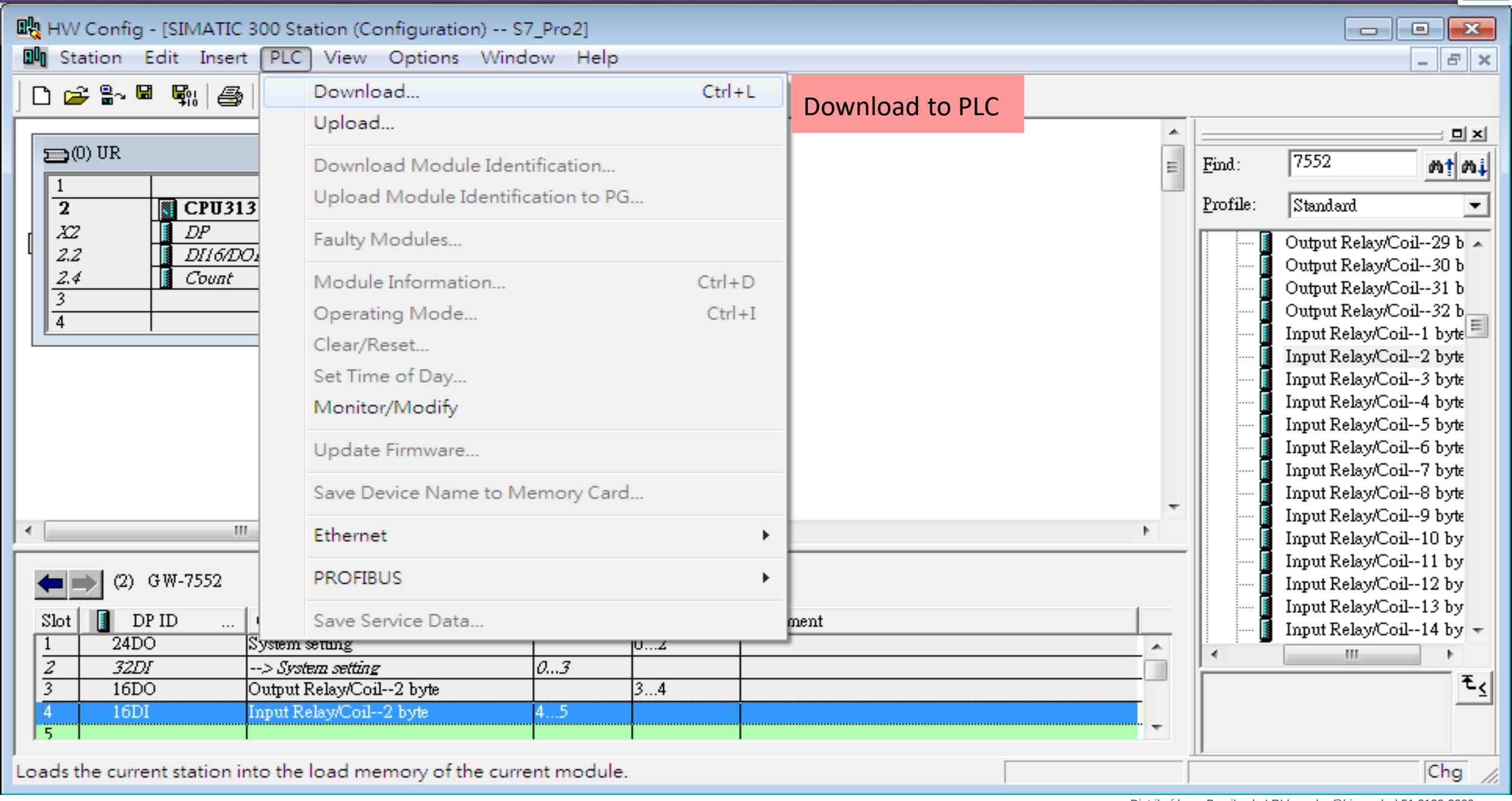
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Read 16-channel DO and Write 16-channel DO



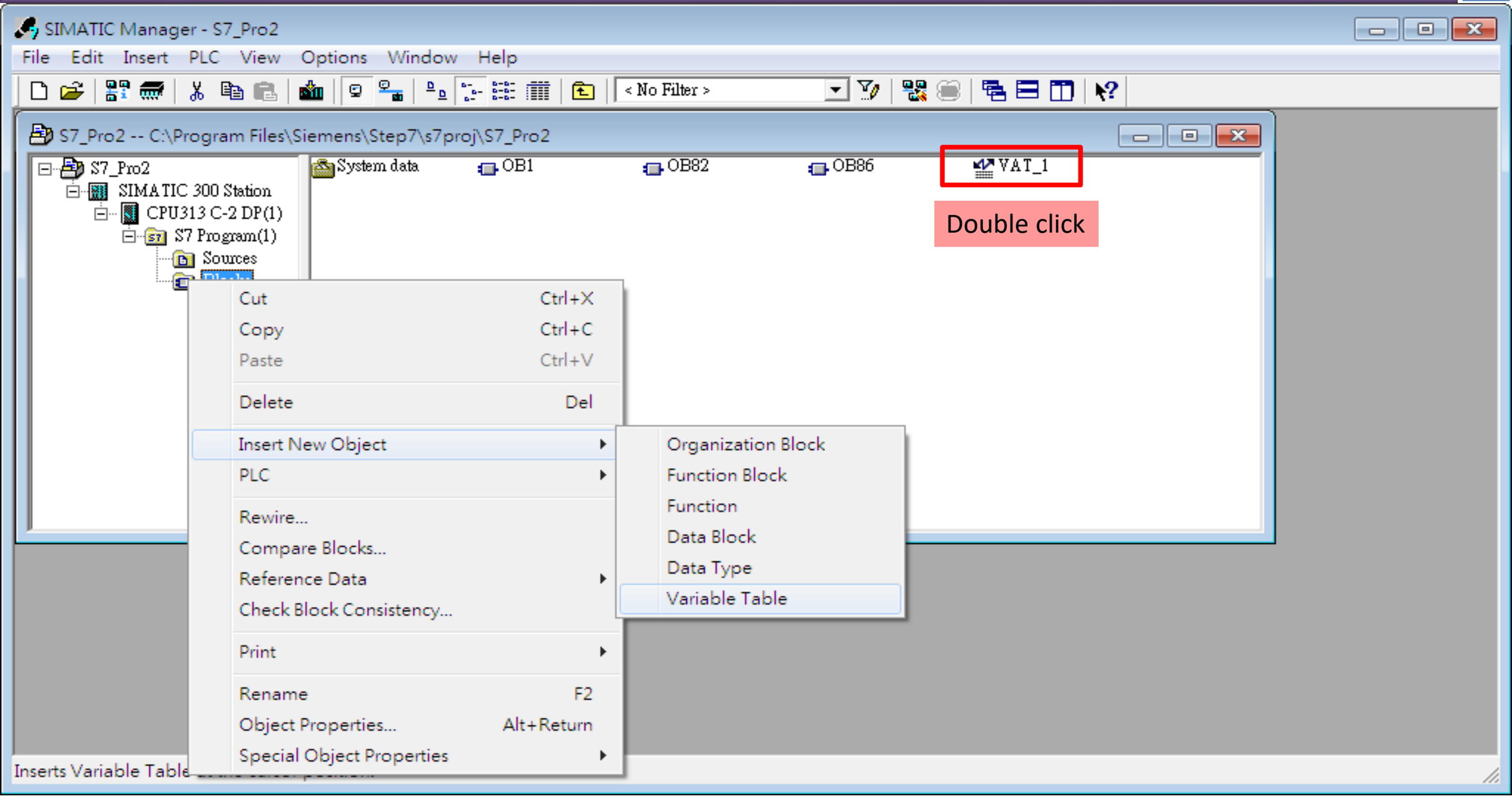
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Read 16-channel DO and Write 16-channel DO



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Read 16-channel DO and Write 16-channel DO



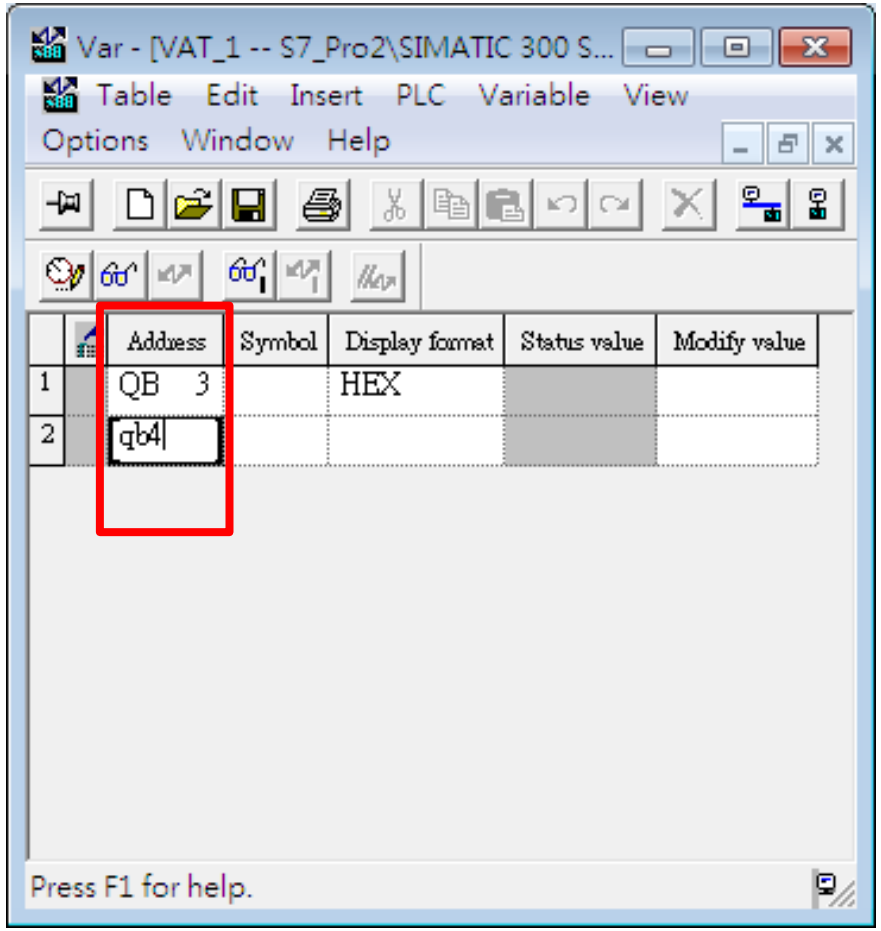
LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

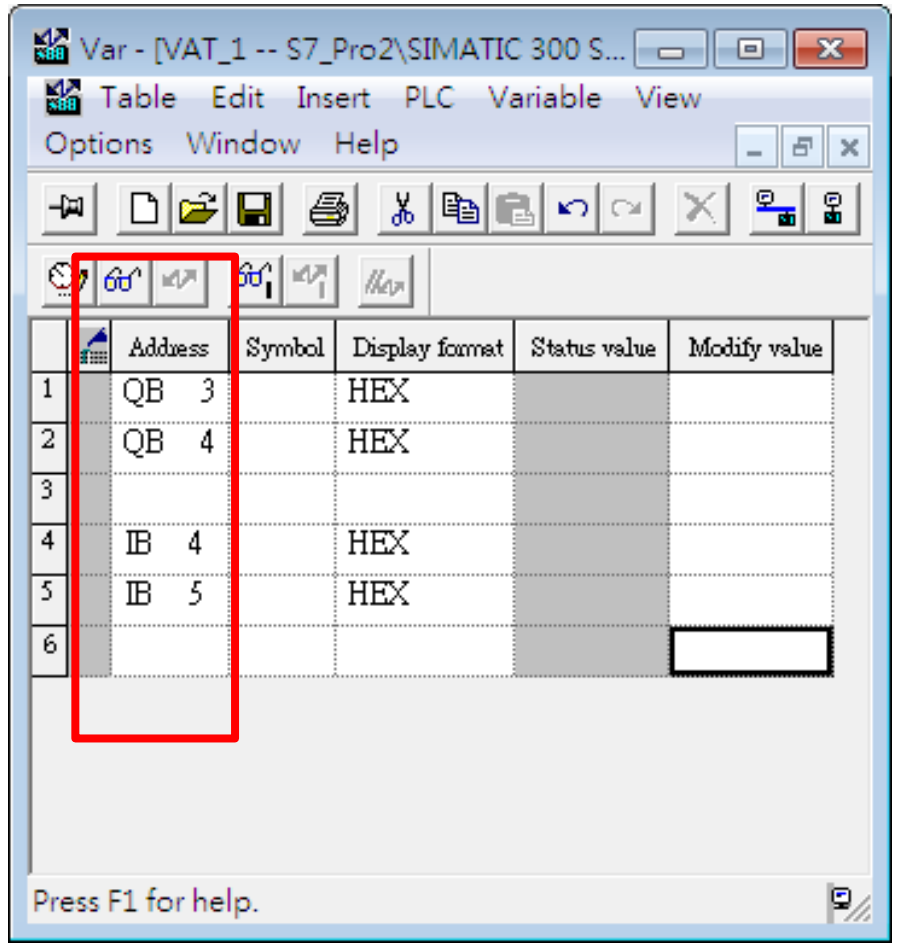
Read 16-channel DO and Write 16-channel DO

Type output(QB #)& input (IB #)

IB : input Byte ; QB : output Byte

IW: input Word ; QW : output Word

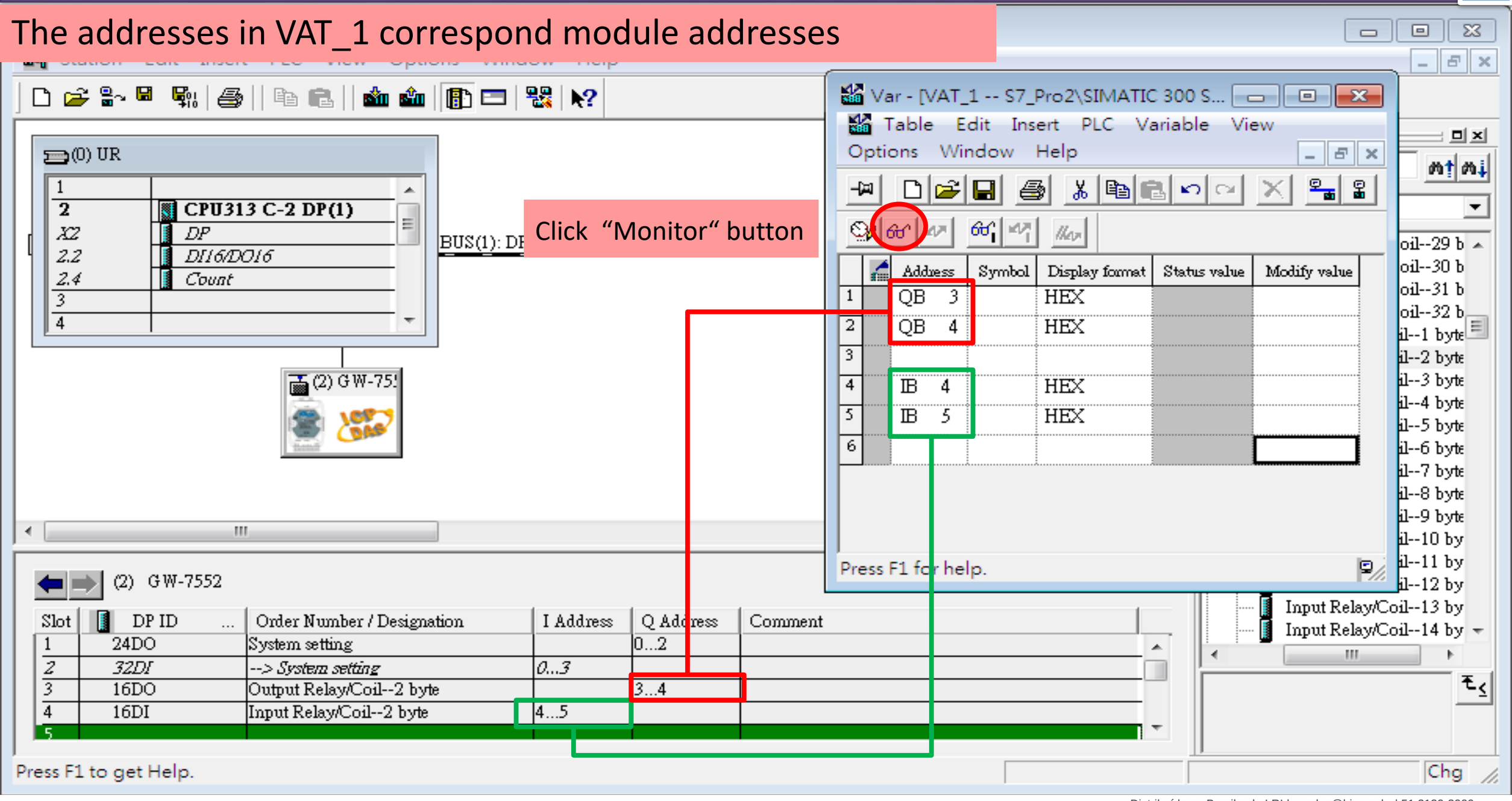




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Read 16-channel DO and Write 16-channel DO

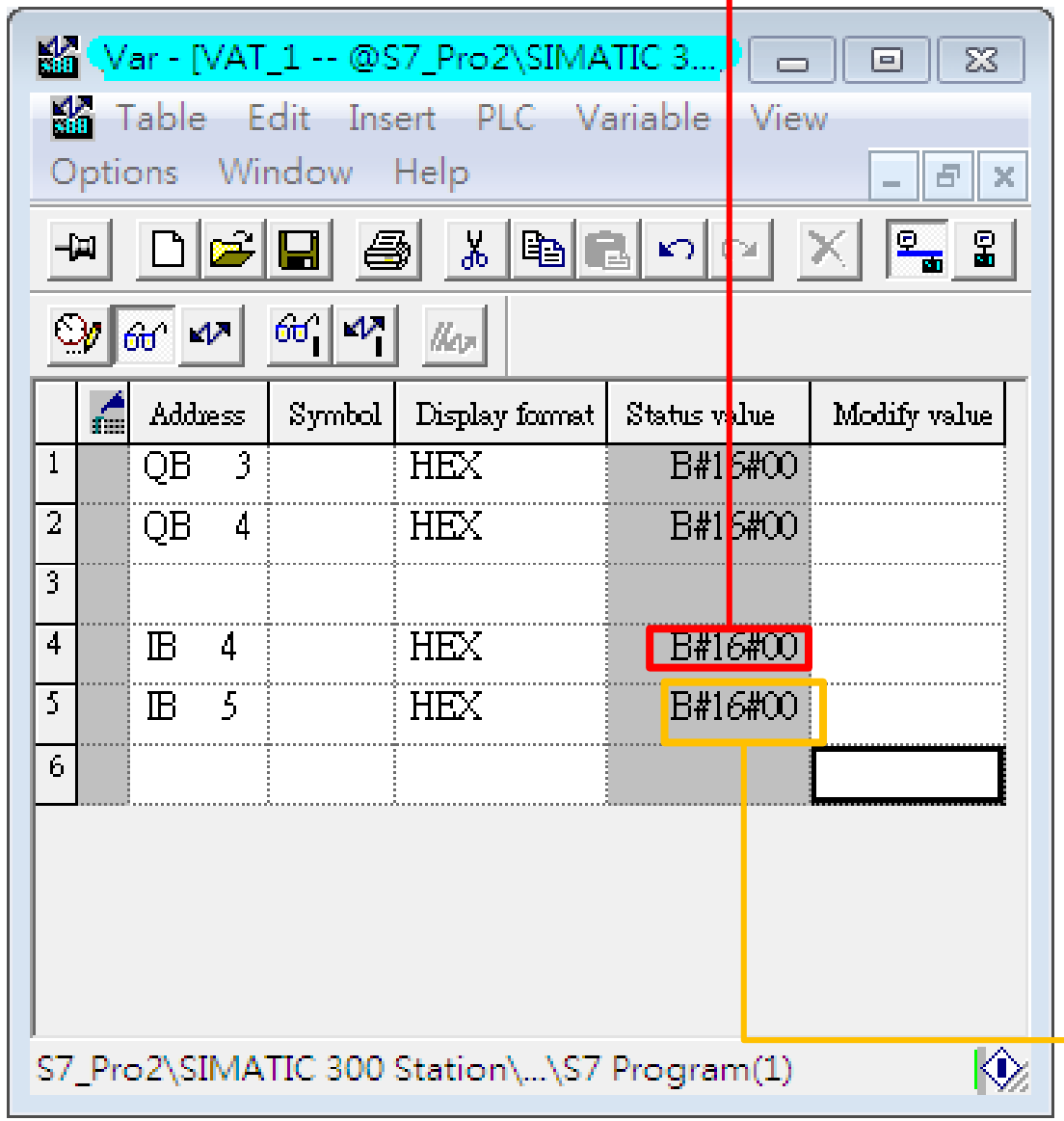
The addresses in VAT_1 correspond module addresses



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Read 16-channel DO and Write 16-channel DO

Monitor Variable

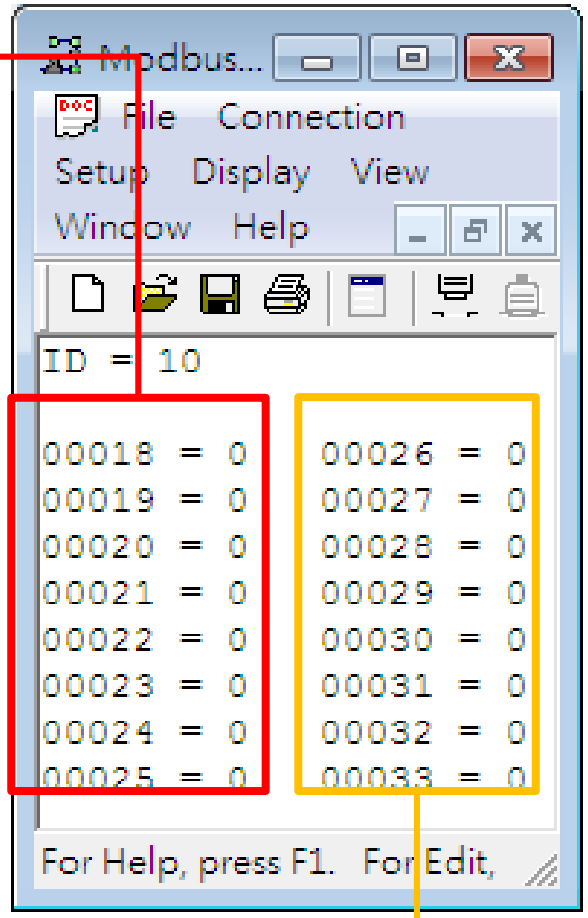


00018~00025

Bit 25 24 23 22 21 20 19 18

0 0 0 0 0 0 0 0

2^7 2^6 2^5 2^4 2^3 2^2 2^1 2^0



Bit 33 32 31 30 29 28 27 26

0 0 0 0 0 0 0 0

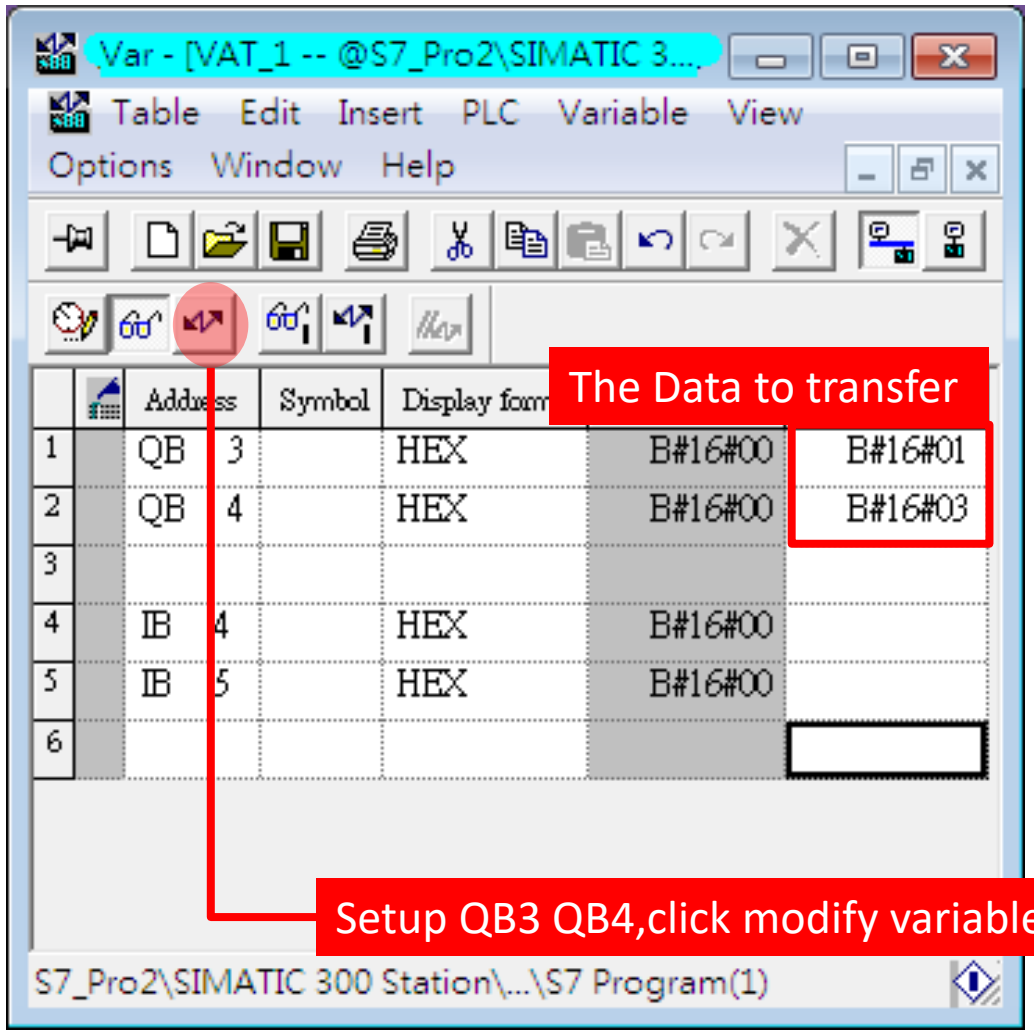
2^7 2^6 2^5 2^4 2^3 2^2 2^1 2^0

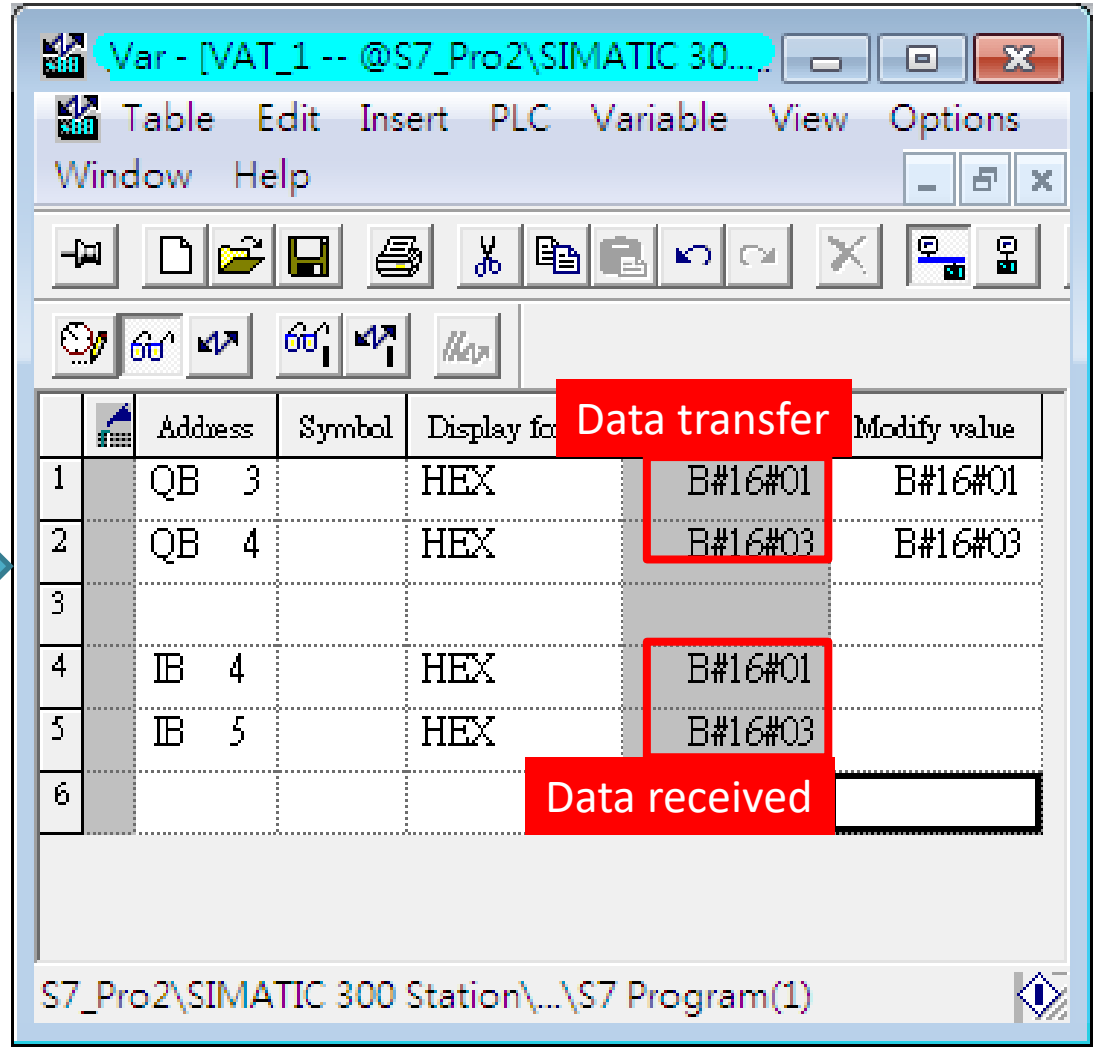
00026~00033

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Read 16-channel DO and Write 9-channel DO

Modify the value to send ModBus command

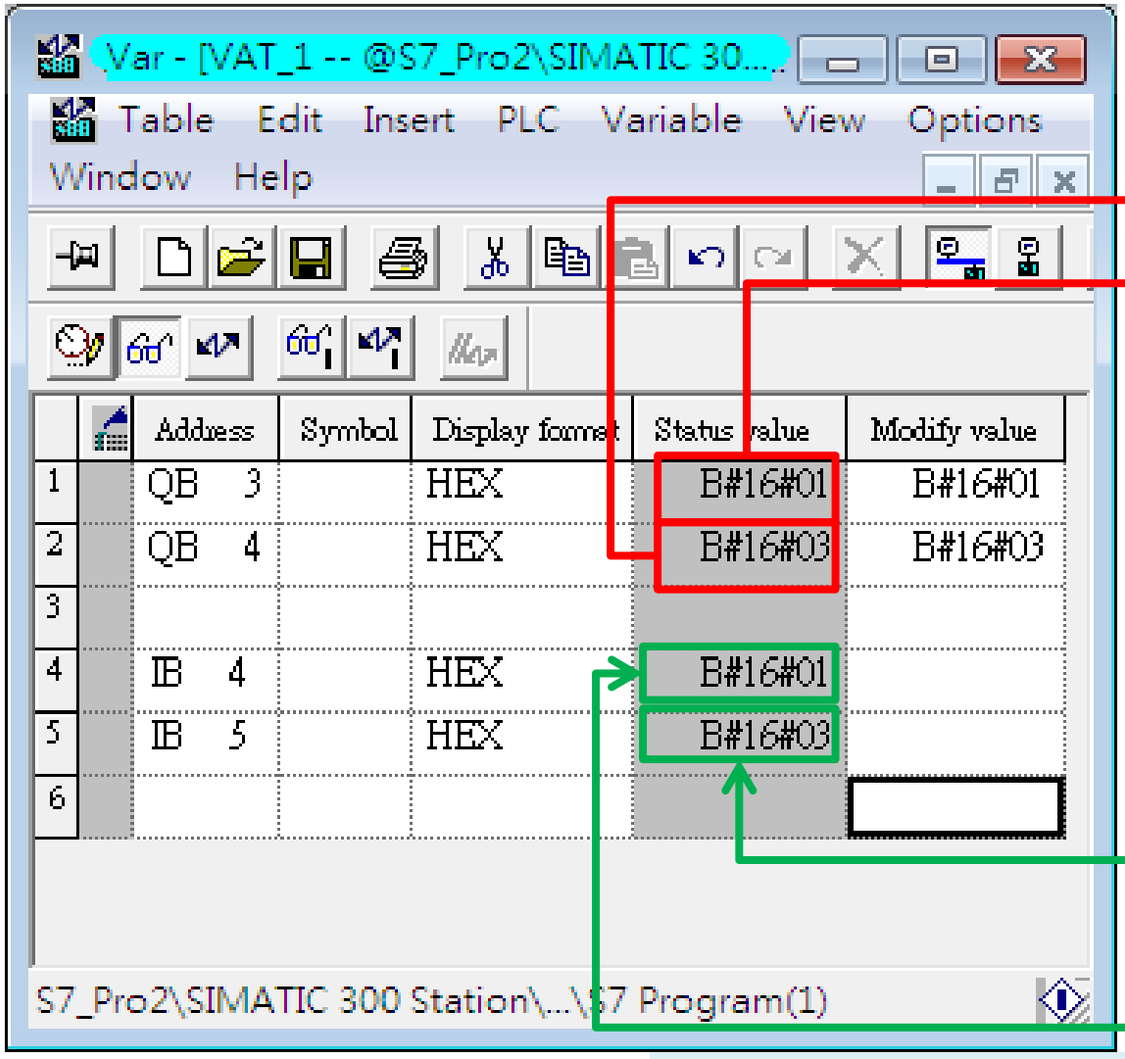




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Read 16-channel DO and Write 9-channel DO

Step 15 :Modify the value to send ModBus command

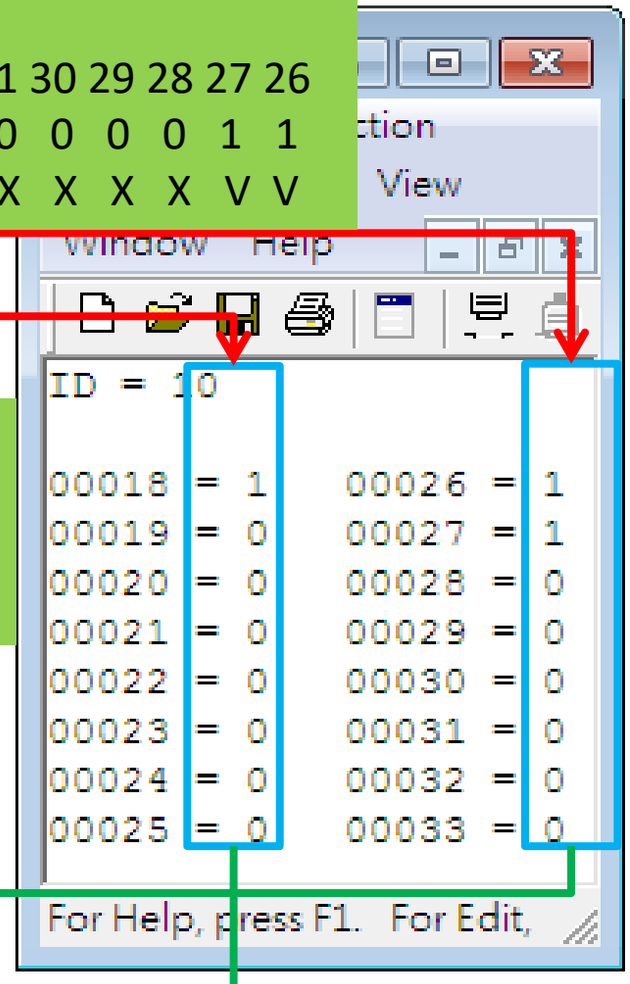


Write DO(8bit)

Data	03							
Address	33	32	31	30	29	28	27	26
bit	0	0	0	0	0	0	1	1
Write	X	X	X	X	X	X	V	V

Write DO(8bit)

Data	03							
Address	25	24	23	22	21	20	19	18
bit	0	0	0	0	0	0	0	1
Write	X	X	X	X	X	X	X	V



Read DO(8bit)

Read DO(8bit)

User can read the data to the Modbus DO module at address IB4 、IB5

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Read 13-channel DI

SIMATIC Manager



SIMATIC PLC
* PROFIBUS Device 0(Master)

PROFIBUS DP



GW-7552
- PROFIBUS Device 2 (Slave)
- Modbus Device (RTU Master)

MODBUS RTU

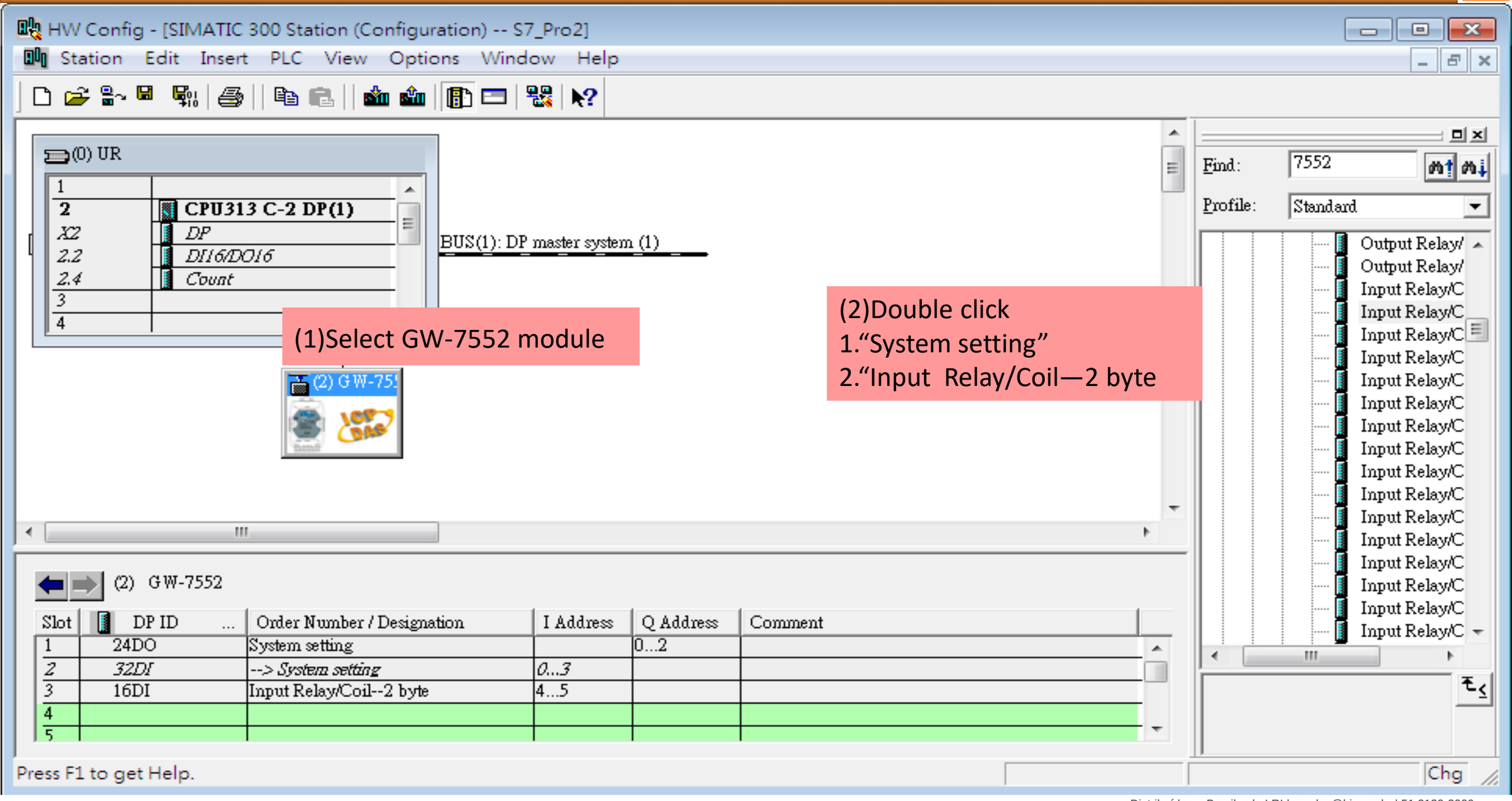
16-channel DI module
* Modbus Device **5** (RTU Slave)
* Data Address:**10057~100069**
* Data Length: 2



Comport Settings:
- Baudrate:115200
- Data bit: 8
- Stop bit : 1
- Parity: None

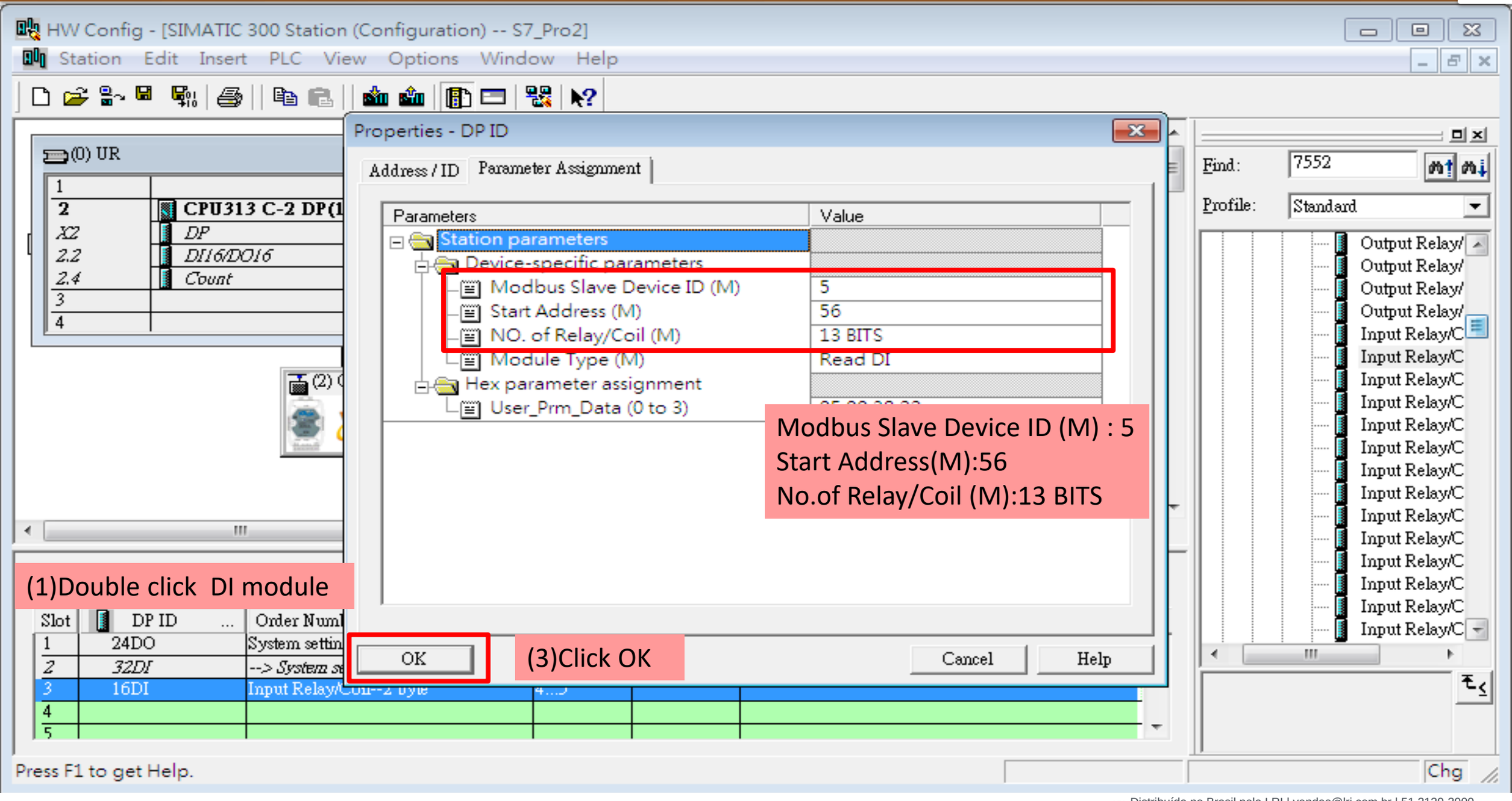
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Read 13-channel DI



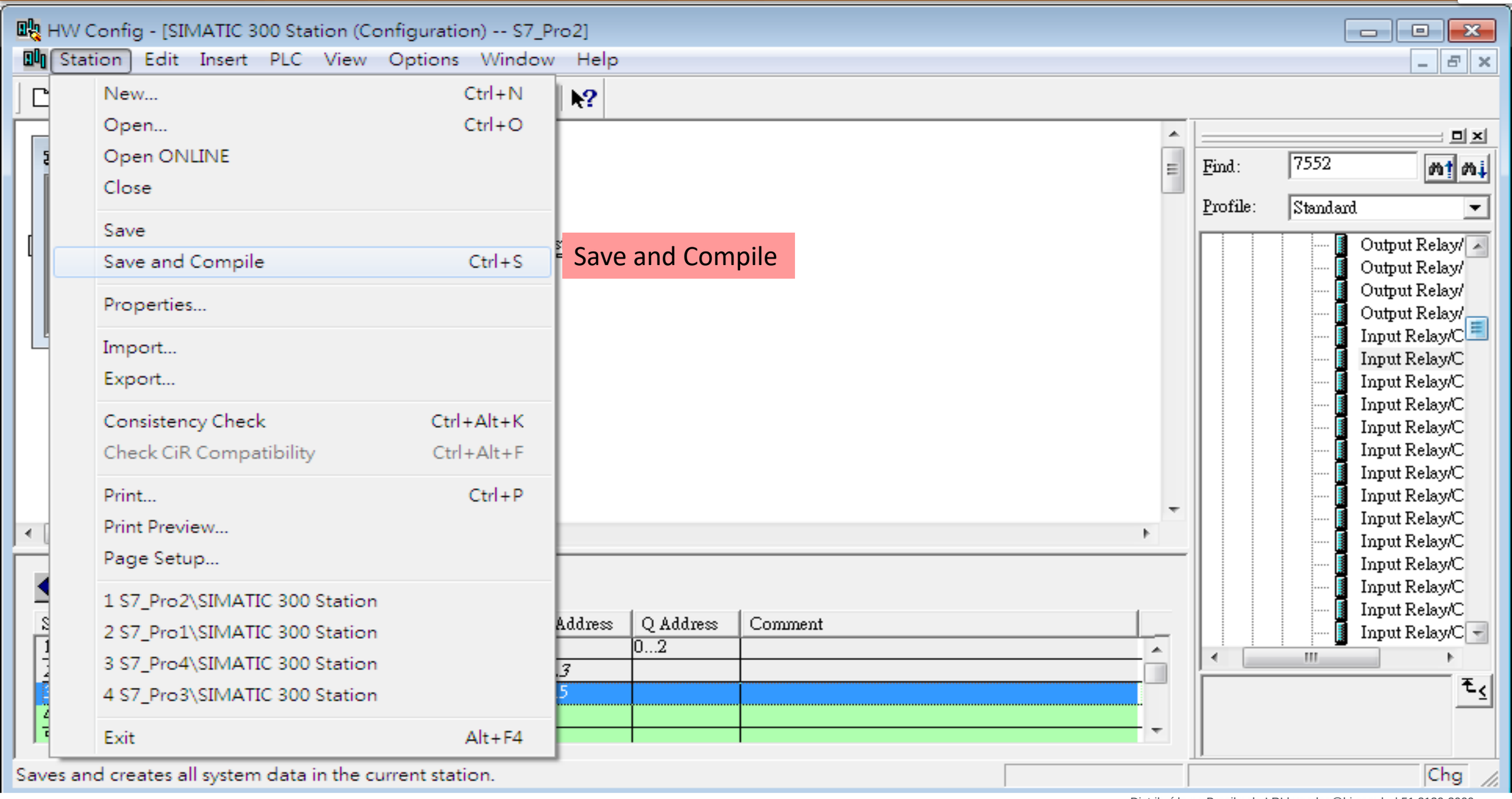
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Read 13-channel DI



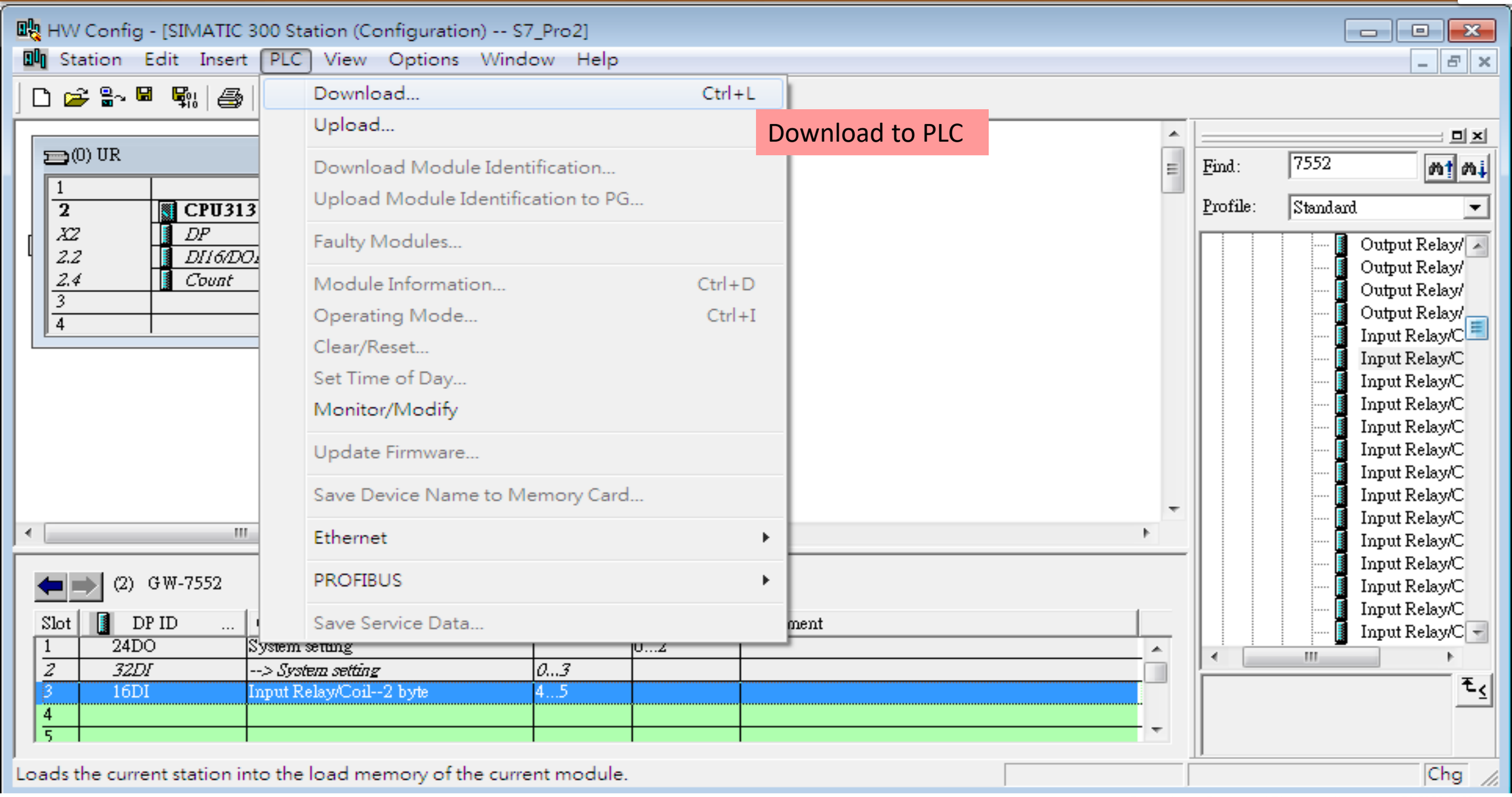
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Read 13-channel DI



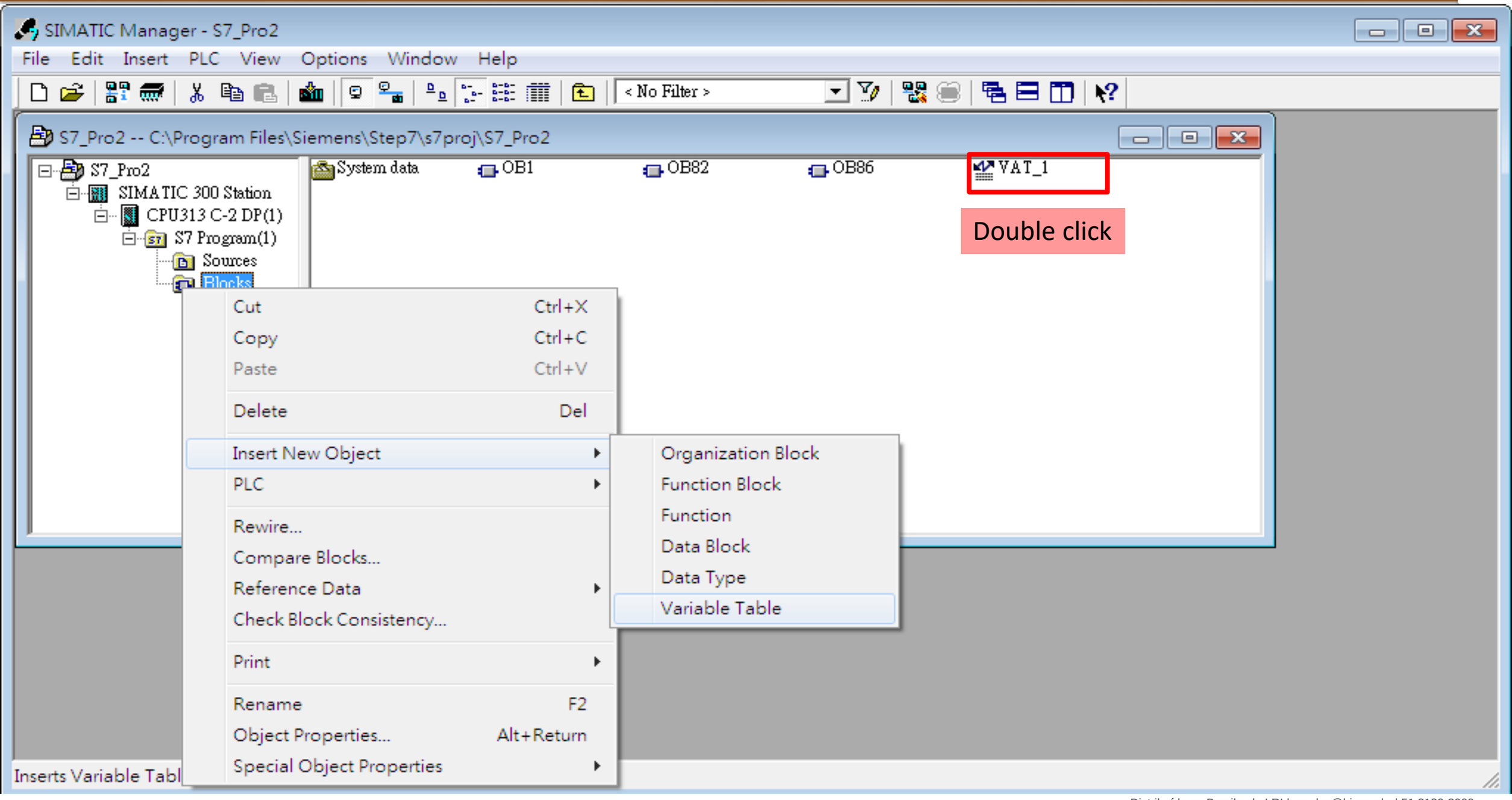
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Read 13-channel DI



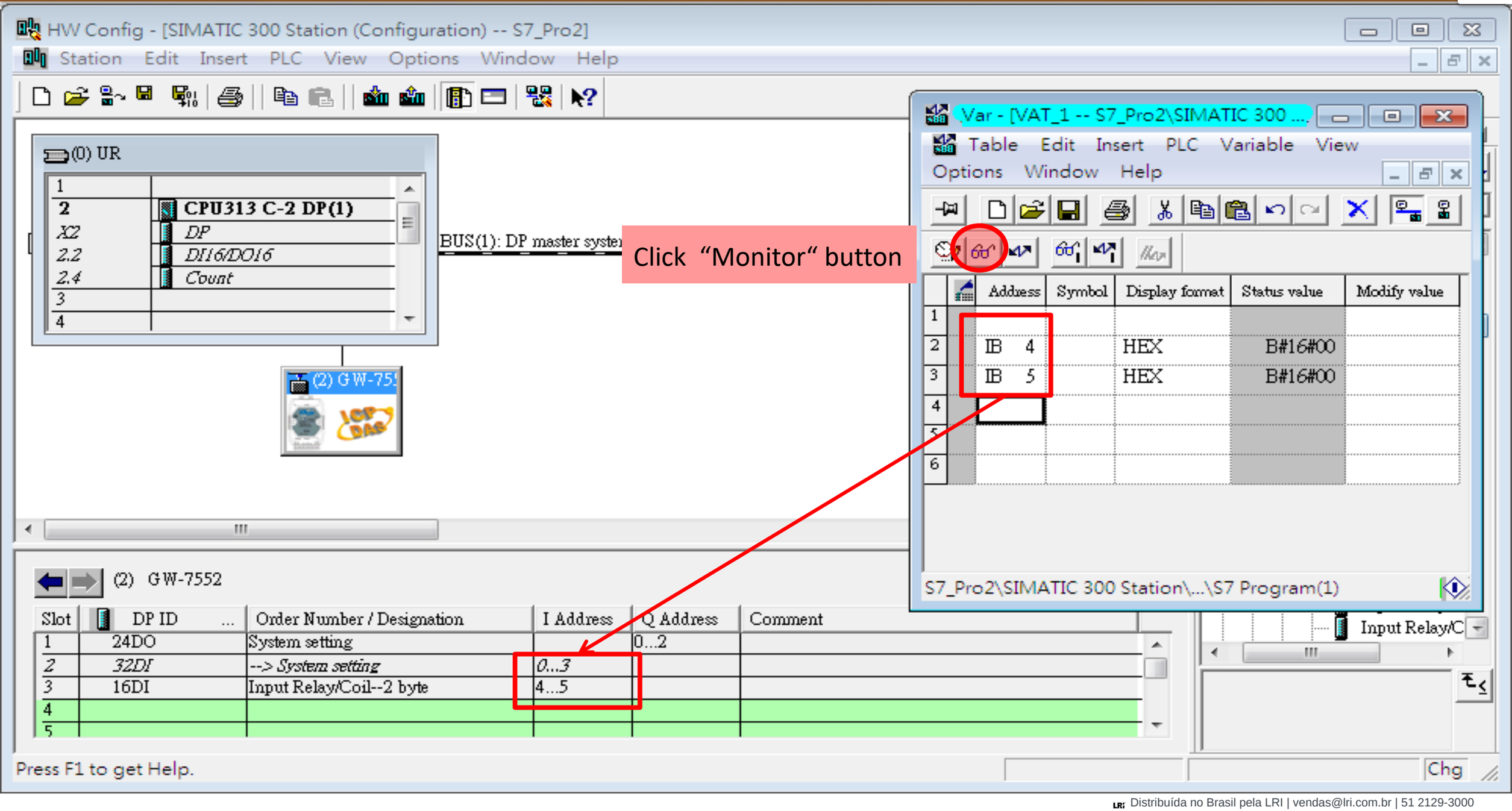
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Read 13-channel DI



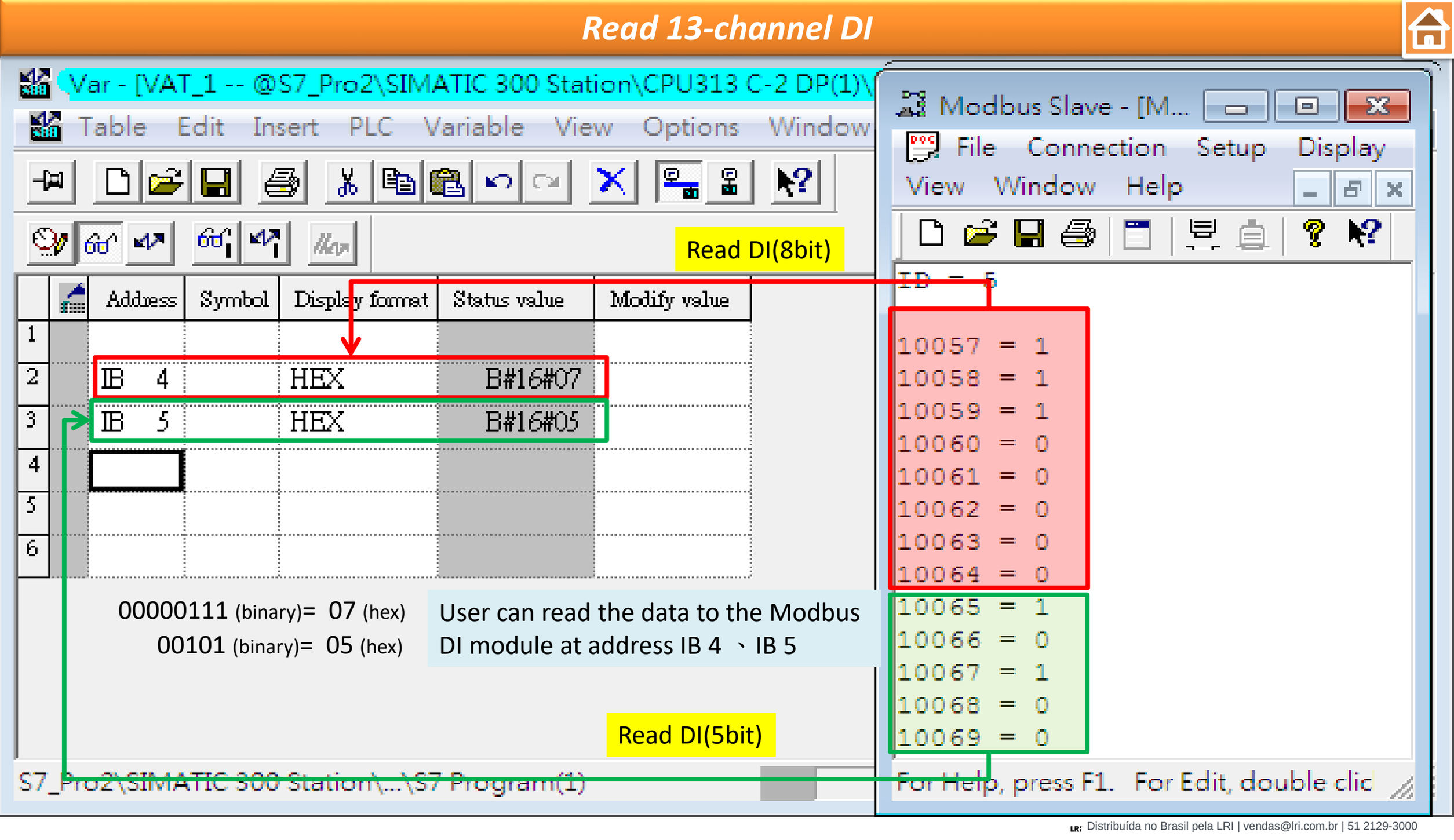
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Read 13-channel DI



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Read 13-channel DI



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Read and Write 6-channel AO

SIMATIC Manager



SIMATIC PLC
* PROFIBUS Device 0(Master)

PROFIBUS DP



GW-7552
- PROFIBUS Device 2 (Slave)
- Modbus Device (RTU Master)

MODBUS RTU

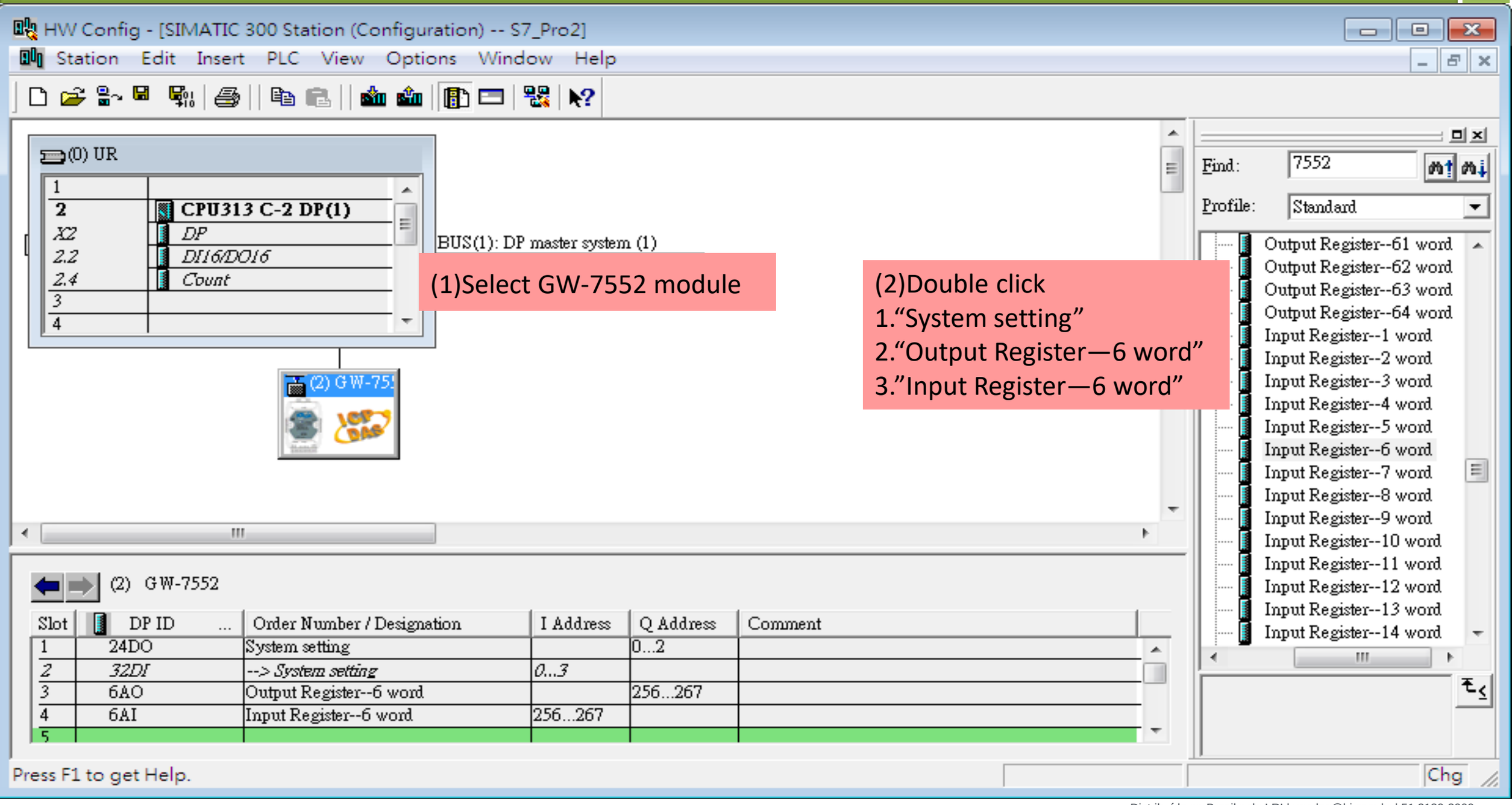
AO module
* Modbus Device **11** (RTU Slave)
* Data Address: **40001~40006**
* Data Length: 6



Comport Settings:
- Baudrate:115200
- Data bit: 8
- Stop bit : 1
- Parity: None

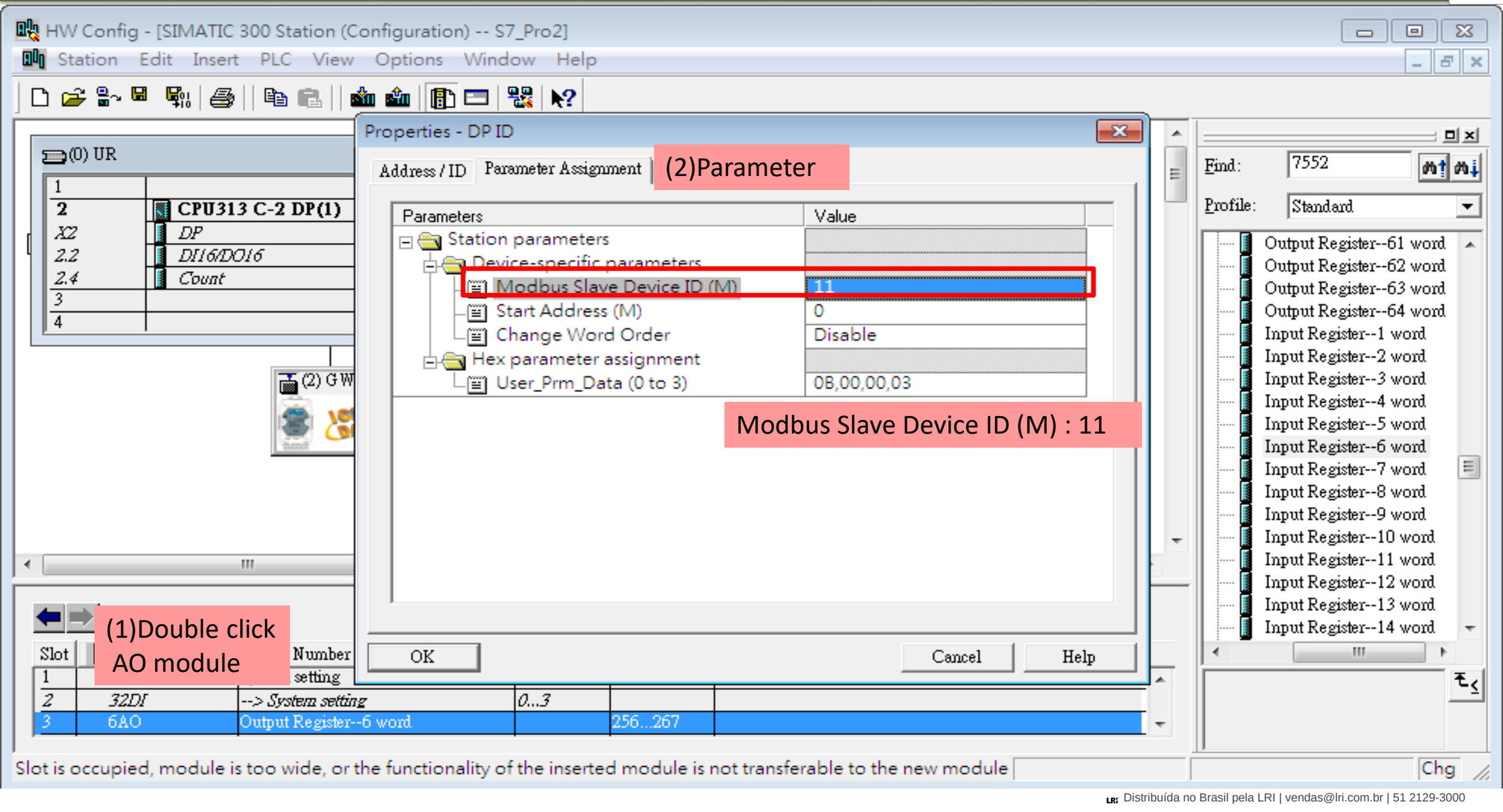
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Read and Write 6-channel AO



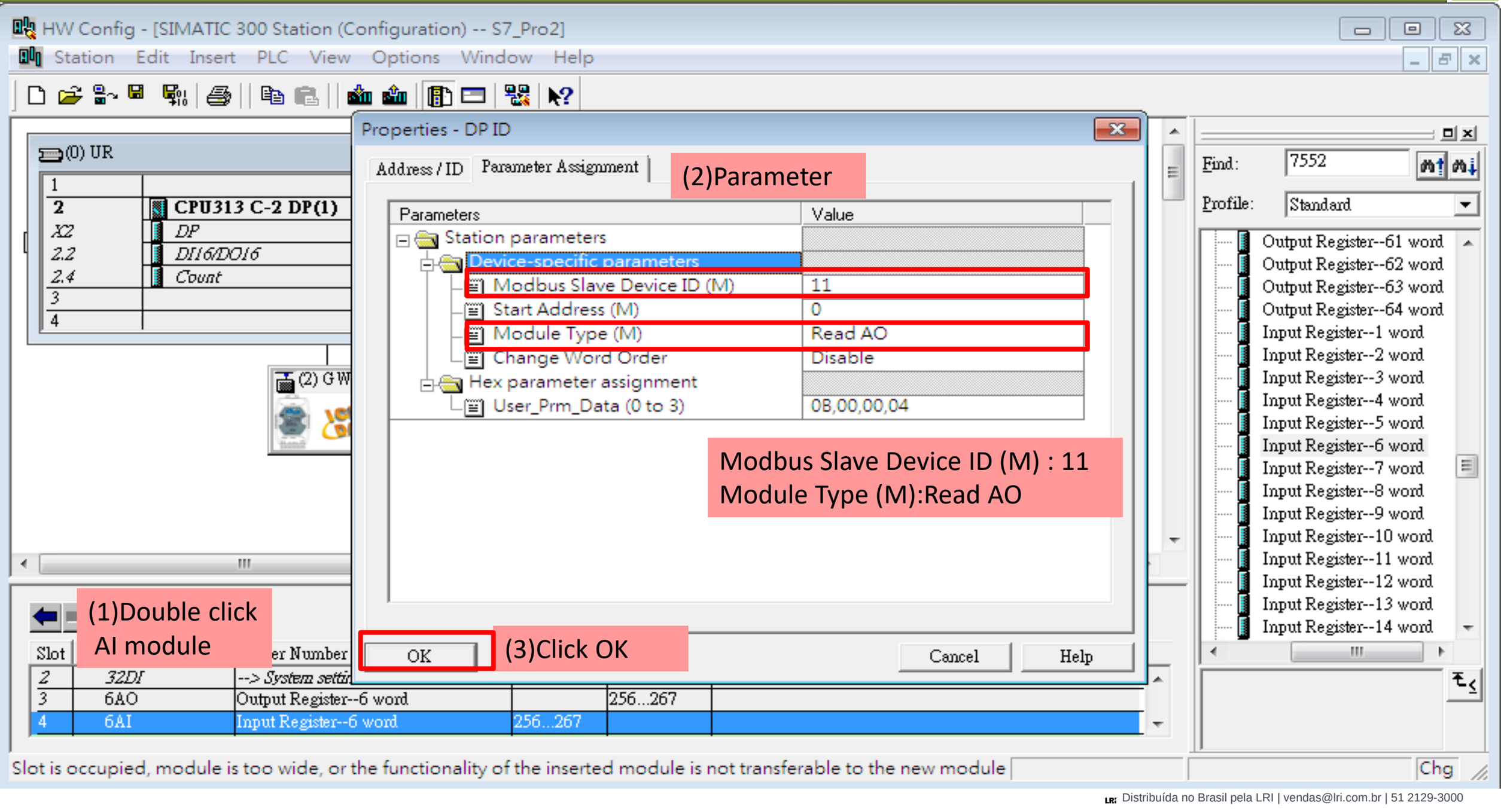
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Read and Write 6-channel AO



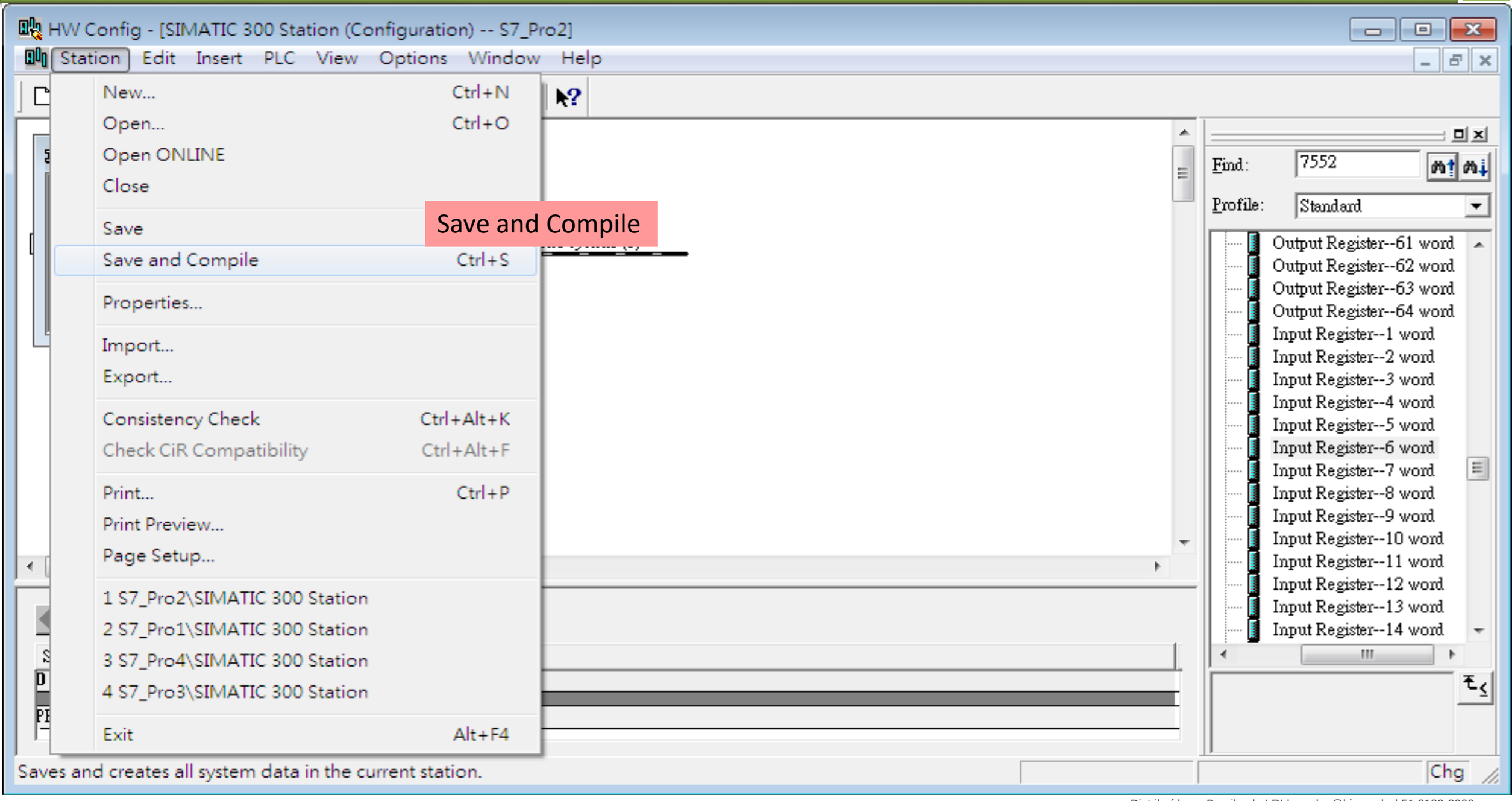
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Read and Write 6-channel AO



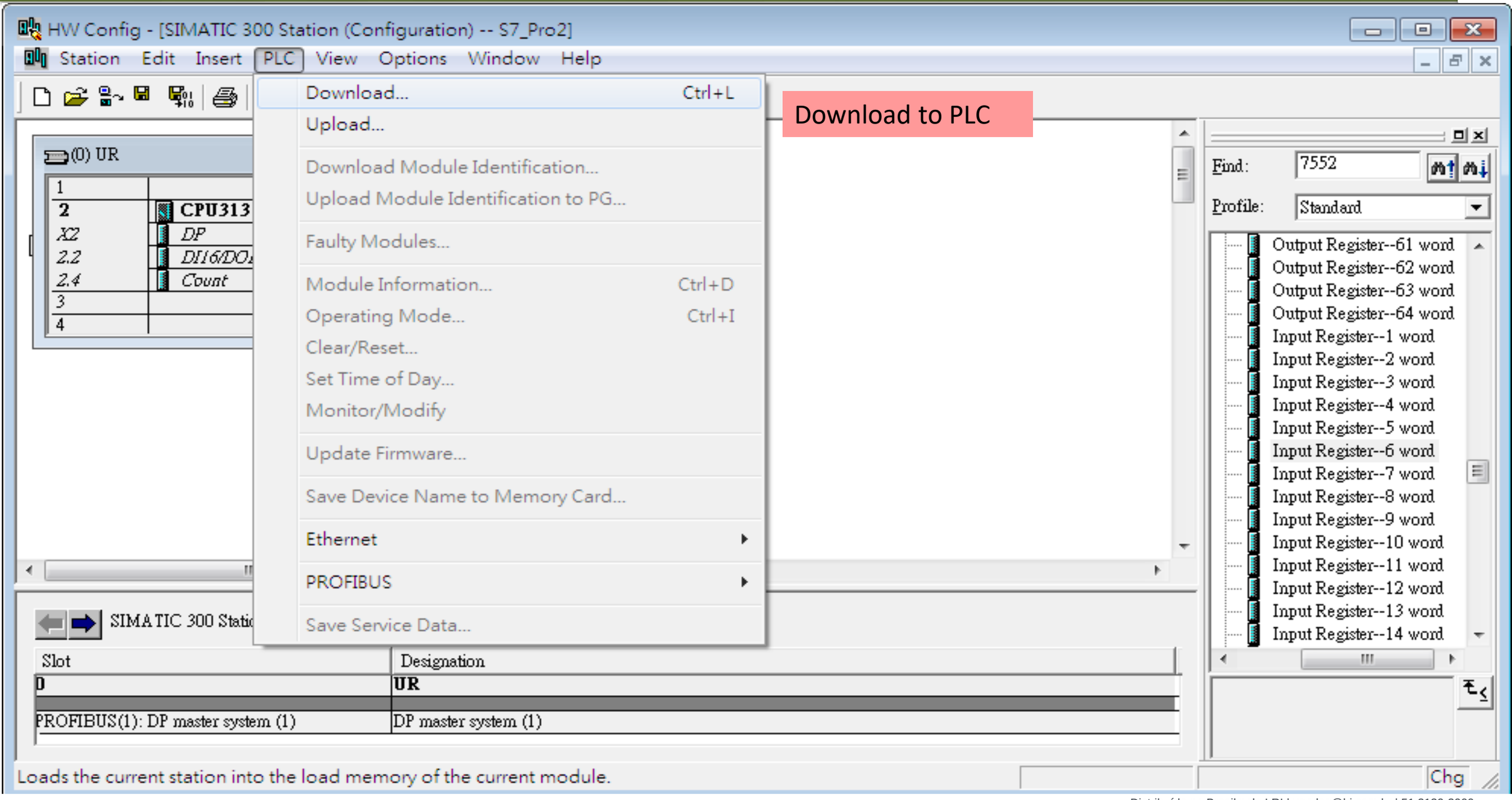
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Read and Write 6-channel AO



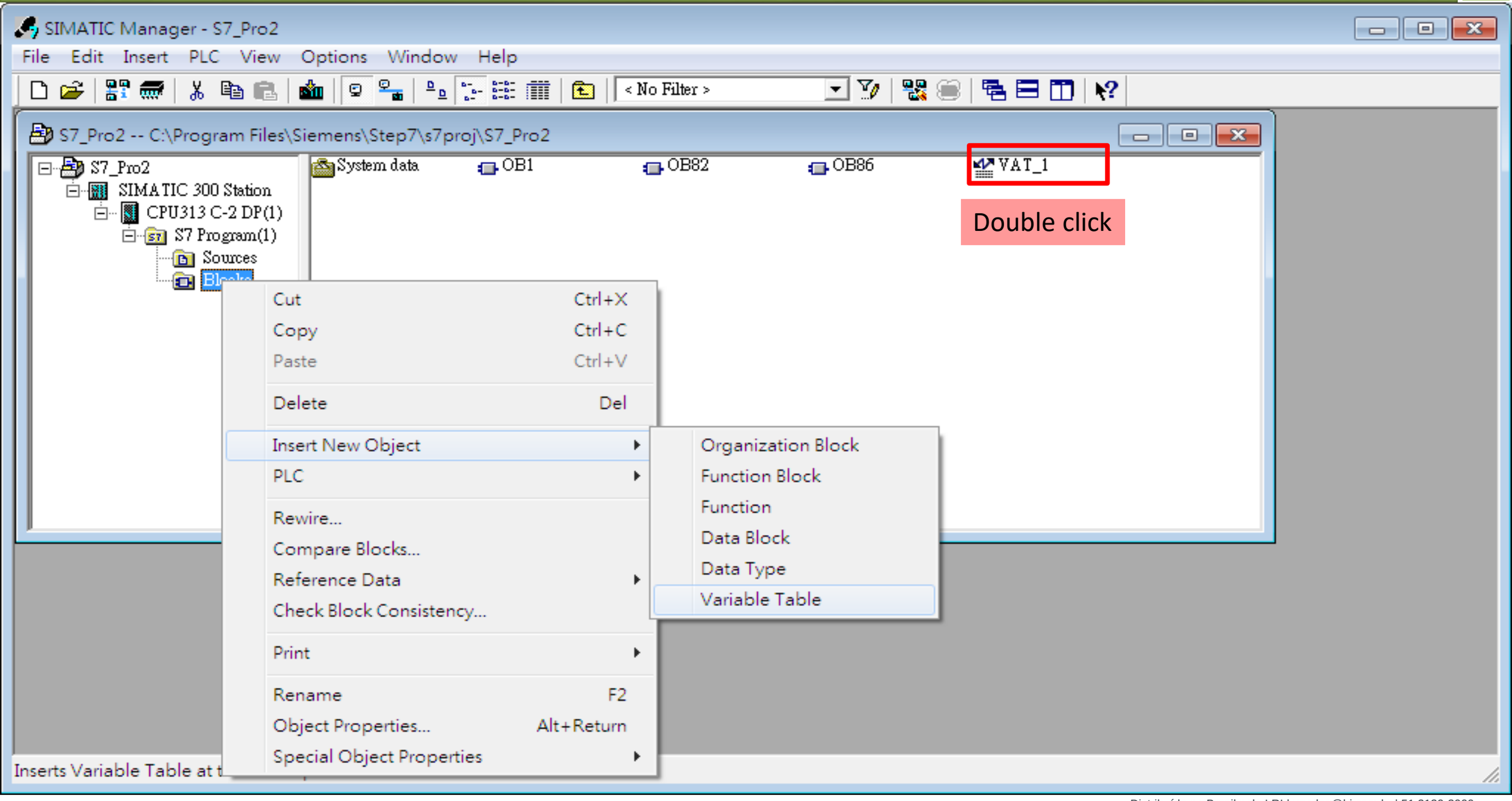
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Read and Write 6-channel AO



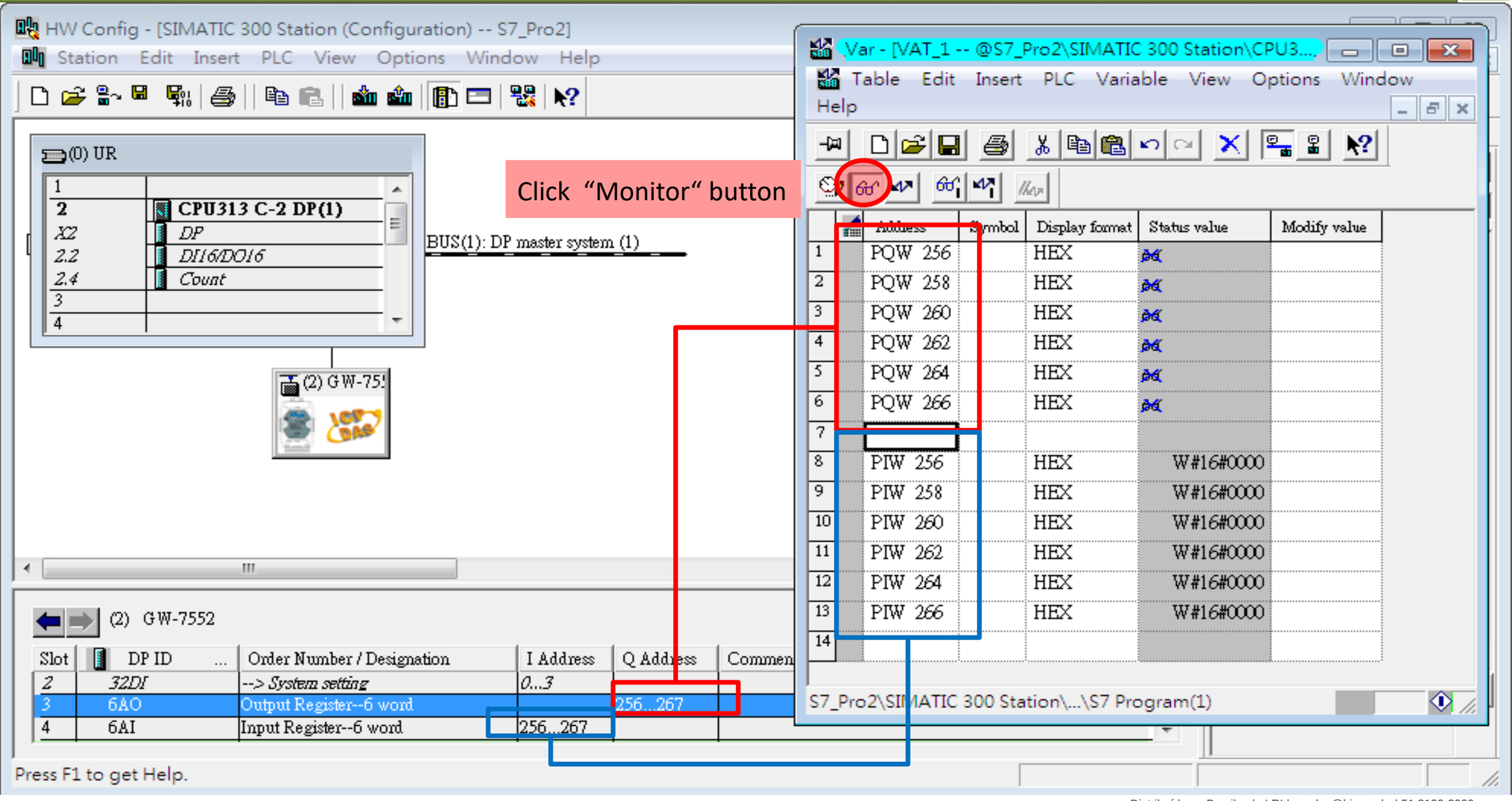
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Read and Write 6-channel AO



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Read and Write 6-channel AO



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Read and Write 6-channel AO

Var - [VAT_1 -- @S7_Pro2\SIMATIC 300 Station\CPU313 C-2 DP(1)\S7 Program(1) ONLINE]

Table Edit Insert PLC Variable View Options Window Help

	Address	Symbol	Display format	Status value	Modify value
1	PQW 256		HEX		
2	PQW 258		HEX		
3	PQW 260		HEX		
4	PQW 262		HEX		
5	PQW 264		HEX		
6	PQW 266		HEX		
7					
8	PIW 256		HEX	W#16#0000	
9	PIW 258		HEX	W#16#0000	
10	PIW 260		HEX	W#16#0000	
11	PIW 262		HEX	W#16#0000	
12	PIW 264		HEX	W#16#0000	
13	PIW 266		HEX	W#16#0000	
14					

Read AO(6 word)

Modbus Slave - [M...

File Connection Setup Display View Window Help

```
ID = 11

40001 = 0x0000
40002 = 0x0000
40003 = 0x0000
40004 = 0x0000
40005 = 0x0000
40006 = 0x0000
```

For Help, press F1. For Edit, double clic

S7_Pro2\SIMATIC 300 Station\...\S7 Program(1) RUN Abs < 5.2

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Read and Write 6-channel AO

Var - [VAT_1 -- @S7_Pro2\SIMATIC 300 Station\CPU313 C-2 DP(1)\S7 Program(1) ONLINE]

Table Edit Insert PLC Variable View Options Window Help

(2)Click “Modify variable“ button

(1)Set the data to transfer

	Address	Symbol	Display format	Status value	
1	PQW 256		HEX		W#16#1253
2	PQW 258		HEX		W#16#5533
3	PQW 260		HEX		W#16#4537
4	PQW 262		HEX		W#16#0123
5	PQW 264		HEX		W#16#0012
6	PQW 266		HEX		W#16#0022
7					
8	PIW 256		HEX	W#16#0000	
9	PIW 258		HEX	W#16#0000	
10	PIW 260		HEX	W#16#0000	
11	PIW 262		HEX	W#16#0000	
12	PIW 264		HEX	W#16#0000	
13	PIW 266		HEX	W#16#0000	
14					

Read AO(6 word)

Modbus Slave - [M...

File Connection Setup Display View Window Help

```
ID = 11

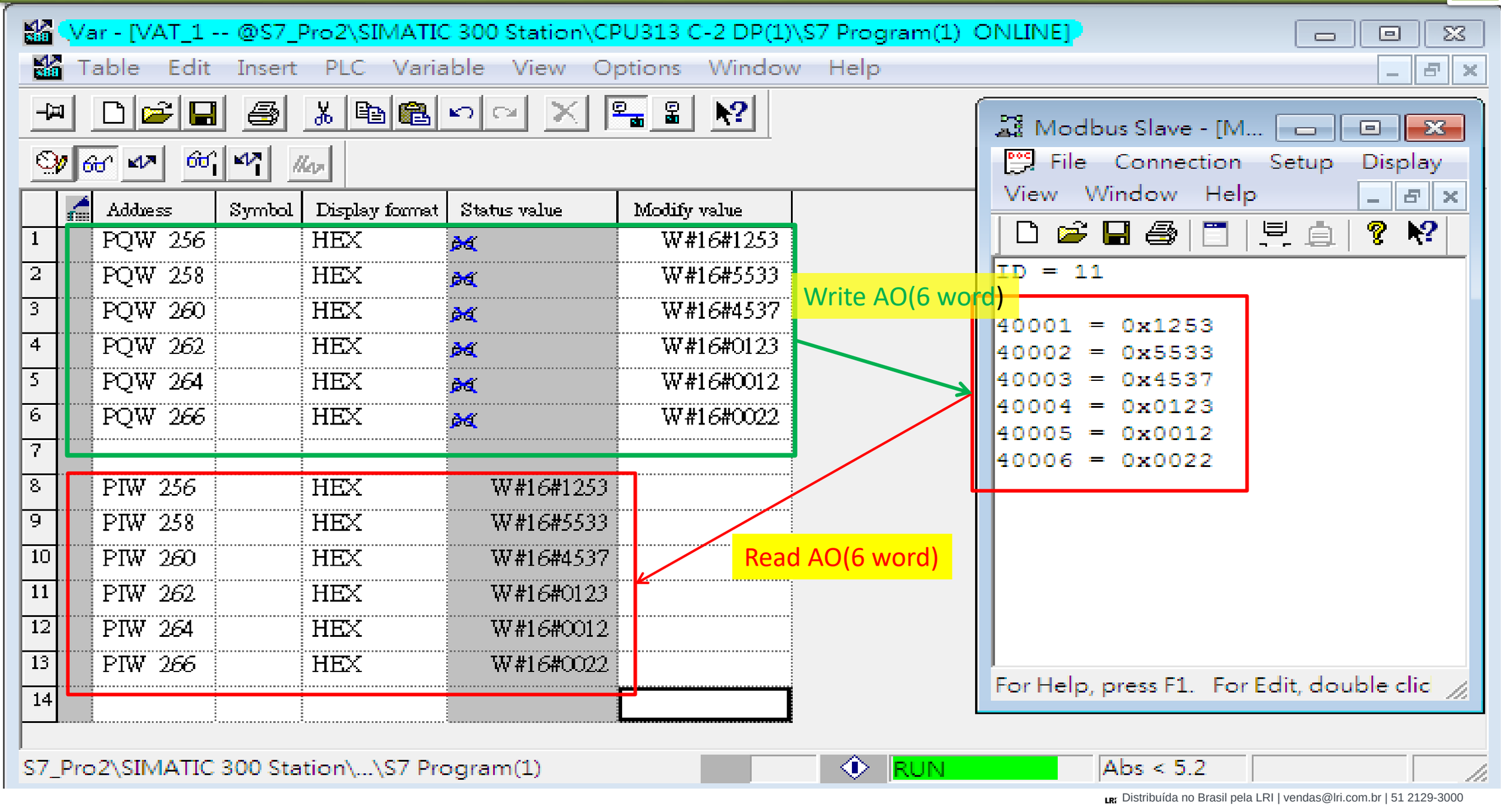
40001 = 0x0000
40002 = 0x0000
40003 = 0x0000
40004 = 0x0000
40005 = 0x0000
40006 = 0x0000
```

For Help, press F1. For Edit, double clic

S7_Pro2\SIMATIC 300 Station\...\S7 Program(1) RUN Abs < 5.2

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Read and Write 6-channel AO



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Read 4-channel AI

SIMATIC Manager



SIMATIC PLC
* PROFIBUS Device 0(Master)

PROFIBUS DP



GW-7552
- PROFIBUS Device 2 (Slave)
- Modbus Device (RTU Master)

MODBUS RTU

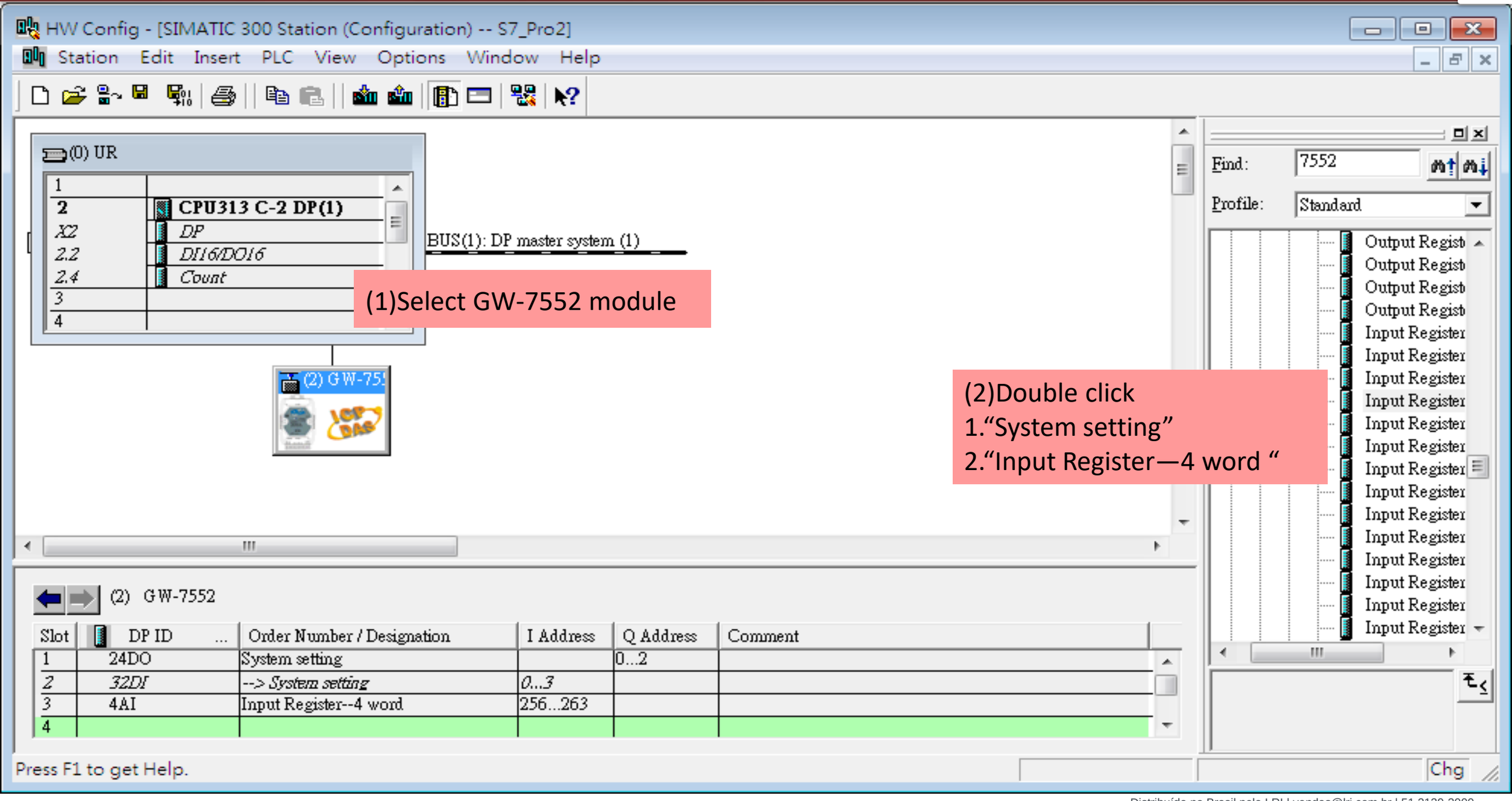
AI module
* Modbus Device **20** (RTU Slave)
* Data Address: **30001~30004**
* Data Length: 4



Comport Settings:
- Baudrate:115200
- Data bit: 8
- Stop bit : 1
- Parity: None

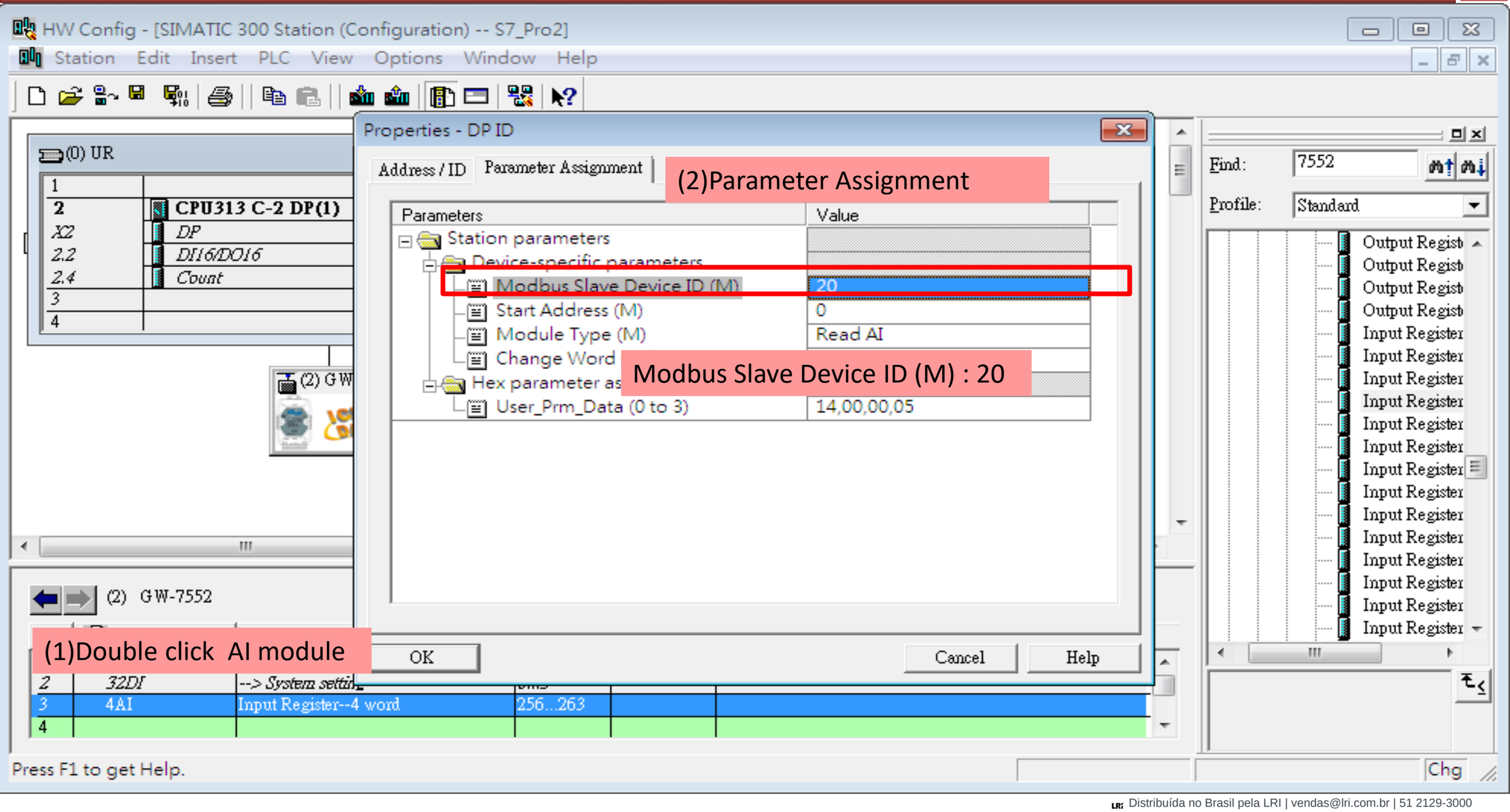
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Read 4-channel AI



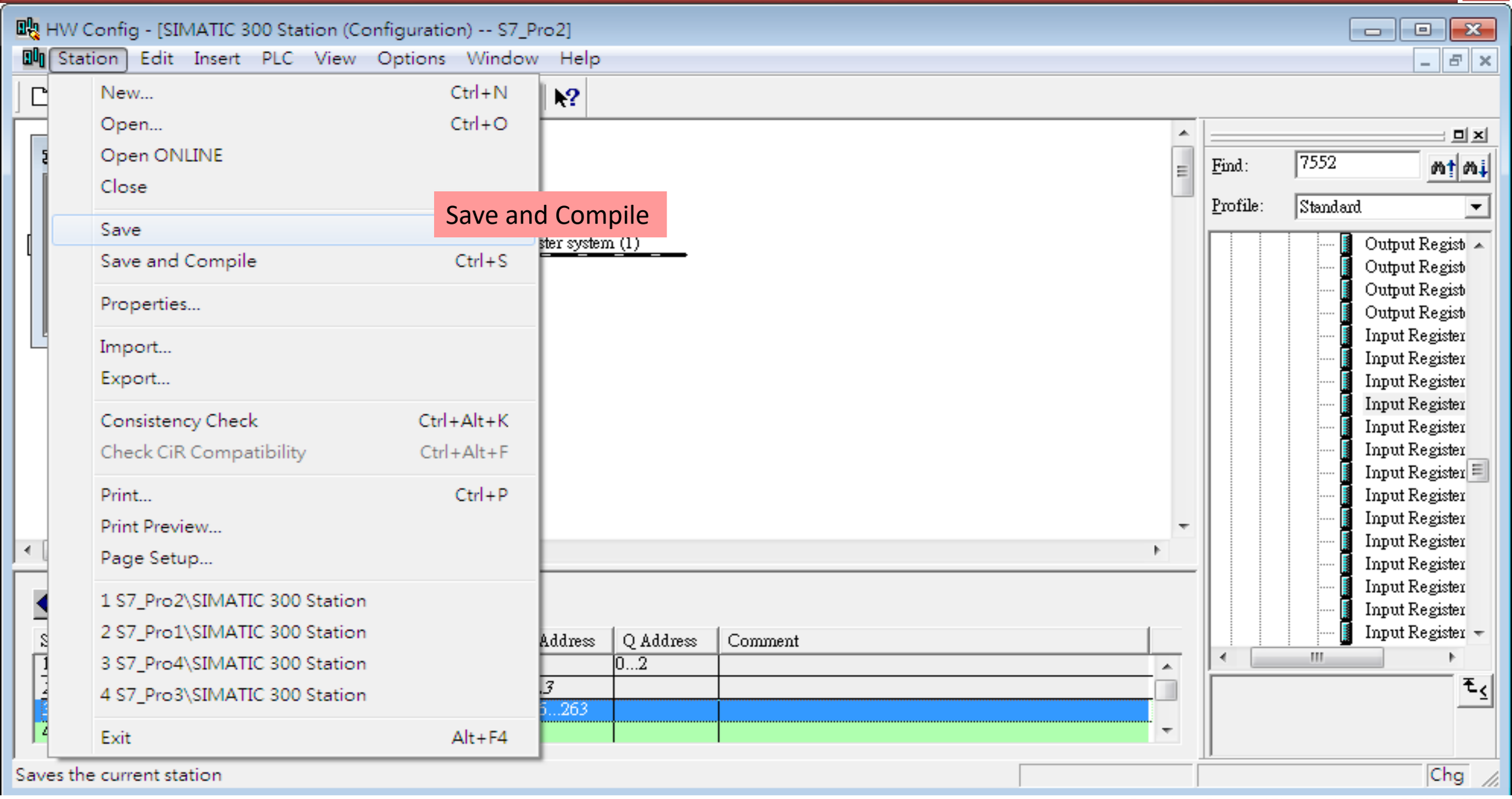
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Read 4-channel AI



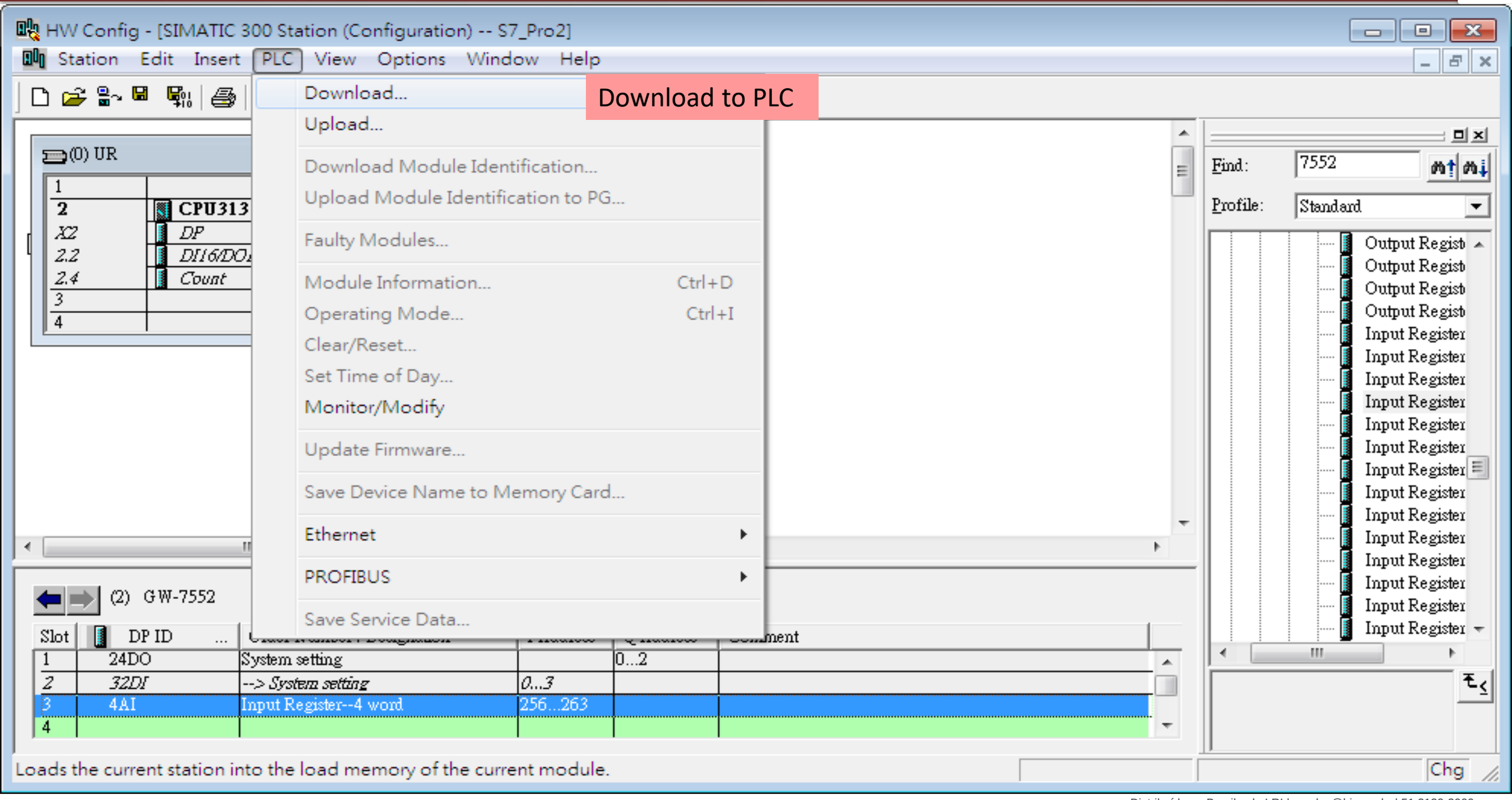
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Read 4-channel AI



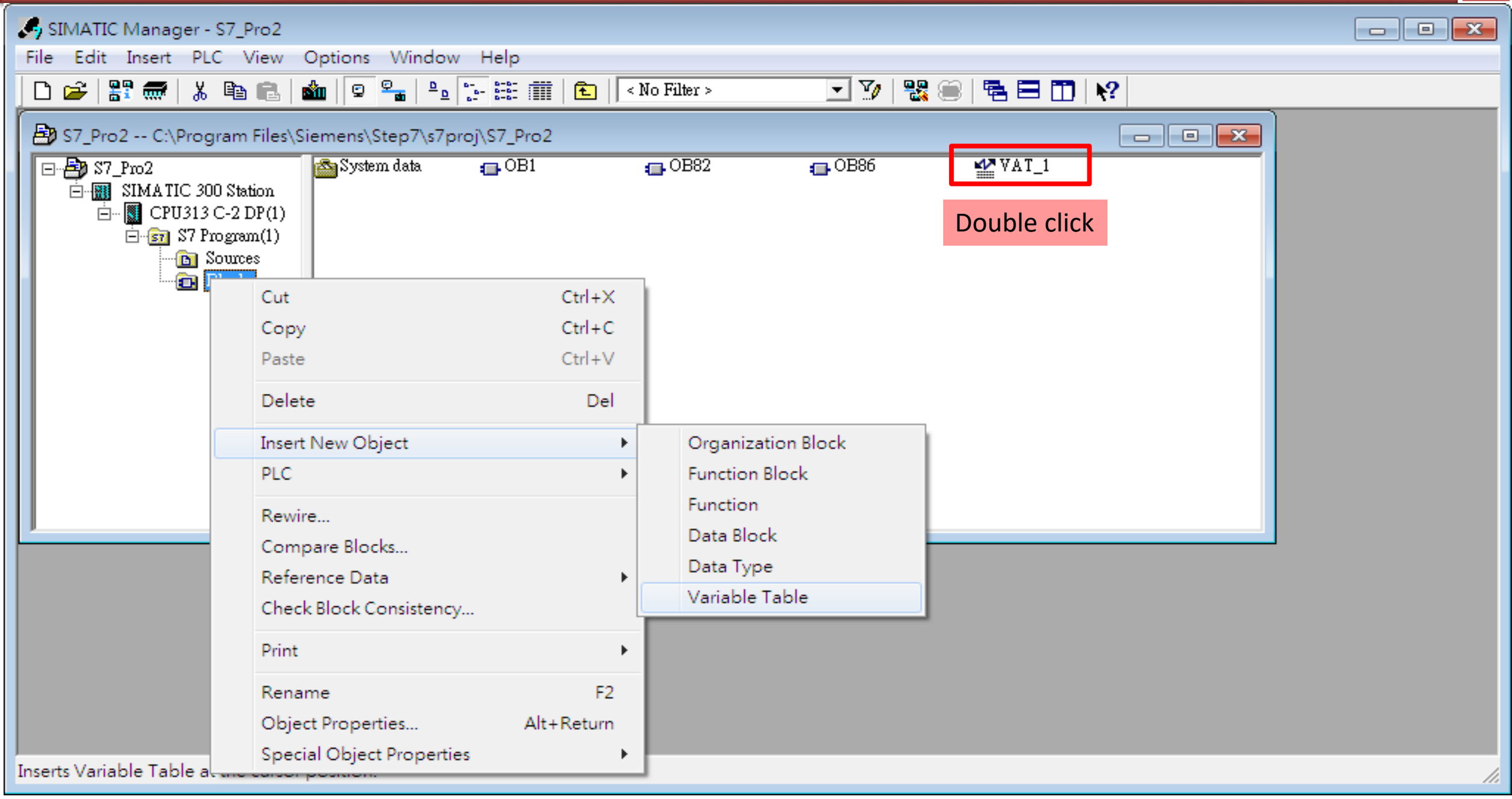
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Read 4-channel AI



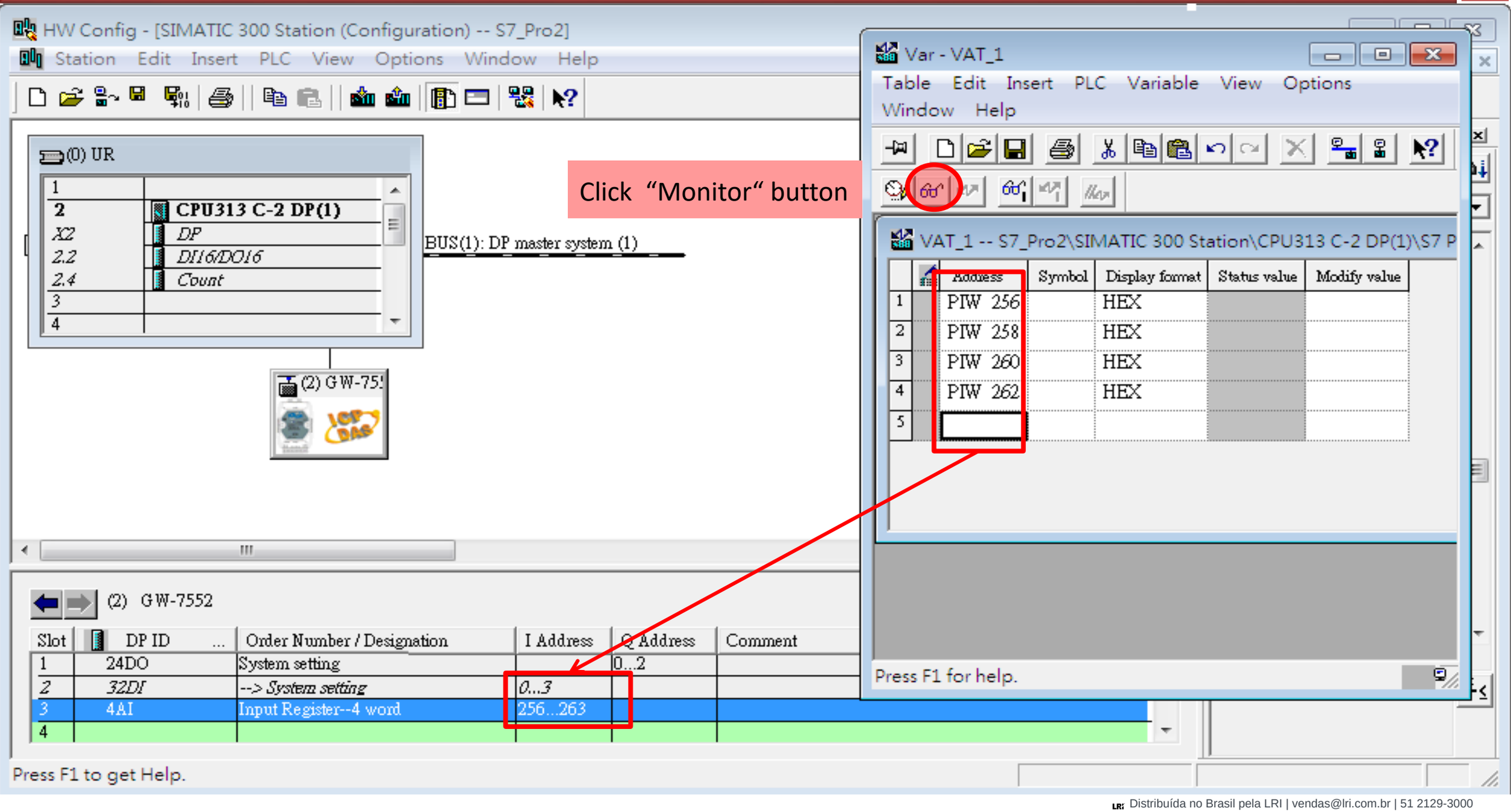
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Read 4-channel AI



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Read 4-channel AI

Var - [VAT_1 -- @S7_Pro2\SIMATIC 300 Station\CPU313 C-2 DP(1)\S7 Program(1) ONLINE]

Table Edit Insert PLC Variable View Options Window

	Address	Symbol	Display format	Status value	Modify value
1	PIW 256		HEX	W#16#1234	
2	PIW 258		HEX	W#16#0000	
3	PIW 260		HEX	W#16#0000	
4	PIW 262		HEX	W#16#0000	
5					

Read AI(4word)

Modbus Slave - [M...

File Connection Setup Display View Window Help

```
ID = 20

30001 = 0x1234
30002 = 0x0000
30003 = 0x0000
30004 = 0x0000
```

For Help, press F1. For Edit, double clic

S7_Pro2\SIMATIC 300 Station\...\S7 Program(1) RUN Abs < 5.2

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Read 4-channel AI

Var - [VAT_1 -- @S7_Pro2\SIMATIC 300 Station\CPU313 C-2 DP(1)\S7 Program(1) ONLINE]

Table Edit Insert PLC Variable View Options Window Help

	Address	Symbol	Display format	Status value	Modify value
1	PIW 256		HEX	W#16#1234	
2	PIW 258		HEX	W#16#7788	
3	PIW 260		HEX	W#16#AABB	
4	PIW 262		HEX	W#16#CCDD	
5					

Read AI(4word)

Modbus Slave - [M...

File Connection Setup Display View Window Help

```
ID = 20

30001 = 0x1234
30002 = 0x7788
30003 = 0xAABB
30004 = 0xCCDD
```

For Help, press F1. For Edit, double clic

S7_Pro2\SIMATIC 300 Station\...\S7 Program(1) RUN Abs < 5.2

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