



台
達
電
子

How to communicate with ACS550 of ABB brand via MODBUS

Configuration:

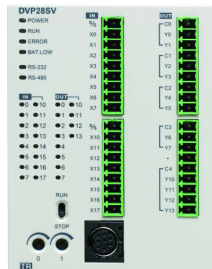
Scenario_1: HMI(DOP) \leftrightarrow ACS550



(Modbus)



Scenario_2: PLC (DVP) \leftrightarrow ACS550

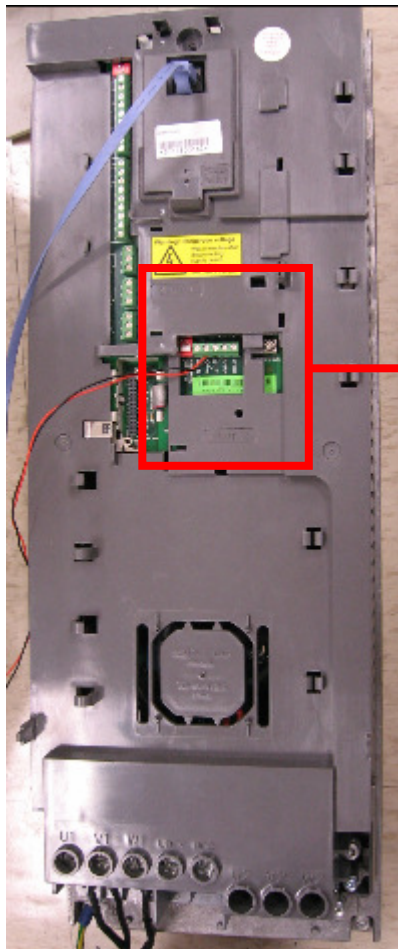


(Modbus)

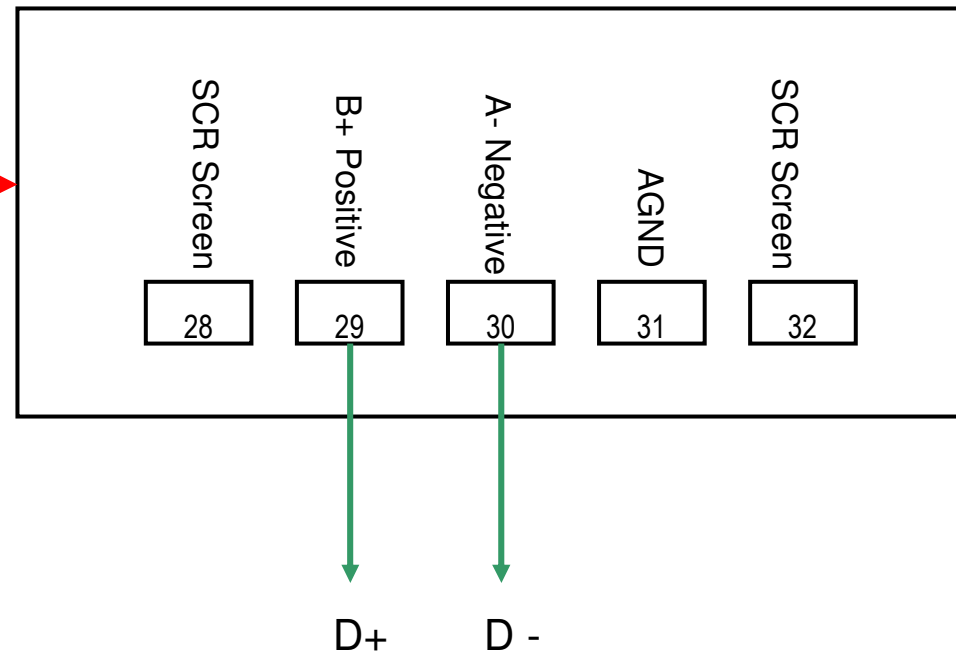


The communication setup for ACS550 motor drive via Modbus:

➤ Hardware setup:



(RS- 485 drive terminal block X1)



➤ Parameter setup: Please to check the manual of ACS550 for more detailed.

Code	Description
9802	To activate the serial communication, set parameter 9802 COMM PROT SEL = 1 (STD MODBUS)
5302	EFB STATION ID: Defines the node address of the RS485 link.
5303	EFB BAUD RATE Defines the communication speed of the RS485 link in kbits per second (kbits/s)
5304	EFB PARITY Defines the data length, parity and stop bits to be used with the RS485 communication
5305	EFB CTRL PROFILE Selects the communication profile used by the EFB protocol.

PS : (1) The Modbus specification defines two distinct transmission modes: ASCII and RTU. The ACS550 supports RTU only.

(2) The following Modbus function codes are supported by the ACS550

➔ 0x01,0x02,0x03,0x04,0x05,0x06,0x08,0x0F,0x10,0x17

Reading/Writing parameters:

Modbus address	Category	Description
40001	R/W	The CONTROL WORD is the principal means for controlling the drive from a fieldbus system.
42202	R/W	Sets the acceleration time for zero to maximum frequency for ramp pair 1.
42203	R/W	Sets the deceleration time for maximum frequency to zero for ramp pair 1.
40107	R	The DC bus voltage in V DC, as measured by the ACS550.
40110	R	The temperature of the drive power transistors in degrees Celsius.

Scenario_1: HMI(DOP) \leftrightarrow ACS550

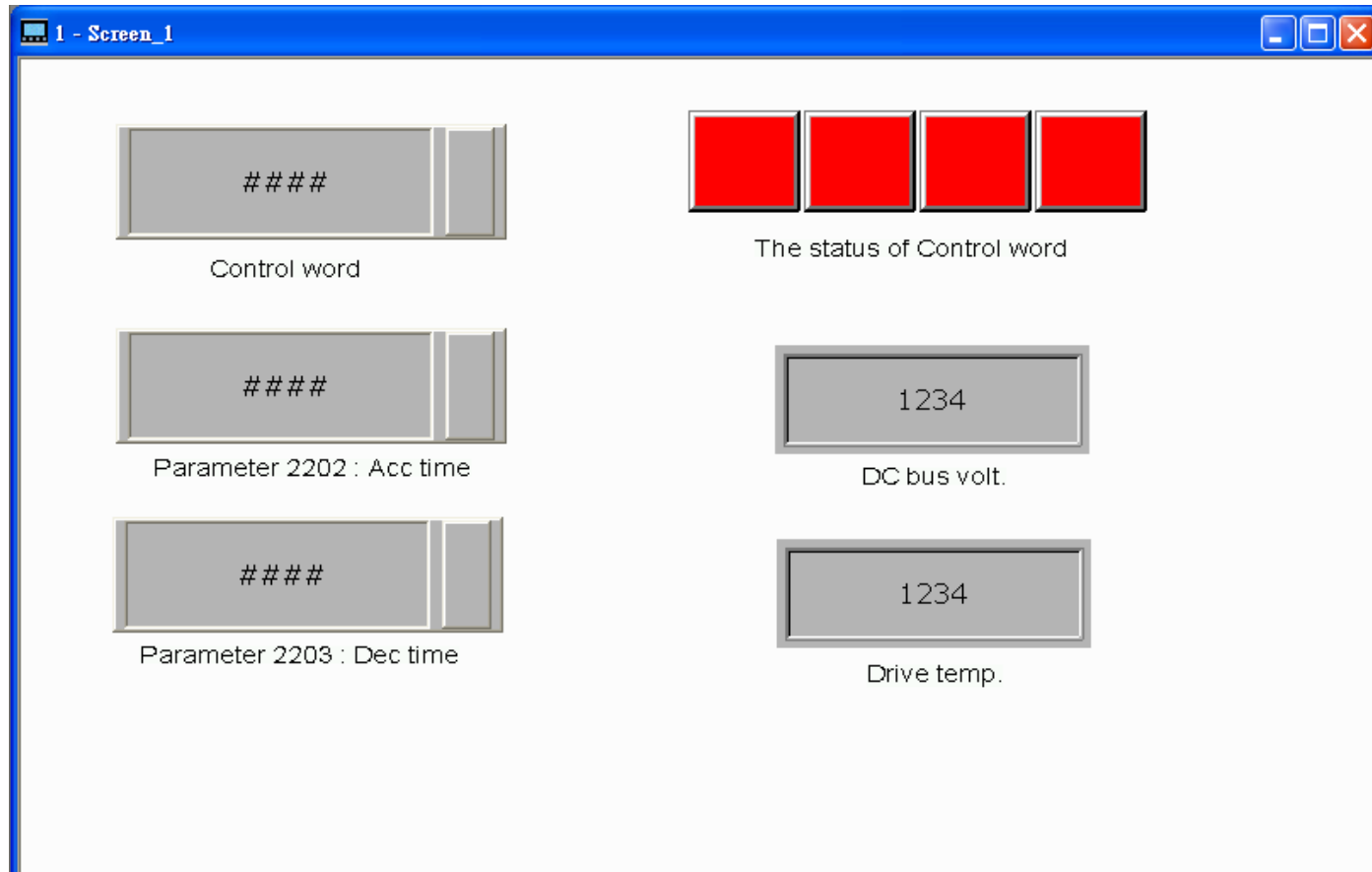
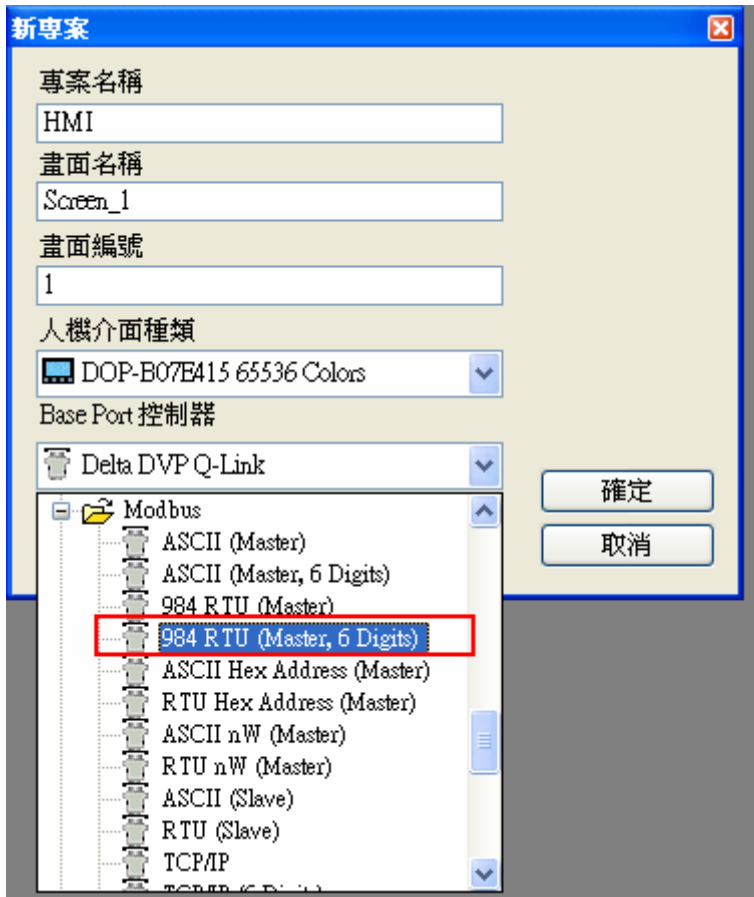


(Modbus)

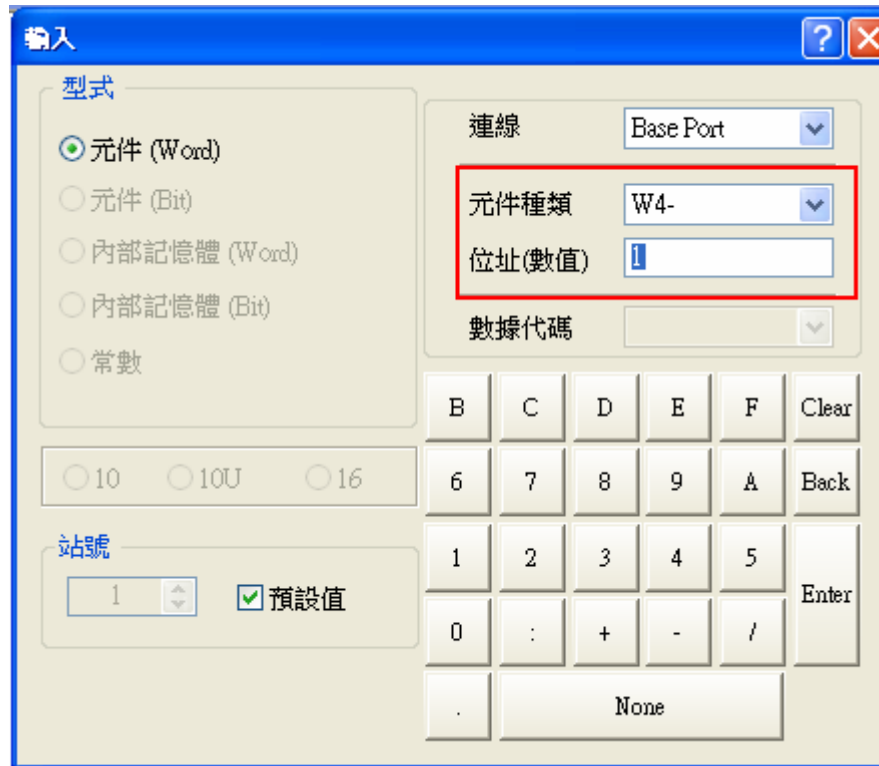
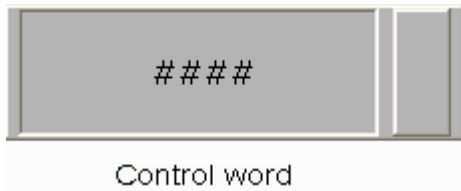




HMI parameter setup(1) :



➤ HMI parameter setup(2) :



輸入

型式

- 元件 (Word)
- 元件 (Bit)
- 內部記憶體 (Word)
- 內部記憶體 (Bit)
- 常數

連線: Base Port

元件種類: W4-

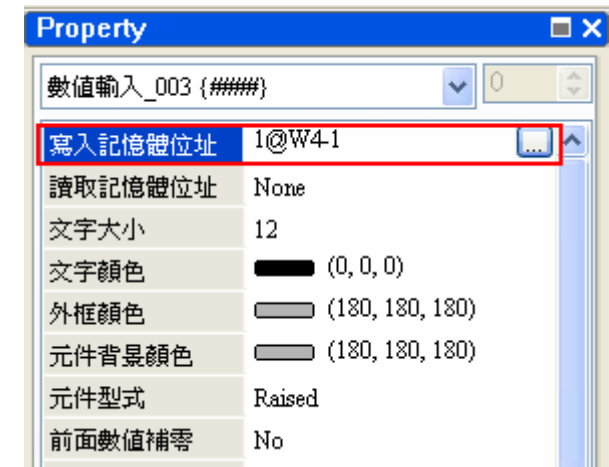
位址(數值): 1

數據代碼: []

10 10U 16

站號: 1 預設值

B	C	D	E	F	Clear
6	7	8	9	A	Back
1	2	3	4	5	Enter
0	:	+	-	/	
.	None				



Property

數值輸入_003 {#####} 0

寫入記憶體位址: 1@W4-1

讀取記憶體位址: None

文字大小: 12

文字顏色: (0, 0, 0)

外框顏色: (180, 180, 180)

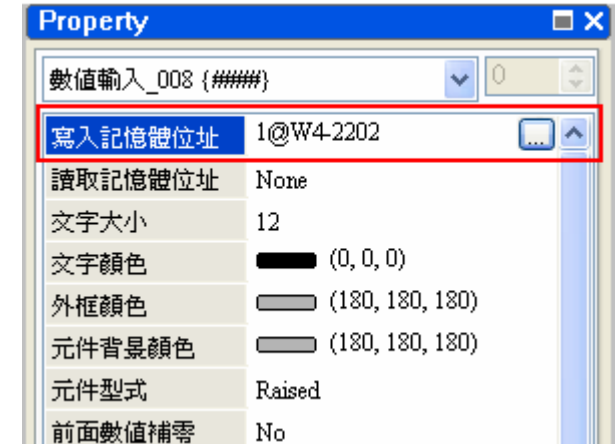
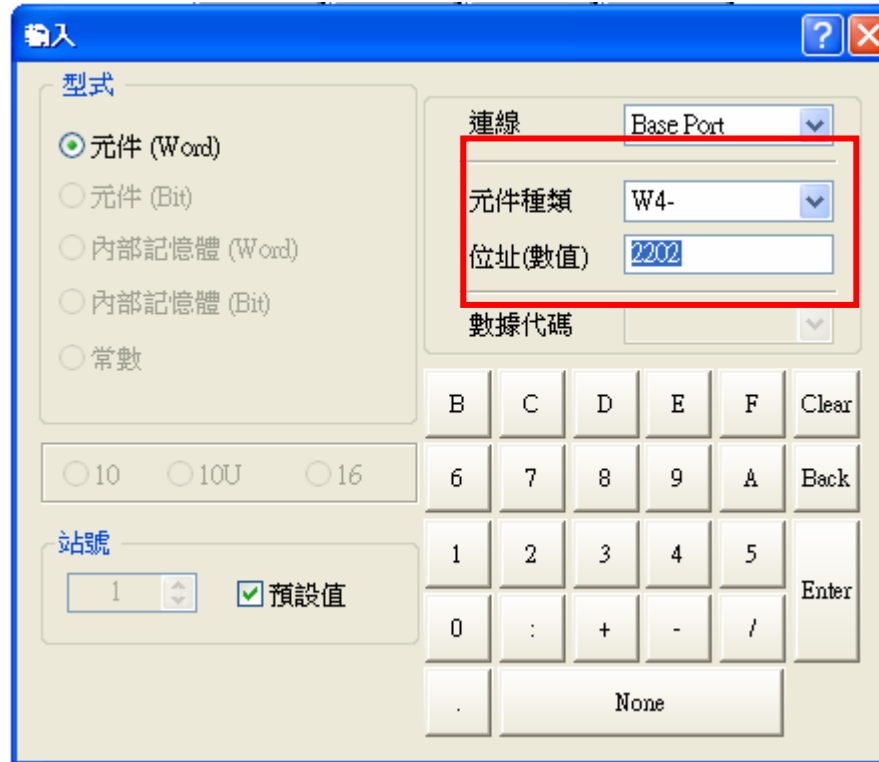
元件背景顏色: (180, 180, 180)

元件型式: Raised

前面數值補零: No

PS: The ACS550 supports the zero-based addressing of the Modbus specification. Holding register 40002 is addressed as 0001 in a Modbus message. Similarly, coil 33 is addressed as 0032 in a Modbus message.

➤ HMI parameter setup(3) :



PS: For Modbus address, any parameter can be accessed using the format: “4” followed by the parameter number.

➤ HMI parameter setup(4) :



輸入

型式

- 元件 (Word)
- 元件 (Bit)
- 內部記憶體 (Word)
- 內部記憶體 (Bit)
- 常數

連線: Base Port

元件種類: W4-

位址(數值): 2203

數據代碼: []

10 10U 16

站號: 1 預設值

B	C	D	E	F	Clear
6	7	8	9	A	Back
1	2	3	4	5	Enter
0	:	+	-	/	
.	None				

Property

數值輸入_009 {#####} 0

寫入記憶體位址: 1@W4-2203

讀取記憶體位址: None

文字大小: 12

文字顏色: (0, 0, 0)

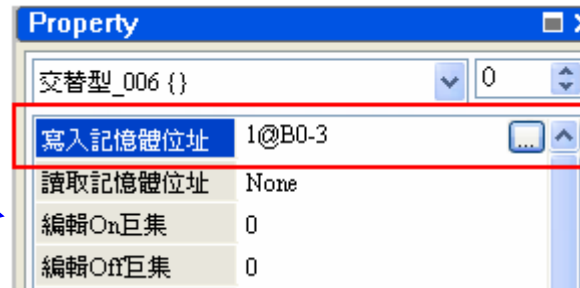
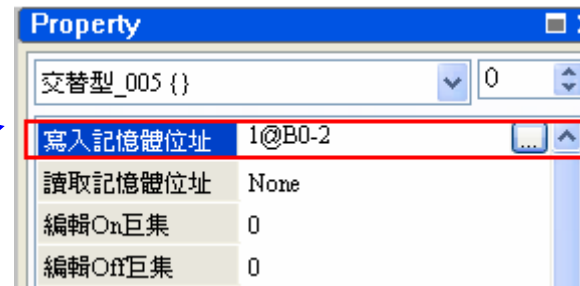
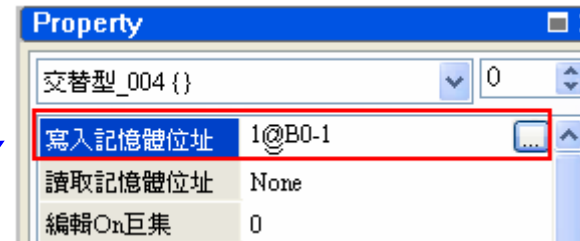
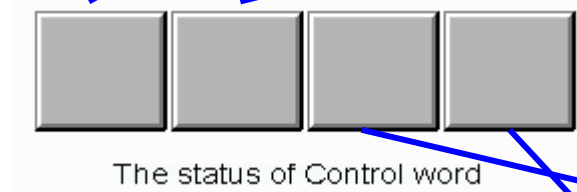
外框顏色: (180, 180, 180)

元件背景顏色: (180, 180, 180)

元件型式: Raised

前面數值補零: No

➤ HMI parameter setup(5) :



➤ HMI parameter setup(6) :



Parameter 0107 : DC bus volt

輸入

型式

- 元件 (Word)
- 元件 (Bit)
- 內部記憶體 (Word)
- 內部記憶體 (Bit)
- 常數

連線 Base Port

元件種類 W4-

位址(數值) 107

數據代碼

10 10U 16

站號 1 預設值

B	C	D	E	F	Clear
6	7	8	9	A	Back
1	2	3	4	5	Enter
0	:	+	-	/	
.	None				

Property

數值顯示_001 {1234} 0

讀取記憶體位址 1@W4:107

文字大小 12

文字顏色 (0, 0, 0)

外框顏色 (180, 180, 180)

元件背景顏色 (180, 180, 180)

元件型式 Sunken

前面數值補零 No

➤ HMI parameter setup(7) :



Parameter 0110 : Drive temp

輸入

型式

元件 (Word)
 元件 (Bit)
 內部記憶體 (Word)
 內部記憶體 (Bit)
 常數

連線 Base Port

元件種類 W4-
位址(數值) 110
數據代碼

10 10U 16

站號 1 預設值

B	C	D	E	F	Clear
6	7	8	9	A	Back
1	2	3	4	5	Enter
0	:	+	-	/	
.	None				

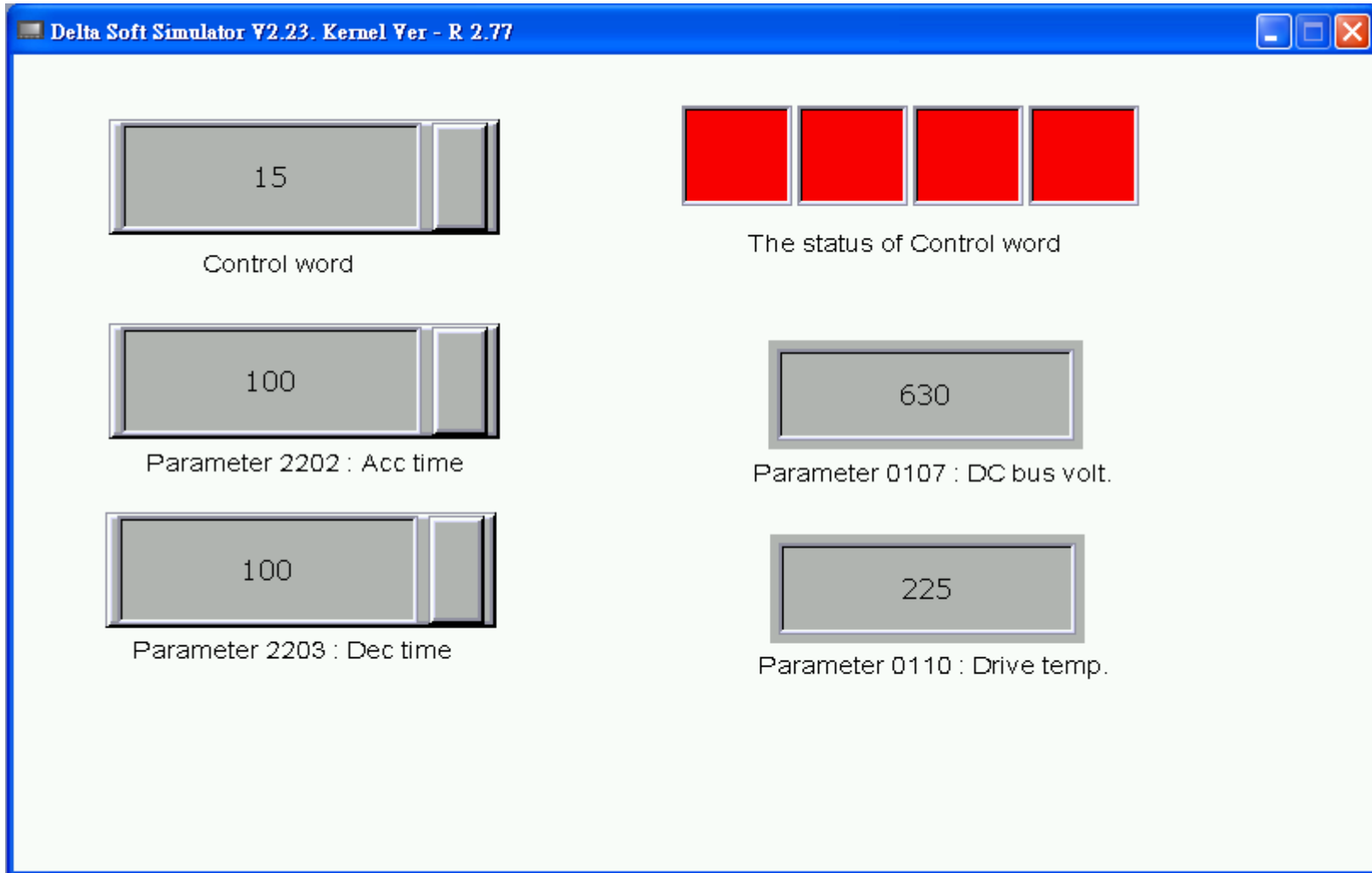
Property

數值顯示_002 {1234} 0

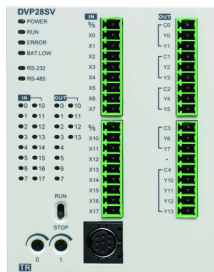
讀取記憶體位址 1@W4-110

文字大小 12
文字顏色 (0, 0, 0)
外框顏色 (180, 180, 180)
元件背景顏色 (180, 180, 180)
元件型式 Sunken
前面數值補零 No

➤ The result from HMI connection:



Scenario_2: PLC(DVP) \leftrightarrow ACS550



(Modbus)



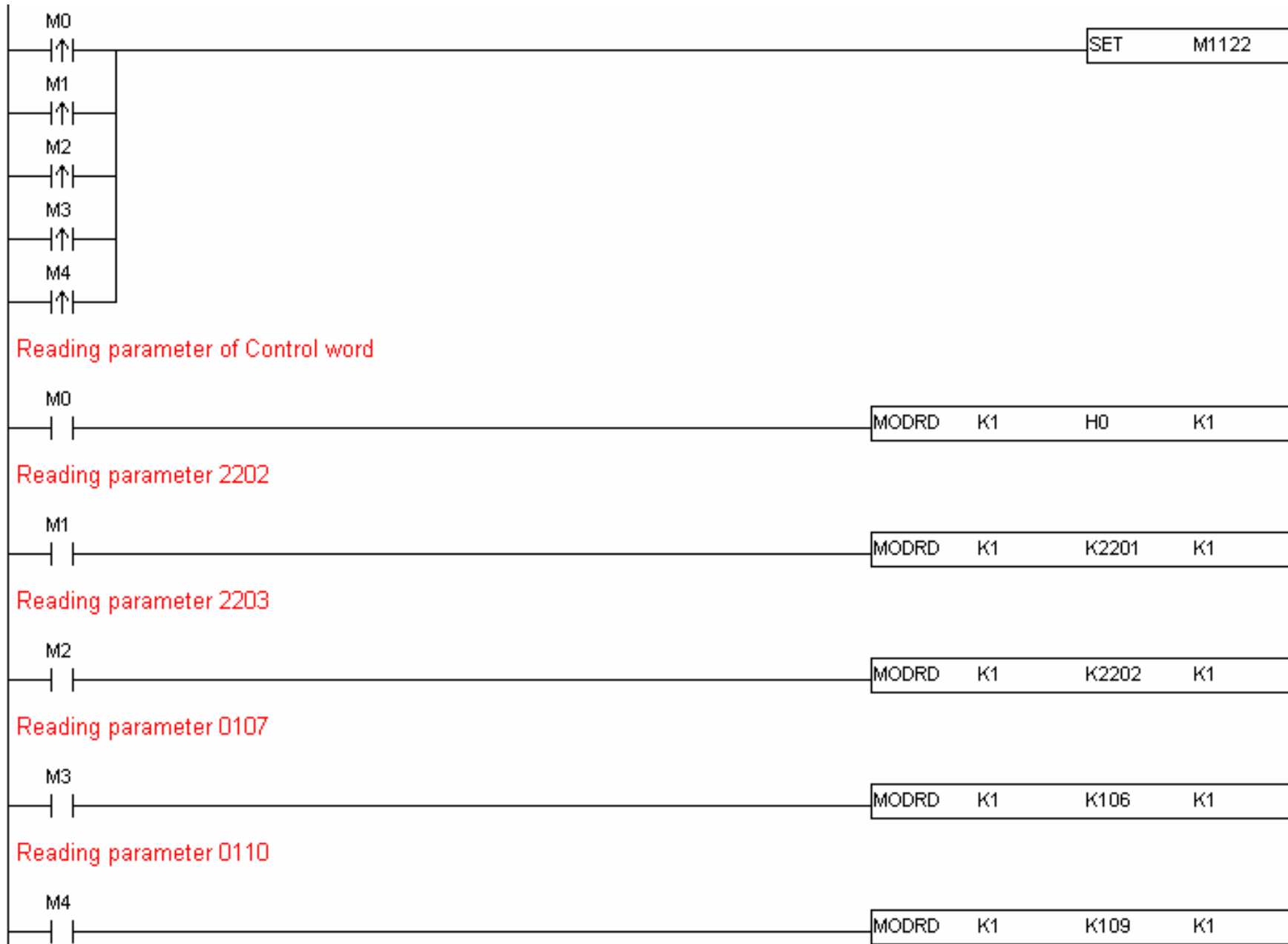
◆ Start writing the PLC ladder program(1):

PLC: Communication protocol==>9600,8,N,2,RTU

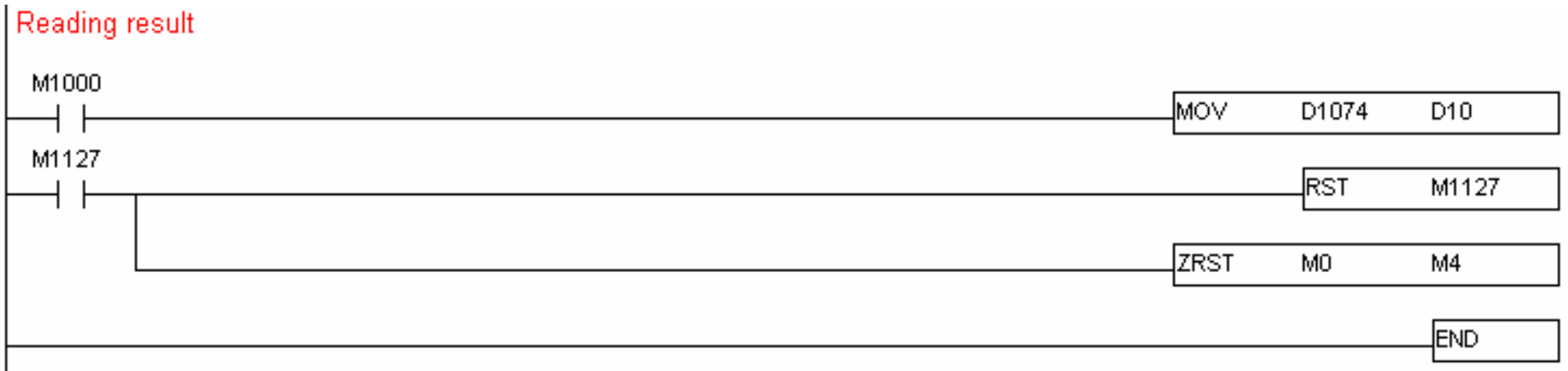
station address=2



◆ Start writing the PLC ladder program(2):



◆ Start writing the PLC ladder program(3):



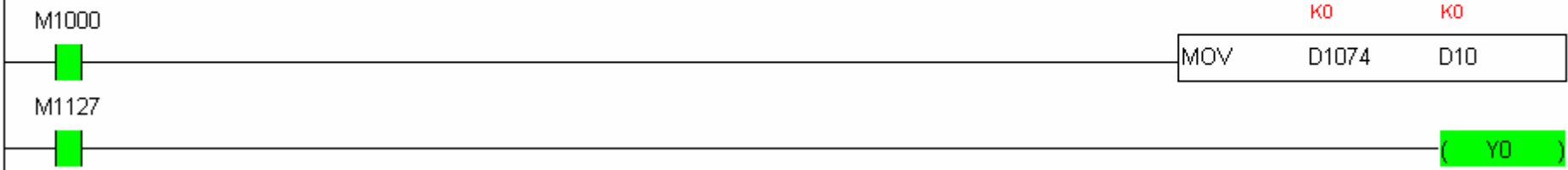
◆ The result from PLC connection:

(1)

Reading parameter of Control word



Reading result

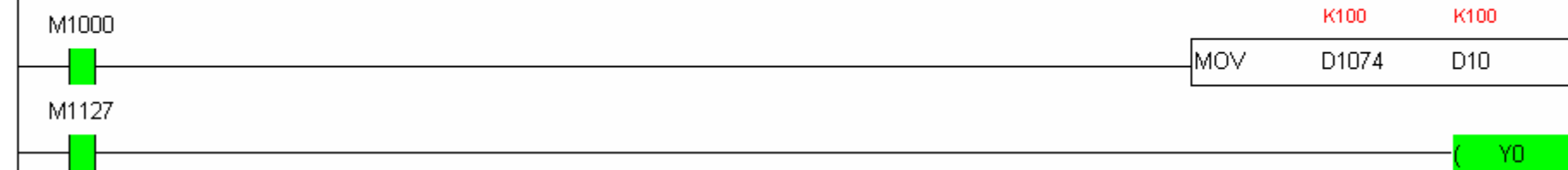


(2)

Reading parameter 2202



Reading result



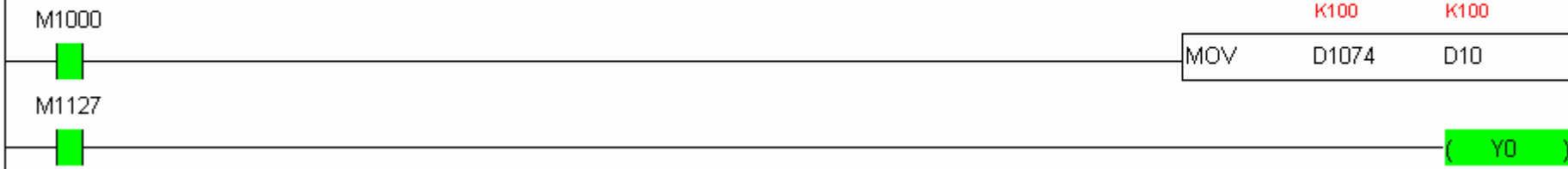
◆ The result from PLC connection:

(3)

Reading parameter 2203



Reading result



(4)

Reading parameter 0107



Reading result



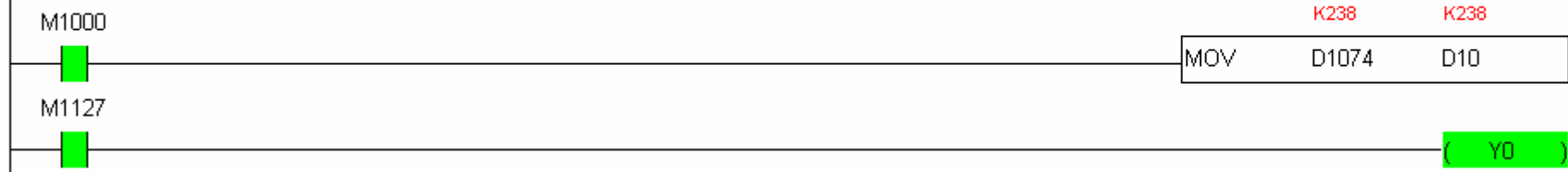
◆ The result from PLC connection:

(5)

Reading parameter 0110



Reading result



~ END ~

