

LinMot Control Type P 脈波控制說明文件(以 B1100 series 為例)

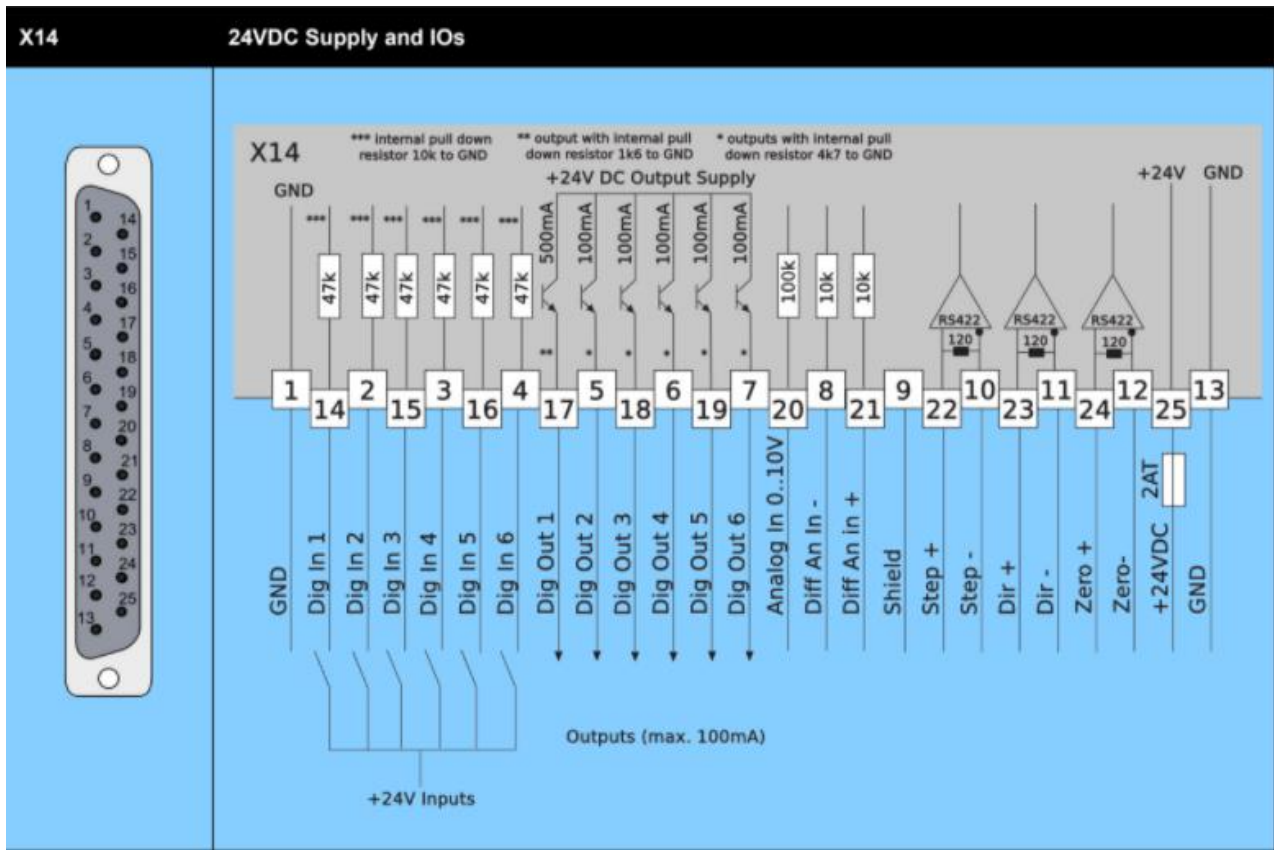
1 脈波接線方式

1.1 Differential ended

Pin.22 : STEP+ ; Pin.10 : STEP-

Pin.23 : DIR+ ; Pin.11 : DIR-

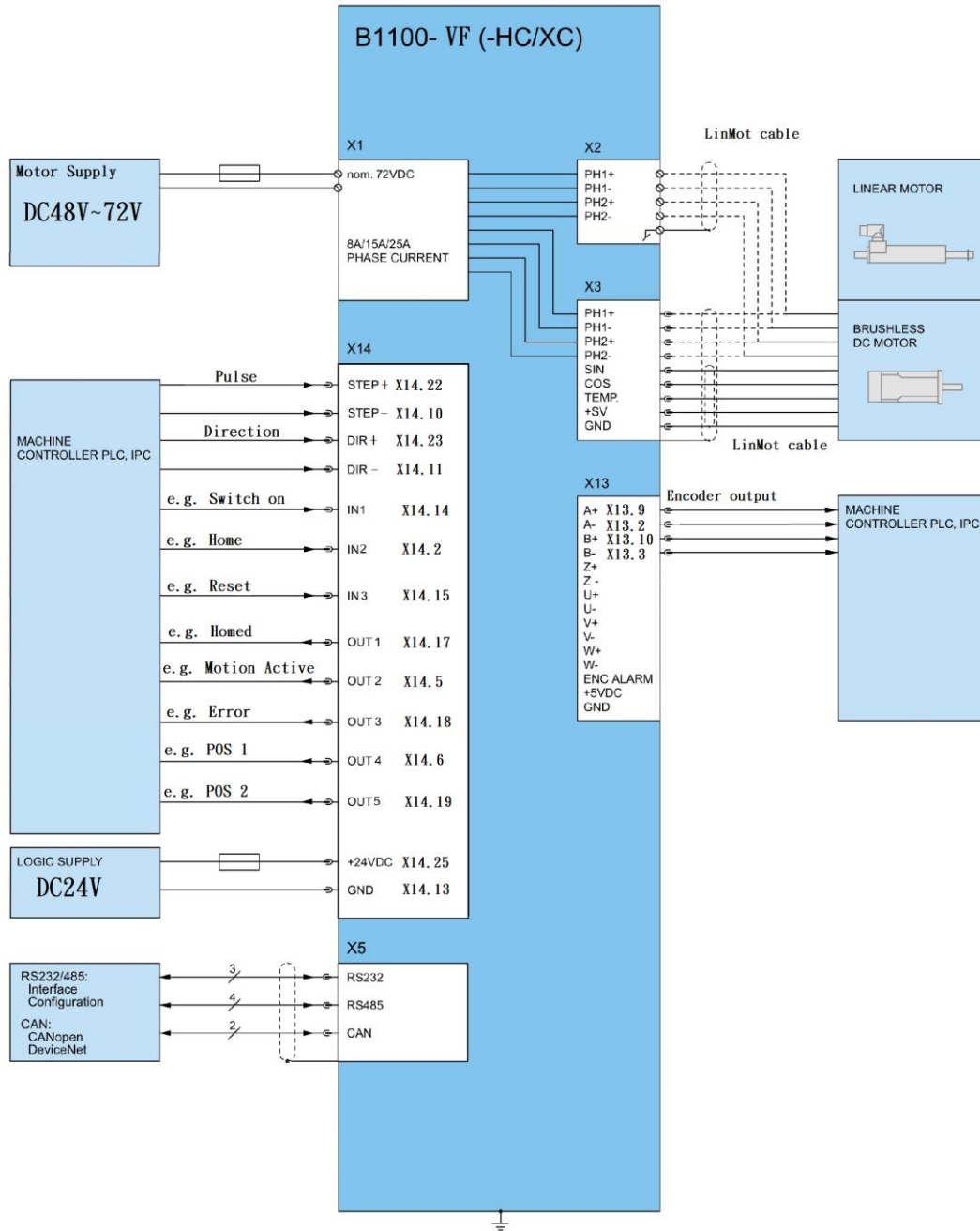
Differential Step Dir Zero:
Indexer Inputs: RS422, Max. Input Frequency: 2MHz, 4 M counts/s with quadrature decoding, 240ns edge separation



1.2 脈波及 I/O 接線配置圖

B1100 伺服驅動器接頭 X14 : 25P		I/O 定義	另一端位置及接點(上位控制器)	
接點編號	接點名稱		位置	接點名稱
22	Step+		PLC	Step+
10	Step-		PLC	Step-
23	Dir+		PLC	Dir+
11	Dir-		PLC	Dir-
25	24V+		電源供應器	V+
13	0V		電源供應器	0V
14	IN1	Switch on	PLC	OUT1
2	IN2	Home	PLC	OUT2
15	IN3	RESET	PLC	OUT3
17	OUT1	Homed	PLC	IN1
5	OUT2	Motion Active	PLC	IN2
18	OUT3	Error	PLC	IN3
6	OUT4	POS 1	PLC	IN4
19	OUT5	POS2	PLC	IN5


B1100-VF Wiring Example



2 內部 Encoder 輸出接線方式(視需求設定)

Pin.9 : A+ ; Pin.2 : A-

Pin.10 : B+ ; Pin.3 : B-

X13 External Position Sensor Differential Hall Switches		
	1	+5V DC
	2	A-
	3	B-
	4	Z-
	5	GND
	6	U-
	7	V-
	8	W- Shield
9	A+	
10	B+	
11	Z+	
12	Encoder Alarm	
13	U+	
14	V+	
15	W+	
case		

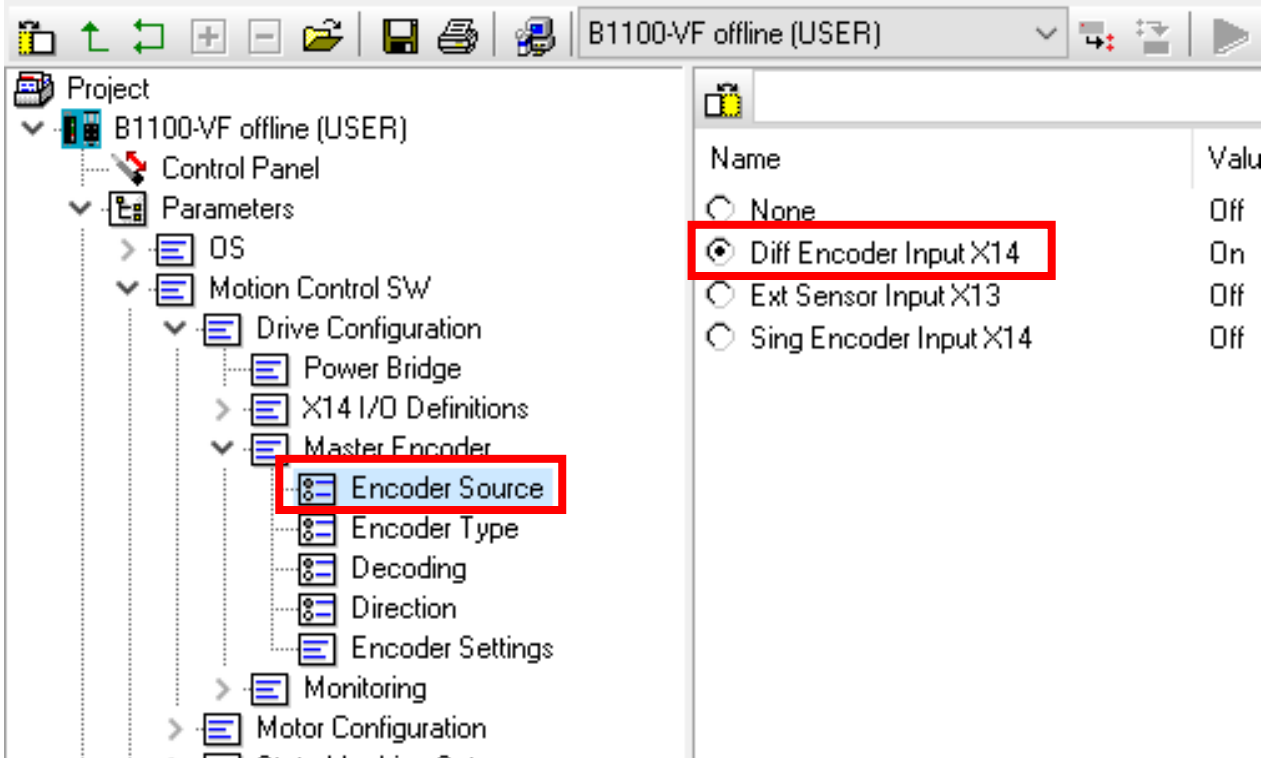
DSUB-15 (f)	<p>Position Encoder Inputs (RS422): Max Input Frequency: 2MHz, 4 M counts/s with quadrature decoding, 240ns edge separation</p> <p>Encoder Simulation Outputs (RS422): Max Output Frequency: 2.5MHz, 5 M counts/s with quadrature decoding, 200ns edge separation</p> <p>Differential Hall Switch Inputs (RS422): Input Frequency: <1kHz</p> <p>Enc. Alarm In: 5V / 1mA</p> <p>Sensor Supply: 5VDC max 100mA</p> <p>Cable length < 30m.</p>
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3 LinMot Talk 軟體脈波控制設定

3.1 Configuration of inputs

LinMot-Talk 6.9

File Search Drive Services Options Window Tools Manuals Help



B1100-VF offline (USER)

Project

- B1100-VF offline (USER)
 - Control Panel
 - Parameters
 - OS
 - Motion Control SW
 - Drive Configuration
 - Power Bridge
 - X14 I/O Definitions
 - Master Encoder
 - Encoder Source**
 - Encoder Type
 - Decoding
 - Direction
 - Encoder Settings
 - Monitoring
 - Motor Configuration

Name	Value
<input type="radio"/> None	Off
<input checked="" type="radio"/> Diff Encoder Input X14	On
<input type="radio"/> Ext Sensor Input X13	Off
<input type="radio"/> Sing Encoder Input X14	Off

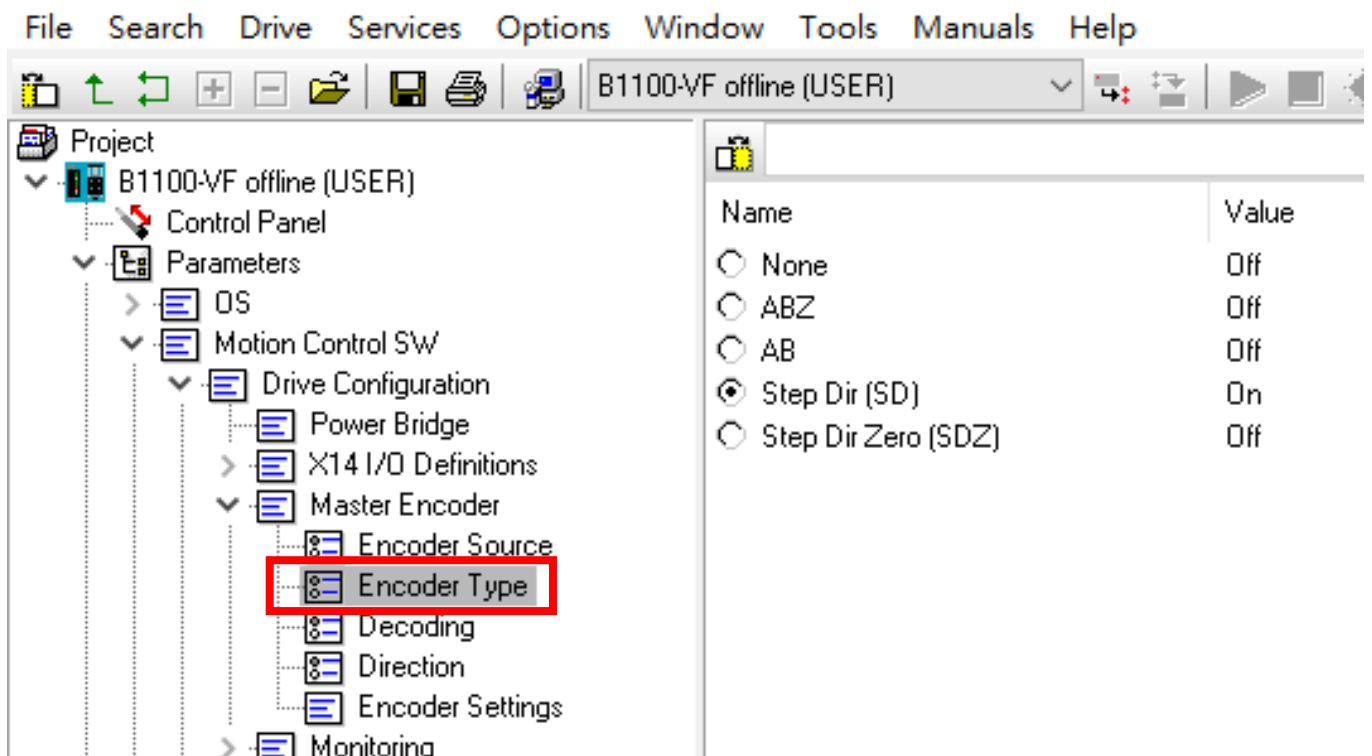
3.2 Select between Step Dir(SD) or Step Dir Zero (SDZ)

※Notice :

SD : The Encoder is of type Step Direction (no Z signal).

SDZ : The Encoder is of type Step Direction with Zero signal.

LinMot-Talk 6.9



File Search Drive Services Options Window Tools Manuals Help

B1100-VF offline (USER)

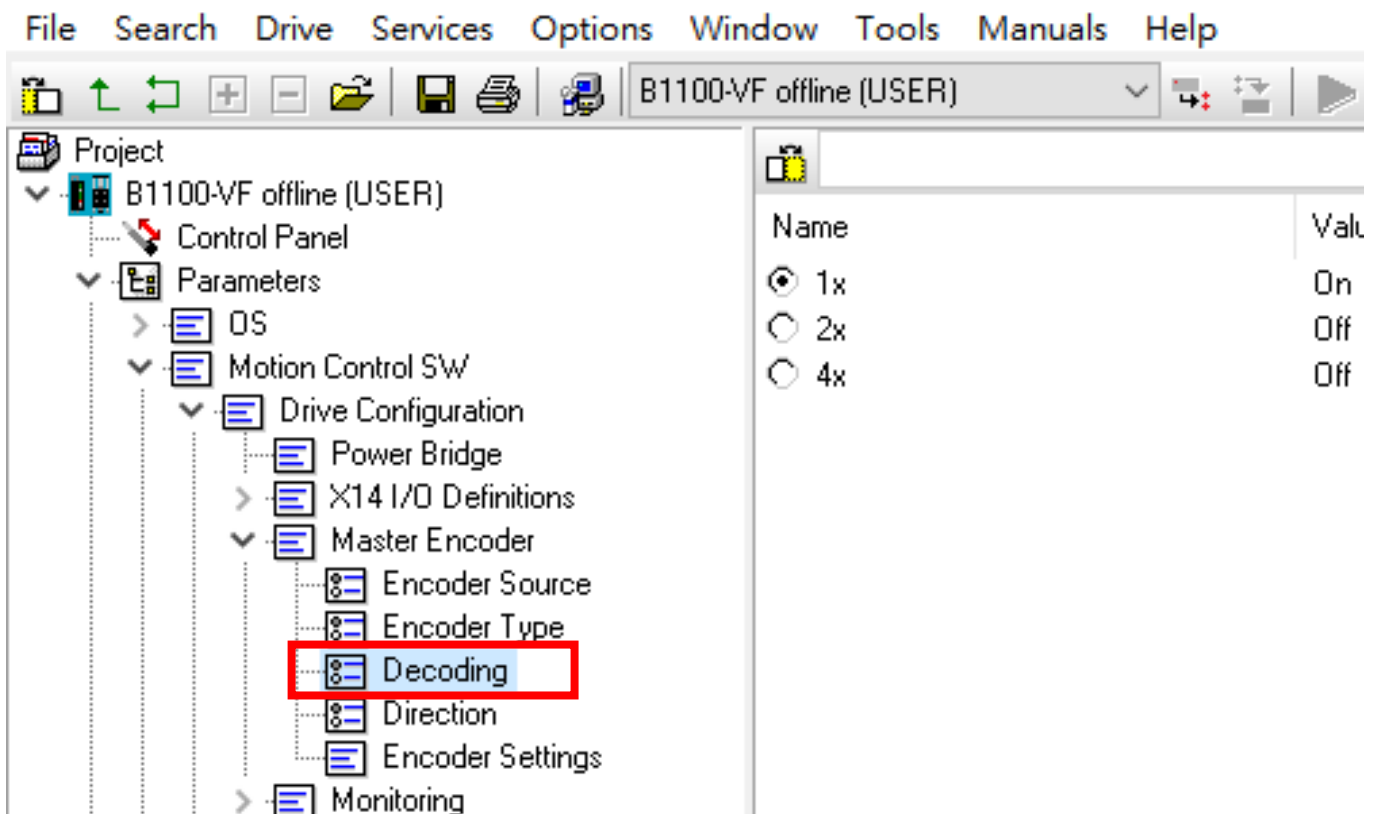
Project

- B1100-VF offline (USER)
 - Control Panel
 - Parameters
 - OS
 - Motion Control SW
 - Drive Configuration
 - Power Bridge
 - X14 I/O Definitions
 - Master Encoder
 - Encoder Source
 - Encoder Type**
 - Decoding
 - Direction
 - Encoder Settings
 - Monitoring

Name	Value
<input type="radio"/> None	Off
<input type="radio"/> ABZ	Off
<input type="radio"/> AB	Off
<input checked="" type="radio"/> Step Dir (SD)	On
<input type="radio"/> Step Dir Zero (SDZ)	Off

3.3 Selection of decoding

LinMot-Talk 6.9



File Search Drive Services Options Window Tools Manuals Help

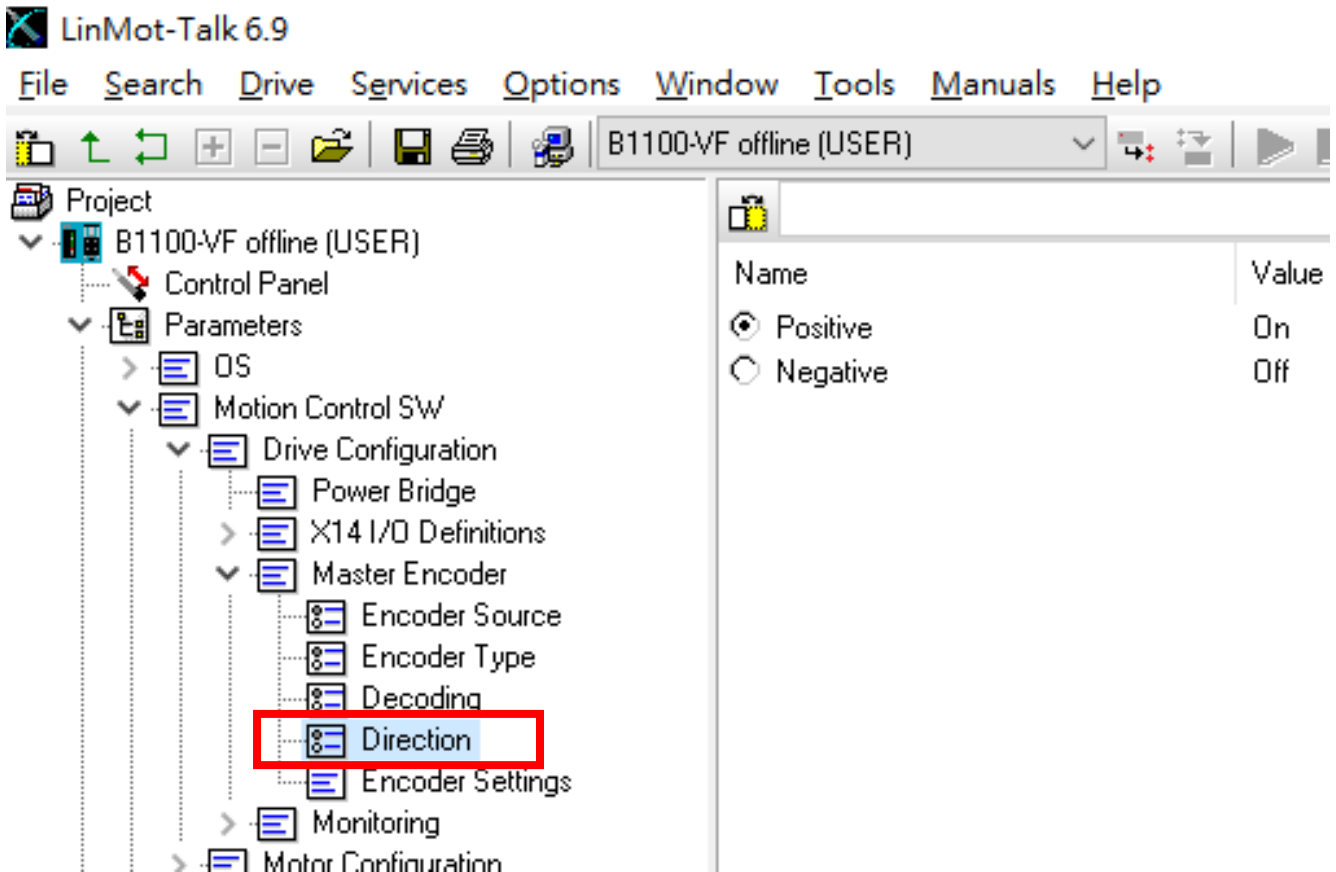
B1100-VF offline (USER)

Project

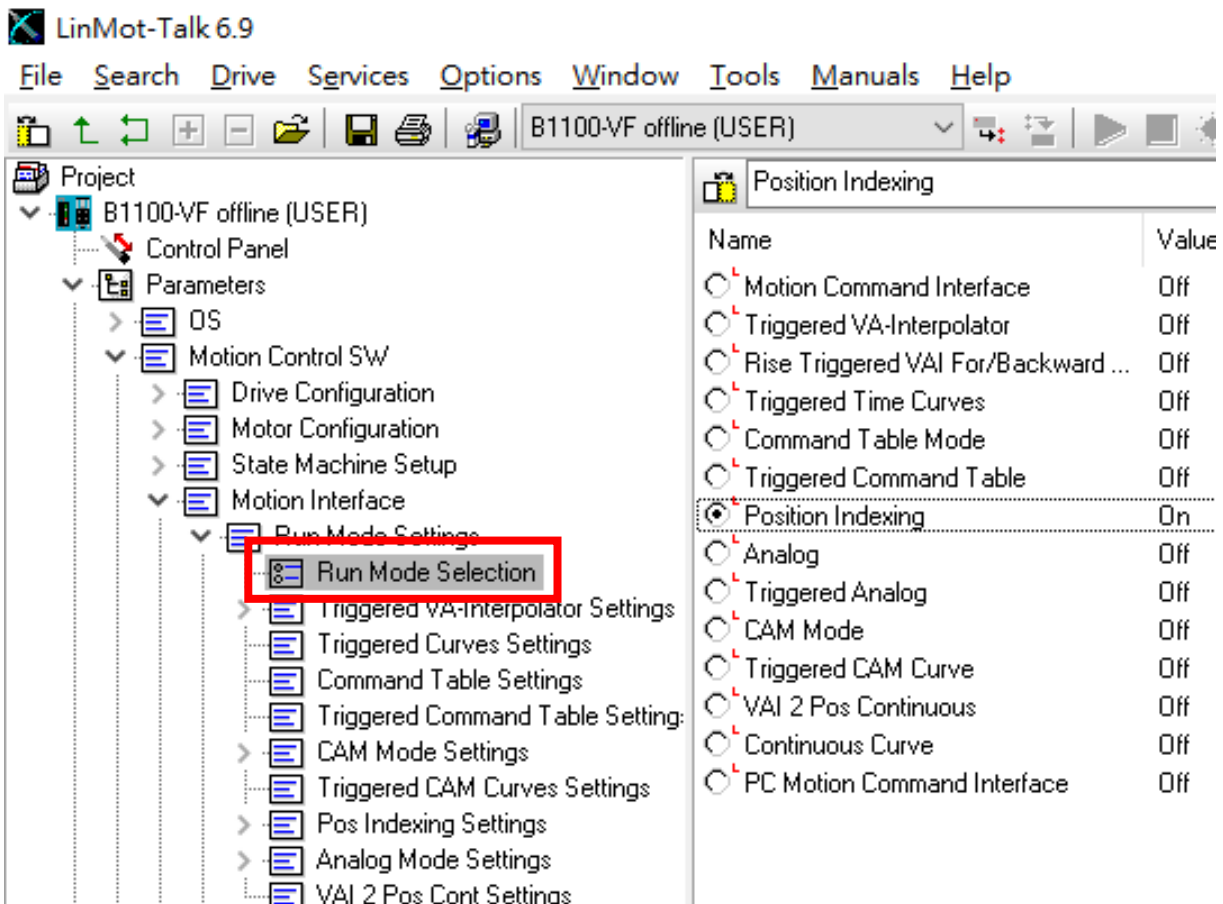
- B1100-VF offline (USER)
 - Control Panel
 - Parameters
 - OS
 - Motion Control SW
 - Drive Configuration
 - Power Bridge
 - X14 I/O Definitions
 - Master Encoder
 - Encoder Source
 - Encoder Type
 - Decoding**
 - Direction
 - Encoder Settings
 - Monitoring

Name	Value
<input checked="" type="radio"/> 1x	On
<input type="radio"/> 2x	Off
<input type="radio"/> 4x	Off

3.4 Selection of direction



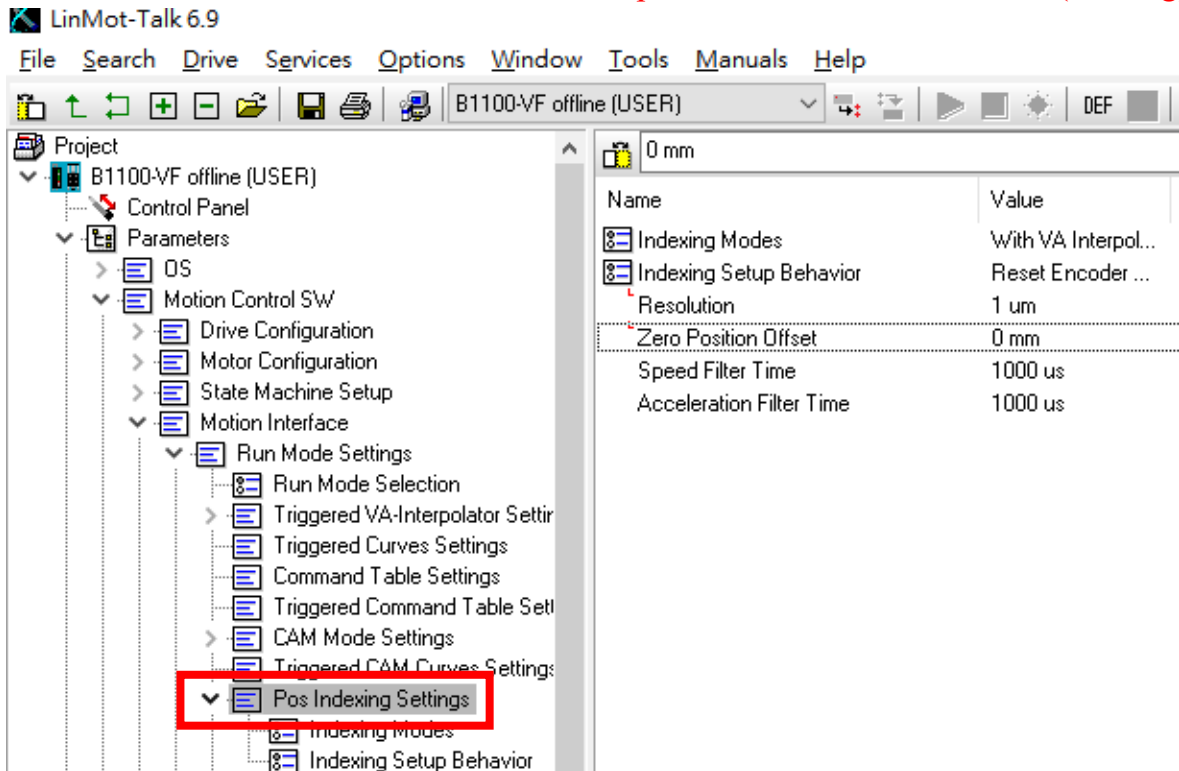
3.5 Configuration of the run mode



3.6 Pos Indexing Setting 設定：設定 Resolution (解析度) 及 Zero Position Offset(零點位移量)

*解析度如設 1um，倍率設定 1x，則輸入 1pulse 實際走的距離為 $1 * 1(\text{decoing}) = 1\text{um}$

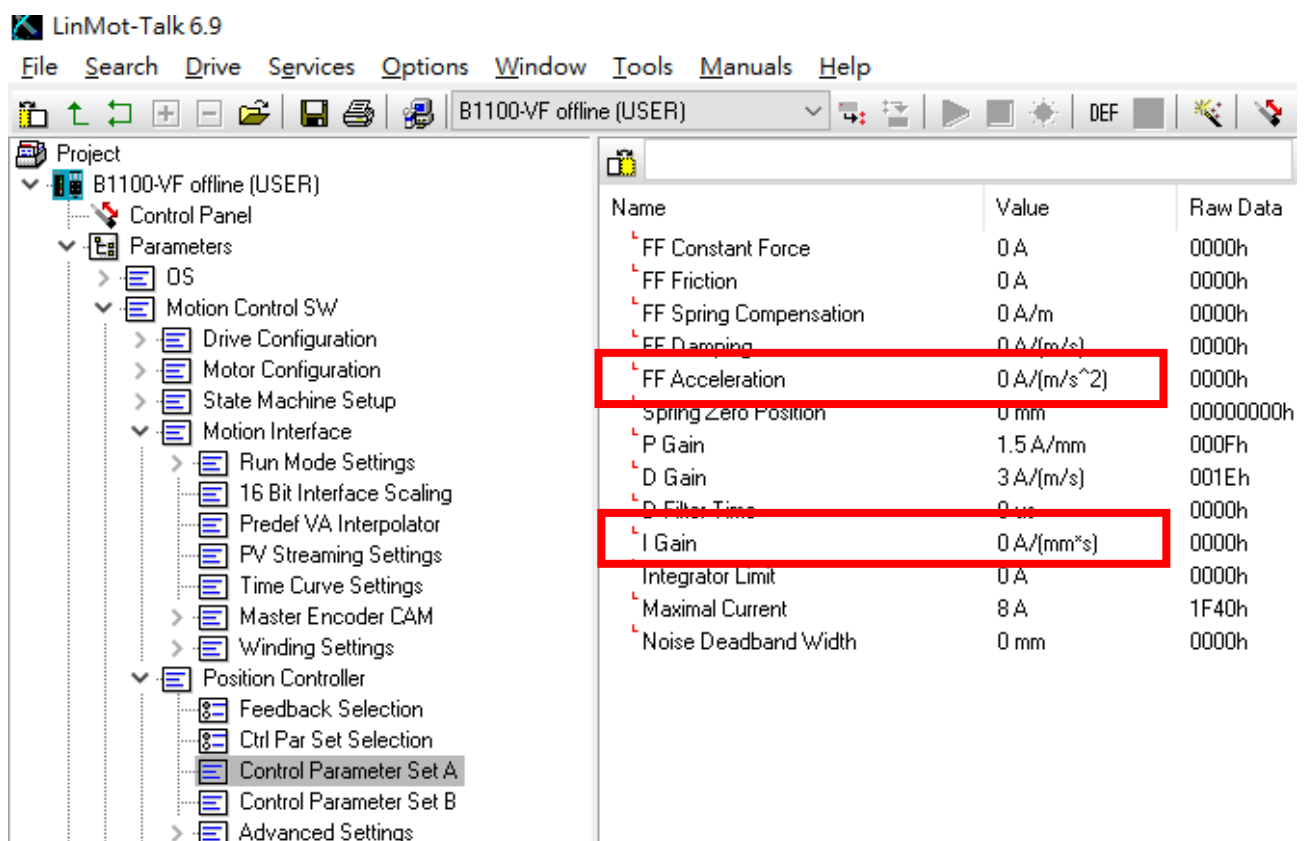
*解析度如設 250um，倍率設定 4x，則輸入 1pulse 實際走的距離為 $250 * 4(\text{decoing}) = 1\text{mm}$



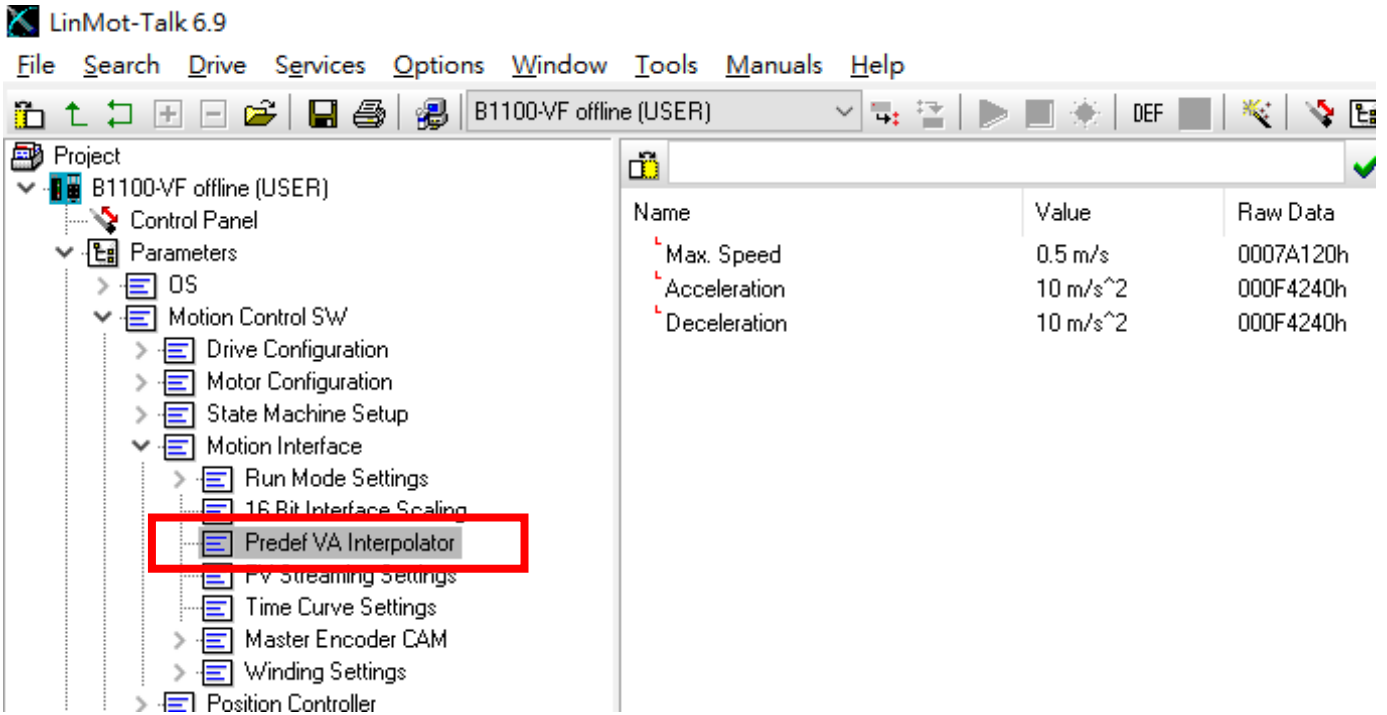
3.7 PID 的參數調整：

*當出現共振的聲音→解決方法：FF Acceleration 調至 0

*當出現位置穩態誤差→解決方法：調大 I Gain

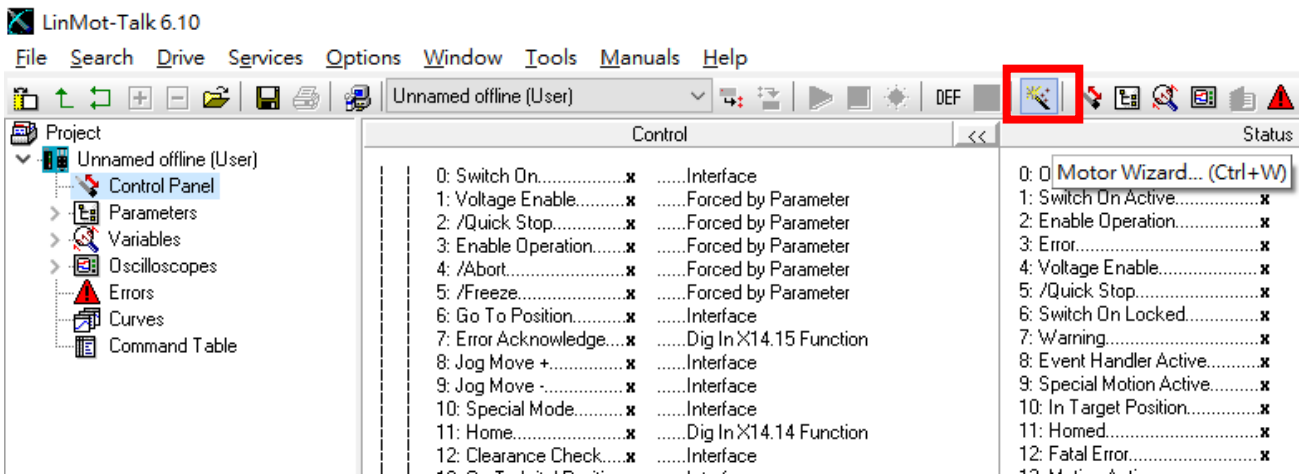


3.8 設定速度限制：設定脈波控制下最大速度及加減速的限制。

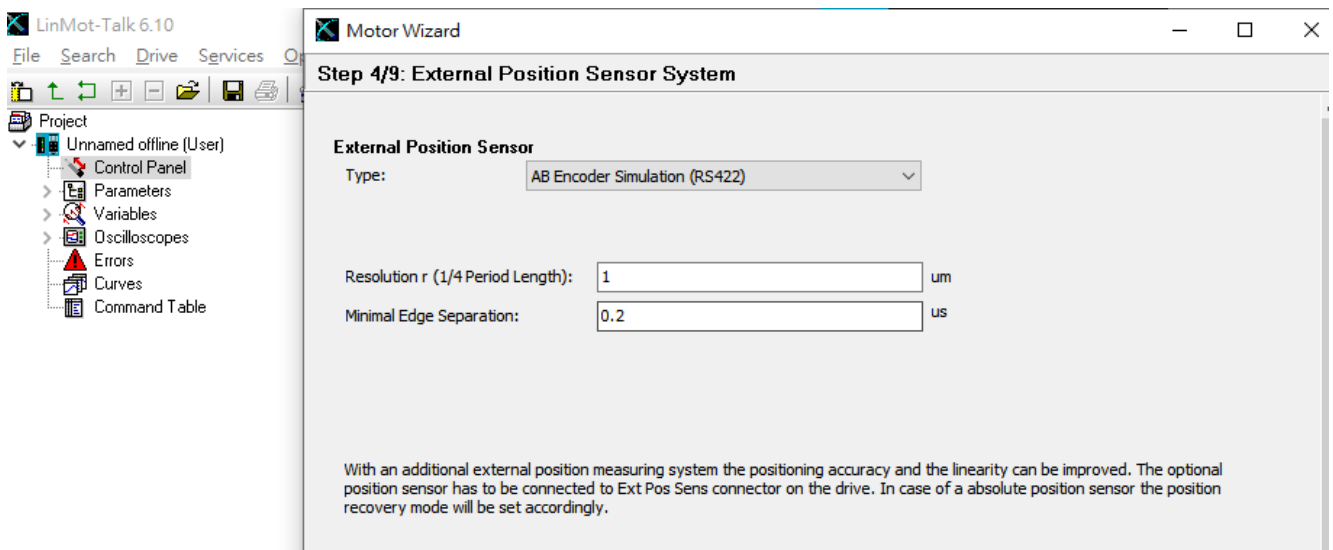


4 內部 Encoder 輸出軟體設定(視需求設定)

4.1 進入 Motor Wizard



4.2 在 External position sensor system 的設定內選擇 AB Encoder Simulation



4.3 重新啟動 Firmware 完成設定

5 定義 I/O

LinMot-Talk 6.10

The screenshot shows the LinMot-Talk 6.10 software interface. The left pane displays a tree view of the project structure under 'Unnamed offline (User)'. The 'X14 I/O Definitions' folder is expanded, showing a list of digital input and output functions. A red bracket groups the first six 'Dig In' functions, with the label '輸入' (Input) written vertically to its left. Another red bracket groups the next six 'Dig Out' functions, with the label '輸出' (Output) written vertically to its left. The 'Dig In X14.14 Function' is selected. The right pane shows a table of control words with their current values and raw data addresses.

Name	Value	Raw Data
<input type="radio"/> None	Off	0000h
<input type="radio"/> PTC 1	Off	0005h
<input type="radio"/> PTC 2	Off	0006h
<input type="radio"/> CAM Start Enable (Input)	Off	000Ah
<input type="radio"/> Ctrl Word: Switch On	Off	0010h
<input type="radio"/> Ctrl Word: Voltage Enable	Off	0011h
<input type="radio"/> Ctrl Word: /Quick Stop	Off	0012h
<input type="radio"/> Ctrl Word: Enable Operation	Off	0013h
<input type="radio"/> Ctrl Word: /Abort	Off	0014h
<input type="radio"/> Ctrl Word: /Freeze	Off	0015h
<input type="radio"/> Ctrl Word: Go To Position	Off	0016h
<input type="radio"/> Ctrl Word: Error Acknowledge	Off	0017h
<input type="radio"/> Ctrl Word: Jog Move +	Off	0018h
<input type="radio"/> Ctrl Word: Jog Move -	Off	0019h
<input type="radio"/> Ctrl Word: Special Mode	Off	001Ah
<input checked="" type="radio"/> Ctrl Word: Home	On	001Bh
<input type="radio"/> Ctrl Word: Clearance Check	Off	001Ch
<input type="radio"/> Ctrl Word: Go To Initial Position	Off	001Dh

5.1 定義 Input 1 為 Switch on

LinMot-Talk 6.11

The screenshot shows the LinMot-Talk 6.11 software interface. The left pane shows the same project structure as in the previous screenshot, but now the 'Dig In X14.14 Function' is selected. The right pane shows the configuration for the 'Ctrl Word: Switch On' control word, which is now set to 'On'.

Name	Value
<input type="radio"/> None	Off
<input type="radio"/> PTC 1	Off
<input type="radio"/> PTC 2	Off
<input type="radio"/> CAM Start Enable (Input)	Off
<input checked="" type="radio"/> Ctrl Word: Switch On	On
<input type="radio"/> Ctrl Word: Voltage Enable	Off
<input type="radio"/> Ctrl Word: /Quick Stop	Off
<input type="radio"/> Ctrl Word: Enable Operation	Off
<input type="radio"/> Ctrl Word: /Abort	Off
<input type="radio"/> Ctrl Word: /Freeze	Off
<input type="radio"/> Ctrl Word: Go To Position	Off
<input type="radio"/> Ctrl Word: Error Acknowledge	Off
<input type="radio"/> Ctrl Word: Jog Move +	Off
<input type="radio"/> Ctrl Word: Jog Move -	Off
<input type="radio"/> Ctrl Word: Special Mode	Off
<input type="radio"/> Ctrl Word: Home	Off
<input type="radio"/> Ctrl Word: Clearance Check	Off
<input type="radio"/> Ctrl Word: Go To Initial Position	Off

5.2 定義 Input 2 為 Home

The screenshot shows the LinMot-Talk 6.11 interface. The left pane displays a tree view of the project structure: Project > Unnamed offline (USER) > Control Panel > Parameters > Motion Control SW > Drive Configuration > X14 I/O Definitions. The 'Dig In X14.2 Function' is selected. The right pane shows the 'Ctrl Word: Home' configuration table.

Name	Value
<input type="radio"/> None	Off
<input type="radio"/> Home Switch	Off
<input type="radio"/> PTC 1	Off
<input type="radio"/> PTC 2	Off
<input type="radio"/> CAM Start Enable (Input)	Off
<input type="radio"/> Ctrl Word: Switch On	Off
<input type="radio"/> Ctrl Word: Voltage Enable	Off
<input type="radio"/> Ctrl Word: /Quick Stop	Off
<input type="radio"/> Ctrl Word: Enable Operation	Off
<input type="radio"/> Ctrl Word: /Abort	Off
<input type="radio"/> Ctrl Word: /Freeze	Off
<input type="radio"/> Ctrl Word: Go To Position	Off
<input type="radio"/> Ctrl Word: Error Acknowledge	Off
<input type="radio"/> Ctrl Word: Jog Move +	Off
<input type="radio"/> Ctrl Word: Jog Move -	Off
<input type="radio"/> Ctrl Word: Special Mode	Off
<input checked="" type="radio"/> Ctrl Word: Home	On
<input type="radio"/> Ctrl Word: Clearance Check	Off
<input type="radio"/> Ctrl Word: Go To Initial Position	Off

5.3 定義 Input 3 為 Error Acknowledge

The screenshot shows the LinMot-Talk 6.11 interface. The left pane displays a tree view of the project structure: Project > Unnamed offline (USER) > Control Panel > Parameters > Motion Control SW > Drive Configuration > X14 I/O Definitions. The 'Dig In X14.15 Function' is selected. The right pane shows the 'Ctrl Word: Error Acknowledge' configuration table.

Name	Value
<input type="radio"/> None	Off
<input type="radio"/> Trigger	Off
<input type="radio"/> PTC 1	Off
<input type="radio"/> PTC 2	Off
<input type="radio"/> Capture Input	Off
<input type="radio"/> CAM Start Enable (Input)	Off
<input type="radio"/> Ctrl Word: Switch On	Off
<input type="radio"/> Ctrl Word: Voltage Enable	Off
<input type="radio"/> Ctrl Word: /Quick Stop	Off
<input type="radio"/> Ctrl Word: Enable Operation	Off
<input type="radio"/> Ctrl Word: /Abort	Off
<input type="radio"/> Ctrl Word: /Freeze	Off
<input type="radio"/> Ctrl Word: Go To Position	Off
<input checked="" type="radio"/> Ctrl Word: Error Acknowledge	On
<input type="radio"/> Ctrl Word: Jog Move +	Off
<input type="radio"/> Ctrl Word: Jog Move -	Off
<input type="radio"/> Ctrl Word: Special Mode	Off
<input type="radio"/> Ctrl Word: Home	Off
<input type="radio"/> Ctrl Word: Clearance Check	Off
<input type="radio"/> Ctrl Word: Go To Initial Position	Off

5.4 定義 Output 1 為 Homed

The screenshot shows the LinMot-Talk 6.11 software interface. The left pane displays a project tree for 'Unnamed offline (USER)'. The tree is expanded to 'Motion Control SW' > 'Drive Configuration' > 'X14 I/O Definitions'. The 'Dig Out X14.17 Function' is selected. The right pane shows the 'Status Word: Homed' configuration table.

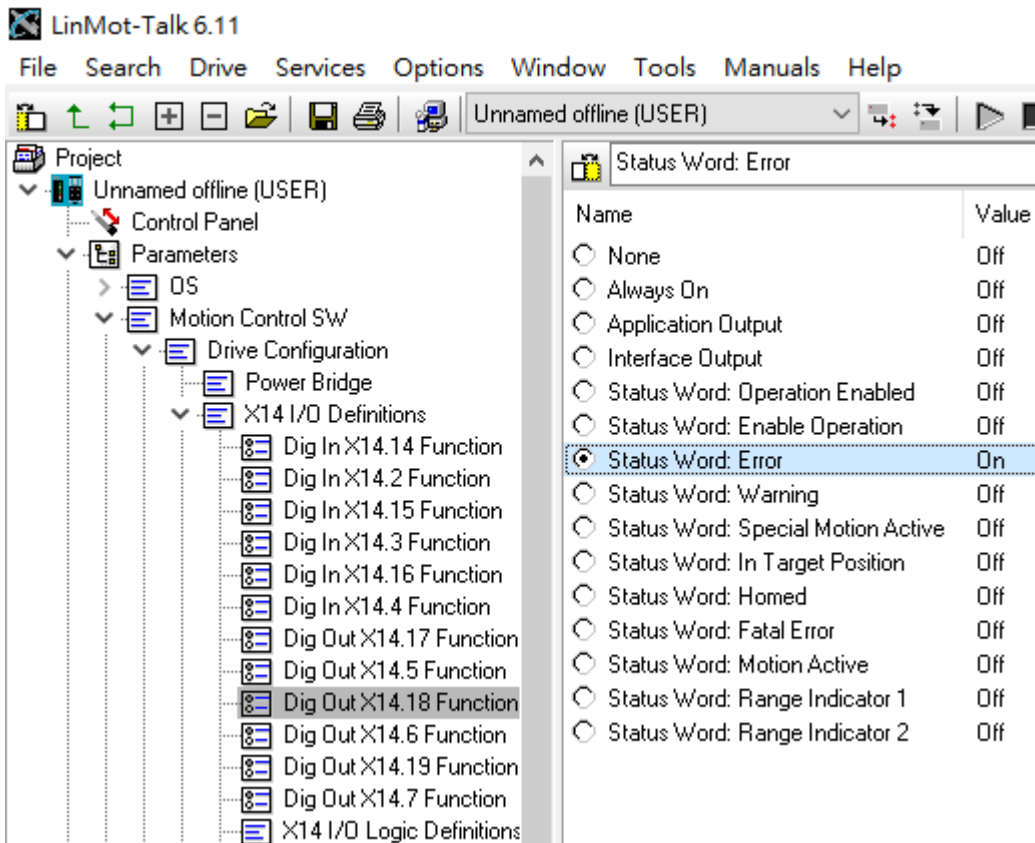
Name	Value
<input type="radio"/> None	Off
<input type="radio"/> Brake	Off
<input type="radio"/> Always On	Off
<input type="radio"/> Application Output	Off
<input type="radio"/> Interface Output	Off
<input type="radio"/> Status Word: Operation Enabled	Off
<input type="radio"/> Status Word: Enable Operation	Off
<input type="radio"/> Status Word: Error	Off
<input type="radio"/> Status Word: Warning	Off
<input type="radio"/> Status Word: Special Motion Active	Off
<input type="radio"/> Status Word: In Target Position	Off
<input checked="" type="radio"/> Status Word: Homed	On
<input type="radio"/> Status Word: Fatal Error	Off
<input type="radio"/> Status Word: Motion Active	Off
<input type="radio"/> Status Word: Range Indicator 1	Off
<input type="radio"/> Status Word: Range Indicator 2	Off

5.5 定義 Output 2 為 Motion Active

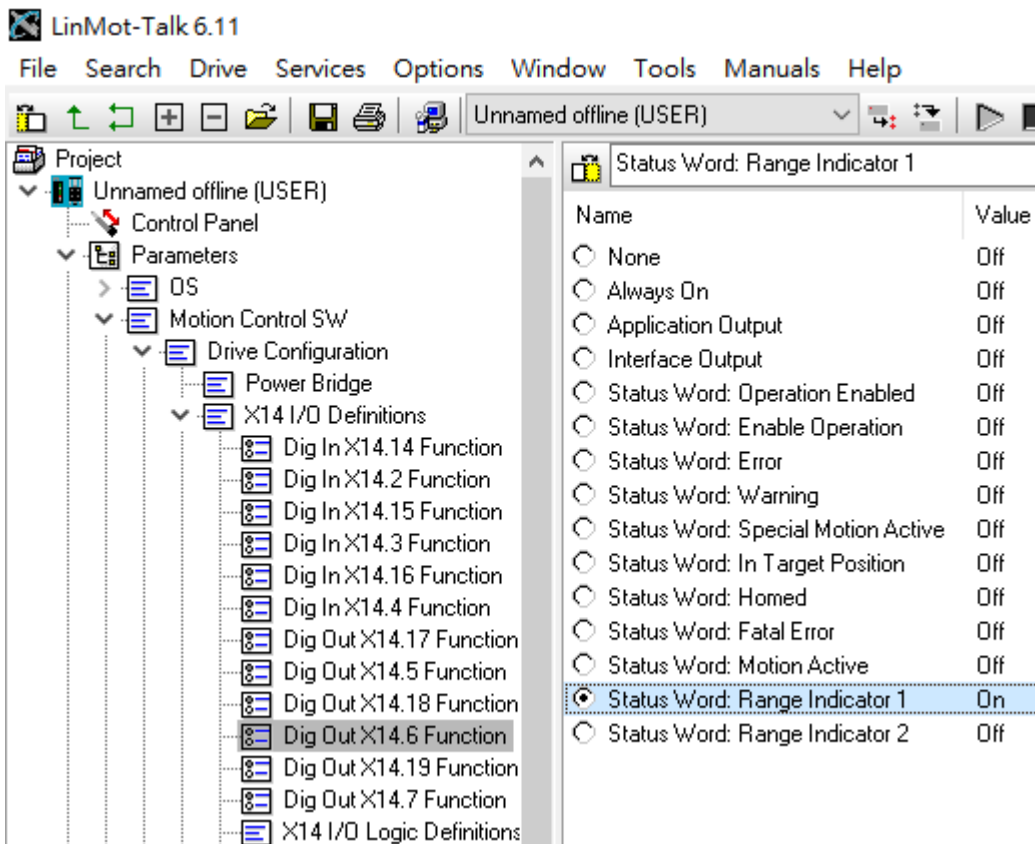
The screenshot shows the LinMot-Talk 6.11 software interface. The left pane displays a project tree for 'Unnamed offline (USER)'. The tree is expanded to 'Motion Control SW' > 'Drive Configuration' > 'X14 I/O Definitions'. The 'Dig Out X14.5 Function' is selected. The right pane shows the 'Status Word: Motion Active' configuration table.

Name	Value
<input type="radio"/> None	Off
<input type="radio"/> Always On	Off
<input type="radio"/> Application Output	Off
<input type="radio"/> Interface Output	Off
<input type="radio"/> Status Word: Operation Enabled	Off
<input type="radio"/> Status Word: Enable Operation	Off
<input type="radio"/> Status Word: Error	Off
<input type="radio"/> Status Word: Warning	Off
<input type="radio"/> Status Word: Special Motion Active	Off
<input type="radio"/> Status Word: In Target Position	Off
<input type="radio"/> Status Word: Homed	Off
<input type="radio"/> Status Word: Fatal Error	Off
<input checked="" type="radio"/> Status Word: Motion Active	On
<input type="radio"/> Status Word: Range Indicator 1	Off
<input type="radio"/> Status Word: Range Indicator 2	Off

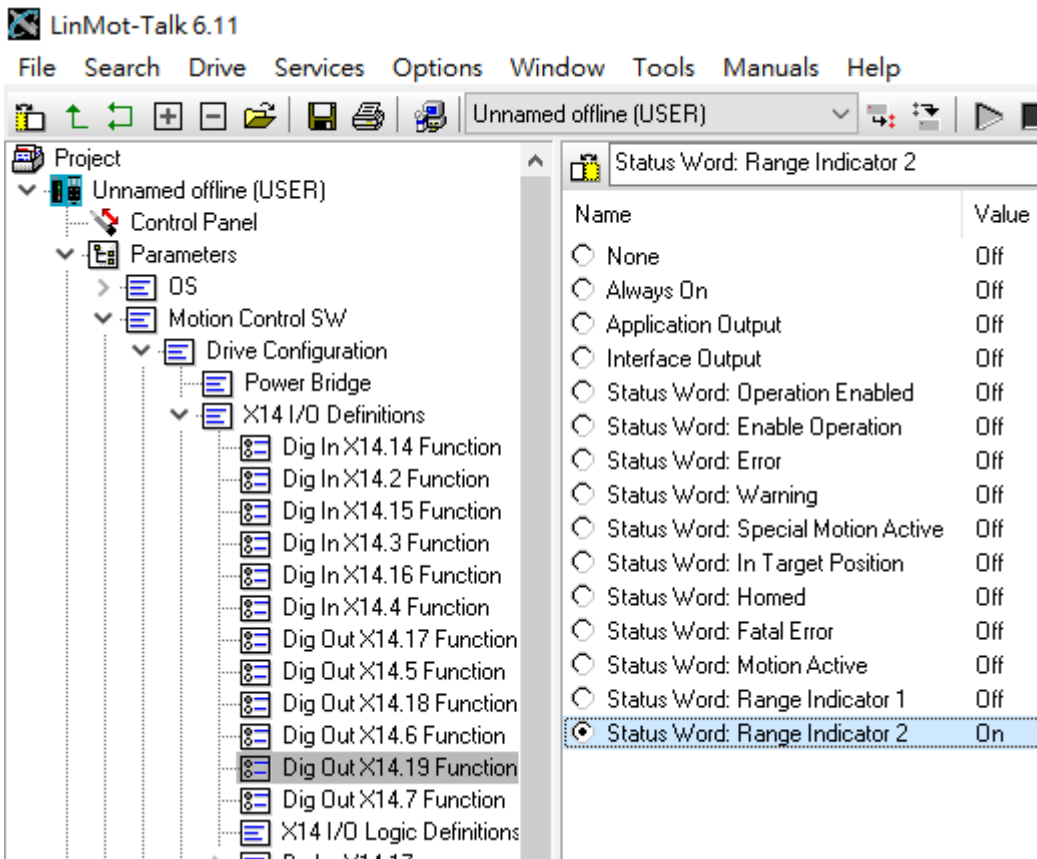
5.6 定義 Output 3 為 Error



5.7 定義 Output 4 為 Range Indicator 1



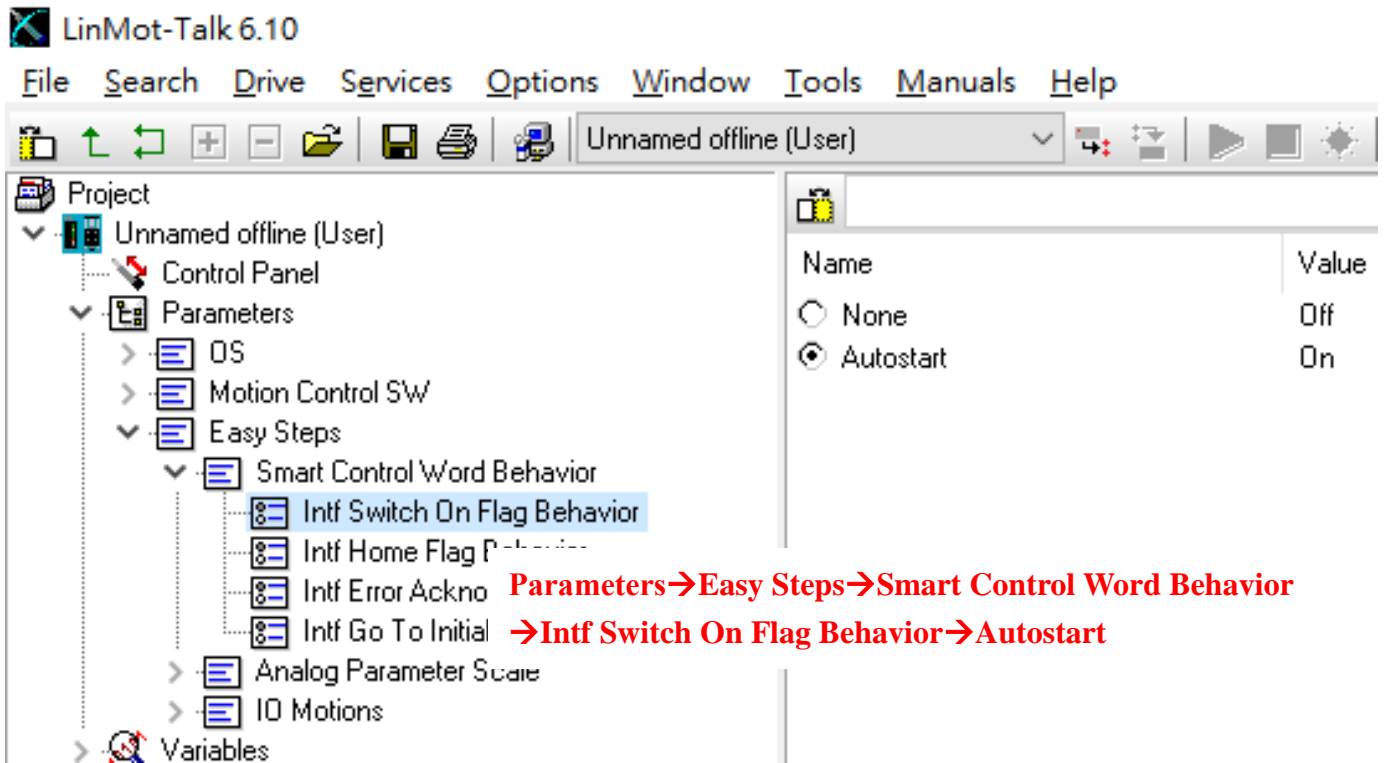
5.8 定義 Output 5 為 Range Indicator 2



5.9 重新啟動 Firmware 完成設定

6 其他設定

6.1 啟用開機自動復歸(Auto Switch On & Auto Homing)



The screenshot shows the LinMot-Talk 6.10 software interface. The top menu bar includes File, Search, Drive, Services, Options, Window, Tools, Manuals, and Help. Below the menu is a toolbar with various icons and a dropdown menu showing 'Unnamed offline (User)'. The main area is divided into two panes. The left pane shows a project tree structure:

- Project
 - ▼ Unnamed offline (User)
 - Control Panel
 - ▼ Parameters
 - > OS
 - > Motion Control SW
 - ▼ Easy Steps
 - ▼ Smart Control Word Behavior
 - Intf Switch On Flag Behavior
 - Intf Home Flag Behavior
 - Intf Error Ackno
 - Intf Go To Initial
 - > Analog Parameter S
 - > IO Motions

The right pane shows a table with two columns: Name and Value. The 'Intf Home Flag Behavior' parameter is selected, and its value is 'On'.

Name	Value
<input type="radio"/> None	Off
<input checked="" type="radio"/> Autohome	On

**Parameters→Easy Steps→Smart Control Word Behavior
→Intf Home Flag Behavior→Autohome**