

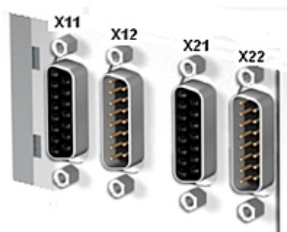
AX5000 伺服 BISS 编码器第二反馈操作说明(SXY)

一、硬件连接

a)硬件接口，接线定义

X11 and X21: Feedback, high-resolution

The X11 and X21 D-SUB sockets are available for connecting high-resolution feedback systems. In delivery state X11 is assigned to axis 1, X21 to axis 2.



Pin	EnDAT / BiSS	Hiperface	Sine / Cosine 1Vpp	TTL	output current
1	SIN	SIN	SIN	n.c.	max. 250 mA / channel
2	GND_5 V	GND_9 V	GND_5 V	GND_5 V	
3	COS	COS	COS	n.c.	
4	U _s -5 V	n.c.	U _s -5 V	U _s -5 V	
5	DX+ (Data)	DX+ (Data)	n.c.	B+	
6	n.c.	U _s -9V	n.c.	n.c.	
7	n.c.	n.c.	REF Z	REF Z	
8	CLK+ (Clock)	n.c.	n.c.	A+	
9	REFSIN	REFSIN	REFSIN	n.c.	
10	GND_Sense	n.c.	GND_Sense	GND_Sense	
11	REFCOS	REFCOS	REFCOS	n.c.	
12	U _s -5 V_Sense	n.c.	U _s -5 V_Sense	U _s -5 V_Sense	
13	DX- (Data)	DX- (Data)	n.c.	B-	
14	n.c.	n.c.	Z	Z	
15	CLK- (Clock)	n.c.	n.c.	A-	

b)BISS 编码器接口必须是采用 resolver 编码器电机下，接 X11 或者 X21 口；

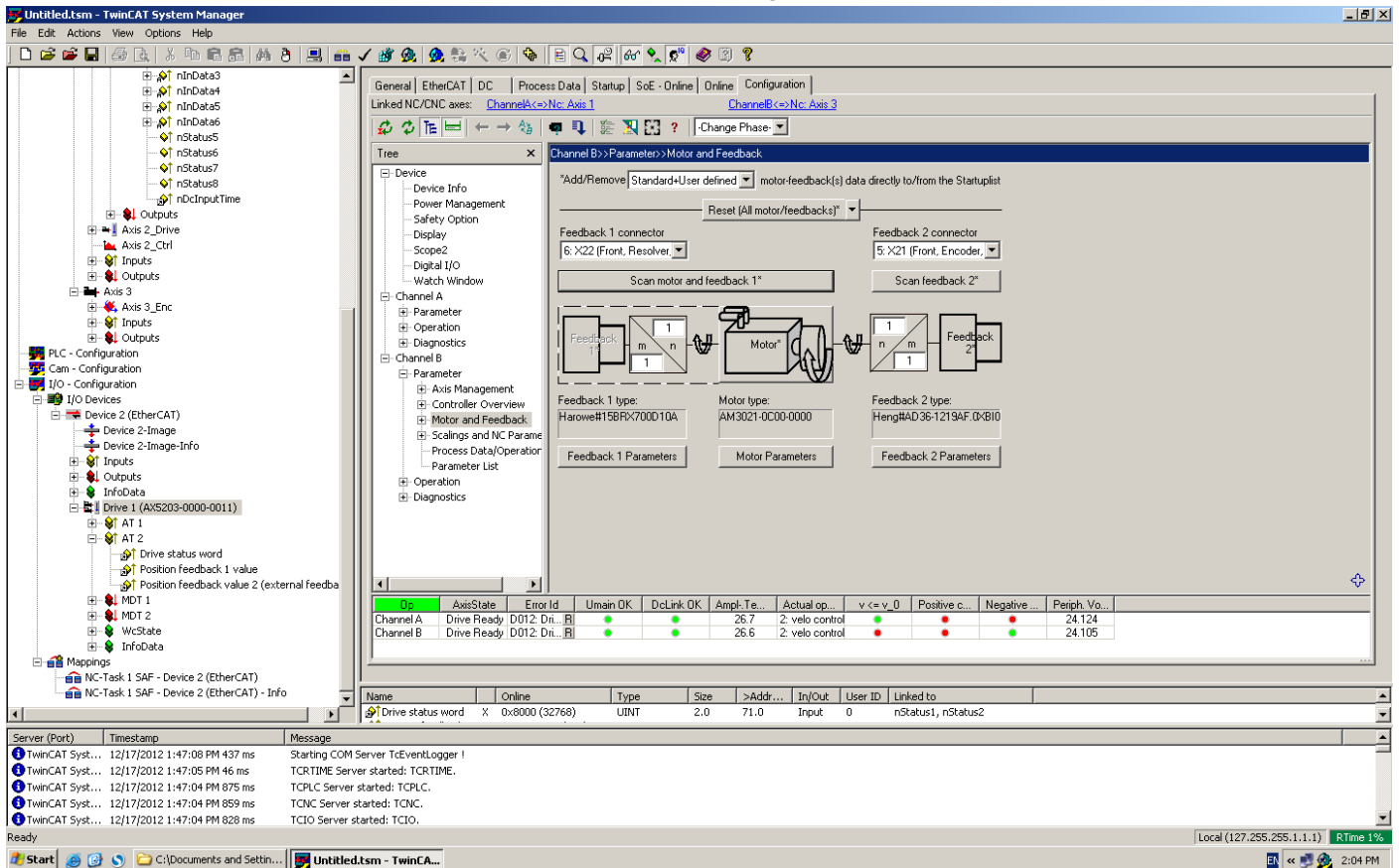
The screenshot shows the 'Configuration' tab in SIMATIC Manager. The 'Tree' on the left shows the navigation path: Device > Channel A > Parameter > Motor and Feedback. The main window displays the configuration for 'Channel A >> Parameter >> Motor and Feedback'. It includes a 'Reset (All motor/feedbacks)*' button, 'Feedback 1 connector' set to '4: X12 (Front, Resolver)', and 'Feedback 2 connector' set to '3: X11 (Front, Encoder, Channel A)'. A dropdown menu for Feedback 2 connector is open, showing options from 0 to 42. Below this, there are three sections: 'Feedback 1 type' (Harowe#15BRX700D10A), 'Motor type' (AM3021-0C00-0000), and 'Feedback 2 type' (Unkn#TTL-2048I-5Vfixed). Each section has a corresponding 'Parameters' button. At the bottom, a status bar shows 'Op' (Operation) and 'AxisState' for Channel A and B, both in 'Drive Ready' state.

Op	AxisState	Diag Code	Diag Msg	Umain OK	DcLink OK	Ampl. Te...	Actual op...	v <= v_0	Positive c...	Negative ...	Periph. V...
Channel A	Drive Ready	0x0000D012	R D012: DriveRdy	●	●	35.3	2: velo control	●	●	●	23.993
Channel B	Drive Ready	0x0000D012	R D012: DriveRdy	●	●	35.3	2: velo control	●	●	●	23.974

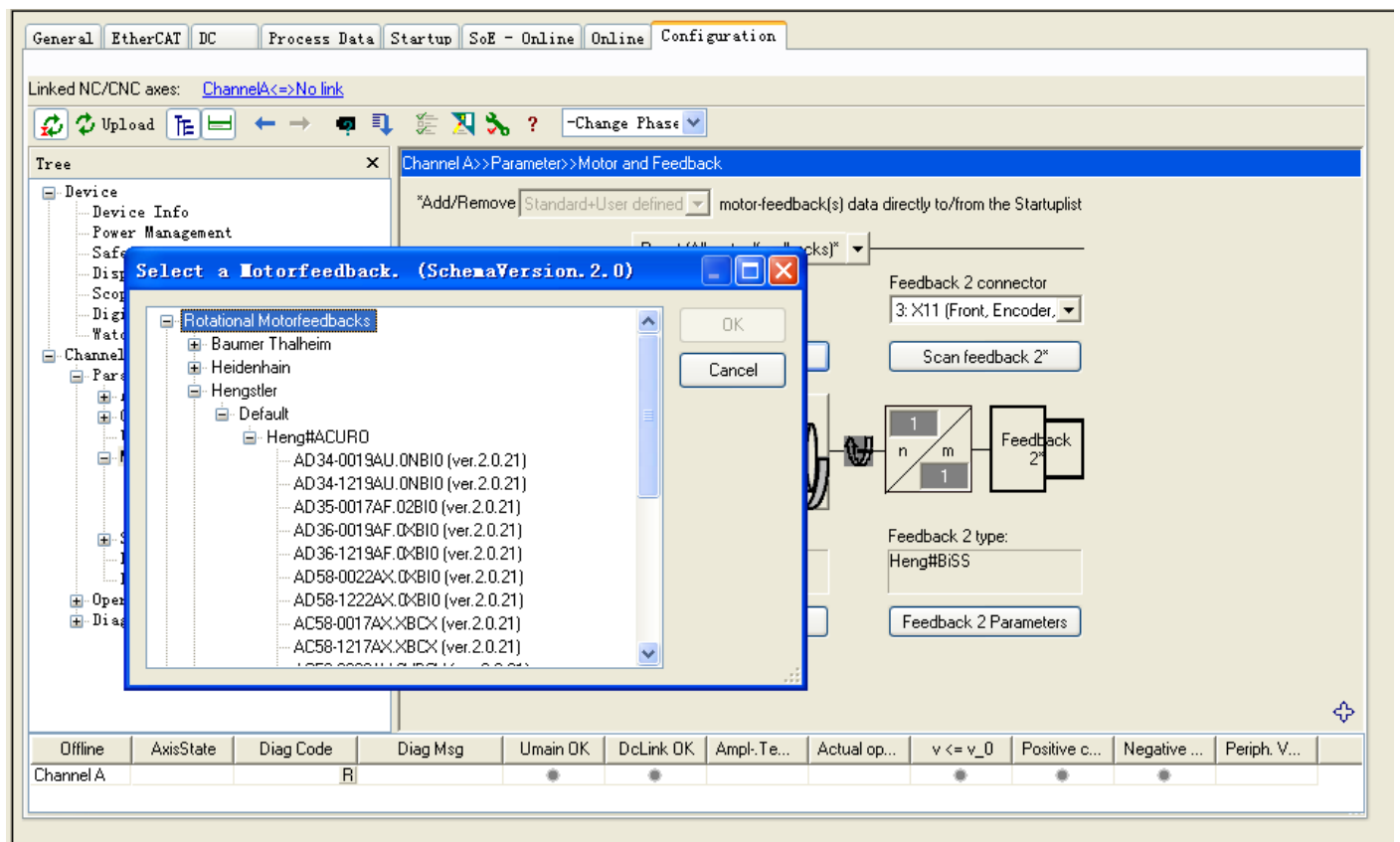
c) 第二反馈编码器类型选择

通过编码器直接扫描出伺服电机目前的编码器型号，

如下图中的 Feedback 1 Parameter 下的编码器型号为：Heng#AD36-1219AF.0XB10



d) 将编码器型号 Heng#AD36-1219AF.0XB10 选择



二、软件操作

a) 第二反馈编码器数值 PDO 设定, 添加 Position feedback value 2 (external feedback)

The screenshot shows the 'Process Data' tab in the TwinCAT System Manager. It displays the 'PDO List' and 'PDO Content' for slave S-0-0016.

Sync Manager:

SM	Size	Type	Flags
0	128	MbxOut	
1	128	MbxIn	
2	12	Out...	
3	16	Inputs	

PDO List:

Index	Size	Name	Flags	SM	SU
S-0-0...	10.0	AT 1	M	3	0
S-0-0...	6.0	AT 2	M	3	0
S-0-0...	6.0	MDT 1	M	2	0
S-0-0...	6.0	MDT 2	M	2	0

PDO Assignment (SM 2):

- S-0-0024 (A)
- S-0-0024 (B)

PDO Content (S-0-0016):

Index	Size	Offs	Name	Type	Default...
S-0-0135	2.0	0.0	Drive status word	VINT	
S-0-0051	4.0	2.0	Position feedback 1 value	DINT	
S-0-0053	4.0	6.0	Position feedback value 2...	DINT	10.0

Buttons: Download, PDO Assignment, PDO Configuration, Predefined PDO Assignment: (none), Load PDO info from device, Sync Unit Assignment...

b) 编码器第二反馈, 轴连接至虚拟轴。

The screenshot shows the 'encoder-szy.tsm' project in TwinCAT System Manager. A dialog box titled 'Attach Variable Position feedback value 2 (external feedback) (Input)' is open, showing a tree view of variables. The variable 'nInData1' is selected under 'Axis 3_Enc'. The dialog also shows options for 'Show Variables', 'Show Variable Types', 'Offsets', and 'Variable Name'.

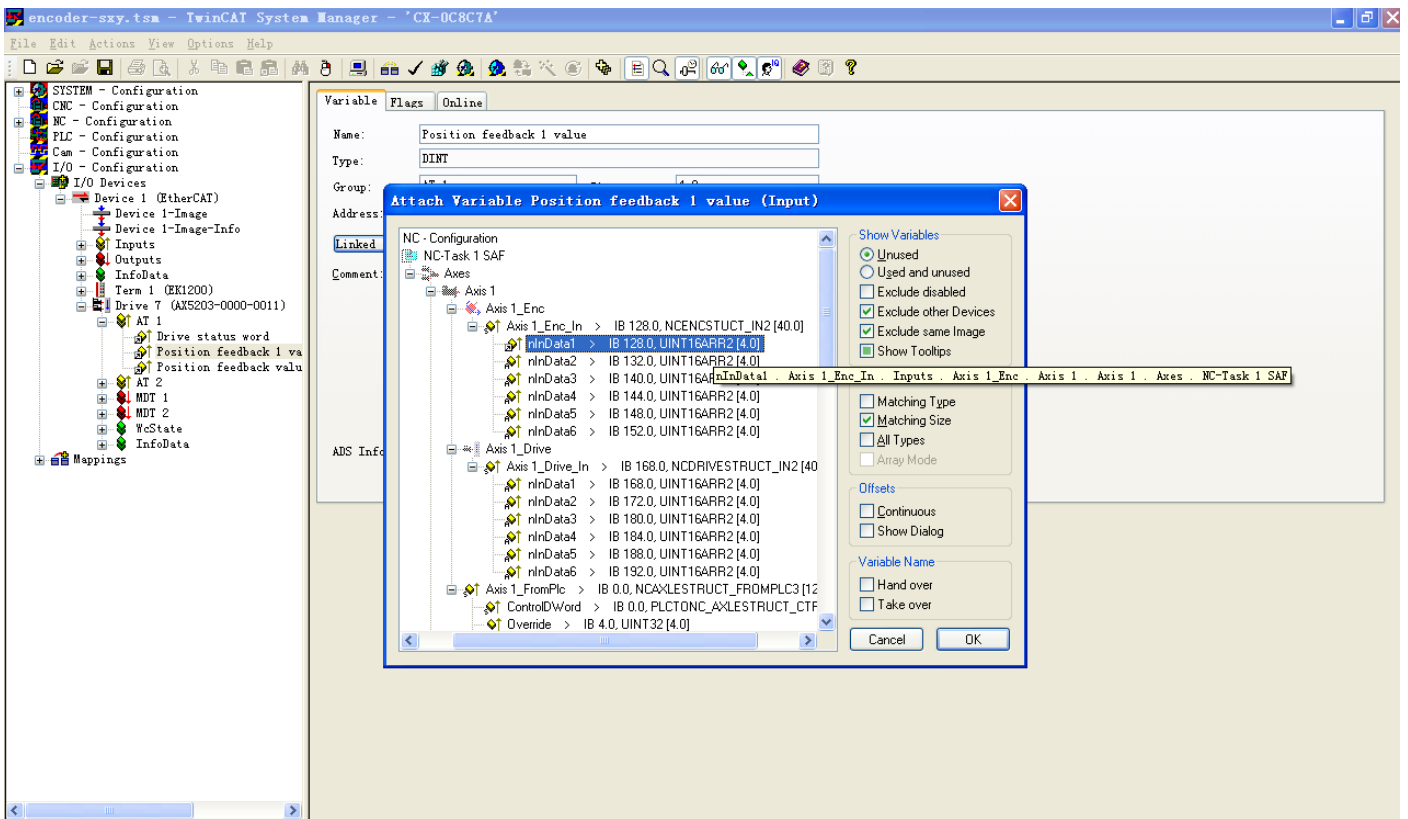
Variable: Position feedback value 2 (external feedback)
Type: DINT
Group: [empty]
Address: [empty]
Comment: [empty]
ADS Info: [empty]

Attach Variable Position feedback value 2 (external feedback) (Input)

- Show Variables: Unused, Used and unused, Exclude disabled, Exclude other Devices, Exclude same Image, Show Tooltips
- Show Variable Types: Matching Type, Matching Size, All Types, Array Mode
- Offsets: Continuous, Show Dialog
- Variable Name: Hand over, Take over

Buttons: Cancel, OK

c)编码器第一反馈仍然连接至原轴。



d)虚拟主轴连接（Encoder SERCOS(Position)）

