

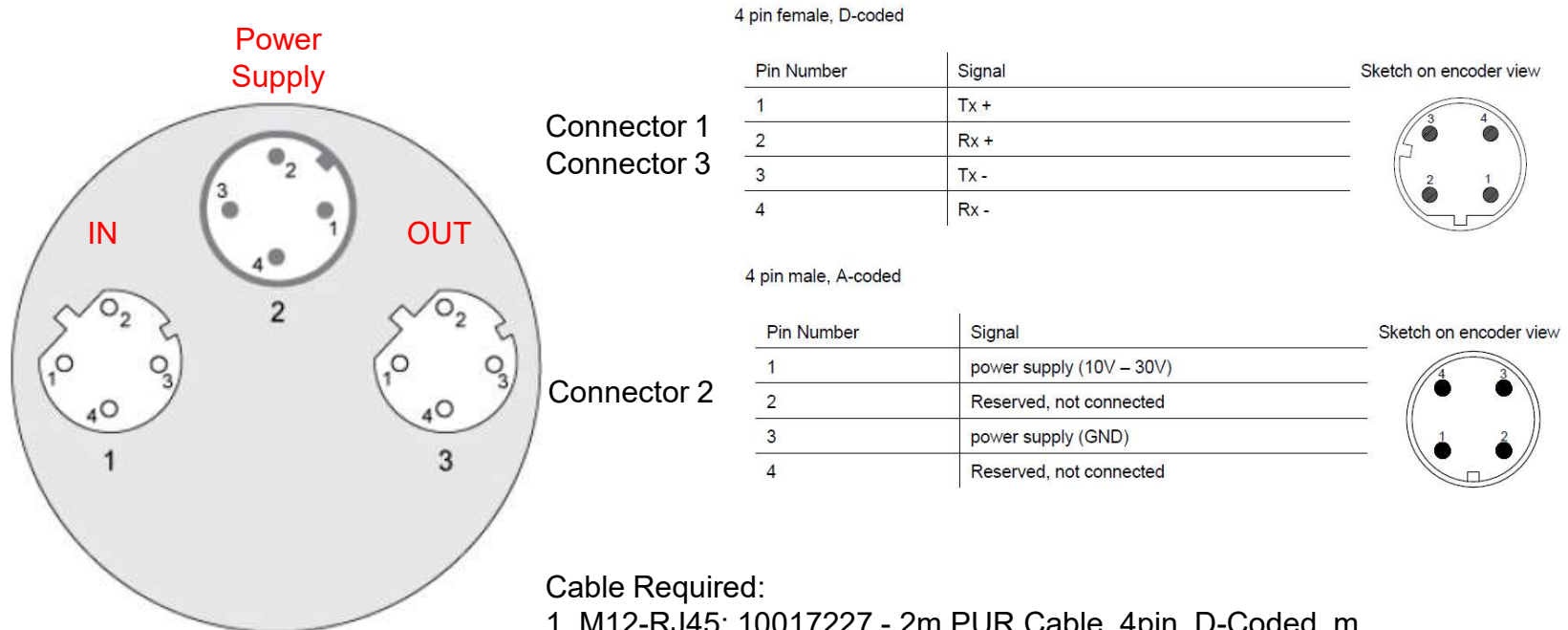
EtherCAT Interface Absolute Encoder Quick Manual



► Sample: UCD-EC00B-1213-L100-PRM

➤ 1. Connection an EtherCAT Absolute Encoder

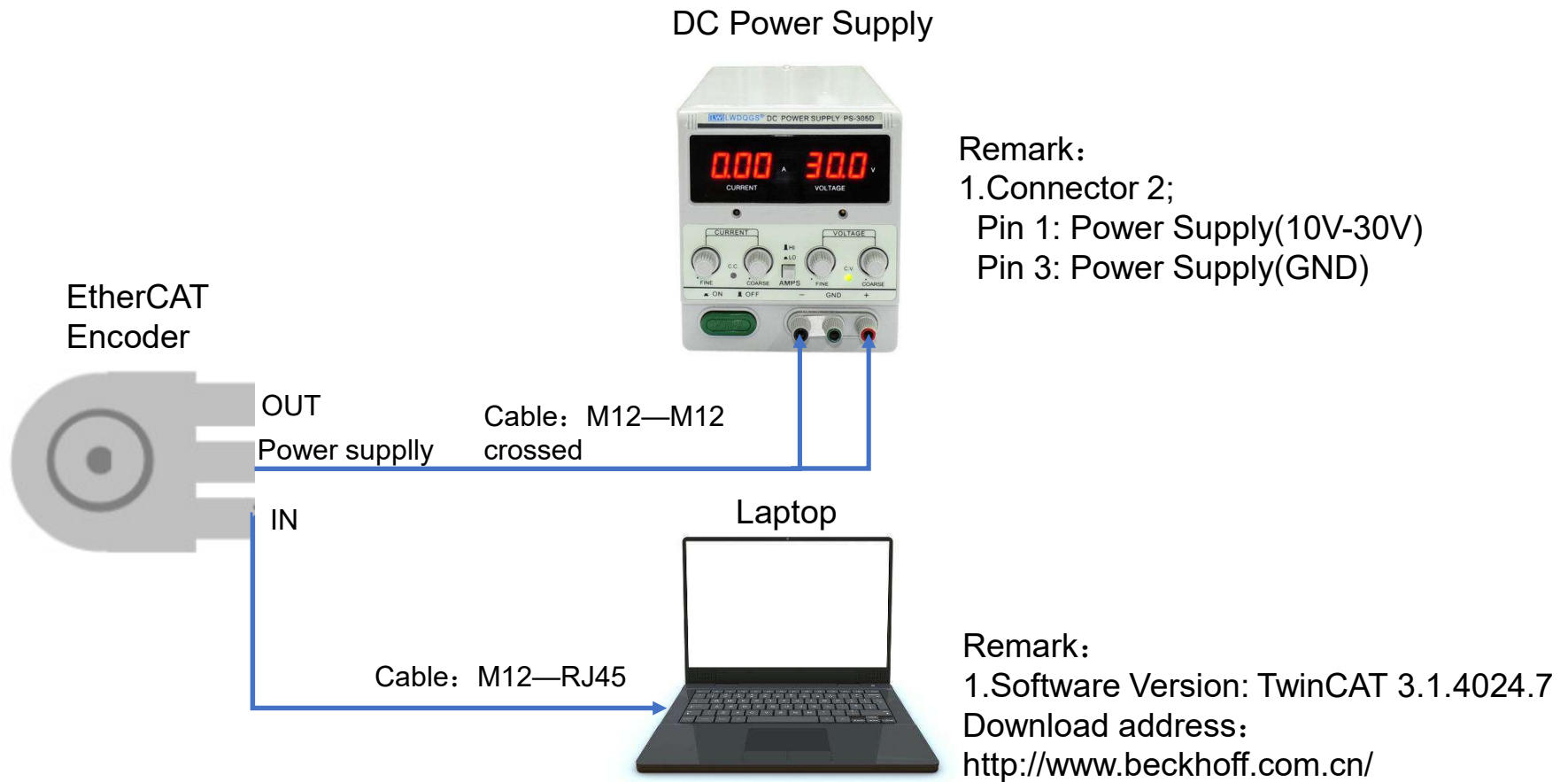
➤ 1.1 Connector Description



Cable Required:

1. M12-RJ45: 10017227 - 2m PUR Cable, 4pin, D-Coded, m
2. M12-M12 crossed: 10017217 - 2m PUR Cable, 5pin, A-Coded, f

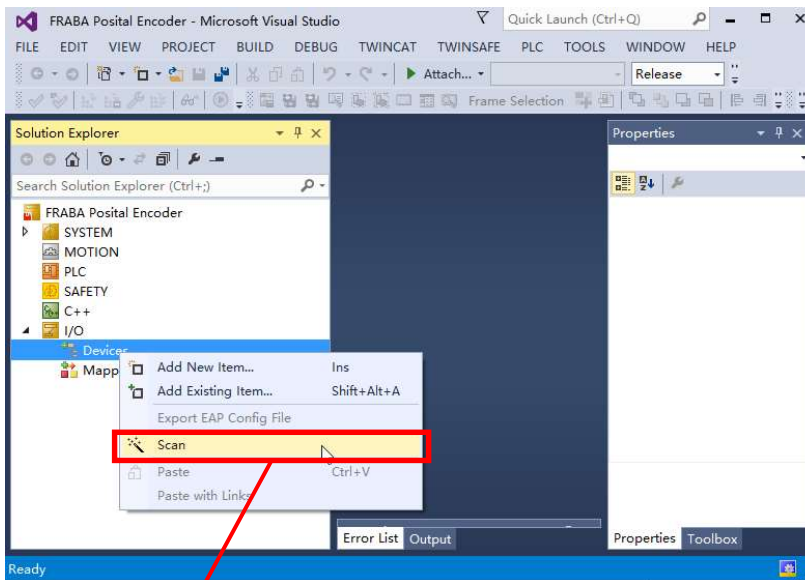
1.2 Device Connection



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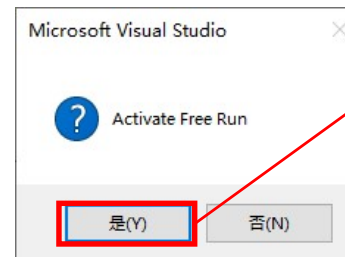
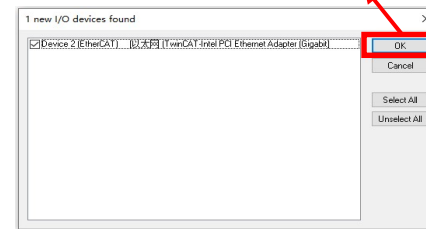
2. Network Connection

- 2.1 After the hardware connection is completed, power on, check whether the green light on the back of the encoder (L/A) is flashing normally;
- 2.2 Download the ESI file from the Posital website and copy the ESI file to the following directory: ... \ TwinCAT \ IO \ Ethercat;
- 2.3 Open the TwinCAT3 software and add a new project under the device:



1. Click "Scan" to find the device

2. Select the network adapter where the EtherCAT® devices are connected



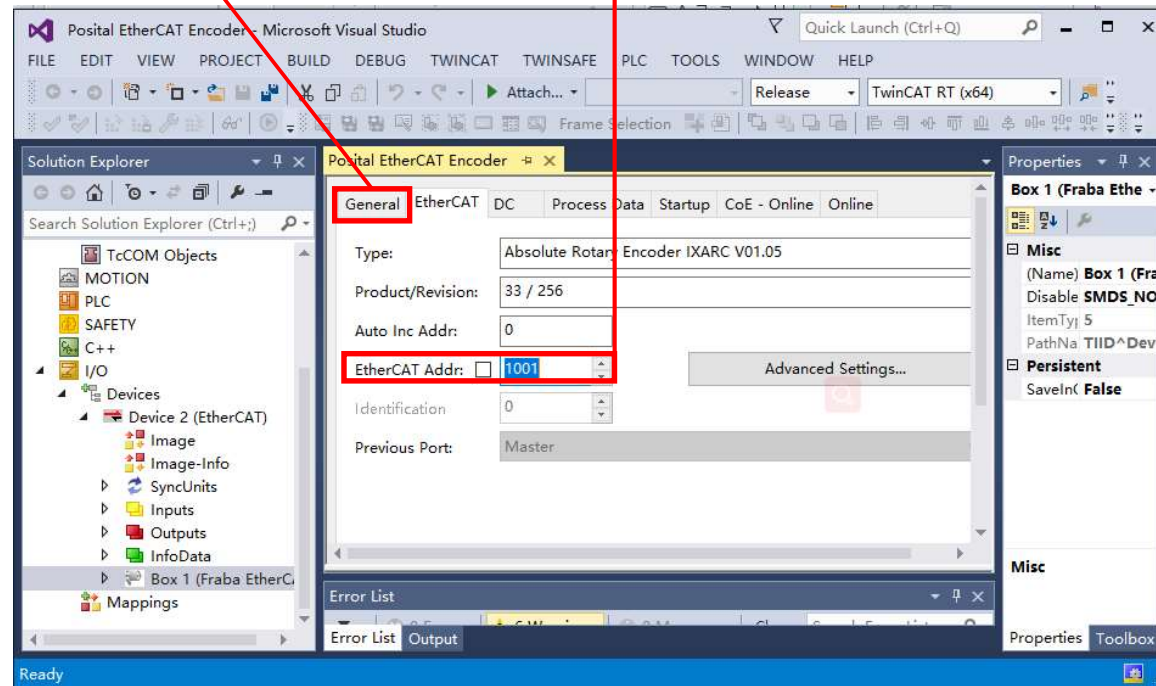
3. Accept to go in Free Run modus

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- 2.4 Under the tabs is it possible to set the different configurations.

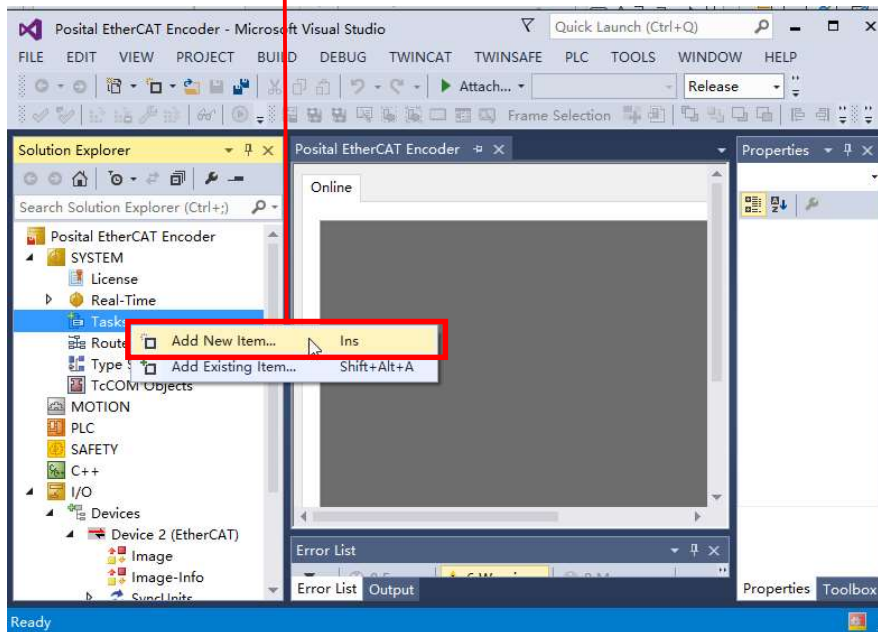
Change the device name
in "General"

Device
address

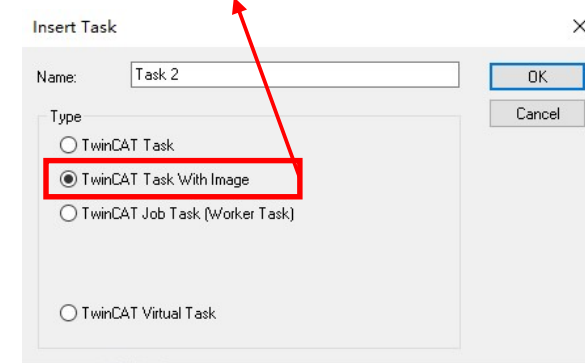


2.5 If no external EtherCAT®-Master is in use (only Laptop as Master) then an additional task is necessary. Create a new "TwinCAT Task With Image" under System→Tasks

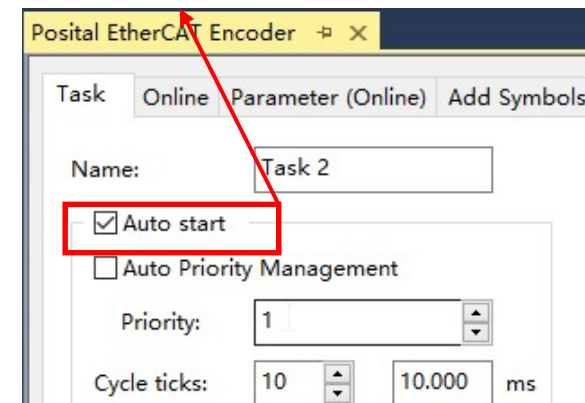
1. Add a new task



2. Choose "TwinCAT Task With Image"

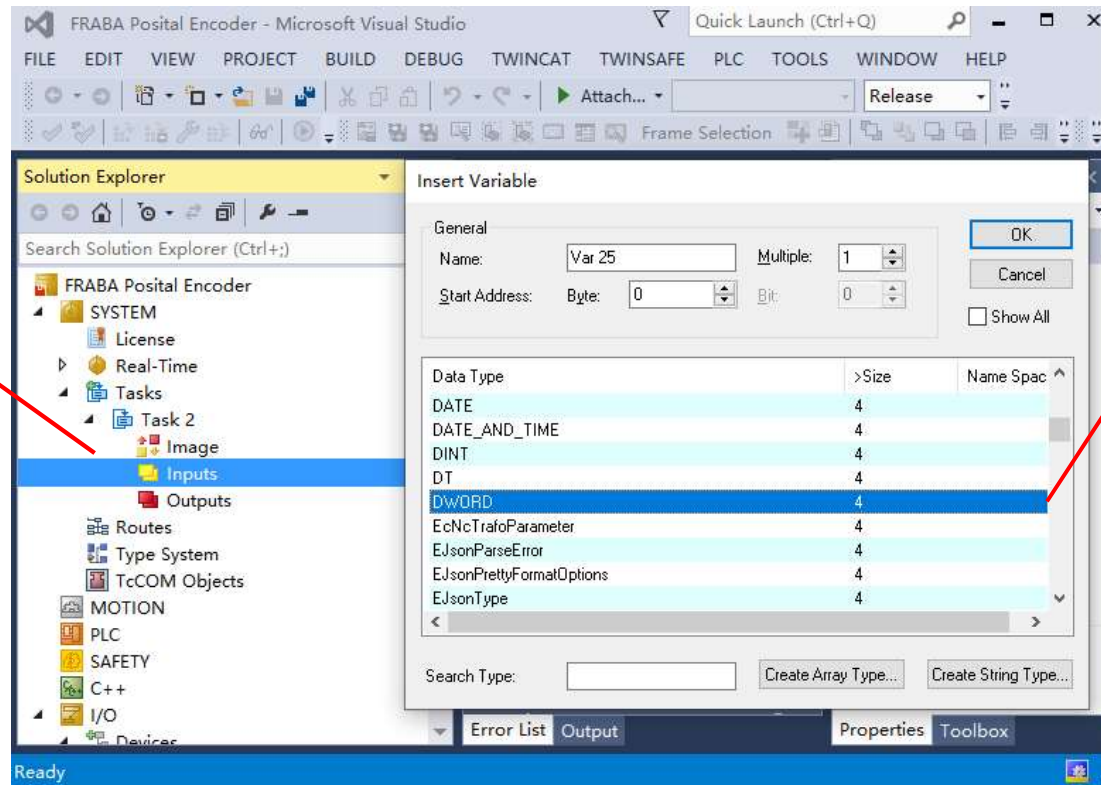


3. Activate Auto start



2.6 Create a new variable under Task2→Inputs and select type “DWORD”

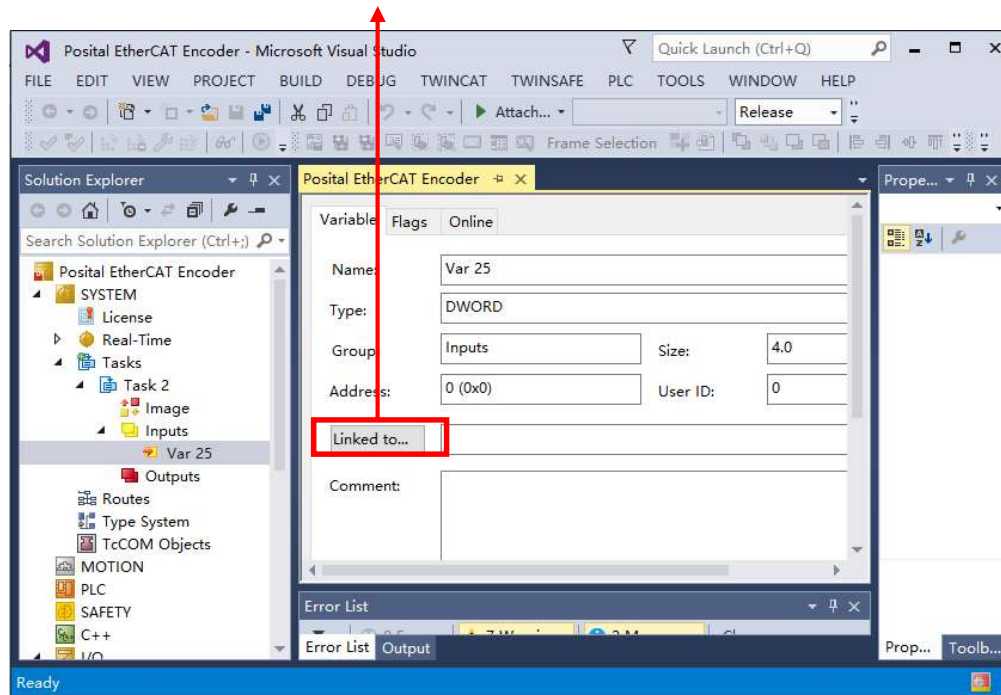
1. Choose “Inputs” and create a new variable



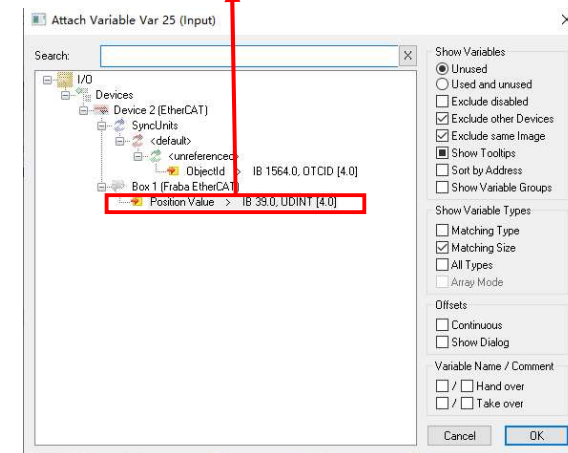
2. Choose type “DWORD”

2.7 Double-click on the variable and associate it with the Fraba "Position Value"

1. Choose "Linked to"

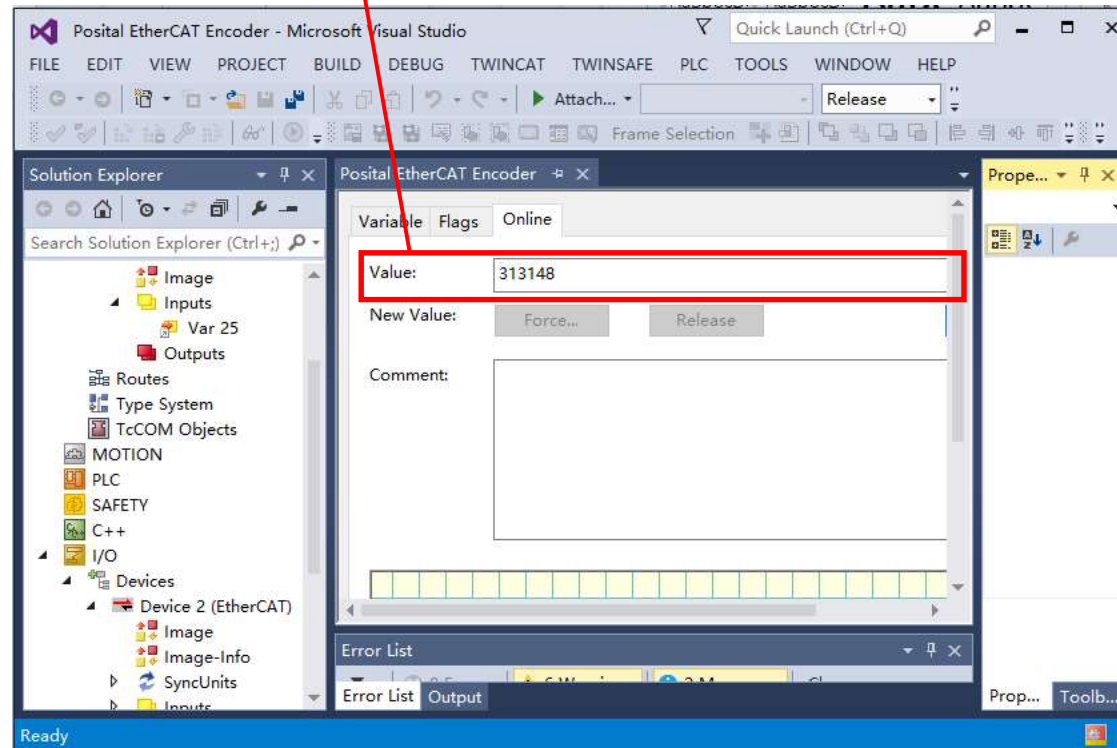


2. Associate with "Position Value"



- 2.8 Check whether the data transmission is correct under Box 1 (Fraba EtherCAT) → Encoder → Position Value

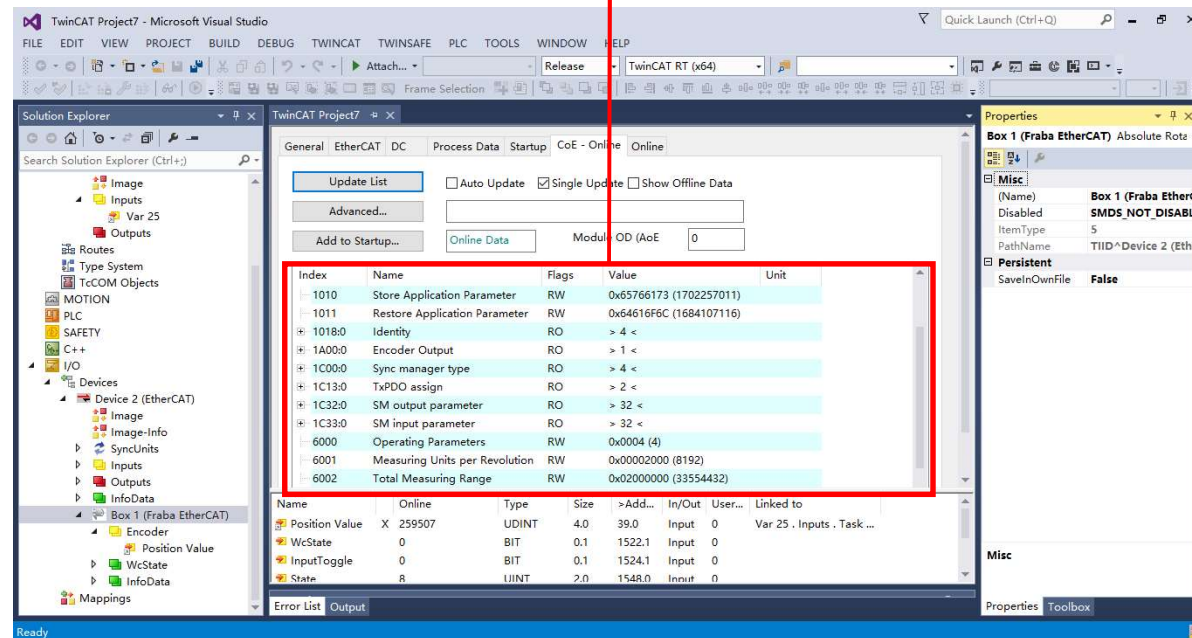
Check whether the data transmission is correct



➤ 3. Device Configuration

➤ 3.1 View the list of instructions in Box 1 (Fraba EtherCAT) → coe-online

Configure device parameters in the instruction list



The screenshot shows the TwinCAT Project7 interface in Microsoft Visual Studio. The 'EtherCAT' tab is active, displaying the 'Update List' dialog. A red box highlights the instruction list table, and a red arrow points from the text above to the 'Update List' button.

Index	Name	Flags	Value	Unit
1010	Store Application Parameter	RW	0x65766173 (1702257011)	
1011	Restore Application Parameter	RW	0x64616F6C (1684107116)	
1018:0	Identity	RO	> 4 <	
1A00:0	Encoder Output	RO	> 1 <	
1C00:0	Sync manager type	RO	> 4 <	
1C13:0	TxPDO assign	RO	> 2 <	
1C32:0	SM output parameter	RO	> 32 <	
1C33:0	SM input parameter	RO	> 32 <	
6000	Operating Parameters	RW	0x0004 (4)	
6001	Measuring Units per Revolution	RW	0x00002000 (8192)	
6002	Total Measuring Range	RW	0x02000000 (33554432)	

Below the instruction list, a table shows the device parameters for 'Box 1 (Fraba EtherCAT)'. The 'Online' column is checked for 'Position Value'.

Name	Online	Type	Size	>Add...	In/Out	User...	Linked to
Position Value	X	UDINT	4.0	39.0	Input	0	Var 25 . Inputs . Task ...
WcState	0	BIT	0.1	1522.1	Input	0	
InputToggle	0	BIT	0.1	1524.1	Input	0	
State	0	UINT	2.0	1548.0	Input	0	

▶ 3.2 The list of instructions

Chapter	Object	Description
3.2.1	6000h:	If the value is set to #04, the clockwise rotation of the encoder increases after modification, and the resolution is set to be adjustable
		If the value is set to #05, the anti-clockwise rotation of the encoder will increase after modification and the resolution will be adjustable
3.2.2	6001h	Single-turn resolution setting (set value should be less than any value of the maximum single-turn resolution)
3.2.3	6002h	Total measuring range setting(set value should be less than the max value)
3.2.4	6003h	Preset Value (Sets the current position value)
3.2.5	1010h	Store application parameter (Set object 1010h to save all parameters to the non volatile memory)
3.2.6	1011h	Restore application parameter



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