

NX-TC Isı Kartı Konfigurasyonu

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Açıklama

Bu dökümanda NX-TC 1s1 kartı modüllerinin konfigurasyonu anlatılacaktır. Kullanılacak ürünler bir adet NX1P2 PLC, bir adet NX-TC2405 1s1 kartı modülüdür.





NX-TC Isı Kartları

Bu ürünler insan müdahalesi olmadan optimum ve otomatik sıcaklık kontrolü yapan cihazlardır. Bu ürünler NX1P2, NX102 PLCler ve NX-EIC coupler modüllerinin yanına takılabilmektedirler. Kullanım tiplerine göre çeşitlilik göstermektedirler. İki kanallı ve dört kanallı olarak çeşitleri mevcuttur. İki kanallı modeller iki ayrı alanın ısısını, dört kanallı modeller dört ayrı ısı bölgesinin kontrolünü sağlar. Bu ürünlerde SSR röle çıkışı veya lineer 4-20mA çıkış alınabilmektedir.

Unit type	Product name	Specification	Specification												
		Number of channels	Input type	Output	Output capacity	CT Input capacity	Control type	Conversion time	I/O refreshing method		code				
NX Series Temperature	Temperature Control Unit	2 Ch	Multi-input	Voltage output	2 points	2 points	Standard Control	50 m sec	Free-Run refreshing	UC1, CE, RCM, KC, EAC	NX- TC2405				
Control Unit	2Ch type		(Thermocouple and Resistance thermometer)	(for driving SSR)		None	Standard Control				NX- TC2406				
	1			Voltage output (for driving SSR)	4 points	None	Heating and Cooling Control				NX- TC2407				
				Linear current output	2 points	None	Standard Control				NX- TC2408				
	Temperature Control Unit	4 Ch		Voltage output	4 points	4 points	Standard Control				NX- TC3405				
	4Ch type			(for driving SSR)		None	Standard Control				NX- TC3406				
				Voltage output (for driving SSR)	8 points	None	Heating and Cooling Control				NX- TC3407				
				Linear current	4 points	None	Standard Control				NX- TC3408				

Temperature Control Units

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NX-TC2405 ürününün elektriksel devre şeması aşağıdaki gibidir:

NX-TC Isı Kartı Konfigurasyonu

1- Sysmac Studio programında "Configuration and Setup" kısmında, "CPU\Extension Racks" bölümünden "CPU Rack" sekmesinde, konfigurasyona NX-TC2405 ısı kartı eklenir :



2- Daha sonra eklenen NX-TC ısı kartının üstüne bir kez mouse ile tıklanır, ve sağ sütunda, NX-TC ısı kartının konfigurasyonunu oluşturmak için "Edit Unit Operation Unit Settings" menüsüne girilir :

NX-TC_Configuration - new_Controller_0 - Sysmac Studio (64bit)	- 🗆 ×
Eile Edit View Insert Project Controller Simulation Tools Window Help	
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Multiview Explorer measure • 0 rew_Controller_0 • • • • • • • • • • • • • • • • • • •	Item name Value Item name Value Ch2 Heater C. Digital Input Device Ch2 Heater C. Digital Input Device Ch3 Heater C. Digital Input Device Ch4 Heater C. Digital Input Device Ch4 Heater C. Digital Input Device Ch4 Heater C. Digital Input Device Ch4 Heater C. Digital Input Device Ch4 Heater C. Digital Input Device Ch4 Heater C. Digital Input Device Ch4 Proportion Ch4 Proportion Ch4 Device Input Device Digital Input Device Device name Stowall versions Device name Settings Device name No.D3347 Vert.0 Device name No.D3462 Vert.0 No.D3462 Vert.0 No.D3462 Vert.0 No.D3462 Vert.0 No.D3462 Vert.0 No.D3462 Vert.0 No.D3462 Vert.0

3- Ardından gelen ekranda, bu dökümanda bir kanal kullanılacağı için, "All parameters" sekmesinden "Ch1" seçilir :



4- Ardından gelen ekranda sensör tipi K tipi, kontrol tipi On-Off ve "Adaptive Control\Ch1 Adaptive Control" seçilir :

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File Edit View Insert Project	Controller Simulation Tools Window Help		
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Multiview Explorer 👻 🔻	Unit 1[NXBusMaster]:rati 🗙 🛐 CPU/Expansion Racks	·	Toolbox 👻 🖡
INTERNALPLC V	All parameters		<search> マ ア ×</search>
	Item name	Value	
Configurations and Setup	Input/Ch1 Cold Junction Compensation Enable/Disable	True 🔽 🔨	
TherCAT	Input/Ch1 PV Input Shift	0 x0.1°C or x0.1°F	
V 🔄 CPU/Expansion Racks	Input/Ch1 PV Input Slope Coefficient	1000 x0.001	
V # CPU Rack	Input/Ch1 Input Digital Filter	0 x0.1s	
Unit 1 : NX-TC24	Input/Ch2 Input Type	K -200 to 1300 [°C] / -300 to 2300[°F]	
.* I/O Man	Input/Ch2 Temperature Unit	[C]	
	Input/Ch2 Decimal Point	Tota	
R Controller Setup	Input/Ch2 Cold Junction Compensation Chable/Disable	v0.1°C or v0.1°E	
Motion Control Setup	Input/Ch2 PV Input Sinne Coefficient	1000	
🖋 Cam Data Settings	Input/Ch2 Input Digital Filter	0 1000	
Event Settings	Control Common/Ch1 PID ON/OFF	ON/OFF	
Task Settings	Control Common/Ch1 Proportional Band	80 x0.1°C or x0.1°F	
M Data Trace Settings	Control Common/Ch1 Integration Time	2330 x0.1s	
December 2010	Control Common/Ch1 Derivative Time	400 x0.1s	
Programming	Control Common/Ch1 Hysteresis (Heating)	10 v0.1°C or v0.1°E	
V 📋 POUs		Return to Default Value	
V 🗐 Programs	- Help		
V 💀 Program0	Data type:		

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<u>File Edit View Insert Project</u>	Controller Simulation Tools Window Help		
	「日本なるの思惑をした」	🗚 🔉 🕹 🤌 🖡 🚺 🖸 😫 🔛 📋 🤤	Q, 10
Multiview Explorer 👻 🗸	CPU/Expansion Racks	٠ •	Toolbox 👻 🗸
new_Controller_0 🔻	All parameters▼Ch1		<search> マ ア ×</search>
Configurations and Setun	Item name Анарыче сопцолент зузент писцация мененсе горон	Value	
TherCAT	Adaptive Control/Ch1 System Fluctuation Average Deviation	0 x0.1%	
▼ St CPU/Expansion Backs	Adaptive Control PID Parameter/Ch1 SP Response Proporti	80 x0.1°C or x0.1°F	
CPU Back	Adaptive Control PID Parameter/Ch1 SP Response Integral	2330 x0.1s	
L Unit 1 : NX-TC24	Adaptive Control PID Parameter/Ch1 SP Response Coefficie	0	
	Adaptive Control PID Parameter/Ch1 Disturbance Proportio	80 x0.1°C or x0.1°F	
	Adaptive Control PID Parameter/Ch1 Disturbance Integral T	2330 x0.1s	
► R Controller Setup	Adaptive Control PID Parameter/Ch1 Disturbance Derivative	400 x0.1s	
Motion Control Setup	Control Common-Voltage Output (for Driving SSR)/Ch1 Co	2	
🖋 Cam Data Settings	Control Common-Voltage Output (for Driving SSR)/Ch1 Mi	10 0.1%	
Event Settings	MV branch/Ch1 MV Branch Operation	Disabled	
🖏 Task Settings	MV branch/Ch1 MV Slope	1000 0.001	
☑ Data Trace Settings	MV branch/Ch1 MV Uttset Heater Error Detected/Ch1 Heater Burnout Detection Current	0 0.17	
V Programming	Heater Error Detected/Ch1 SSR Failure Detection Current	50	
V 🖪 POUs	neater entry beteeted, entry solvenance beteeten oarrent	Deture to Default Value	
▼ III: Programs		Return to Default value	
▼ ⊡ Program0	Help		
L & Section0	Data type: Comment: Set ON/OFF control or 2-PID control.		

5- Yapılan konfigurasyonun gönderilmesi için PLC ye bağlanılıp, "Transfer to Unit" butonu ile gönderilir :

NX-TC_Configuration - INTERNAL	PLC - Sysmac Studio (64bit)		– 🗆 X
File Edit View Insert Project	Controller Simulation Tools Window Help		
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Multiview Explorer 👻 🔻 🕂	Unit 1[NXBusMaster]:rati 🗙 🔄 CPU/Expansion Racks		Toolbox 👻 👎
	All parameters		<search> ▼ ♀ ×</search>
	Item name	Value	A
Configurations and Setup	Event Level Setting/Event 1	Sensor Disconnected Error	
翻 EtherCAT	Event Level Setting/Level Setting of Event 1	Minor Fault	
V 🖙 CPU/Expansion Racks	Event Level Setting/Event 2	Cold Junction Error	
V === CPU Rack	Event Level Setting/Level Setting of Event 2	Minor Fault	
Unit 1 : NX-TC24	Event Level Setting/Event 3	Heater Burnout Detected	
at I/O Man	Event Level Setting/Level Setting of Event 3	Minor Fault	
	Event Level Setting/Event 4	Minor Fault	
Controller Setup	Event Level Setting/Event 5	Alarm Detected	
▶ 尊 Motion Control Setup	Event Level Setting/Level Setting of Event 5	Minor Fault	
🖌 Cam Data Settings	Ch Enable/Disable/Ch1 Enable/Disable	True	
Event Settings	Ch Enable/Disable/Ch2 Enable/Disable	True	
🗟 Task Settings	Input/Ch1 Input Type	K -20.0 to 500.0 [°C] / 0.0 to 900.0[°F]	
M Data Trace Settings	Input/Ch1 Temperature Unit	۲ [۲]	
Programming	Input/Ch1 Decimal Point	Follow the Decimal Point Position of an Input Type	
	Input/ChT Cold Junction Compensation Enable/Disable	Irue	
		Return to Default Value	
▼ ¡ii; Programs	_ Help		
V 🗠 Program0	Data type:		
∟ 🗟 · Section0	Comment: Sensor Disconnected Error		
L 📰 Functions			
L 🗟 Function Blocks	2	L	
▶ III Data			
► 🖿 Tasks		ransfer to Unit Transfer from Unit Compare	

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NX-TC_Configuration - INTERNAL	PLC - Sysmac Studio (64bit)			- 🗆 ×
File Edit View Insert Project	Controller Simulation Tools Window Help			
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Multiview Explorer	CPU/Expansion Racks CPU/Expansion Racks CPU/Expansion Racks CPU/Expansion Racks CPU/Expansion Racks CPU/Expansion Racks CPU/Expansion Racks CPU/Expansion Racks CPU/Expansion Racks CPU/Expansion Racks CPU/Expansion Racks CPU/Expansion	AusMaster]:rati X Value Sensor Disconnected Error Minor Fault Cold Junction Error Minor Fault Heater Burnout Detected Minor Fault SSR Failure Detected Minor Fault True True FOIlow the Decimal Point Post True True 1000 Transfer to NX Unit will Do you want to contin	I be executed.	
∟ 🕃 Function Blocks ▶ 📰 Data ▶ 🖿 Tasks	_	Transfer to Unit Transfer from Unit Comp	are	
	Output		• # ×	

- 6- Daha sonra global değişkenler IO Map bölümünde tanımlanır. Bu uygulamada aşağıdaki değişkenler tanımlanır:
- Ch1 Measured Value REAL : Gerçek sıcaklık değeri okunur.
- Ch1 Set Point REAL : İstenen sıcaklık değerinin girilmesi için kullanılan değişkendir.

Bu uygulamada kullanılacak bu iki değişken seçildikten sonra "Create Device Variable" yöntemi ile tanımlanır:

NX-TC_Configuration - INTERNALPL	LC - Sysmac Stu	udio (64bit)							– 🗆 ×
File Edit View Insert Project	Controller S	imulation Tools Window Help							
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Multiview Explorer 🗸 🗸	CPU/Expan	sion Racks 🛗 EtherCAT Unit 1[NXI	BusMaster]:rati 🥔 🖊) Map	×		-	Toolbox	
INTERNALPLC V	Position	Port	Description	R/W	Data Ty	vpe Variable	Vai	<search></search>	▼ ∧ ×
		EtherCAT Network Configuration							<u>^</u>
Configurations and Setup	Puilt in 1//	CPU/Expansion Racks							
翻 EtherCAI	OptionBoi	Built-In I/O Settings Option Roard Sottings							
▼ 🔄 CPU/Expansion Racks	NVPucMa	Option Board Settings Montanta							
V ## CPU Rack		 INA BUS Master Unit Status (Under management of 							
∟ Unit 1 : NX-TC24	Linit1	 Unit Status (Under management of – NY TC2405 							
📕 🥔 I/O Map		Received for 0x601D	Perenad	•	LUNT				
🖉 🔻 🕄 Controller Setup		Ch1 Operating Status	Channel1 Accreciated oper	R D	WORD				
L □ Operation Settings		Chil Operating Status Chil Operating Status	Channel1 Aggregated open	D	WORD				
∟ #ª Built-in EtherNet/IP I		Ch1 Decimal Point Position Monito	Channel1 decimal point po	R	LIINT				
L 🔚 Built-in I/O Settings		Ch1 Measured Value INT	Channel1 Measured value (R	INT				
Option Board Setting		Ch1 Measured Value REAL	Channel1 Measured value (R	REAL				
Memory Settings		Ch1 MV Monitor Heating INT	Channel1 MV (Heating) (IN	R	INT				
► A Motion Control Setup		Ch1 MV Monitor Heating REAL	Channel1 MV (Heating) (RE	R	REAL	Сору			
t/ Cam Data Sottings		Ch1 Heater Current UINT	Channel1 heater current (U	R	UINT				
B Cam Data Settings		Ch1 Heater Current REAL	Channel1 heater current (R	R	REAL				
Event Settings		Ch1 Leakage Current UINT	Channel1 Leakage current (R	UINT				
Task Settings		Ch1 Leakage Current REAL	Channel1 Leakage current (R	REAL				
Image: Data Trace Settings		Ch1 Reserved for 0x600F	Reserved	R	UINT	Search			
Programming		Ch1 Reserved for 0x6010	Reserved	R	UINT	Expand/Collapse All			
V 🖞 POUs		Ch1 Reserved for 0x6011	Reserved	R	UINT	Craata Davisa Variak	-1-		
V 🗄 Programs		Ch1 Operation Command	Channel1 Aggregated data	W	WORD	Create Device variat	Jie Jacob Dave Cou		
V 🔤 Program0		Ch1 Set Point REAL	Channel1 set point (REAL)	W	REAL	Create Device Variat	ble with Prefix		
L - Section()		Ch1 Manual MV/ REAL	Channel1 Manual MV (RFA)	w	REAL				

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File Edit View Insert Project	Controller S	imulation Tools Window Help						
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Multiview Explorer 👻 🖣 🛛	CPU/Expan:	sion Racks 🛛 🔐 EtherCAT Unit 1[NXB	usMaster]:rati 🦨 I/O N	Map 🗙		-	Toolbox	- 1
INTERNALPLC 🔻	Position	Port EtherCAT Network Configuration	Description	R/W Data Typ	e Variable		<search></search>	▼ P X
Configurations and Setup		CPU/Expansion Racks			_			<u>^</u>
THE Ether CAT	Built-in I/(Built-in I/O Settings						
The COLUCE participe Packs	OptionBoi	Option Board Settings						
	NXBusMa:	▼ ™ NX Bus Master						
V IIII CPU Rack		 Unit Status (Under management of 						
L 0411 1 1 1 1 2 4	Unit1	▼ NX-TC2405						
і і/О Мар		Reserved for 0x601D	Reserved R					
▼ IR Controller Setup		Ch1 Operating Status	Channel1 Aggregated oper R	WORD				
L 🖪 Operation Settings		Ch1 Output and Alarm Status	Channel1 Aggregated outp R	WORD				
∟ 🛱 Built-in EtherNet/IP F		Ch1 Decimal Point Position Monito	Channel1 decimal point po R	R UINT				
L 🔚 Built-in I/O Settings		Ch1 Measured Value IN1	Channel I measured value (H					
L 🔤 Option Board Setting		Ch1 Measured Value REAL	Channel1 Measured value (R REAL	N1_Ch1_Measured_Value_REAL			
L 🗰 Memory Settings		Ch1 MV Monitor Heating INT	Channel1 MV (Heating) (IN R	R INT				
▶ 掛 Motion Control Setup		Ch1 MV Monitor Heating REAL	Channel1 MV (Heating) (RE R	R REAL				
		Ch1 Heater Current UINT	Channel1 heater current (U R	R UINT				
Event Settings		Ch1 Heater Current REAL	Channel1 heater current (R R	REAL				
Tack Settings		Ch1 Leakage Current UINT	Channel1 Leakage current (R	R UINT				
Task Settings		Ch1 Leakage Current REAL	Channel1 Leakage current (R	R REAL				
Data Trace Settings		Ch1 Reserved for 0x600F	Reserved R	R UINT				
Programming		Ch1 Reserved for 0x6010	Reserved R	R UINT				
V 📋 POUs		Ch1 Reserved for 0x6011	Reserved R	R UINT				
▼ III Programs		Ch1 Operation Command	Channel1 Aggregated data	WORD				
V 💀 Program0		Ch1 Set Point REAL	Channel1 set point (REAL)	N REAL	N1_Ch1_Set_Point_REAL			
L 🖶 Section0		01414 1100 PEN						
. Del 15								

7- Bu işlem yapıldıktan sonra "Programming" menüsünden, "Data" kısmında "Global Variables" kısmında görülebiliyor ise, değişkenler başarılı bir şekilde tanımlanmış demektir :

NX-TC_Configuration - INTERNAL	PLC - Sysmac Studio (64bit)	-	\Box \times
<u>File Edit View Insert Project</u>	<u>C</u> ontroller <u>S</u> imulation <u>T</u> ools <u>W</u> indow <u>H</u> elp		
x • • • • • • •			
Multiview Explorer	St CPU/Expansion Racks / 202 EtherCAT Unit 1[NXBusMaster]rati ///O.Map Global Variables ×	Toolbox	
	Group Filter 🔻 (No group) 🔻	<search></search>	$\overline{}$
Configurations and Setup	83 Name Data Type Initial Value AT Retain Constant Network Publish		<u>^</u>
調 EtherCAT	N1_Ch1_Set_Point_REAL REAL IOBus://unit#1 Do not publish 🔻		
V 🖘 CPU/Expansion Racks	N1_Ch1_Measured_Value_REAL REAL IOBus://unit#1 Do not publish 🔻		
V == CPU Rack			
L Unit 1 : NX-TC24			
→ I/O Map			
Operation Settings			
L 部 Built-in EtherNet/IP I			
L 🔚 Built-in I/O Settings			
L 🔚 Option Board Setting			
L ## Memory Settings			
▶ 掛 Motion Control Setup			
& Cam Data Settings			
Event Settings			
EPI Data Trace Settings			
Programming			
V 🖪 POUs			
V 🕮 Programs			
V 📼 Program0			
L 信· Section0			
L 🔄 Functions	Output		
L 35 Function Blocks			
L St Data Types			
Global Variables			

8- CPU\Extension Rack kısmından NX-TC2405 ürünün konfigurasyon ayarları kısmında
 "Edit I/O Allocation Settings" menüsüne girilir:

NX-TC_Configuration - INTERNALPLC - Sysmac Studio (64bit)	- 🗆 X
File Edit View Insert Project Controller Simulation Tools Window Help	
¥ 🖲 🕼 🝵 つ さ 🕼 🔤 🗗 🗙 삶 區 🗟 🗛 🙂 🛤 😫 🗛 🔍 😣 🖉 🦫 🐂	O ⊑ ⊑ [] @ Q %
Multiview Explorer	U/Expansion Racks X Toolbox 4 Item name Value Chi MV Monitor Chi MV Monitor Chi MV Monitor Chi Heater Curre Chi Heater Curre
L Unit 1: NX-TC24	Ch1 Heater Curre. Ch2 Heater Curre. Ch2 Leakage Curr. Ch2 Leakage Curr. Ch2 Leakage Curr. Ch2 Leakage Curr. Ch2 Leakage Curr. Ch3 Reserved for. Ch3 Reserved for. Ch4 Reserved
	Settings NX-ID343 Ver10 Unit operation setti Edit Unit Operation Settings NX-ID343 Ver10 Device name NX-ID542 Ver10 Set a Unit name. NX-ID542 Ver10

9- Ortam sıcaklığının alınabilmesi için "Input" bölümünden "Add I/O Entry" sekmesine tıklanarak beliren ekrandan "0x6003:01 Ambient Temperature" değişkeni eklenir :

NX-IC_Configuration - INTERNAL	.PLC - Sysmac Studio (64bit)		- L X
File Edit View Insert Project	Controller Simulation Tools Window Help		
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Multiview Explorer 👻 🗜	EtherCAT Unit 1[NX8usMaster]rati V/O Map 109 GI VO Allocation Status: (1) I/O data size Input 74/8192 [bytes] Output 92/819	obal Variables CPU/Expansion Racks X (bytes)	Toolbox
✓ Configurations and Setup	UO Entry Mapping List Input 592[bits] Output 736[bits]	VO entries included in the Input Data Set 1 Index Size Data Type VO entry name 0x600101 16 bit WORD Ch1 Operating Status Channel	Digital Input Device Digital Input Time Sta Digital Mix Device Digital Quitout Device
Unit 1 : NX-TC24	ISeleiInput/OutputI/O entry mapping namei Flag i i Output Output Data Set 1 Editable Input Input Data Set 1 Editable	0x6001:02 16[bit] WORD Ch2 Operating Status Channel2 0x6002:01 16[bit] WORD Ch1 Output and Alarm Channel1 0x6002:02 16[bit] WORD Ch2 Output and Alarm Channel2 0x6004:01 16[bit] UNIT Ch1 Decimal Point Point Channel	Digital Output Time Analog Input Device Analog Output Devic
L Controller L Opera Add I/O E L # Built-i 0x6000:01 Ut L ■ Built-i 0x6000:01 A	ntry – – × nit Status Moient Temperature	0x600402 [dbit] UINT Ch2 Decimal Point Point. Channel2 0x600502 [dbit] UINT Ch2 Decimal Point Point. Channel2 0x6005:02 [dbit] INT Ch1 Measured Value INT Channel2 0x6005:02 [dbit] INT Ch2 Measured Value INT Channel2 0x6005:02 [dbit] Ch1 Measured Value INT Channel2	Input Keyword Show all versions NX-IA3117 Ver:1.0 AC input Unit
L I Optio ↓ Memc ↓ Memc ↓ Motion C ↓ Motion C	n1 Reserved for 0x6012 h2 Reserved for 0x6012 h1 Reserved for 0x6013 D2 Reserved for 0x6013	0x60000 52[01] AEAL Charmer Guide Russel Charmer 0x600602 22[01] REAL Ch2 Messared Value Res. Channel 0x6007:02 16[bit] INT Ch1 MV Monitor Heatin Channel 0x6007:02 16[bit] INT Ch2 MV Monitor Heatin Channel	NX-ID3317 Ver:1.0 DC Input Unit NX-ID3343 Ver:1.0 DC Input Unit
6∕ Cam Data 0x6014:01 Cł ▶ Event Sett 0x6014:02 Cł 0x6015:01 Cł ™ Task Setti	n1 Reserved for 0x6014 h2 Reserved for 0x6014 h1 Reserved for 0x6015	Ox6008:01 32[bit] REAL Ch1 MV Monitor Heatin Channel1 Ox6008:02 32[bit] REAL Ch2 MV Monitor Heatin Channel2 Ox6008:01 16[bit] UINT Ch1 Heater Current UINT Channel2 Ox6008:02 16[bit] UINT Ch1 Heater Current UINT Channel2	NX-ID3417 Ver:1.0 DC input Unit NX-ID3443 Ver:1.0 DC input Unit NX-ID4342 Ver:1.0
✓ Data Trace ✓ Programming ✓ ✓ Programming ✓ ✓ POUs ✓ ✓	NT OK Cancel	0x600C:01 32[bit] REAL Ch1 Heater Current REAL Channel1 0x600C:02 32[bit] REAL Ch2 Heater Current REAL Channel2 0x600D:01 16[bit] UINT Ch1 Leakage Current UL Channel1	DC Input Unit NX-ID4442 Ver:1.0 DC Input Unit NX-ID5142-1 Ver:1.0
V III, Progr. V III Program0 L III Section0		Add I/O Entry Delete I/O Entry OK Cancel Apply	NX-ID5142-5 Ver1.0 DC Input Unit NX-ID5342 Ver1.0 DC Input Unit

10- Yapılan konfigurasyon "Synchronize" yardımı ile PLC ye gönderilir:

2	XX-TC_Configuration - INTERNALPLC - Sysmac Studio (64bit)																							
<u>F</u> ile	<u>E</u> dit	<u>V</u> iew	<u>I</u> nsert	<u>P</u> roject	<u>C</u> ont	oller	<u>S</u> im	ulation	Tool	s <u>W</u>	(indow	/ <u>Н</u>	elp											
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11-Bu işlemler bittikten sonra PLC ye bağlandıktan sonra, IO Map menüsünde "Ch1 Operation Command" kısmından "Ch1 Run or Stop" bölümünü önce True daha sonra False yaparak NX-TC ısı kontrol cihazı Run konumuna alınır. İstenen sıcaklık değeri "Ch1 Set Point REAL" bölümüne girilir. Bu uygulamada okunan sıcaklık değeri 27.2 derece olup, istenen sıcaklık değeri ise 30 derecedir. 30 dereceye kadar ısı kartında "Out1" çıkışı aktif olur, 30 dereceye ulaşıldığında ise "Out1" çıkışı kesilir.

ECAT EtherCAT	📲 Unit 1[NXBusMaster]:rati 🧈 I/O N	Map 🗙 🚾 Global Variables	; S	CPU/Expans	sion Rac	:ks		
Position	Port	Description	R/W	Data Type	Value	Variable	Variable Comment	Variable Type
Unit1	NX-TC2405							
	Ambient Temperature	Ambient temperature	R	INT	25			
	Reserved for 0x601D	Reserved	R	UINT	0			
	Ch1 Operating Status	Channel1 Aggregated oper	R	WORD	16#0			
	Ch1 Output and Alarm Status	Channel1 Aggregated outp	R	WORD	16#1			
	Ch1 Decimal Point Position Monito	Channel1 decimal point po	R	UINT	1		-	
	Ch1 Measured Value INT	Channel1 Measured value (R	INT	272			
	Ch1 Measured Value REAL	Channel1 Measured value (R	REAL	27.2	N1_Ch1_Measured		Global Variables
	Ch1 MV Monitor Heating INT	Channel1 MV (Heating) (IN	R	INT	1000			
	Ch1 MV Monitor Heating REAL	Channel1 MV (Heating) (RE	R	REAL	100			
	Ch1 Heater Current UINT	Channel1 heater current (U	R	UINT	0			
	Ch1 Heater Current REAL	Channel1 heater current (R	R	REAL	0			
	Ch1 Leakage Current UINT	Channel1 Leakage current	R	UINT	0			
	Ch1 Leakage Current REAL	Channel1 Leakage current	R	REAL	0			
	Ch1 Reserved for 0x600F	Reserved	R	UINT	0			
	Ch1 Reserved for 0x6010	Reserved	R	UINT	0			
	Ch1 Reserved for 0x6011	Reserved	R	UINT	0			
	Ch1 Operation Command	Channel1 Aggregated data	w	WORD	16#0			
	Ch1 RUN or STOP	Channel1 Run/Stop	W	BOOL	FALSE			
	Ch1 100 Percent AI	Channel I 100%A1 execute	w	BOOL	FALSE			
	Ch1 40 Percent AT	Channel1 40%AT execute	W	BOOL	FALSE			
	Ch1 AT Cancel	Channel1 AT cancel	W	BOOL	FALSE			
	Ch1 Automatic Filter Adjustment	Channel1 Automatic filter a	W	BOOL	FALSE			
	Ch1 Automatic Filter Adjustment	Channel1 Automatic filter a	W	BOOL	FALSE			
	Ch1 Water Cooling Output Adju	Channel1 Water cooling ou	w	BOOL	FALSE	-		
	Ch1 Adaptive Control PID Updat	Channel1 Adaptive control	w	BOOL	FALSE			
	Ch1 Auto or Manual	Channel1 Auto/manual	w	BOOL	FALSE			
_	Ch1 Reflect Manual MV	Channel1 Reflect Manual N	w	BOOL	FALSE			
	Ch1 Inverting Direct or Poverse (Channel1 Inverting direct/r	W		EALSE			
	Ch1 Set Point REAL	Channel1 set point (REAL)	W	REAL	30	N1_Ch1_Set_Point		Global Variables
	Ch1 Manual MV REAL	Channel1 Manual MV (REA	W	REAL	0			
	Ch1 Reserved for 0x7005	Reserved	W	UINT	0			
	Ch1 Reserved for 0x7006	Reserved	w	UINT	0			

Isıya ulaşılıyor (Out1 aktif) :

 Isıya ulaşıldı (Out1 pasif) :

