

User manual

ABC-Industrial Panel

HMI Setup in TIA

18/2018

© Copyright 2018 by ABC IT, Ahrens & Birner Company GmbH Virchowstraße 19/19a D-90409 Nuremberg Tel +49 911-394 800-0 Fax +49 911-394 800-99 mailto:mail@abcit.eu http://www.abcit.eu/

ABC IT	is a registered trademark of ABC IT GmbH
Simatic	is a registered trademark of Siemens AG
STEP	is a registered trademark of Siemens AG
TIA	is a registered trademark of Siemens AG

Contents

1. Introduction	4
1.1 General	
1.2 Software	5
2. Configuration	6
 2.1 Configuration with TIA PC 2.1.1 Project in TIA 2.1.2 PLC configuration 2.1.3 Panel configuration 2.1.4 WinCC configuration 2.1.5 Configuration download 	
2.2 Transferring into ABC panel	

1. Introduction

1.1 General

The ABC industrial panel can also serve as a Simatic HMI panel for the system controlling and monitoring. By means of the integrated LAN port, it is possible to establish the communication with the TIA PC and the PLC. The configuration will take place in TIA PC, and then transferred into the panel through the Ethernet.

This document will show you, how to setup an ABC panel as an HMI panel.



1.2 Software

In order to show the compatibility, we choose software TIA V15 in this example.

PC:installed with TIA V15 and WinnCC Advanced V15ABC panel:installed with WinCC Runtime Advanced V15

Please connect them via a network cable.

2. Configuration

2.1 Configuration with TIA PC

2.1.1 Project in TIA

In TIA, firstly create a new project, "Example.ap15". Of course you can open an existing project as well.

2.1.2 PLC configuration

Configure a PLC station as usual. In this case, we choose a CPU 416 and a CP 443-1.



In "Properties " of CP, connect it in the subnet "PN/IE_1" and set the IP-address. Here the IP- address is 192.168.0.102. Because the IP-address of the PC is in the same subnet, 192.168.0.xxx.

CP 443-1_1 [CP 443-1]	Properties Diagnostics	∎ - ▼
General IO tags	System constants Texts	
▶ General	Ethemet addresses	^
 Options PROFINET interface [X1] IP access protection I/O addresses 	Interface networked with Subnet: PN/IE_1 Add new subnet	
	ISO protocol Use ISO protocol MAC address: 08 -00 -06 -01 -00 -00	
	IP protocol ✓ Use IP protocol IP address: 192.168.0.102 Subnet mask: 255.255.0 Use router Router address: 0.0.0.0	

2.1.3 Panel configuration

Double klick on "Add new device". In the opened Dialog, select "PC systems > PC general > PC station". Then a PC-System will be listed under "Devices" (left). This PC station is just the ABC panel, which will soonly work as an HMI panel.



Open "Device configuration" of PC-System_1[SIMATIC PC station].



In "Hardware catalog" (right) select "SIMATIC HMI application > WinCC RT Advanced", and double click on it. It will appear in the corresponding slot of the PC station. Or drag it in the slot.



In "Hardware catalog" select "Communications modules > IE general", and double click on it. It will also appear in the corresponding slot of the PC station. Or drag it in the slot.



In "Properties" of IE general_1, connect it into the subnet "PN/IE_1" and set the IP address: 192.168.0.117. This should be the IP-address of the ABC panel.

IE general_1	[IE General]	💽 Properties 🚺 Info	🗓 Diagnostics 🔹 🗖 🗖 🗸
General	IO tags	System constants Texts	
 General PROFINET inte General Options Ethernet a Advanced 	erface [X1] Iddresses options	Ethemet addresses	
		ISO protocol Use ISO protocol MAC address: 08 - 00 - 06 - 01 - 00 - 00	
		IP protocol Use IP protocol IP address: 192 . 168 . 0 . 117 Subnet mask: 255 . 255 . 0 Use router Router address: 0 . 0 . 0 . 0	

Open the diagram of "Devices & networks". The connection between the CPU and the PC station will be displayed (as below). That means, that the network connection is ready for the data exchange.

	Project tree		Example	Devices & net	works				_ # = >
	Devices					đ	📱 Topology view	d dh	Network view
5	18 III III III III III III III III III I	B	Network	Connections	HMI connection	- 🖭 🖷 🔜	🛄 🔍 ±		Network overview
vork								^	Pevice
	 Example 	<u>^</u>						_	 PC-System_1
Ē	📑 Add new device								IE general 1
8	📥 Devices & networks		PLC_1		PC-System	1	CP WINCC		HML RT 1
8	Image: Dec_1 [CPU 416-2DP]		CPU 416-2		SIMATIC PC	Stat	RI Adv	=	▼ 57-400 station 1
8	PC-System_1 [SIMATIC PC stat							_	PLC 1
	Device configuration								CR4431.1
	Q Online & diagnostics	=					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Cr 445*1_1
	+ - HMI_RT_1 [WinCC RT Advan				PN/IE_1				
	Device configuration								
	📍 Runtime settings							- 1	
	Screens								
	Screen management							- 11	
	🕨 🔚 HMI tags								
	2 Connections								
	MI alarms								

2.1.4 WinCC configuration

Now you can edit the settings of WinCC, and design the screens as you like.



2.1.5 Configuration download

When the edition in WinCC is finish, you can transfer it to the panel. Please first of all make sure that panel is physically in the network connected. Mark "PC-System_1[SIMATIC PC station]" under "Project tree" and mouse right click on it. Select "Download to device".

7월 Siemens - U:\XSang\Programn	h\TIA Portal\Example\Examp	le
Project Edit View Insert Onl	ine Options Tools Wind	ow Help
📑 🎦 🔚 Save project 昌 🐰 🎚	🗎 🗈 🗙 🔊 ± 🖓 ± 着	🔃 🏠 🖳 🛼 💋 Go onl
Project tree	🔟 🖣 Example 🛛	Devices & networks
Devices		
	Network	Connections HMI con
2		
o ≥ r ⊡ Example		
Add new device		
Devices & networks	PLC_1	
PLC 1 [CPU 416-2DP]	CPU 416-2	DP
PC-System_1 [SIMATIC PC s		
Device configuration	Change device	
Online & diagnostics	Open	
🚽 🍦 🔫 🛅 HMI_RT_1 [WinCC RT Ad	Open in new editor	
🔐 Device configuration	Start the HMI Device Wiza	rd
📍 Runtime settings	V Cut	Ctrl+X
E Screens	Copy	Ctrl+C
🕨 🕞 Screen managemei	Paste	Ctrl+V
🕨 🔁 HMI tags	✓ Delete	Del
😋 Connections	Rename	F2
HMI alarms		
Recipes	Go to topology view	
Historical data	GO TO HELWORK VIEW	
► 🖪 Scripts	Compile	•
5 Scheduled tasks	Download to device	•
Cycles	So online	Ctrl+K
 temports Text and countin list 	Online & diagnostics	
20 Hext and graphic list		Cuito

Now a diagram of "Extended download to device" is displayed. Please check the IP address and select "Ethernet" as the "Type of the PG/PC interface". Then press the button "Connect".

	Device PC-System_1	Device type SIMATIC PC statio	Slot	Interface type Ethernet	Address 192.168.0.117	Subnet
	IE general_1	IE general	1 X1	PN/IE	192.168.0.117	PN/IE_1
		Type of the PG/PC inte	erface:	L Ethernet	>	•
		PG/PC inte	erface:	💹 Ethernet		
		Connection to interface/s	ubnet:	Direct at slot "		
		1st gai	teway:			- 💎 💎
RT Adv	 Configured IP 	Address				
Flash LED	Configured IP Use other IP IP address Use device name Device name	Address	<u>></u>			Connect
Flash LED	Configured IP Use other IP IP address Use device ni Device name	Address :: 0.0.0.0 .: :: :: :: :: :: :: :: :: :: :: :: ::	<u>)</u>		Display only error 1	Connect

If every parameter is set correctly, the connection will be as below established. Now press the button "Load".

	Device	Device type	Slot	Interface type	Address	Subnet
	PC-System_1	SIMATIC PC statio		Ethernet	192.168.0.117	
	IE general_1	IE general	1 X1	PN/IE	192.168.0.117	PN/IE_1
		Type of the PG/PC inte	erface:	Lethernet		
		PG/PC inte	erface:	Ethernet		- (
		Connection to interface/s	ubnet:	Direct at slot "		- (
		1st gat	teway:			
Flash LED	Use other IP IP address	ame (DNS)	D			
	Device name					Connect
ne status informat	ion:				Display only error m	nessages
ttempting to con connection estab	nect to the device with lished to the device wit tion retrieval complete	address 192.168.0.117. h address 192.168.0.117 d	<i>י</i> .			

Press "Load"

Status	1	Target	Message	Action
↓]	0	 PC-System_1 	Ready for loading.	Load 'HMI_RT_1'
	0	Overwrite	Overwrite if object exists online?	🗹 Overwrite all
	0	HMI Runtime	Informations	
. 1				1

2.2 Transferring into ABC panel

At the panel, please meanwhile start the application "WinCC Runtime Loader".



"Start Center " will be opened. For data receiving, select "Transfer". Quickly all the configuration of WinCC will be transferred into the panel. Afterwards the edited screens will be automatically executed as configurated.

