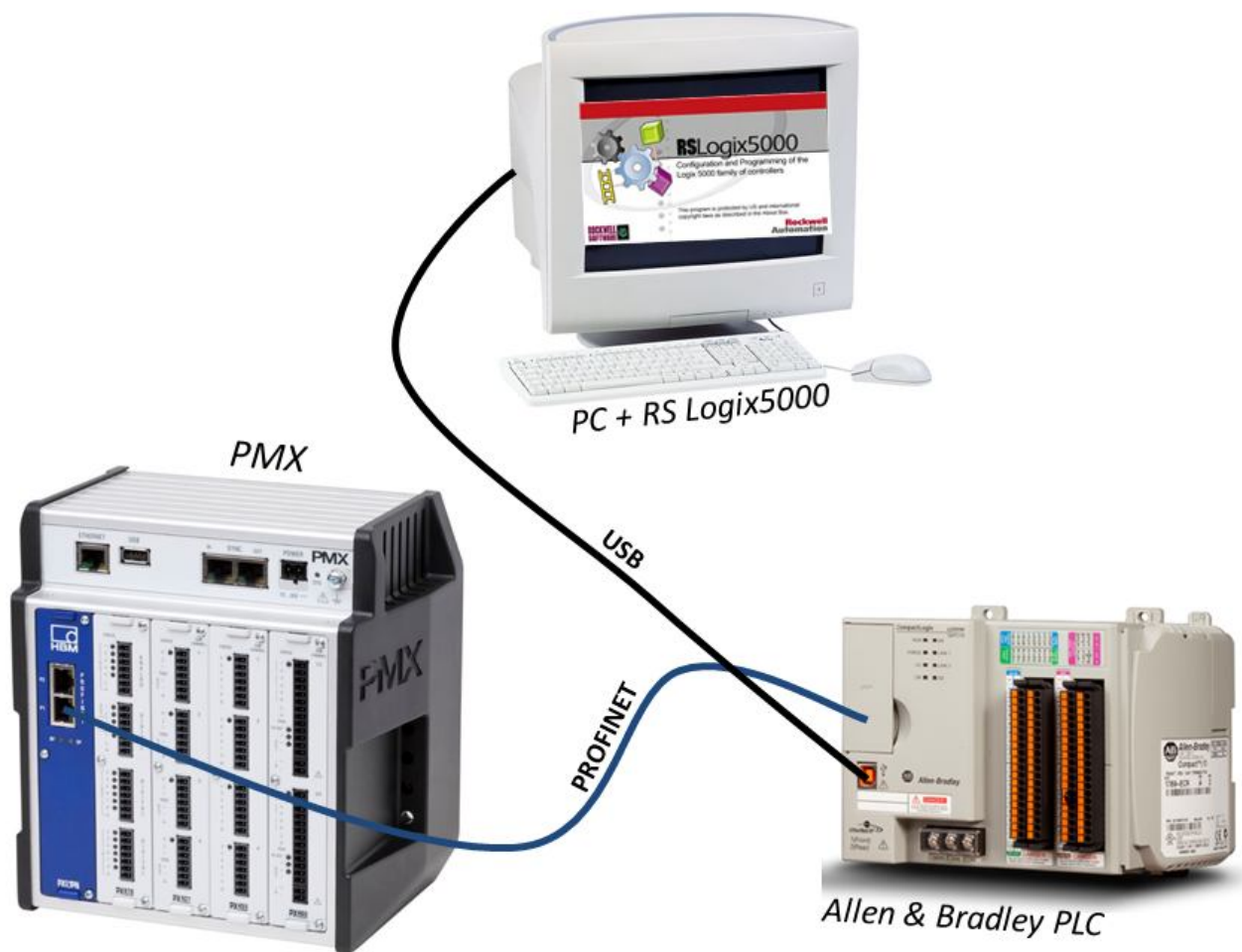


TECH NOTE :: Demo configuration for PMX to read/write consistent data via Ethernet/IP to Allen-Bradley PLC CompactLogix LE24ER

Version: 2014-11-07
Author: Michael Guckes
Status: External

Short description

This is an introduction on how to setup an Allen-Bradley-PLC which communicates via EtherNet with a PMX System.



Introduction

Required Hardware

In order to run the example given in this instruction the following hardware components are required:

- 1x PMX System (incl. supply)
- 1x Card PX01EP
- 1x Allen-Bradley PLC – CompactLogix L24ER QBFC1B (incl. supply and an USB-connection cable)
- 2x Ethernet cable
- 1x Computer

Connection

PMX and the CompactLogix PLC are connected via the EtherNet-cable. Further the PMX System is connected to the computer with EtherNet, while the PLC is connected to the computer with the USB-Cable. Finally the PLC and the PMX are connected to their supplies.

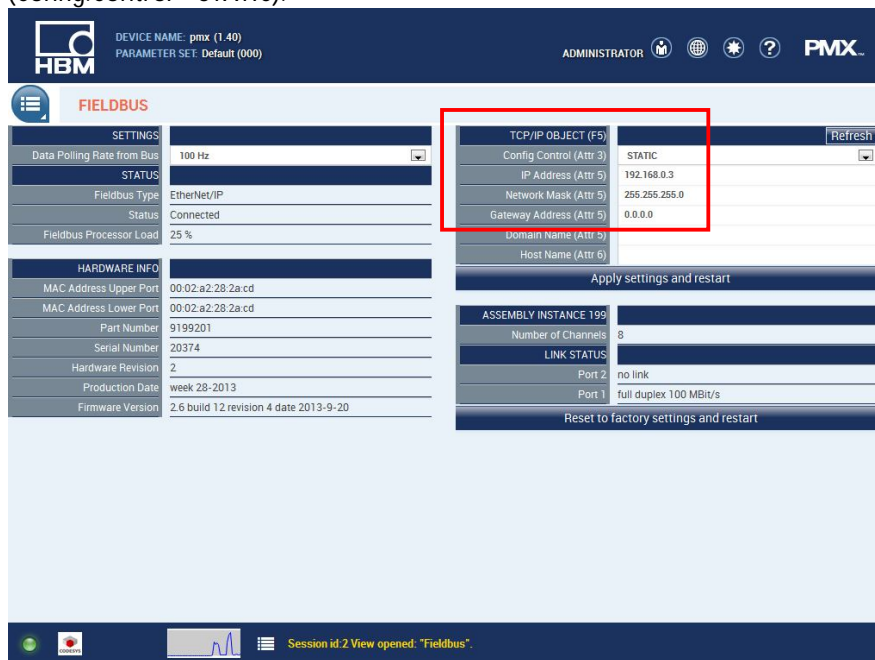
Software

- RSLogix5000
- Webbrowser

Setup

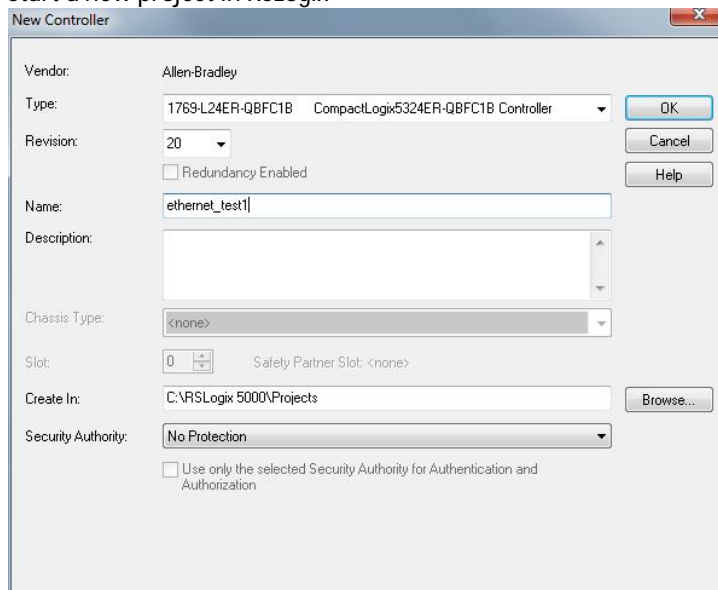
Default Settings in the Webbrowser

Access the PMX in the browser (in Administrator Mode) and choose "Fieldbus" in the menu. Set an IP Address (Config.Control = STATIC).



Setup a project in RSLogix5000

Start a new project in RSLogix



File Edit View Search Logic Communications Tools Window Help

assign an ip address

Select a Language...

Offline RUN OK HALT I/O

No Forces

No Edits

Path: Innone

Controller Organizer

- Controller Organizer
 - Controller Tags
 - Controller Fault Handler
 - Power-Up Handler
 - Tasks
 - MainTask
 - MainProgram
 - Unscheduled Programs
 - Motion Groups
 - Ungrouped Axes
 - Add-On Instructions
 - Data Types
 - User-Defined
 - Strings
 - Add-On-Defined
 - Predefined
 - Module-Defined
 - Trends
 - I/O Configuration
 - 1709 Bus
 - (0) 1709-L24ER-QBFC1B ethernet_test1
 - Embedded I/O
 - [1] Embedded Discrete_IO
 - [2] Embedded Analog_IO
 - [3] Embedded Counters
 - Expansion I/O
 - Ethernet
 - (0) 1709-L24ER-QBFC1B ethernet_test1

Type	Description
1709-L24ER-QBFC1B CompactLogix534ER-QBFC1B Controller	
Slot	0
Major Fault	
Minor Fault	

Create Output Expansion Instructions

The screenshot shows the 'New Module...' context menu in the Embedded Wizard IDE. The menu is open, displaying the following options:

- Discover Modules...
- Paste (with a keyboard shortcut of Ctrl+V)
- Properties (with a keyboard shortcut of Alt+Enter)
- Print

A red arrow points to the 'New Module...' option in the top-level menu.

Select Module Type

Catalog Module Discovery Favorites

Enter Search Text for Module Type...

Clear Filters

Hide Filters

Module Type Category Filters

- ☒ Communication
- ☒ Communications Adapter
- ☒ Controller
- ☒ Digital
- ☒ DPI to Ethernet/IP

Module Type Vendor Filters

- ☒ Allen-Bradley
- ☒ Cognex Corporation
- ☒ Endress+Hauser
- ☒ Hottinger Baldwin Messtechnik GmbH
- ☒ Mettler-Toledo

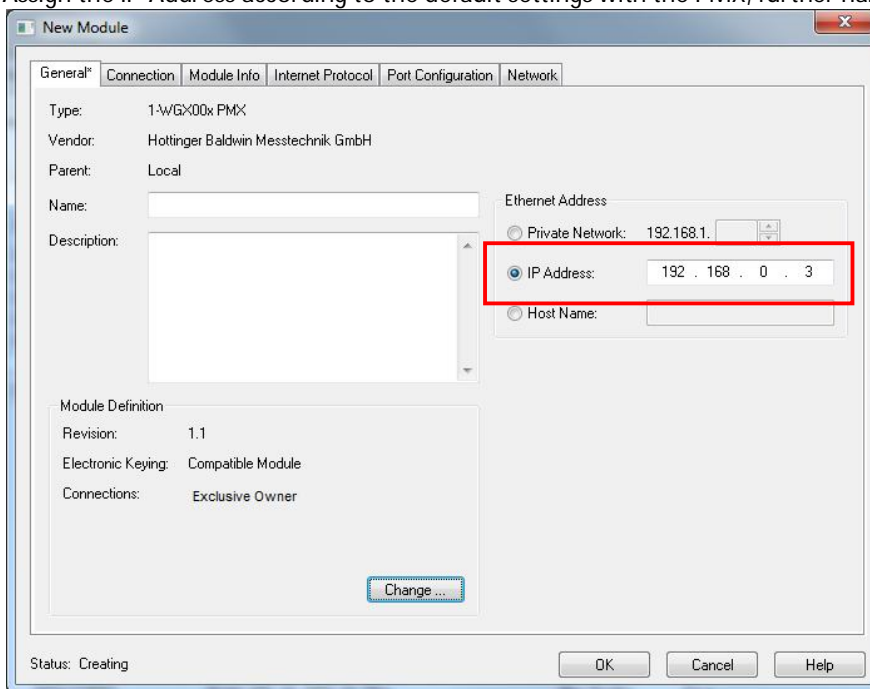
Catalog Number	Description	Vendor	Category
1783-EMS08T	1783-EMS08T Ethernet Managed Switch	Allen-Bradley	Communication
1783-ETAP	3 Port Ethernet Tap, Twisted-Pair Media	Allen-Bradley	Communication
1783-ETAP1F	3 Port Ethernet Tap, 1 Fiber/2 Twisted-Pair Media	Allen-Bradley	Communication
1783-ETAP2F	3 Port Ethernet Tap, 2 Fiber/1 Twisted-Pair Media	Allen-Bradley	Communication
1788-EN2DN	1788 Ethernet to DeviceNet Linking Device	Allen-Bradley	Communication
1788-ENBT	1788 10/100 Mbps Ethernet Bridge, Twisted-Pair Media	Allen-Bradley	Communication
1794-AENT	1794 10/100 Mbps Ethernet Adapter, Twisted-Pair Me...	Allen-Bradley	Communication
1794-AENTR	1794 10/100 Mbps Ethernet Adapter, 2-Port, Twisted...	Allen-Bradley	Communication
1799ER1G10/10G10	16 Port Input, 16 Port Output, 24V DC Base, Source...	Allen-Bradley	Digital
1-WG00x	PMX	Hottinger Baldwin...	Communications Adapter
2097-V31PR0	Kinetix 300, 2A, 120/240V, No Filter	Allen-Bradley	Drive
2097-V31PR2	Kinetix 300, 4A, 120/240V, No Filter	Allen-Bradley	Drive
2097-V32PR0	Kinetix 300, 2A, 240V, Integrated Filter	Allen-Bradley	Drive
2097-V32PR2	Kinetix 300, 4A, 240V, Integrated Filter	Allen-Bradley	Drive
2097-V32PR4	Kinetix 300, 8A, 240V, Integrated Filter	Allen-Bradley	Drive

210 of 210 Module Types Found

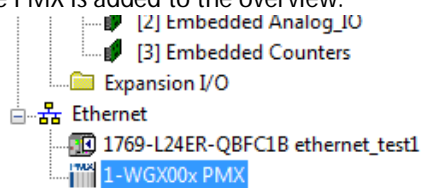
Add to Favorites

Create Close Help

Assign the IP-Address according to the default settings with the PMX, further name the device.



The PMX is added to the overview.

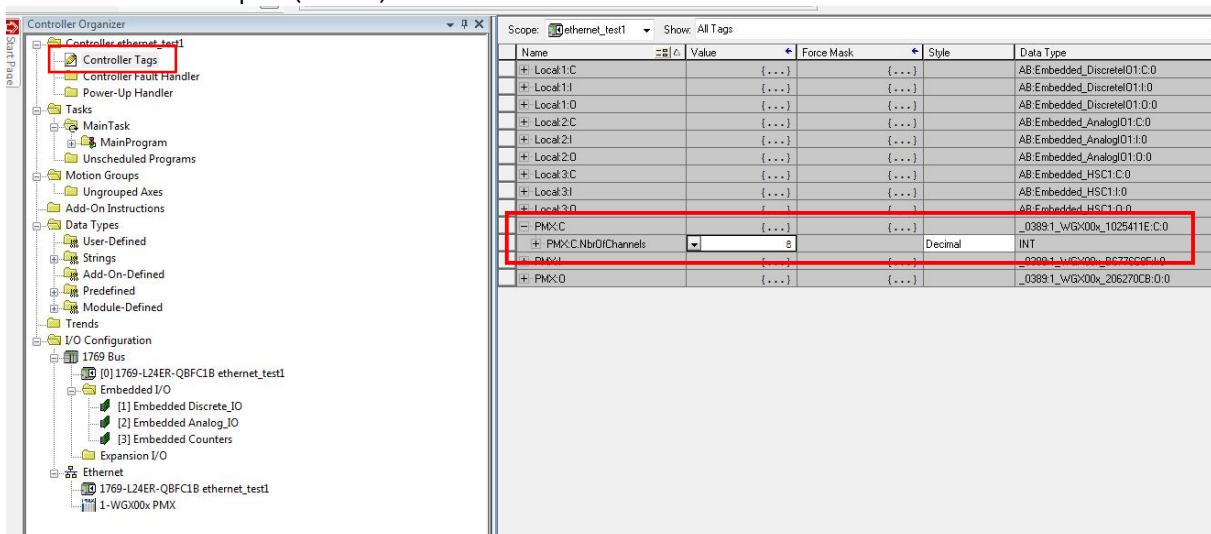


Select Controller Tags and define the number of Calculated Channels under "PMX C" (here: 8).

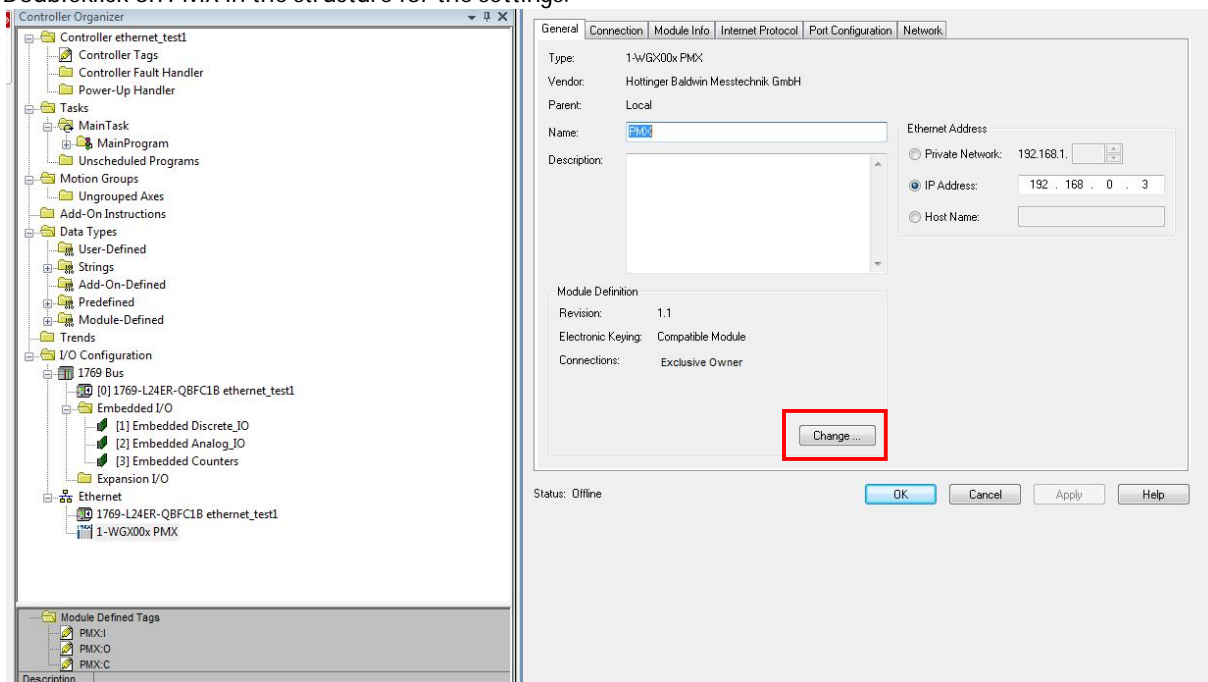
PMX C = Configuration

PMX I = Inputs (from PMX)

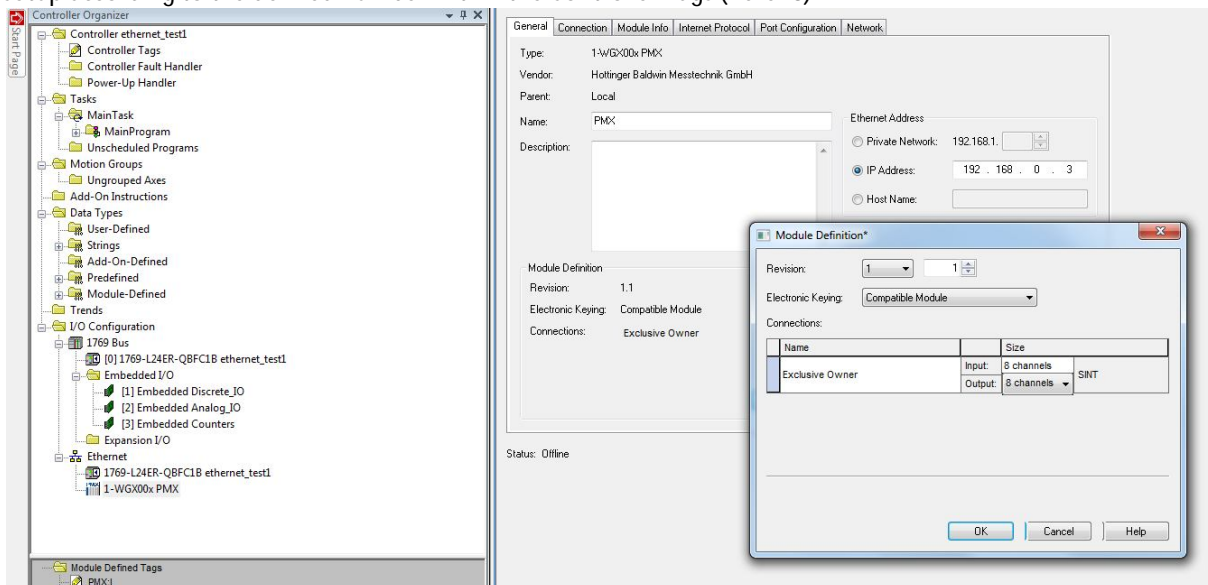
PMX O = Outputs (to PMX)



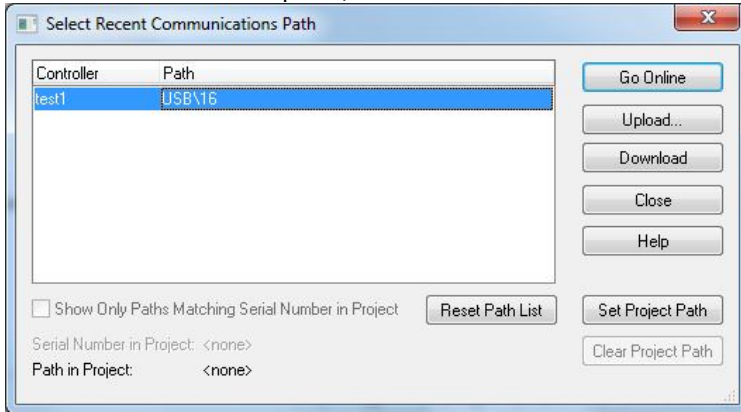
Doubleclick on PMX in the structure for the settings.



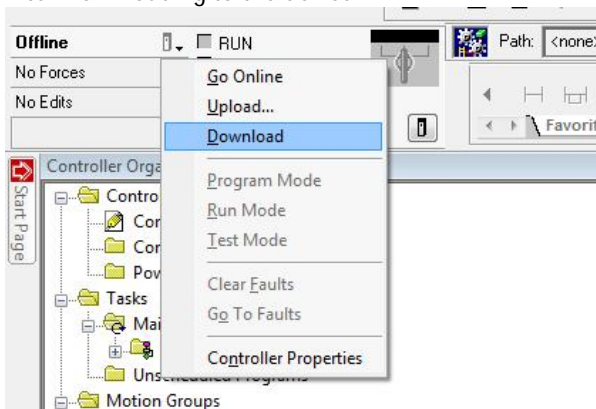
A click on „Change...” (see above) opens the window „Module Definition”, in which the Calculated Channels must be setup according to the defined number within the Controller Tags (here: 8).



Choose a communication path (Path: Communications \ Select Recent Path). Confirm your selection with „Go Online“.



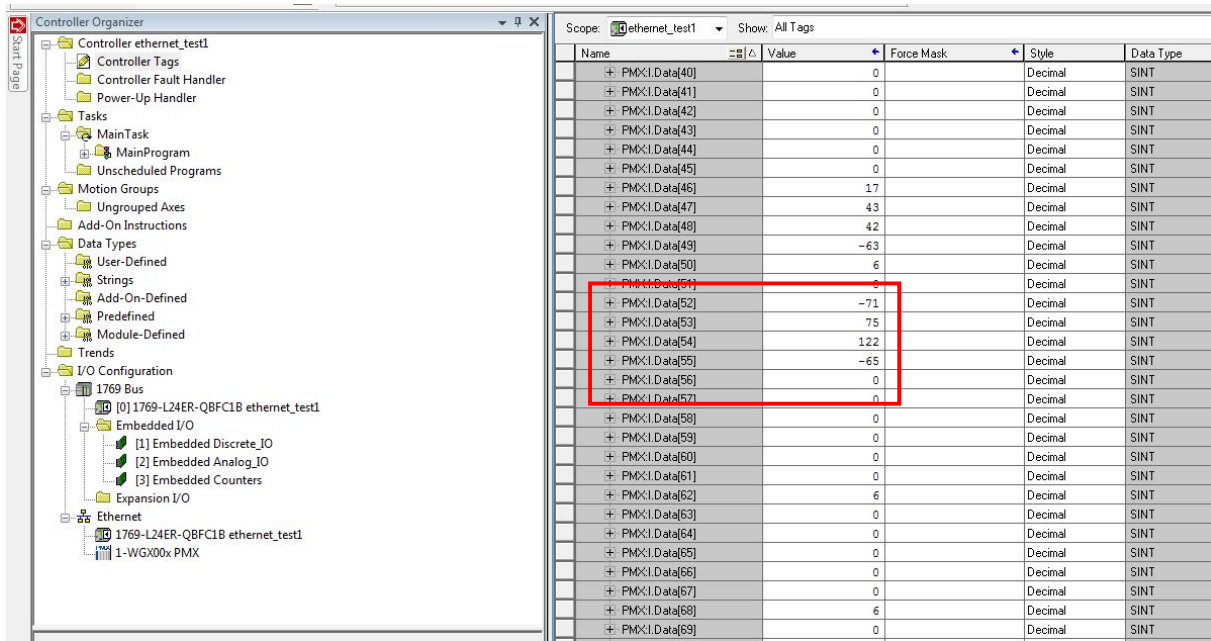
After Downloading to the device...



...the program can be started by „Go online“.



The measured values are shown under Controller Tags \ PMX I (Input).



Name	Value	Force Mask	Style	Data Type
PMX:I.Data[40]	0		Decimal	SINT
PMX:I.Data[41]	0		Decimal	SINT
PMX:I.Data[42]	0		Decimal	SINT
PMX:I.Data[43]	0		Decimal	SINT
PMX:I.Data[44]	0		Decimal	SINT
PMX:I.Data[45]	0		Decimal	SINT
PMX:I.Data[46]	17		Decimal	SINT
PMX:I.Data[47]	43		Decimal	SINT
PMX:I.Data[48]	42		Decimal	SINT
PMX:I.Data[49]	-63		Decimal	SINT
PMX:I.Data[50]	6		Decimal	SINT
PMX:I.Data[51]	-71		Decimal	SINT
PMX:I.Data[52]	-71		Decimal	SINT
PMX:I.Data[53]	75		Decimal	SINT
PMX:I.Data[54]	122		Decimal	SINT
PMX:I.Data[55]	-65		Decimal	SINT
PMX:I.Data[56]	0		Decimal	SINT
PMX:I.Data[57]	0		Decimal	SINT
PMX:I.Data[58]	0		Decimal	SINT
PMX:I.Data[59]	0		Decimal	SINT
PMX:I.Data[60]	0		Decimal	SINT
PMX:I.Data[61]	0		Decimal	SINT
PMX:I.Data[62]	6		Decimal	SINT
PMX:I.Data[63]	0		Decimal	SINT
PMX:I.Data[64]	0		Decimal	SINT
PMX:I.Data[65]	0		Decimal	SINT
PMX:I.Data[66]	0		Decimal	SINT
PMX:I.Data[67]	0		Decimal	SINT
PMX:I.Data[68]	6		Decimal	SINT
PMX:I.Data[69]	0		Decimal	SINT

TIPP

Further information regarding the channel-settings and the data-structure can be found in the PMX handbook starting at page 202 within the chapters 11.8.2 and 11.8.3.

Disclaimer

These examples are simply for the purpose of illustration. They cannot be used as the basis for any warranty or liability claims.