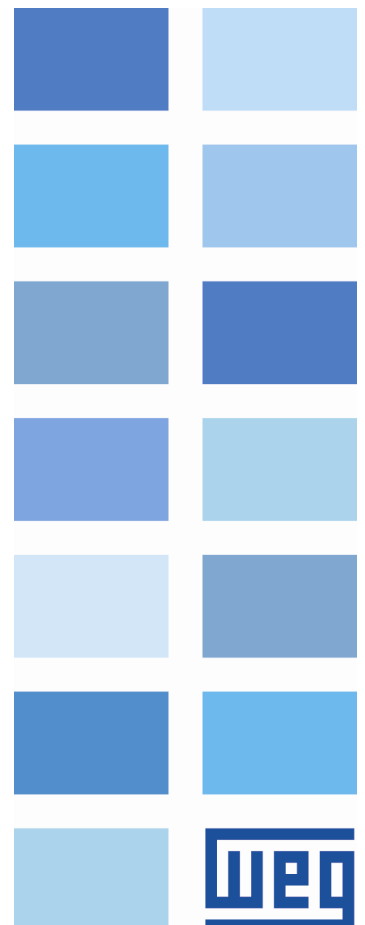


# WEG MVW-01 (EtherNet/IP) communication with Rockwell RSLogix 5000 and FTView SE

## Application Notes

Language: English  
Document: 0





# WEG MVW-01 (EtherNet/IP) communication with Rockwell RSLogix 5000 and FTView SE

Language: English

Document number: 00000000/0

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Revision	Description	Chapter
1	First Edition	-
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## ABOUT THE MANUAL

This document provides information about the configuration and programming for the communication of the Rockwell ControlLogix PLC with the MVW-01 Frequency Inverter equipped with ETHERNET/IP module. All presented operations assume the user is familiar with the programming of the Rockwell PLC with the application RSLogix 5000.

The equipment is subject to failures and the user must take safety measures for this condition.

### Abbreviations and definitions

PLC	Programmable Logic Controller
RAM	Random Access Memory
USB	Universal Serial Bus
HMI	KEYPAD (HMI)
OP	Operation Mode
EDS	Electronic Data Sheet – Data base file of the device.

### Numerical representation

Decimal numbers are represented by means of digits without suffix. Hexadecimal numbers are represented with the letter 'h' after the number.

### Used documents and manuals

For a better understanding of the information provided hereby, the following manuals may be referred to:

#### *MANUAL OF THE FREQUENCY INVERTER*

Series: MVW-01

Language: English

Document number: 0899.5247-3.3

#### *MANUAL OF THE ETHERNET/IP COMMUNICATION*

Series: SSW-06:

Language: English

Document number: 0899.5844 / 06

#### *RSLogix 5000*

Software Application: V19

Language: English

#### *FTView SE*

Software Application: V6.0

Language: English

### Hardware

#### *MVW-01 Frequency Inverter*

Firmware Version: 3.41

Manufacturer: WEG

#### *ETHERNET/IP interface module*

Model: ETHERNET/IP

Manufacturer: WEG

#### *CPU ControlLogix*

Model: 1756-L63 ControlLogix5563

Manufacturer: Rockwell

## SAFETY INSTRUCTIONS

This manual was developed to be used by people with proper technical training or qualification to operate this kind of equipment.

### Safety warnings in the manual

In this manual are used the following safety warnings:



#### DANGER!

The not following of the procedures recommended in this warning can lead to death, serious injuries and considerable material damages.



#### ATTENTION!

The not following of the procedures recommended in this warning can lead to material damages.



#### NOTE!

The text aims at providing important information for the full understanding and proper operation of the product.

### Preliminary recommendations



#### DANGER!

Only duly qualified people must operate the INVERTER. Those people must first read the user manual. Executing unknown commands or not complying with the safety instructions may result in risk of life and/or damages to the machine.



#### ATTENTION!

In order to make the commands on the inverter HMI, you must not use pointed tools or instruments. That could damage the keypad screen.

# 1. USER INSTRUCTIONS: SE MVW FACEPLATE

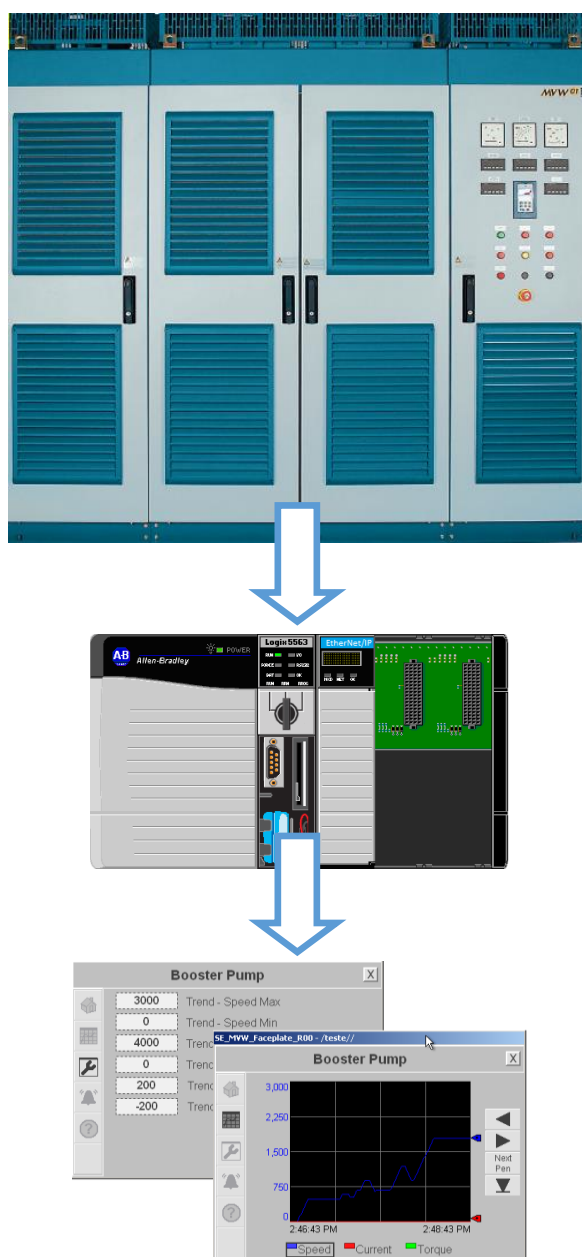
The "SE MVW Faceplate" files allow you to quickly load, configure, and use preconfigured status, control and diagnostic displays or "faceplates" for the MVW family of drives using RSVIEW Supervisory Edition.

The example below shows a MVW drive faceplate object that may be added to a specific system display. The faceplate object can be configured to launch the on-top display or "faceplate" for the particular MVW drive it represents. The faceplate includes status, control, and diagnostic views controlled by its own toolbar buttons.



## ATTENTION!

Disclaimer: WEG is not responsible for any support over this application and customer must take all responsibility for the use of this content.

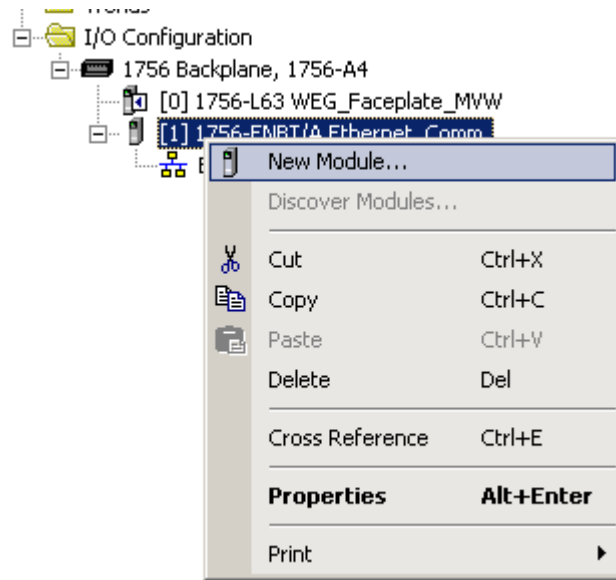


**Figure 1.0 – Architecture of the Inverter hardware**

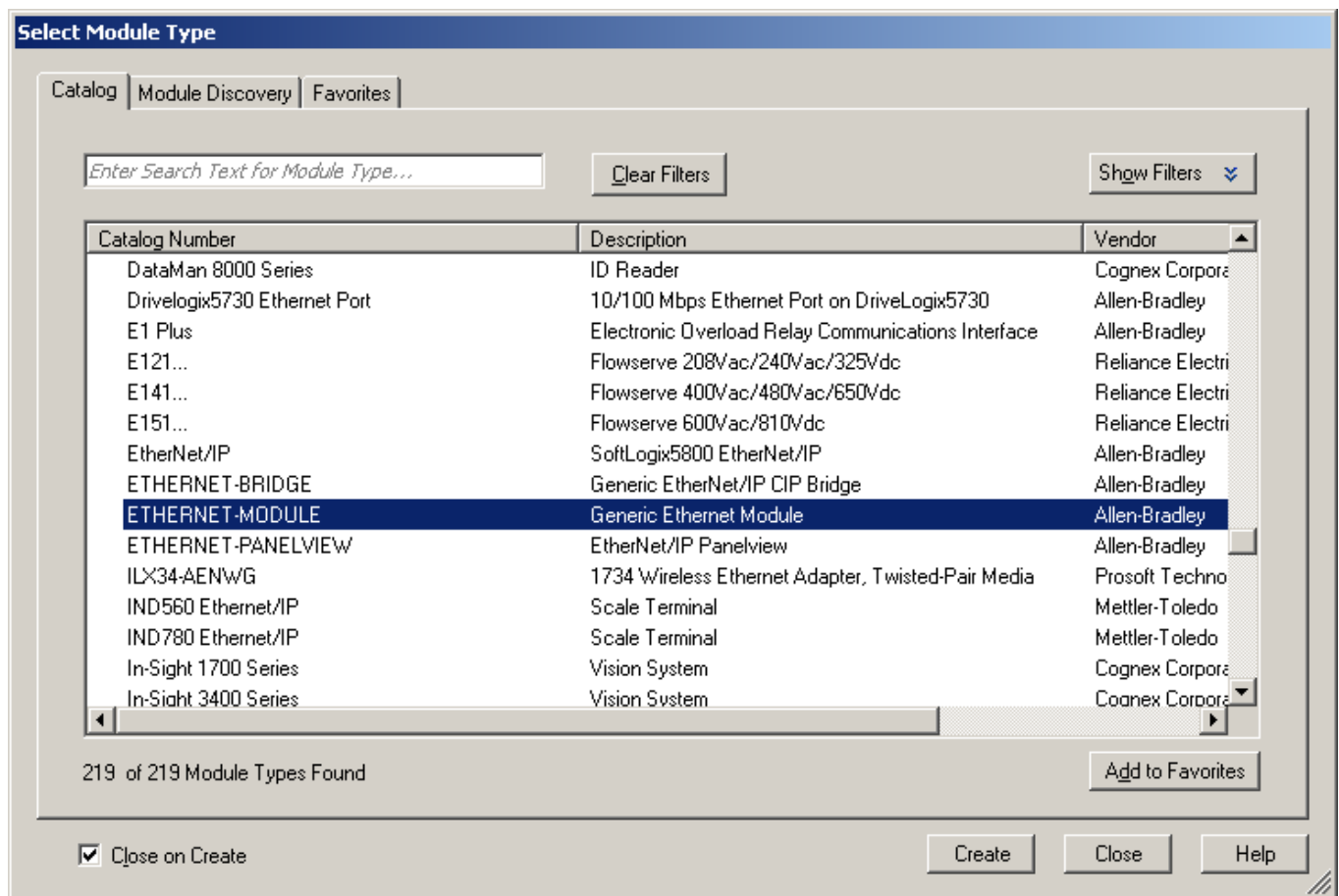
## 2. GENERIC MODULE

For network communication if MVW the users must be added a Generic Module in the Ethernet IP card, for this follow the steps bellow.

Under I/O Configuration, right click on network communication module for the intended MVW drive and select "New Module".

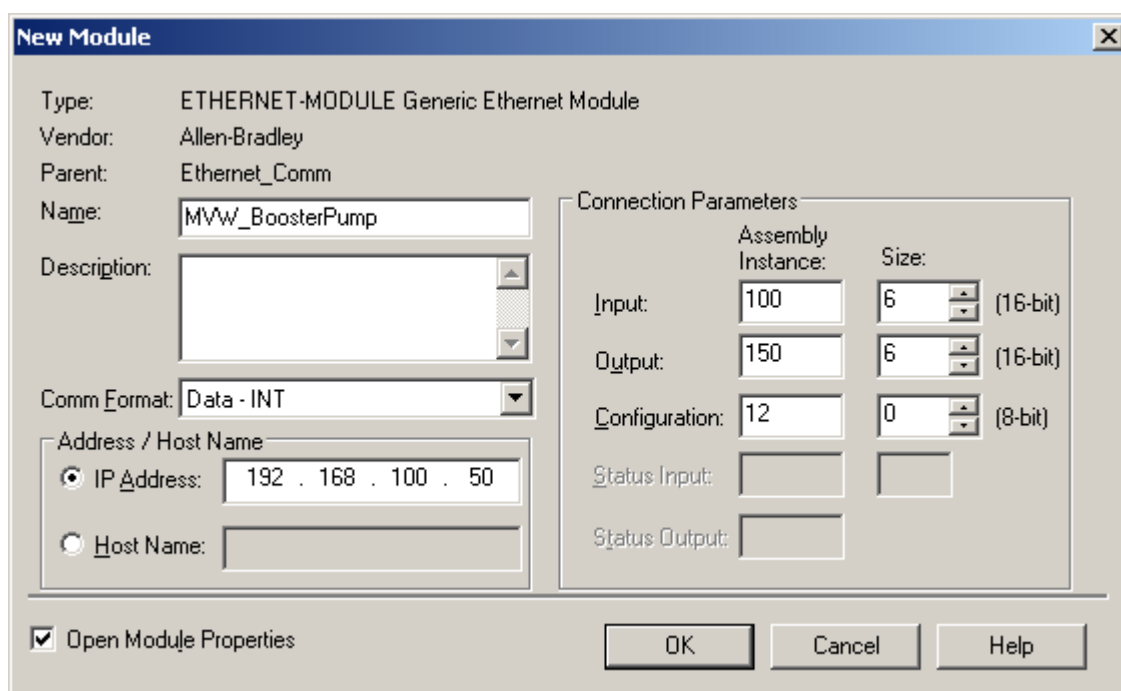


Open the Drives folder, select Generic Ethernet Module and select OK.





Enter a distinct module name and IP Address and configure the Connections Parameters as follows



**New Module**

Type: ETHERNET-MODULE Generic Ethernet Module  
 Vendor: Allen-Bradley  
 Parent: Ethernet\_Comm  
 Name: MVW\_BoosterPump  
 Description:  
 Comm Format: Data - INT

Address / Host Name  
☒ IP Address: 192 . 168 . 100 . 50  
☐ Host Name:

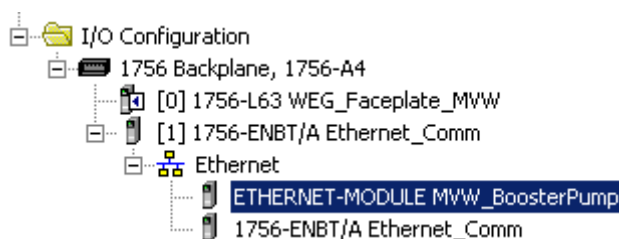
Connection Parameters

	Assembly Instance:	Size:	
Input:	100	6	(16-bit)
Output:	150	6	(16-bit)
Configuration:	12	0	(8-bit)
Status Input:			
Status Output:			

☒ Open Module Properties

OK Cancel Help

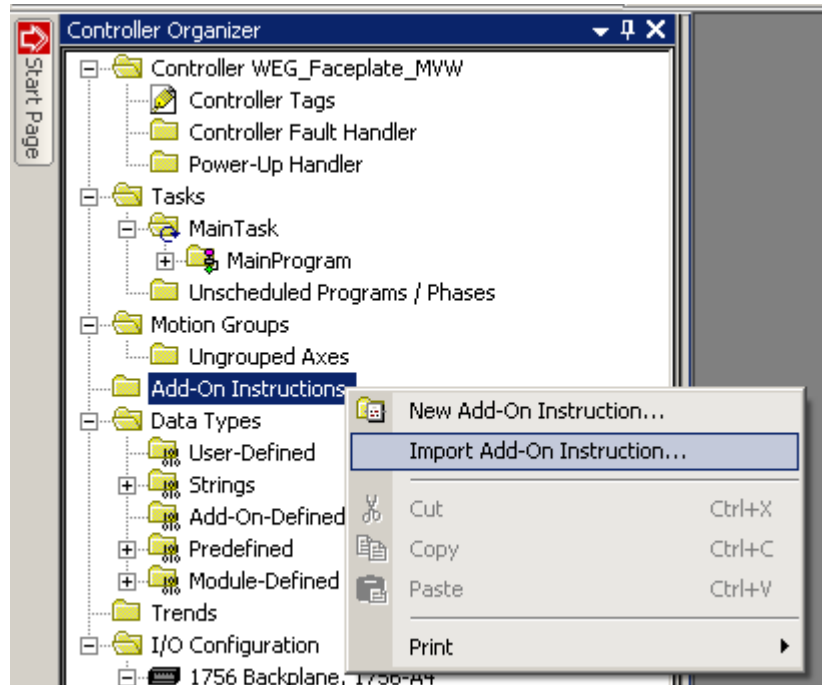
Generic Module must be shown at the “Controller Organizer”



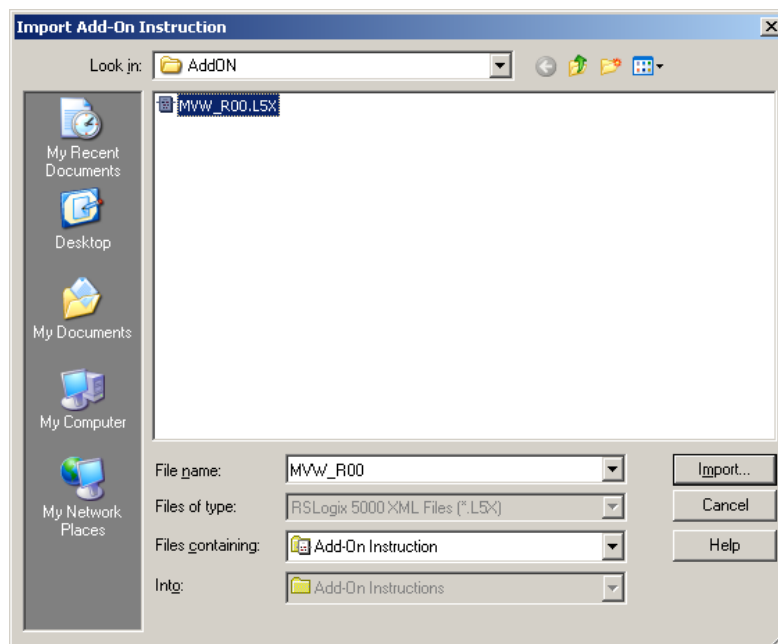
### 3. ADD-ON INSTRUCTION

After configure communication between PLC and MVW-01, this user can be create and configure MVW-01 Add-On.

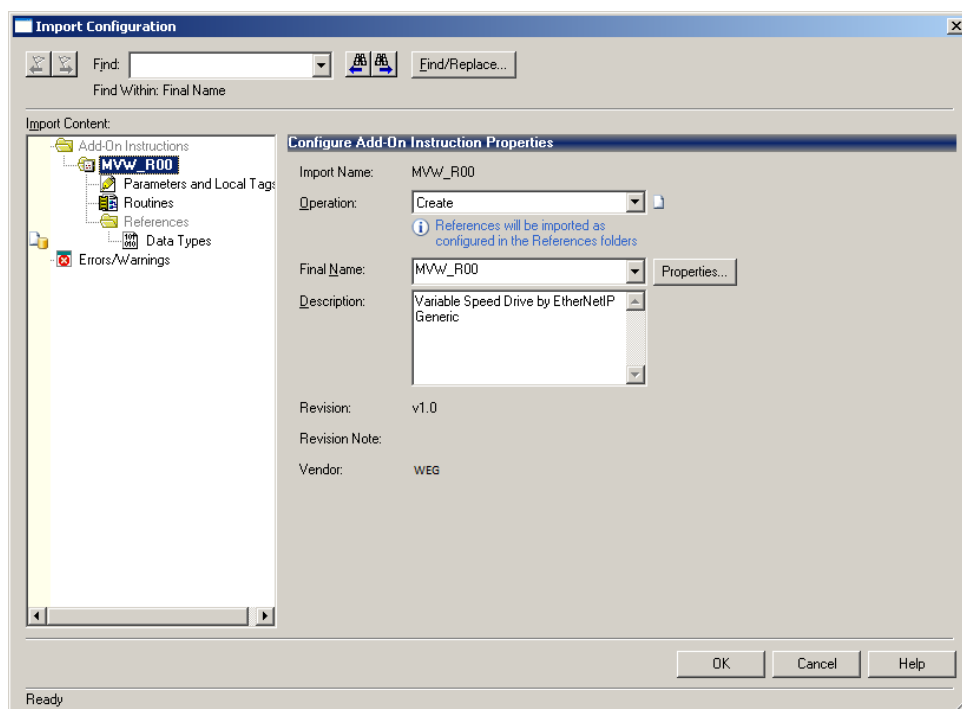
First of the all import Add-On instruction, to do this right click in “Add-On Instructions” and select the “Import Add-On Instruction...” option.



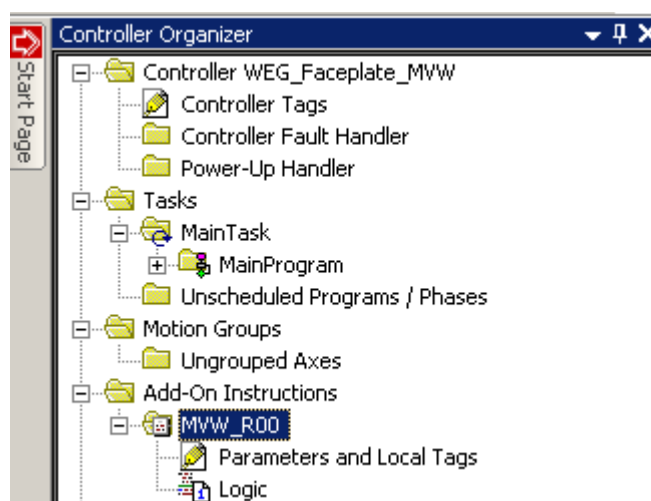
Select the file “MVW\_R00” provided by WEG and click in “Import...”



In import configuration screen is no need change anything so just press “OK” button in import configuration screen.

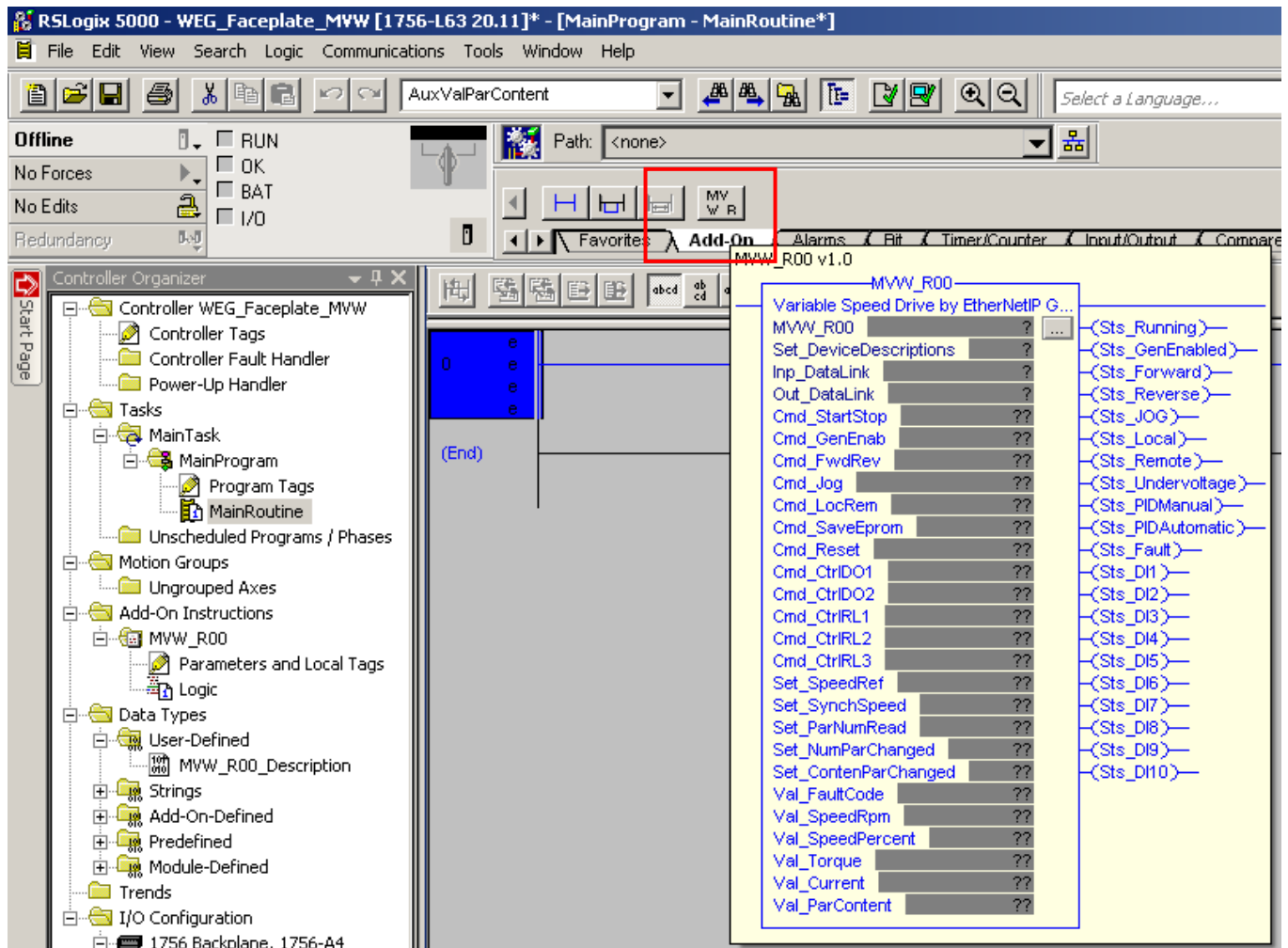


After this process the file must be shown as bellow

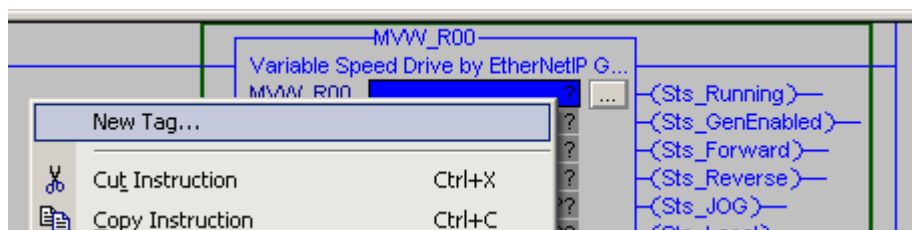


## 4. CONFIGURING ADD-ON ON RSLOGIX

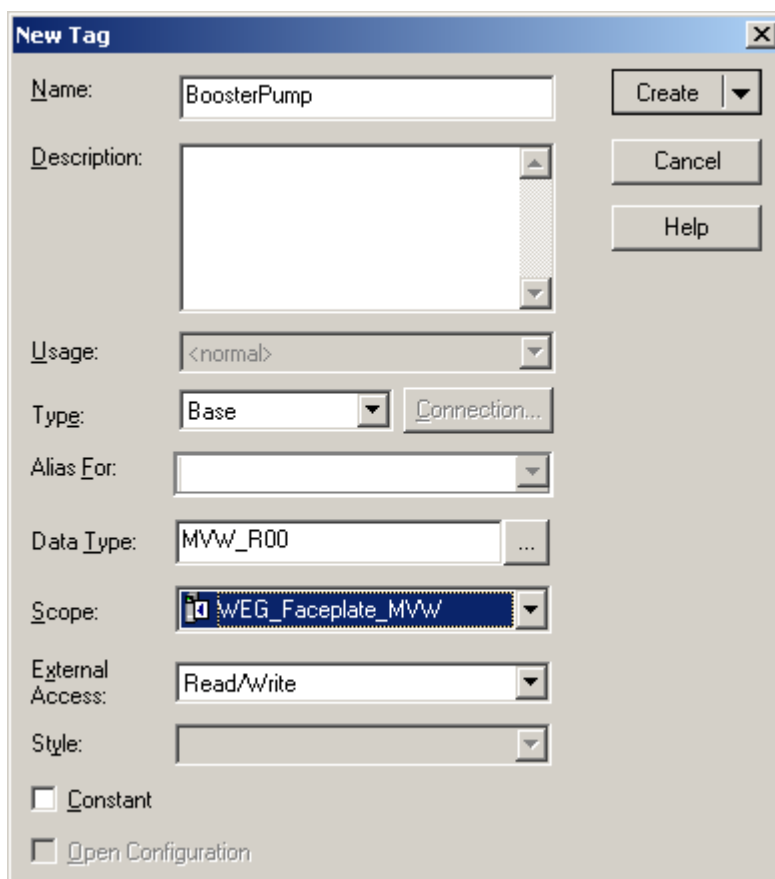
Insert the MVW Add-On in any desired task



Right click in first parameter and create new TAG with the block's name



Configure the block parameters TAG as according image below, note this Scope of this TAF is global TAG, it's necessary for establish communication between PLC and Factory Talk.

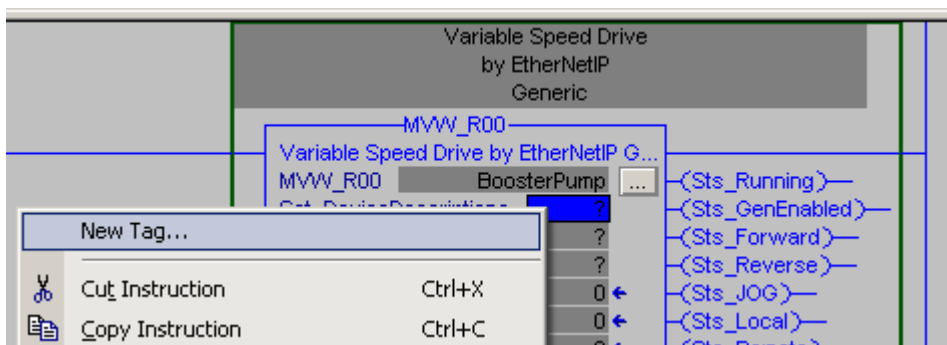


The 'New Tag' dialog box is shown with the following configuration:

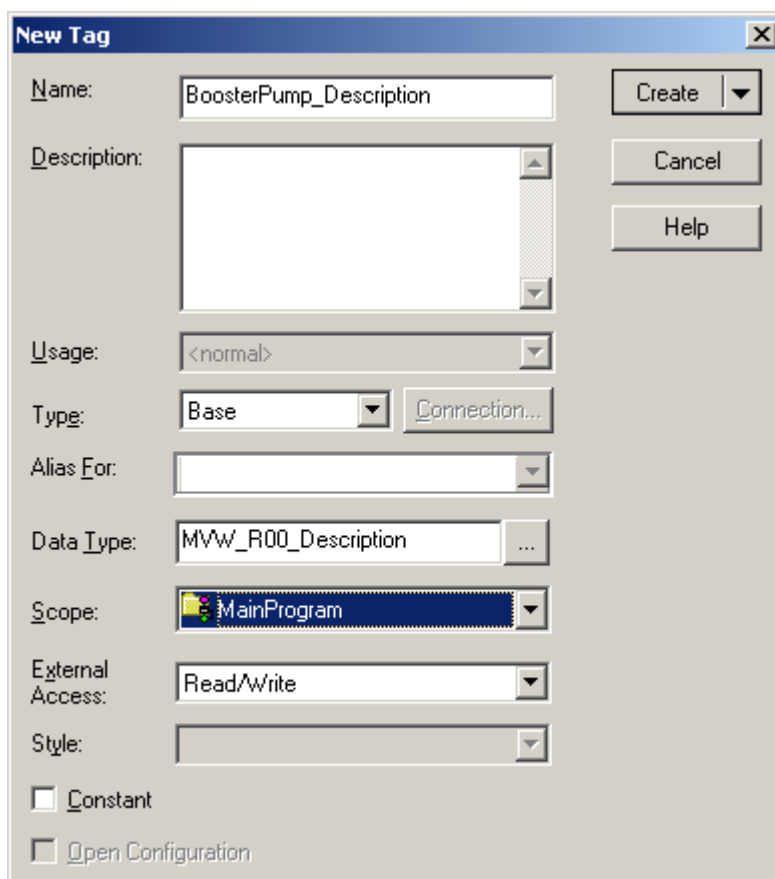
- Name:** BoosterPump
- Description:** (Empty text area)
- Usage:** <normal>
- Type:** Base
- Alias For:** (Empty dropdown)
- Data Type:** MVW\_R00
- Scope:** WEG\_Faceplate\_MVW
- External Access:** Read/Write
- Style:** (Empty dropdown)
- ☐ Constant
- ☐ Open Configuration

Buttons: Create, Cancel, Help

Create new TAG with the descriptions texts presents in template, such the motor name and the digital input functions, more information about the descriptions is shown in following chapters.



Configure the descriptions TAG as follows, in this case the Scope can be local because the Factory Talk faceplate only communicate with the block parameters TAG creating before.

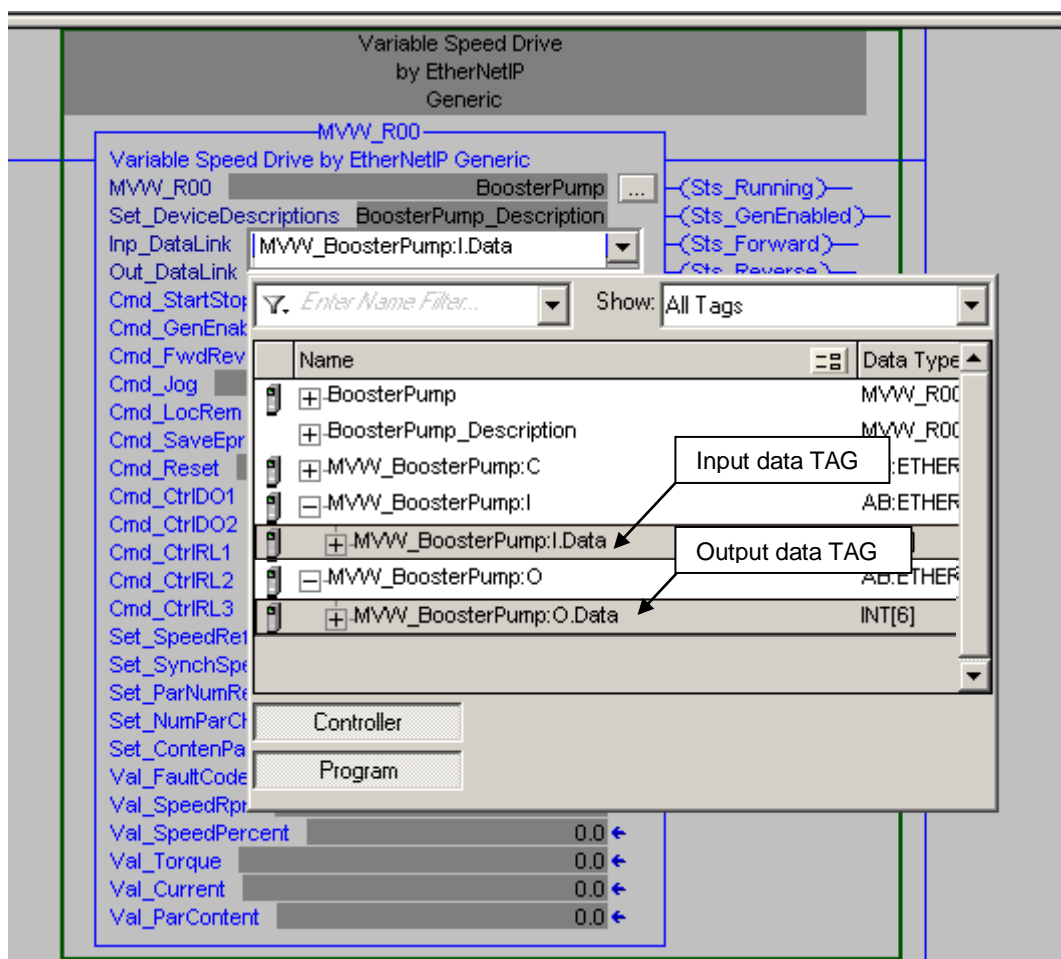


The image shows a 'New Tag' dialog box with the following fields and options:

- Name:** BoosterPump\_Description
- Description:** (Empty text area)
- Usage:** <normal>
- Type:** Base (with a 'Connection...' button next to it)
- Alias For:** (Empty dropdown)
- Data Type:** MVW\_R00\_Description
- Scope:** MainProgram
- External Access:** Read/Write
- Style:** (Empty dropdown)
- ☐ Constant
- ☐ Open Configuration

Buttons on the right: Create, Cancel, Help.

Add the network data input and output, this TAGs are automatic creating during the steps made in chapter 2, so it is only necessary to select the Data tags in option list.



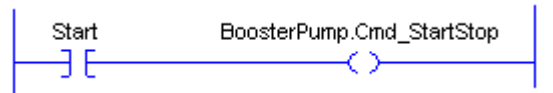
#### 4.1 WEG MVW-01 Add-On status and commands

In addition to facilitating the control and monitoring of the MVW-01 by Factory Talk, the Add-On WEG MVW-01 also provides the user with all control and monitoring of the drive by programming logic, in table below is shown all block TAGs and their function.

TAG name	Type	Access	Function	
Cmd_StartStop	BOOL	RW	0-Stop VFD	1-Start VFD
Cmd_GenEnable	BOOL	RW	0-Disable VFD to start	1-Enable VFD to start
Cmd_FwdRev	BOOL	RW	0-Forward rot. direction	1-Reverse rot. direction
Cmd_Jog	BOOL	RW	-	1-JOG command
Cmd_LocRem	BOOL	RW	0-Local	1-Remote
Cmd_SaveEeprom	BOOL	RW	-	1-Save parameters value in EPROM memory
Cmd_Reset	BOOL	RW	-	1-Reset VFD faults
Cmd_CtrlDO1	BOOL	RW	0-Disable DO1	1-Active DO1
Cmd_CtrlDO2	BOOL	RW	0-Disable DO2	1-Active DO2
Cmd_CtrlRL1	BOOL	RW	0-Open RL1	1-Close RL1
Cmd_CtrlRL2	BOOL	RW	0-Open RL2	1-Close RL2
Cmd_CtrlRL3	BOOL	RW	0-Open RL3	1-Close RL3
Set_SpeedRef	REAL	RW	Set speed reference to VFD in rpm	
Set_SynchSpeed	REAL	RW	Inform motor synchronous speed to system, need to calculations	
Set_ParNumRead	INT	RW	Number of drive parameter that will be read in Val_ParContent	
Set_NumParChanged	INT	RW	Number of drive parameter to change in VFD	
Set_ContenParChanged	INT	RW	New value to parameter selected in Set_NumParChanged	
Sts_Running	BOOL	RO	0-VFD stopped	1-VFD running
Sts_GenEnabled	BOOL	RO	0-VFD disabled	1-VFD enabled

TAG name	Type	Access	Function	
Sts_Forward	BOOL	RO	-	1-Forward motor rotation
Sts_Reverse	BOOL	RO	-	1-Reverse motor rotation
Sts_JOG	BOOL	RO	-	1-Motor running by JOG
Sts_Local	BOOL	RO	-	1-VFD in local mode
Sts_Remote	BOOL	RO	-	1-VFD in remote mode
Sts_Undervoltage	BOOL	RO	-	1-VFD in undervoltage
Sts_PIDManual	BOOL	RO	-	1-VFD PID in manual mode
Sts_PIDAutomatic	BOOL	RO	-	1-VFD PID in automatic mode
Sts_Fault	BOOL	RO	-	1-VFD fault active
Sts_DI1	BOOL	RO	0-DI1 off	1-DI1 on
Sts_DI2	BOOL	RO	0-DI2 off	1-DI2 on
Sts_DI3	BOOL	RO	0-DI3 off	1-DI3 on
Sts_DI4	BOOL	RO	0-DI4 off	1-DI4 on
Sts_DI5	BOOL	RO	0-DI5 off	1-DI5 on
Sts_DI6	BOOL	RO	0-DI6 off	1-DI6 on
Sts_DI7	BOOL	RO	0-DI7 off	1-DI7 on
Sts_DI8	BOOL	RO	0-DI8 off	1-DI8 on
Sts_DI9	BOOL	RO	0-DI9 off	1-DI9 on
Sts_DI10	BOOL	RO	0-DI10 off	1-DI10 on
Val_FaultCode	INT	RO	VFD fault code (consult all fault descriptions in MVW-01 manual)	
Val_SpeedRpm	REAL	RO	Motor speed in rpm	
Val_SpeedPorcent	REAL	RO	Motor speed in percentage	
Val_Torque	REAL	RO	Motor torque	
Val_Current	REAL	RO	Motor current	
Val_ParContent	REAL	RO	Current value of VFD parameter selected in Set_ParNumRead	

For read or write any block parameter in logic is need use the bellow syntax: Block\_name.Parameter.

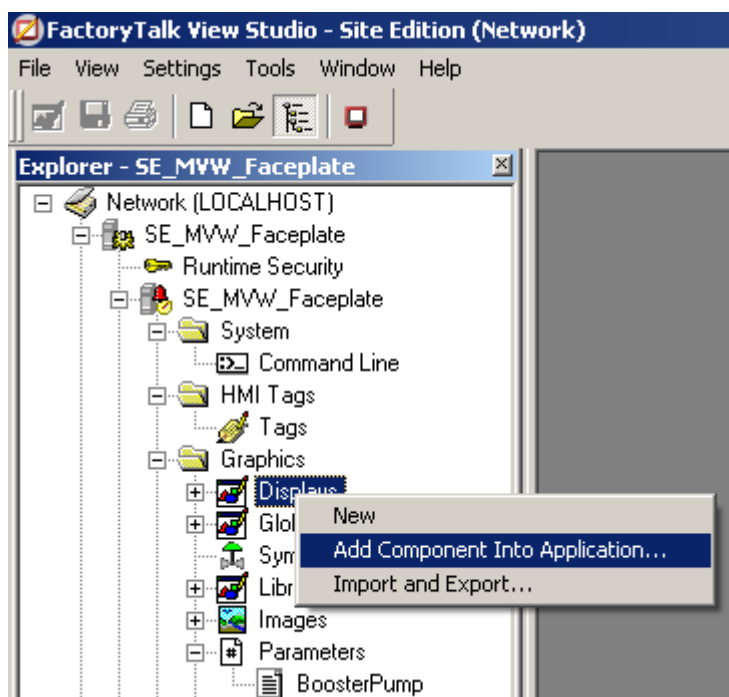




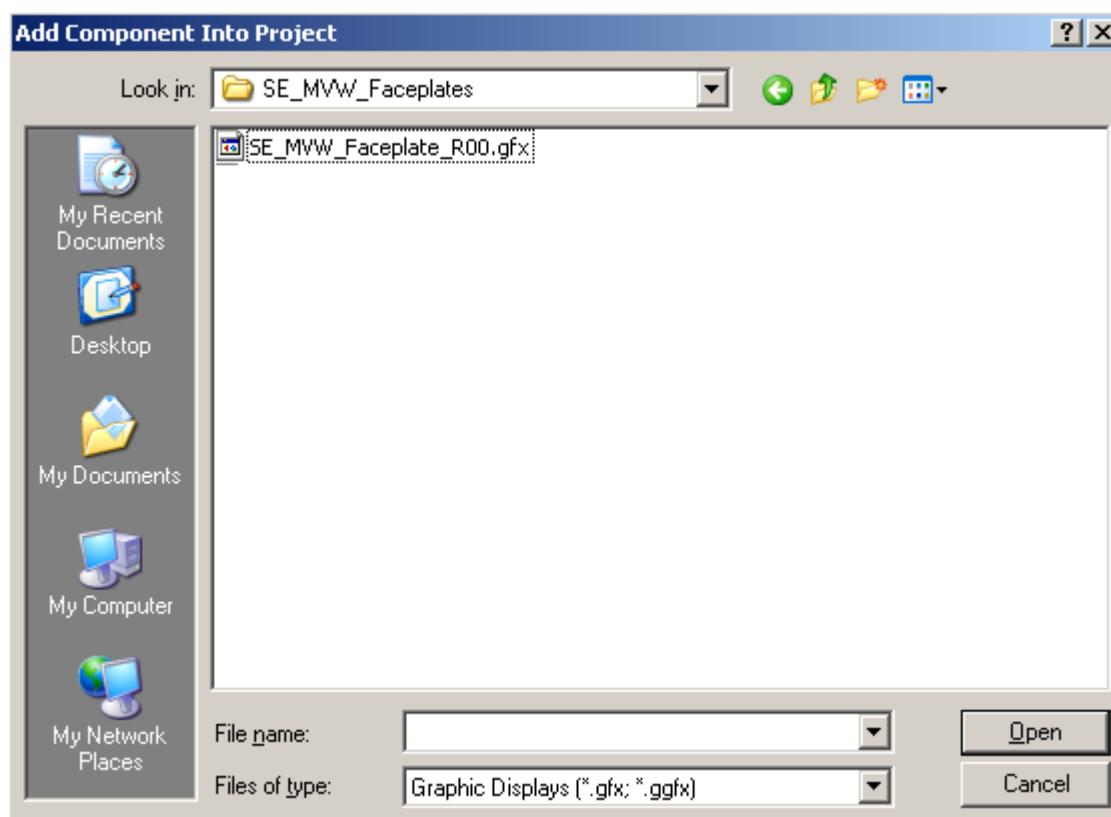
## 5. CONFIGURING FACEPLATE ON FTVIEW

### 5.1 Add faceplate to project

For create a MVW-01 faceplate first of the all add a component into the application.



Choose the file “SE\_MVW\_FACEPLATE\_R00” provided by WEG.



Faceplate will be added to the project as shown bellow



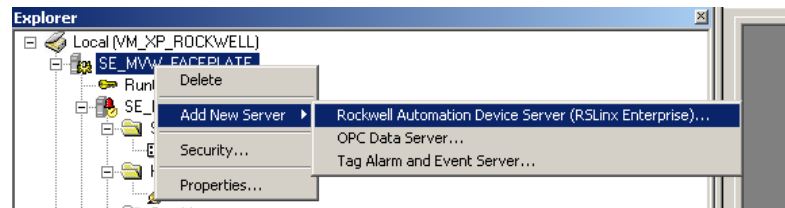
## 5.2 Creating a communication with PLC block



### NOTE!

If you already have the communication configuration between PLC and Factory Talk, you do not need to perform steps presents in this chapter.

Adding PLC communication server



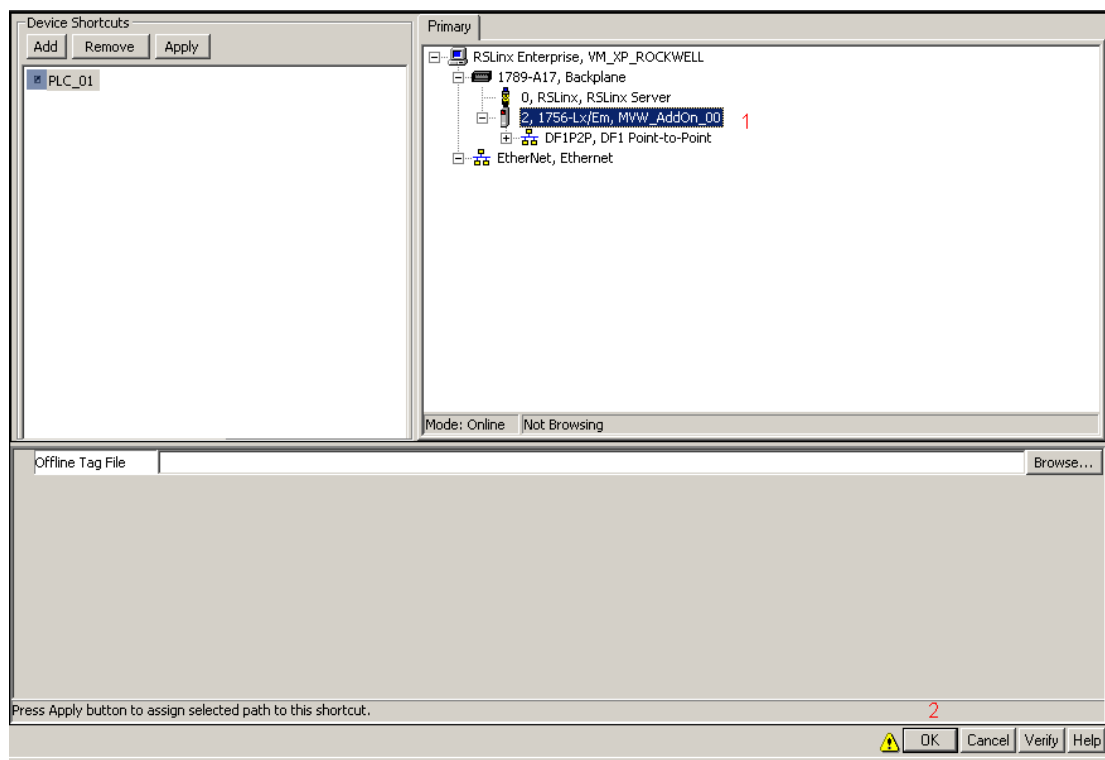
After adding communication server go to Communication Setup.



In Communication Setup click in Add and create the communication device.



If the PLC is connected in computer, select he and press Ok to create link between Factory Talk and PLC program.

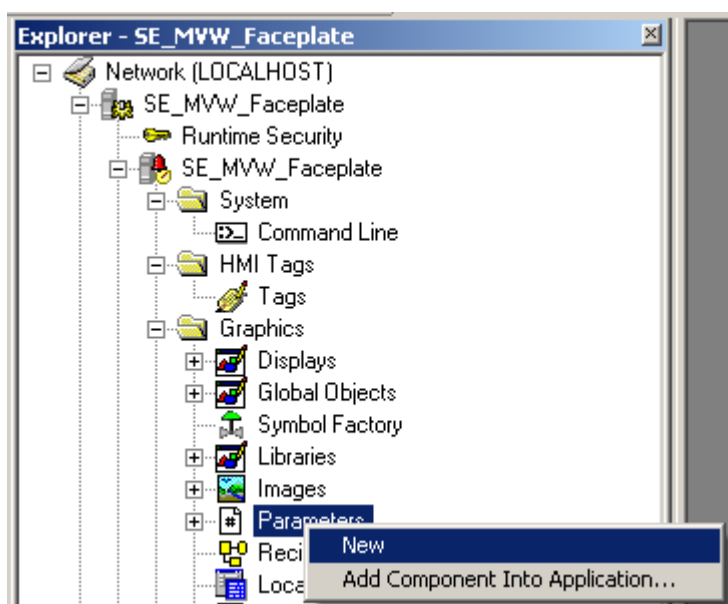


#### NOTE!

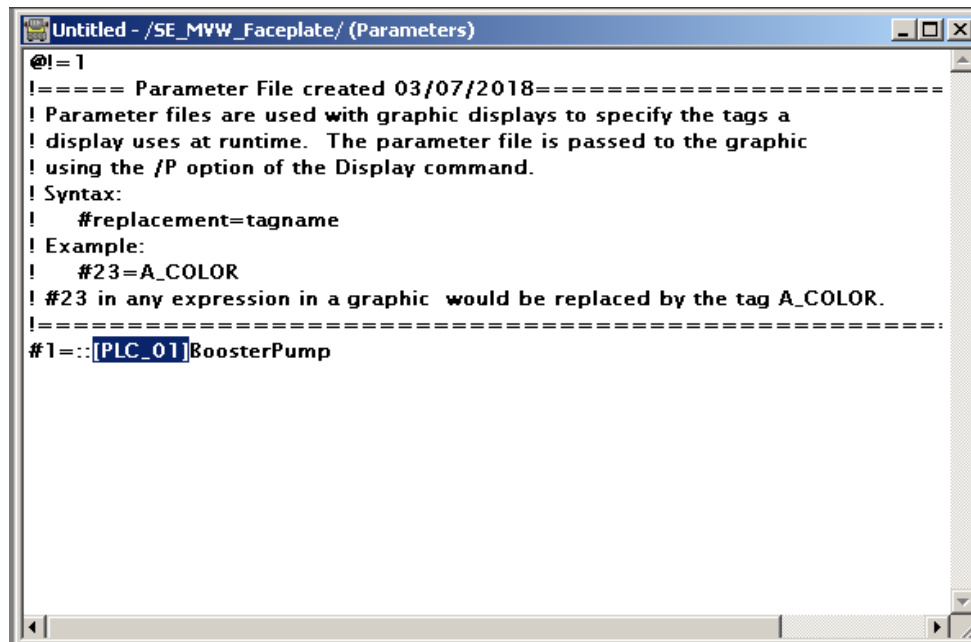
The connection between Factory Talk and PLC don't's necessary to configure template.

### 5.3 Adding new parameter and configuring it

For MVW-01 faceplate access the block parameters is need create a "Parameters" object, for this right click in "Parameters" and select "New".



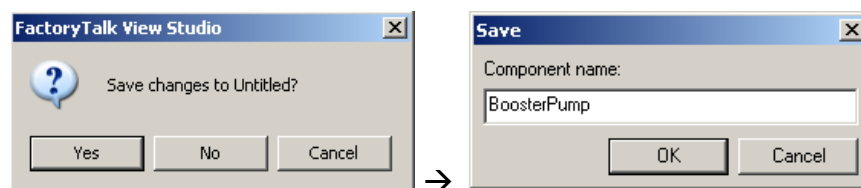
Configure parameters object, according example bellow.



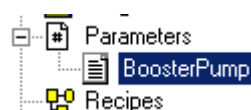
**NOTE!**

Note that the first term [PLC\_01] is the name of connection between Factory Talk and PLC, mode in item 5.5 and the second term "BoosterPump" is the name of structure made in item 4.3.

After you configure the "Parameters", close and save save the changes with any desired component name



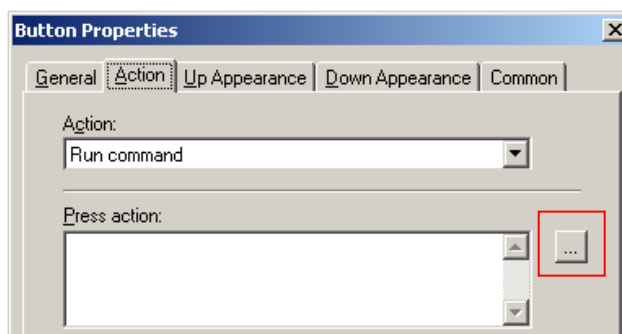
Note that "Parameter" object are created



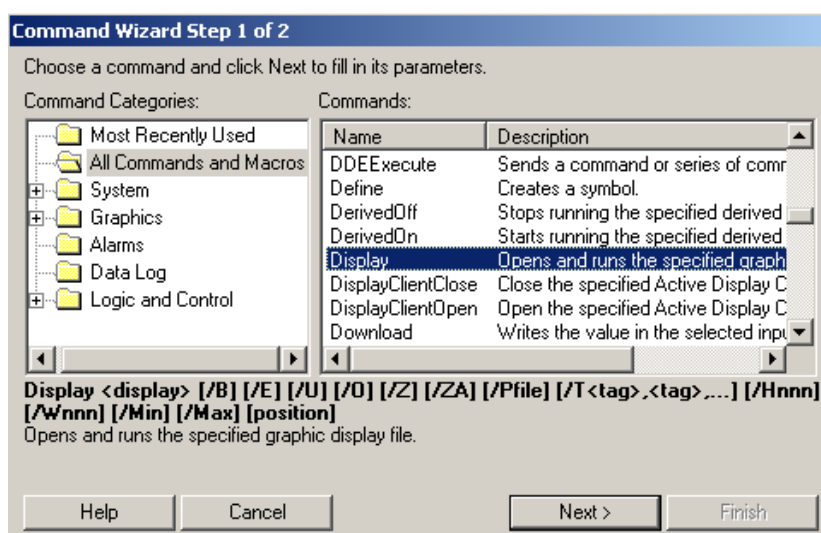
## 5.4 Open faceplate

For open the faceplate is possible use a button object, for this insert a button object  in the screen.

In button properties go to action sheet and edit Press action.



This command indicates how to call the faceplate when in runtime.



Select the file (SE\_MVW\_Faceplate\_R00), after click on the checkbox /P – Parameter File and select the Parameter file created previously

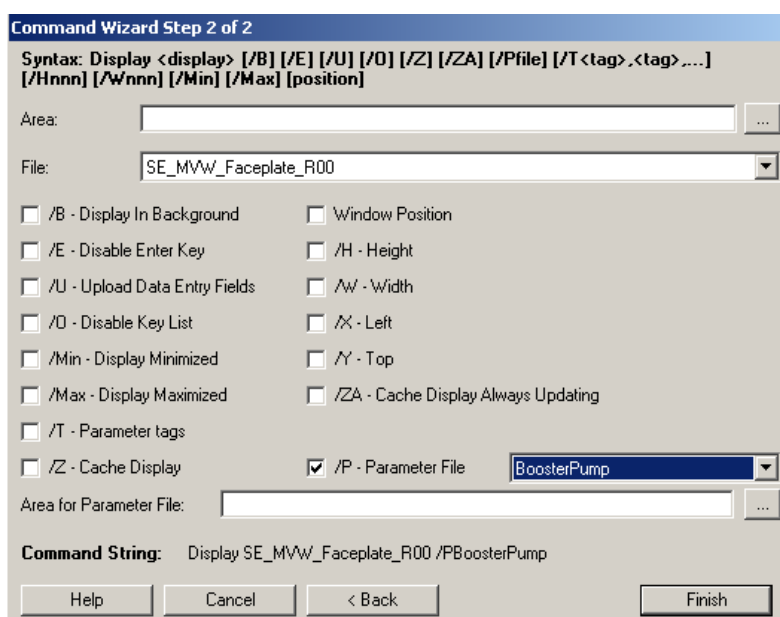
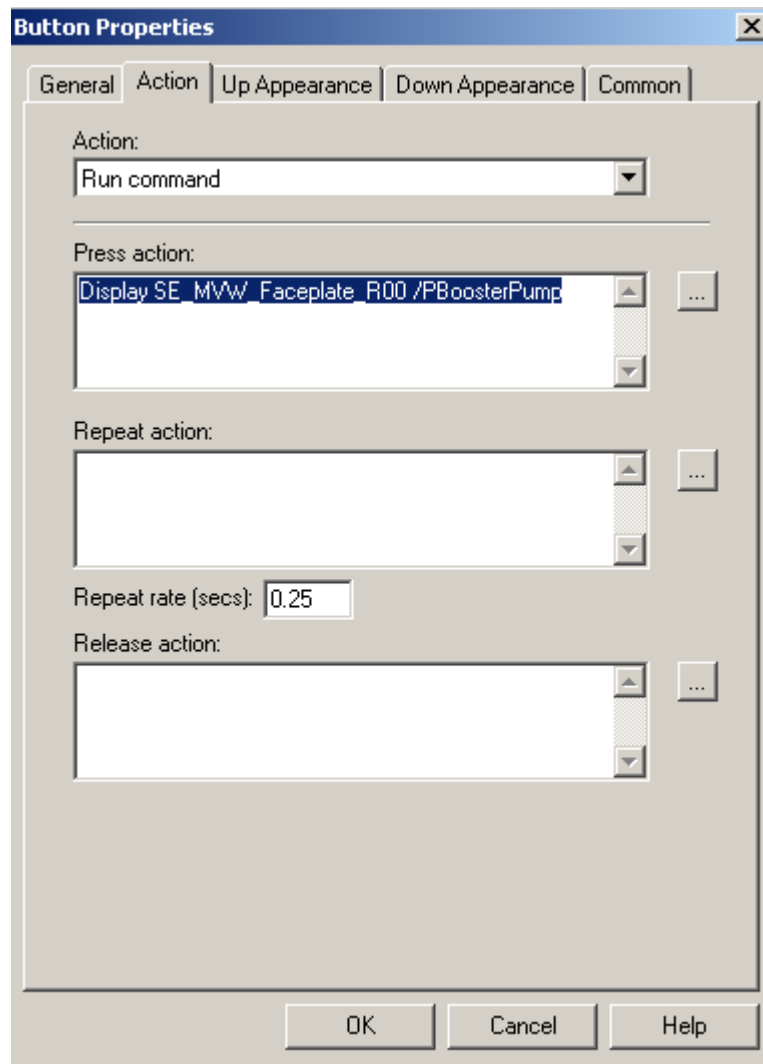


Figure below indicates the how the command to open faceplate in runtime should be.



## 6. FACEPLATES IN RUNTIME

This chapter discuss about the faceplates in runtime mode.

### 6.1 Navigation buttons

On the left bar navigation buttons can be accessed.



Button Home



Button Trends



Button Config



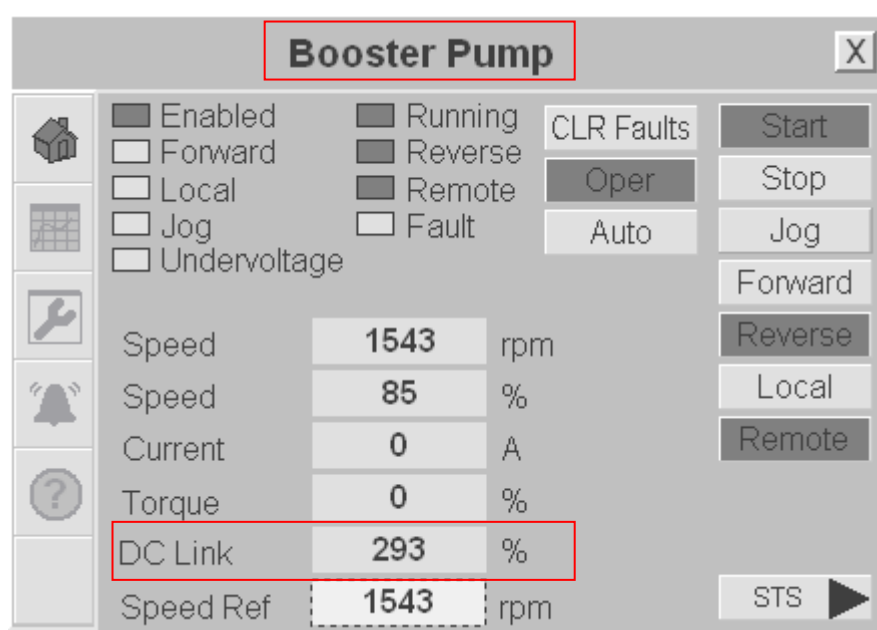
Button Alarms



Button Help

### 6.2 Home screen

Main VFDs information are shown in this screen.



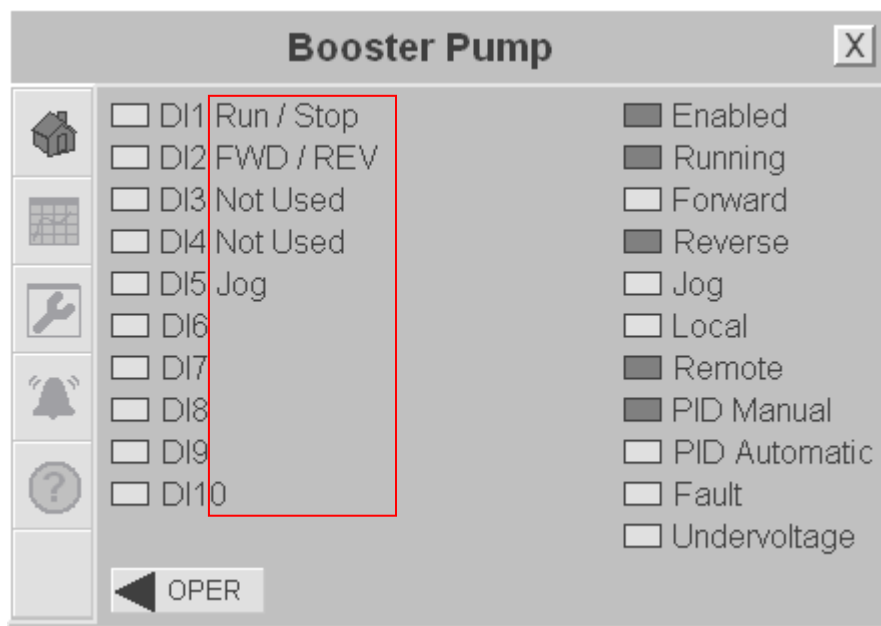
#### NOTE!

The template title name is configured in [BoosterPump\_Descriptions.DeviceName] within the PLC program.

The value displayed in highlighted box is configured in [BoosterPump.Set\_ParNumRead] and the parameter name and unit is configured in [BoosterPump\_Descriptions.ParContentName] and [BoosterPump\_Descriptions.ParContentUnit] within the PLC program.

### 6.3 Digital Inputs and VFD status

In this screen, Digital Inputs as well as VFD status can also be ready

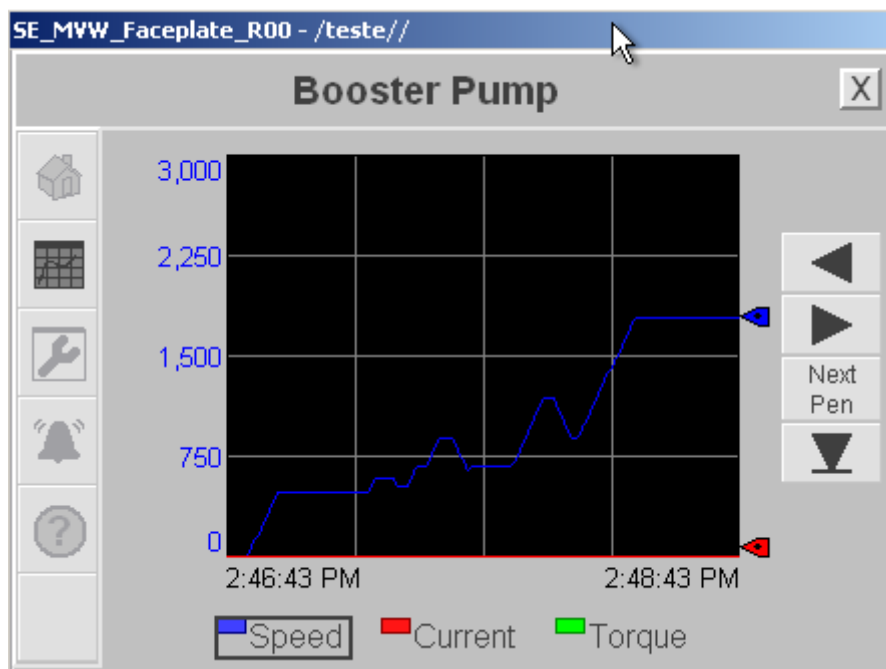


#### NOTE!

The name of digital inputs is configured in [BoosterPump\_Descriptions.DIsName] within the PLC program.

### 6.4 Trends

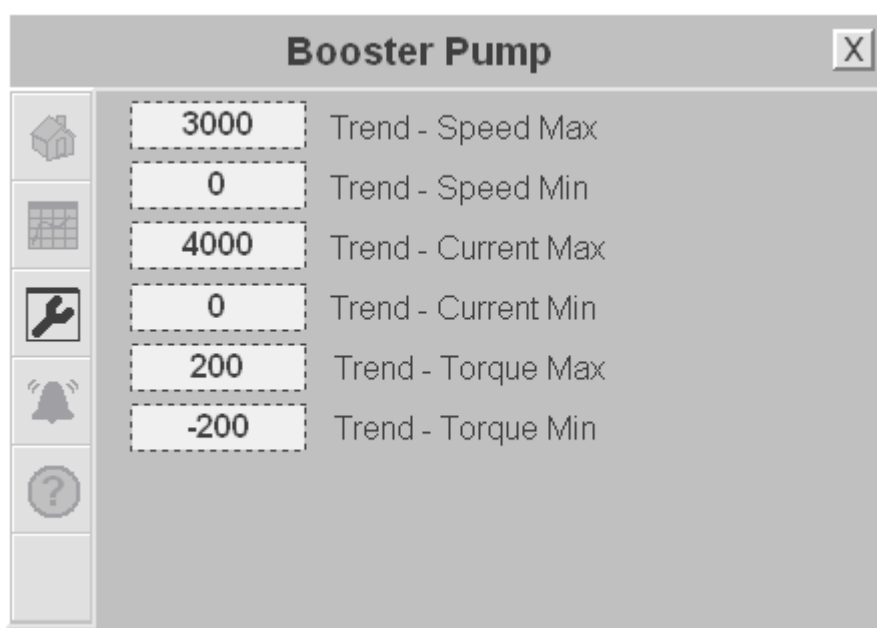
This screen is used to ready analog values as speed, current and torque





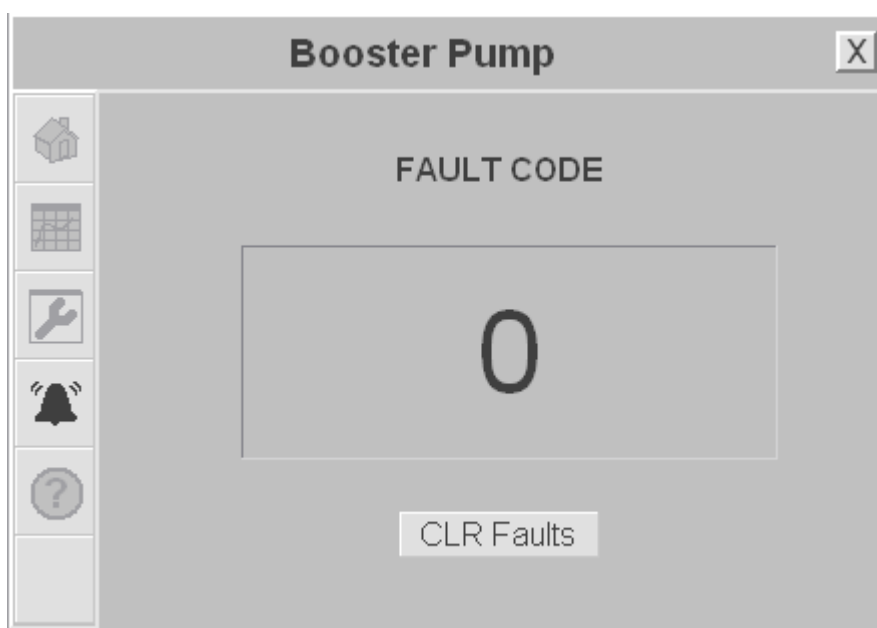
## 6.5 Configuration screen

At the configuration screen the maximum and minimum values for the trends can be adjusted



## 6.6 Alarm screen

At the Alarm screen is possible to ready the VFD fault code as well as send the command to reset fault



## 7. INVERTER FIELDBUS SETTINGS

Below are presented the parameters that must be verified and configured in order to perform the communication in EtherNet/IP network. This parameter setting can be used as a basic example.

EtherNet/IP Settings

### P309 – Fieldbus

<b>Adjustable Range:</b>	0 to 13	<b>Value:</b> 13
<b>Properties:</b>	CFG, Anybus	

#### Description:

It identifies the amount of words that will be changed between master and slave. For the block and the faceplate work properly P309 must be equal to 13 (Ethernet IP 6 I/O).

Behavior when Fieldbus is with alarm

### P313 – Disabling with Alarm A128, A129 and A130

<b>Adjustable Range:</b>	0 to 3	<b>Value:</b> 13
<b>Properties:</b>	CFG, Anybus	

#### Description:

Defines the inverter behavior when the physical connection with the master is interrupted and/or the Fieldbus board is inactive (A128, A129 or A130 indicated on the display).

The parameter P313 has the following options:

- 0 = Run/Stop
- 1 = General Enable
- 2 = Inactive
- 3 = Go to Local
- 4 = Not Used
- 5 = Fatal Failure



#### NOTE!

For further information about the parameter, refer to the MVWs manual and SSW-06 communication Manual!

## 8. REFERENCE PARAMETERS SETTINGS

In order to run the VFD through Fieldbus the Reference parameters must be adjusted properly. Below an example of such adjustments are presented to REMOTE parameters.

Selection of Speed Reference – REMOTE Mode

### P0222 – Selection of Speed Reference – REMOTE Mode

<b>Adjustable</b>	0 to 13	<b>Value:</b> 10
<b>Range:</b>		
<b>Properties:</b>	CFG	

#### Description:

It defines the source of the inverter speed reference in the REMOTE control mode.

In this example, the inverter will be programmed for **value 10 “Fieldbus”**.



**NOTE!**

For further information about the parameter, refer to the Inverter Programming Manual.

Selection of the Direction of Rotation Control – Remote Mode

### P0226 – Selection of the Direction of Rotation – REMOTE Mode

<b>Adjustable</b>	0 to 13	<b>Value:</b> 7
<b>Range:</b>		
<b>Properties:</b>	CFG	

#### Description:

It defines the source for the inverter Direction of Rotation command in the REMOTE control mode. It also defines the direction of rotation the inverter will adopt when it is powered up.

In this example, the inverter will be programmed for **value 7 “Fieldbus (H)”**.



**NOTE!**

For further information about the parameter, refer to the Inverter Programming Manual.

Selection of the Run/Stop Control – Remote Mode

### P0227 – Selection of Run/Stop – REMOTE Mode

<b>Adjustable</b>	0 to 5	<b>Value:</b> 3
<b>Range:</b>		
<b>Properties:</b>	CFG	

#### Description:

It defines the source for the inverter Run or Stop command in the REMOTE control mode. In this example, the inverter will be programmed for **value 3 “Fieldbus”**.



**NOTE!**

For further information about the parameter, refer to the Inverter Programming Manual.

**P0228 - Selection of JOG – REMOTE Mode**

**Adjustable** 0 to 6  
**Range:**  
**Properties:** CFG

**Value:** 4

**Description:**

It defines the source for the inverter JOG command in the REMOTE control mode.  
In this example, the inverter will be programmed for **value 4 “Fielbus”**.

**NOTE!**

For further information about the parameter, refer to the Inverter Programming Manual.