

## TECH NOTE :: ClipX with Modbus TCP and Schneider PLC

Version: 2020-05-14

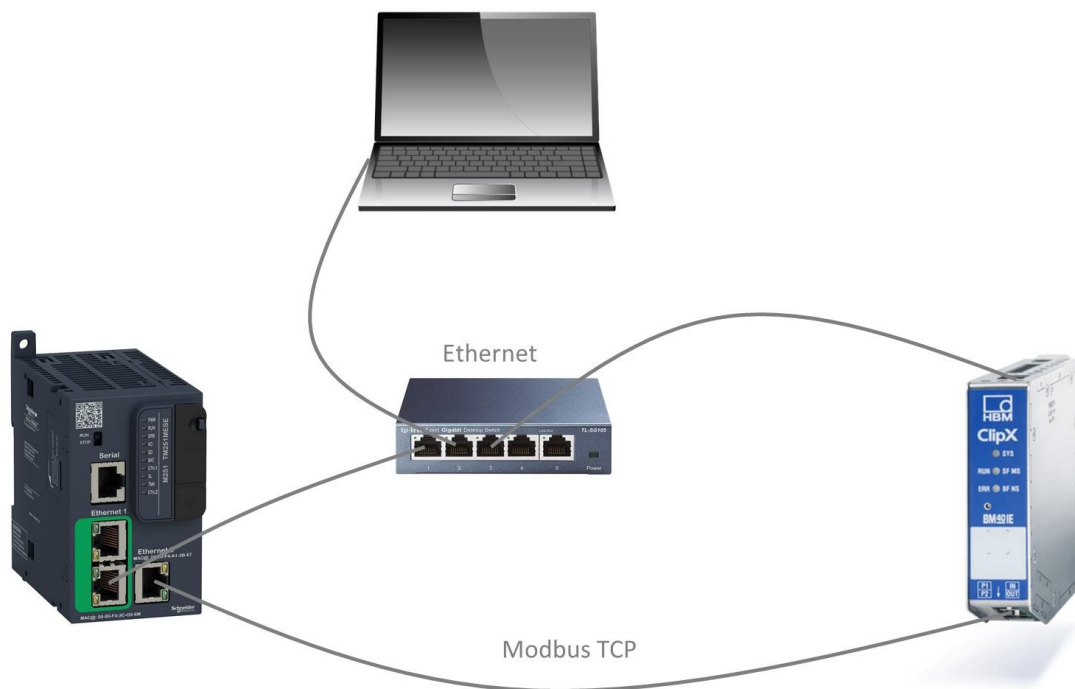
Author: Michael Guckes, Roland Siepmann

Status: HBM: Public

### Brief description

This is an instruction for using the Modbus TCP protocol with ClipX and a Schneider Electric PLC. This example shows which settings must be made in the ClipX web interface, how the project can be created in SoMachine and how individual values can be transferred.

Note: For this example the software SoMachine Central V4.3 is used.



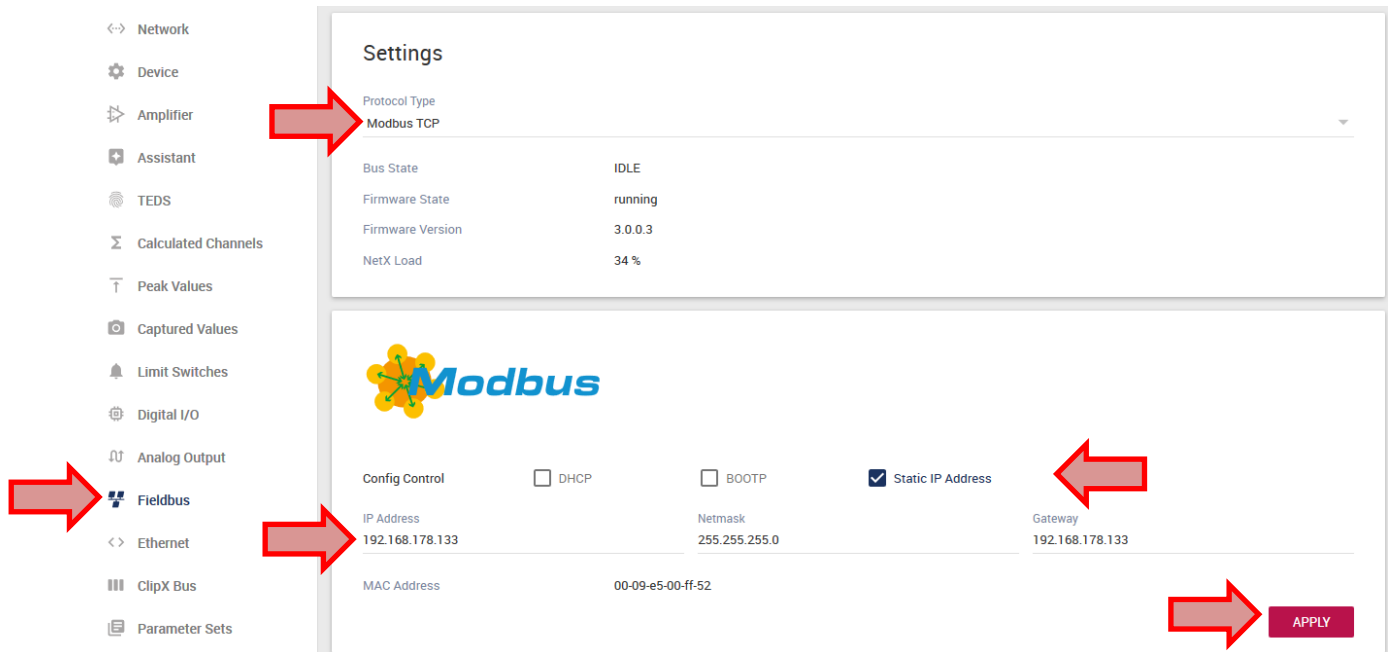


## Carry out

### ClipX settings

First, the Modbus protocol must be activated in the ClipX Webserver.

- Open the webserver
- Switch to the fieldbus menu
- Activate the Modbus TCP protocol
- Set up the network settings (IP address, DHCP, ...)




The screenshot displays the 'Settings' page of the ClipX Webserver. The left sidebar contains a menu with the following items: Network, Device, Amplifier, Assistant, TEDS, Calculated Channels, Peak Values, Captured Values, Limit Switches, Digital I/O, Analog Output, **Fieldbus**, Ethernet, ClipX Bus, and Parameter Sets. The 'Fieldbus' menu item is highlighted with a red arrow. The main content area is titled 'Settings' and is divided into two sections. The top section, 'Protocol Type', shows 'Modbus TCP' selected, indicated by a red arrow. The bottom section, 'Modbus', features the Modbus logo and configuration options. Under 'Config Control', the 'Static IP Address' checkbox is checked, with a red arrow pointing to it. Below this, the 'IP Address' is set to 192.168.178.133, the 'Netmask' to 255.255.255.0, and the 'Gateway' to 192.168.178.133. A red arrow points to the 'Static IP Address' checkbox, and another red arrow points to the 'APPLY' button at the bottom right. The 'MAC Address' is listed as 00-09-e5-00-ff-52.

Protocol Type
Modbus TCP

Bus State	IDLE
Firmware State	running
Firmware Version	3.0.0.3
NetX Load	34 %



Config Control

☐ DHCP

☐ BOOTP

☒ Static IP Address

IP Address

192.168.178.133

Netmask

255.255.255.0

Gateway

192.168.178.133

MAC Address

00-09-e5-00-ff-52

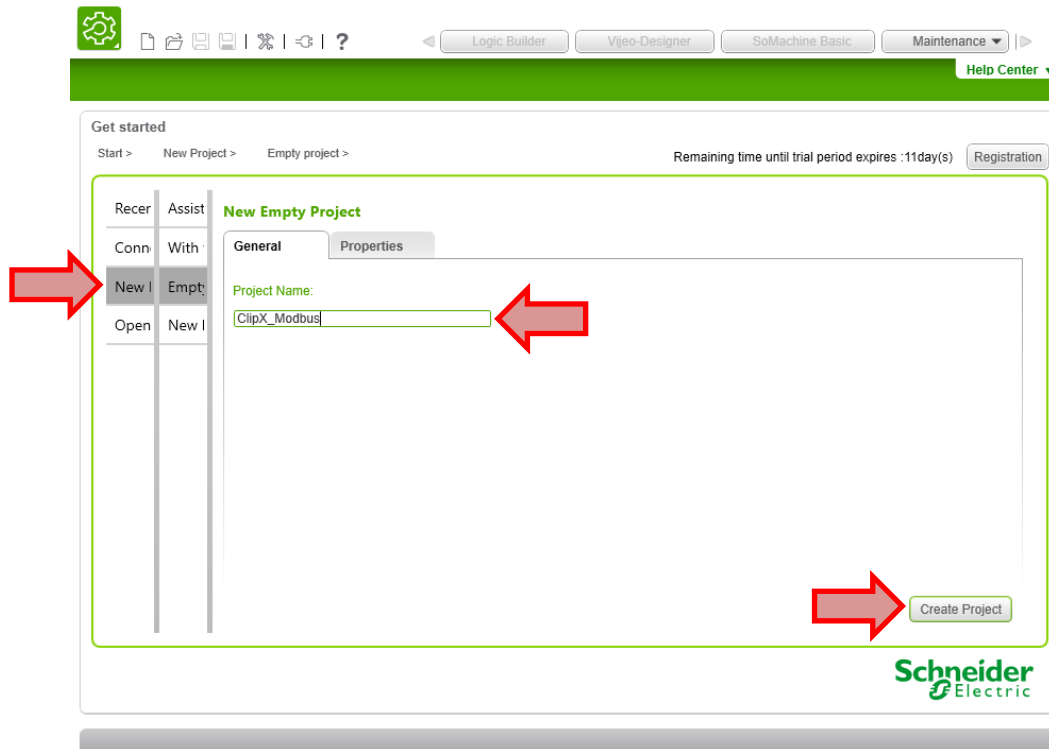
APPLY



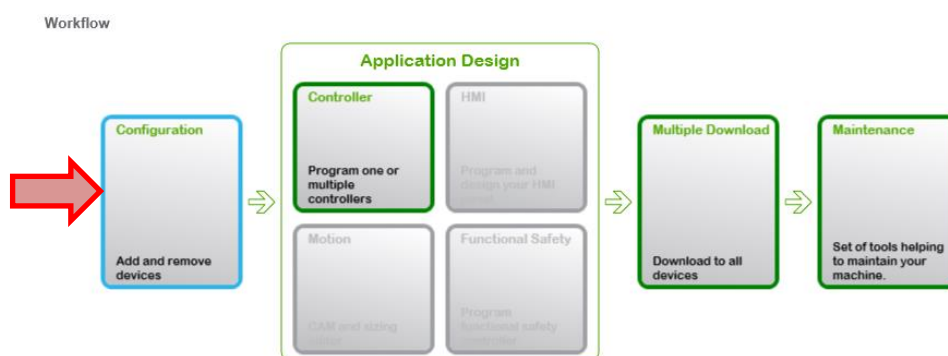
## Settings in SoMachine

For simplicity a prebuild program block “ClipX\_Modbus.export” is attached to this TechNote. In the following it is explained how the block can be imported and how the measurement values are transmitted.

- Start the SoMachine software
- ‘New Project’ → ‘Empty Project’
- Set a project name
- Create the project

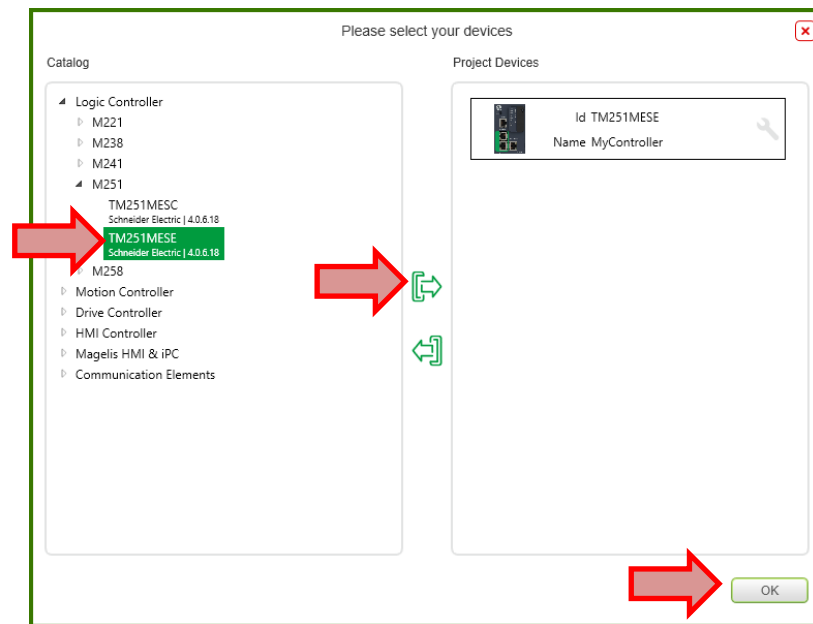


- Select ‘Add and remove devices’

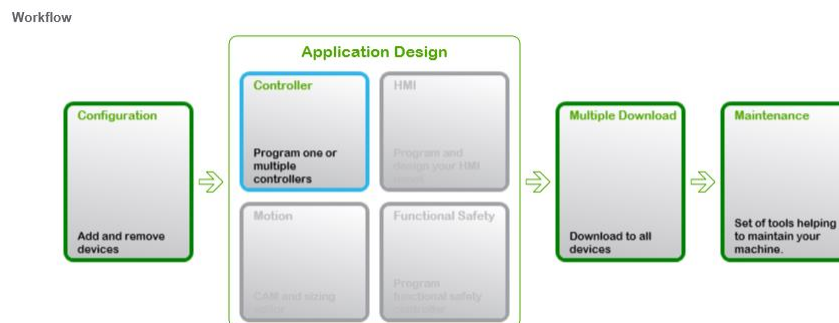




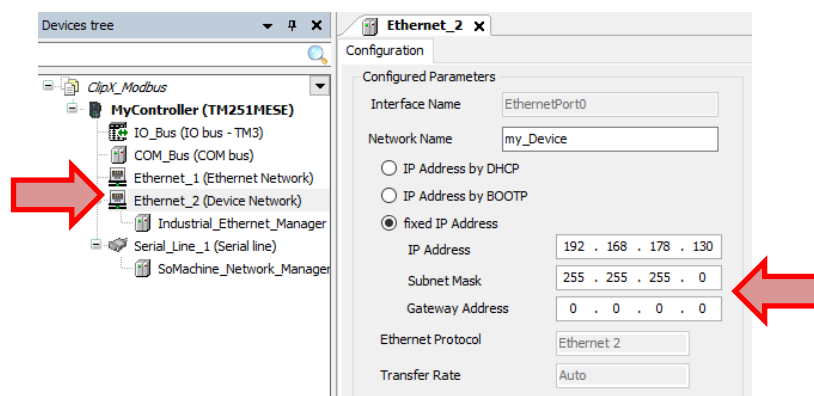
- In the following dialog add the PLC



- Select 'Program one or multiple controllers'

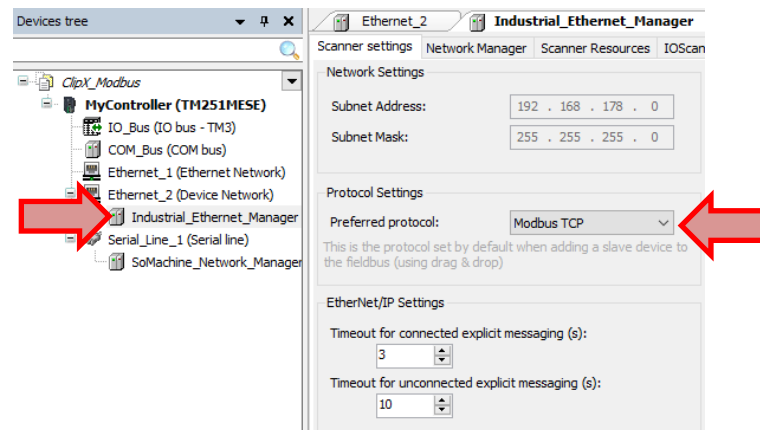


- Double click 'Ethernet\_2'
- Set up the ip address of the Modbus Port of the PLC

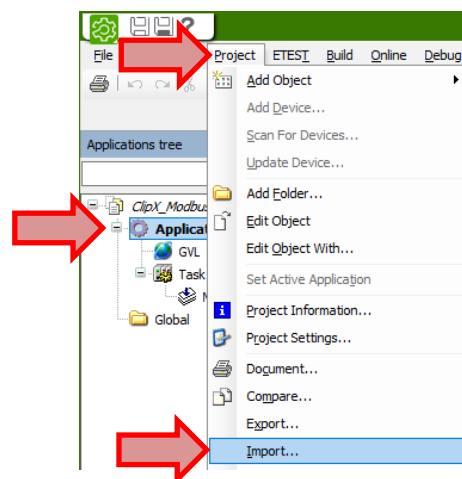




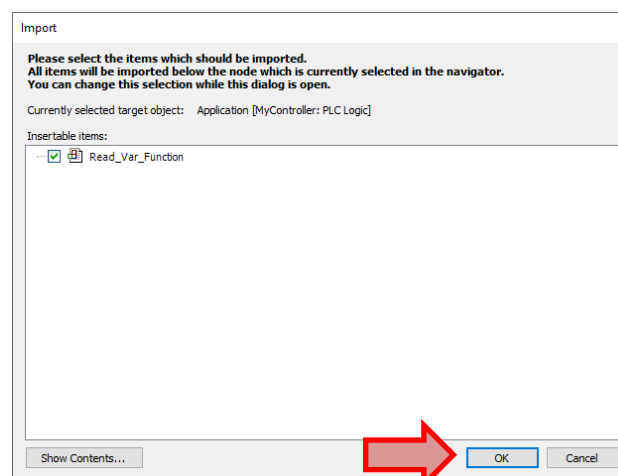
- Double click 'Industrial\_Ethernet\_Manager'
- Set Modbus TCP as 'Preferred protocol'



- Switch to the application tree
- Select 'Application'
- At Project → Import select the "ClipX\_Modbus.export" file

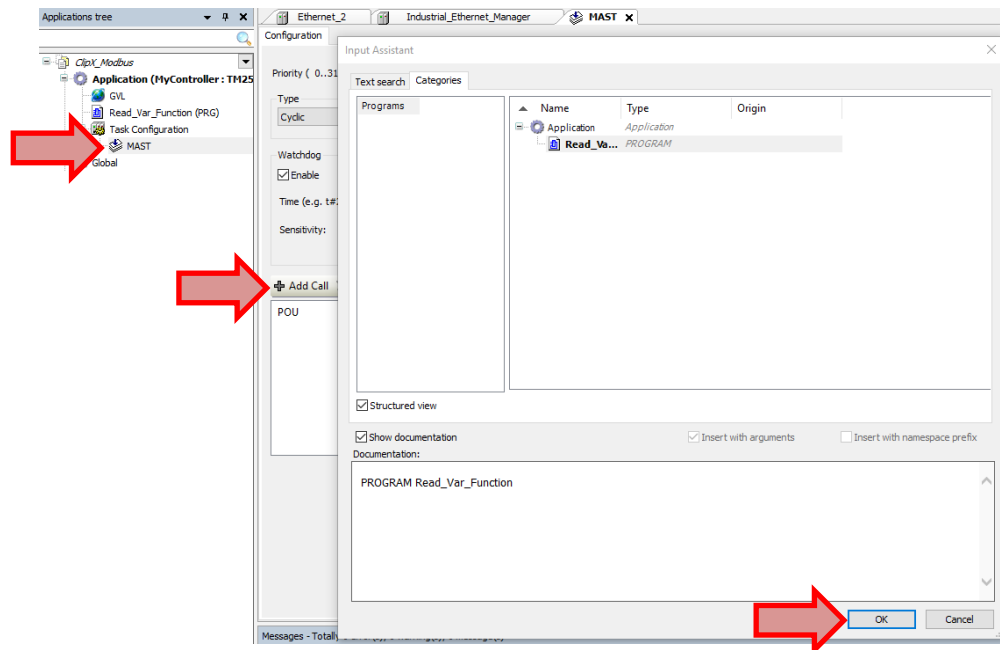


- Confirm the dialog

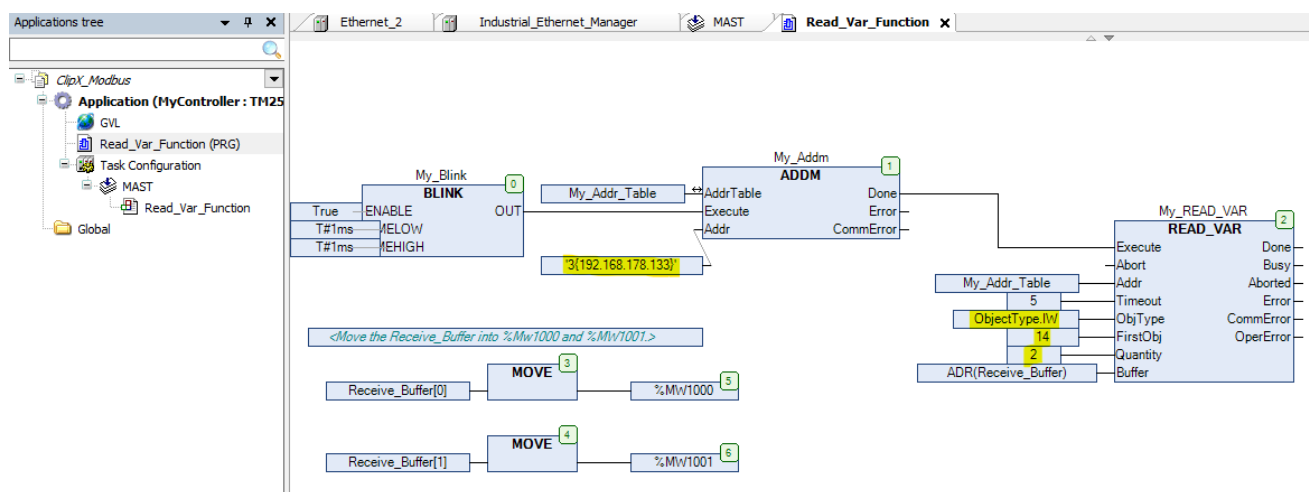




- Go to 'Task Configuration' → 'MAST'
- Select 'Add Call' and add the 'Read\_Var\_Function'

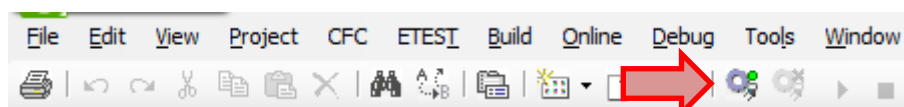


- Edit the yellow marked fields (ip address, object type → IW corresponds to function code 04, FirstObj, Quantity)
- If desired, edit the read times at 'BLINK' (TIMELOW, TIMEHIGH)



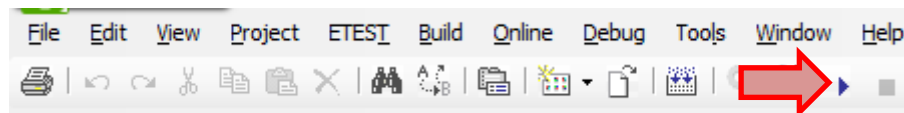
**Note:** In this example register 14 and 15 of ClipX are read. These registers correspond to the 4 byte float gross value of ClipX (two byte per register).

- Select 'Log in' and load the program to the PLC

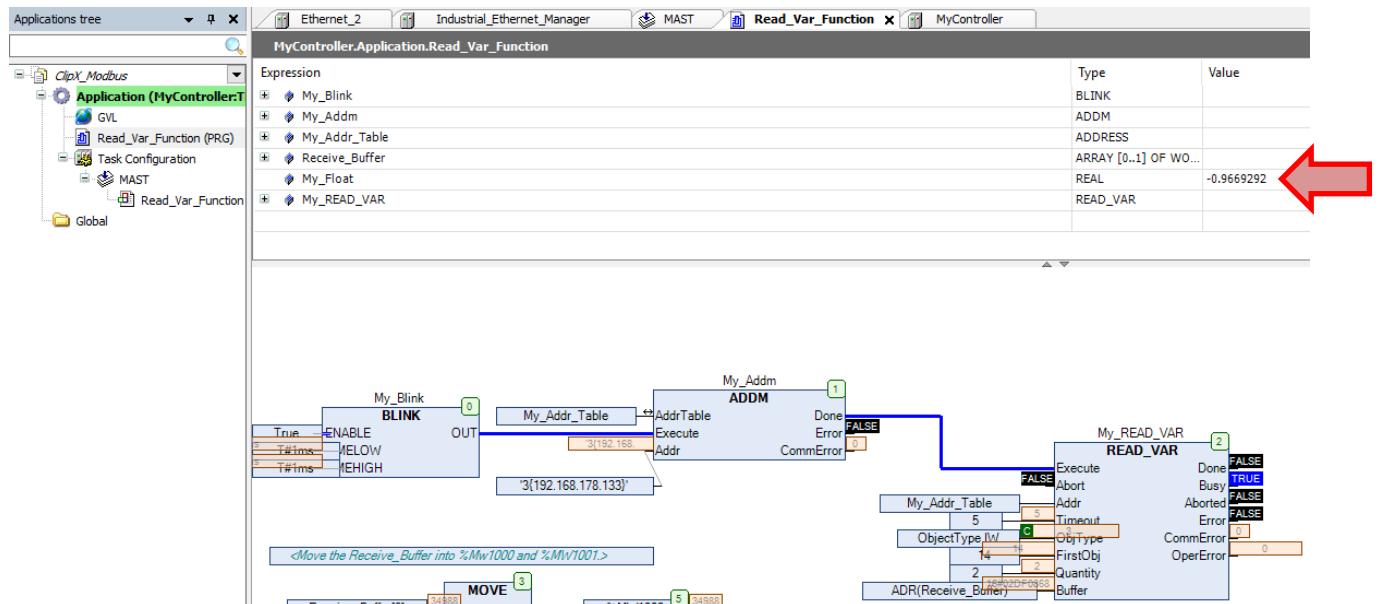




- Start the program



- The gross value is now available as 'My\_Float'



## Disclaimer

These examples are for illustrative purposes only. They cannot be used as the basis for any warranty or liability claims.