



Modbus communication driver

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Content

Introduction	2
Modbus RTU	2
Reading and writing parameters from/to a F5 Modbus-Operator	2
Reading and writing from/to a C6 Compact II	6
Modbus Ethernet TCP	10
Reading and writing from/to a C6 Compact II	10
Modbus Ethernet TCP Server	14
Example	17
Modbus TCP Server und Modbus TCP	17
Disclaimer	18

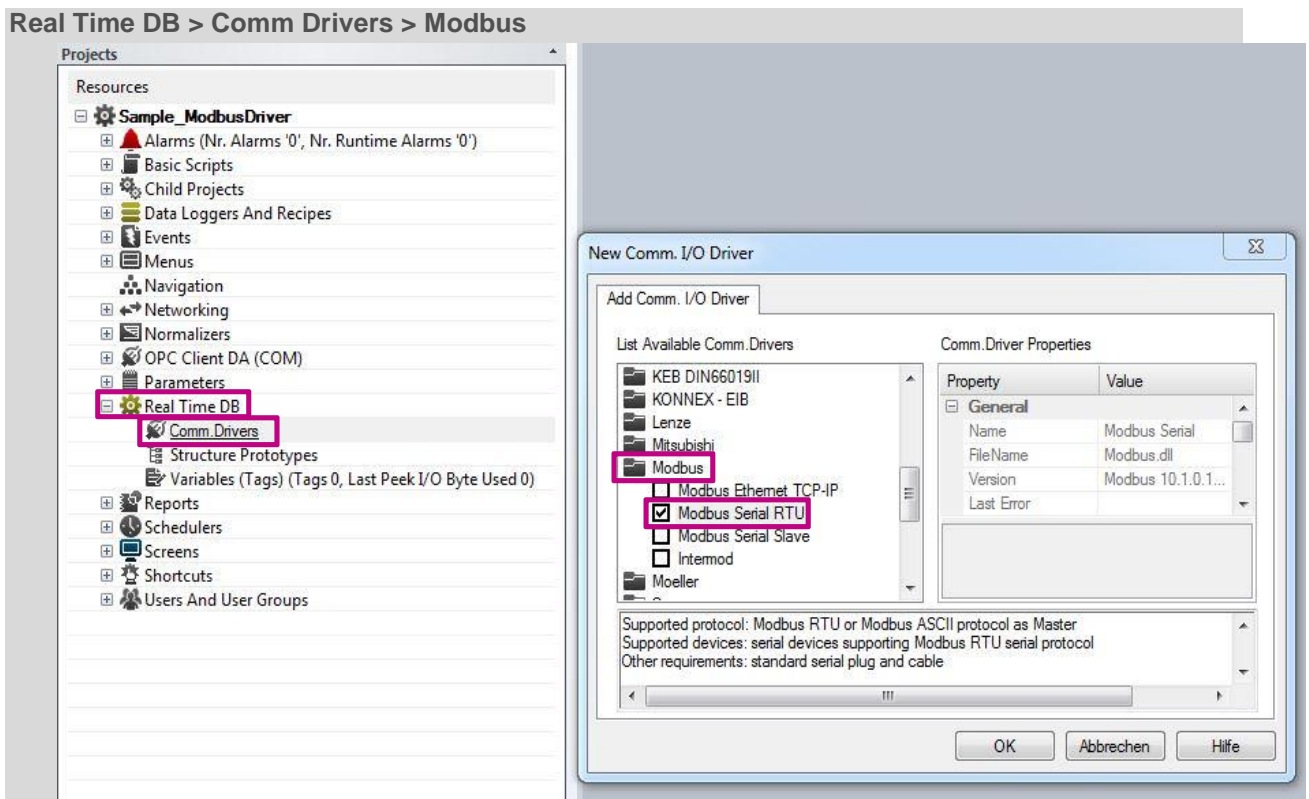
Introduction

This document describes how to add and configure the Modbus- RTU and TCP-IP -drivers to your HMI project. It also includes a short manual of reading and writing parameters from a serial Modbus-Operator and C6 Compact II with a C6 HMI/Router.

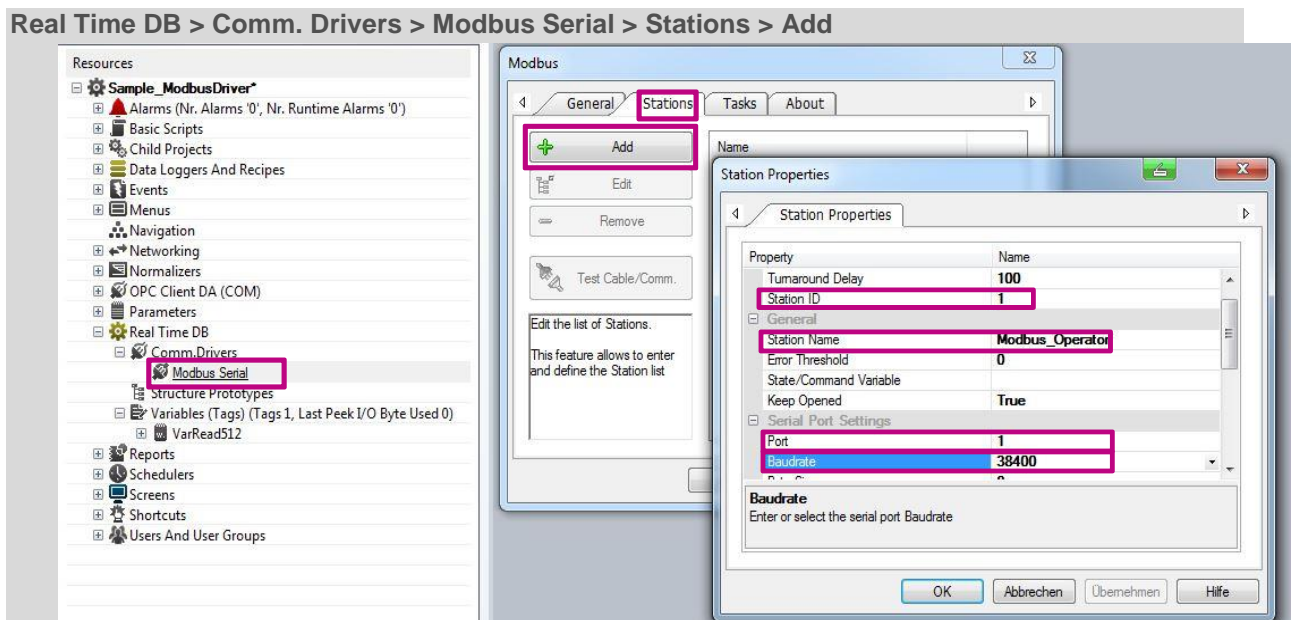
Modbus RTU

Reading and writing parameters from/to a F5 Modbus-Operator

1. Add the “Modbus Serial RTU”- driver to the HMI project.

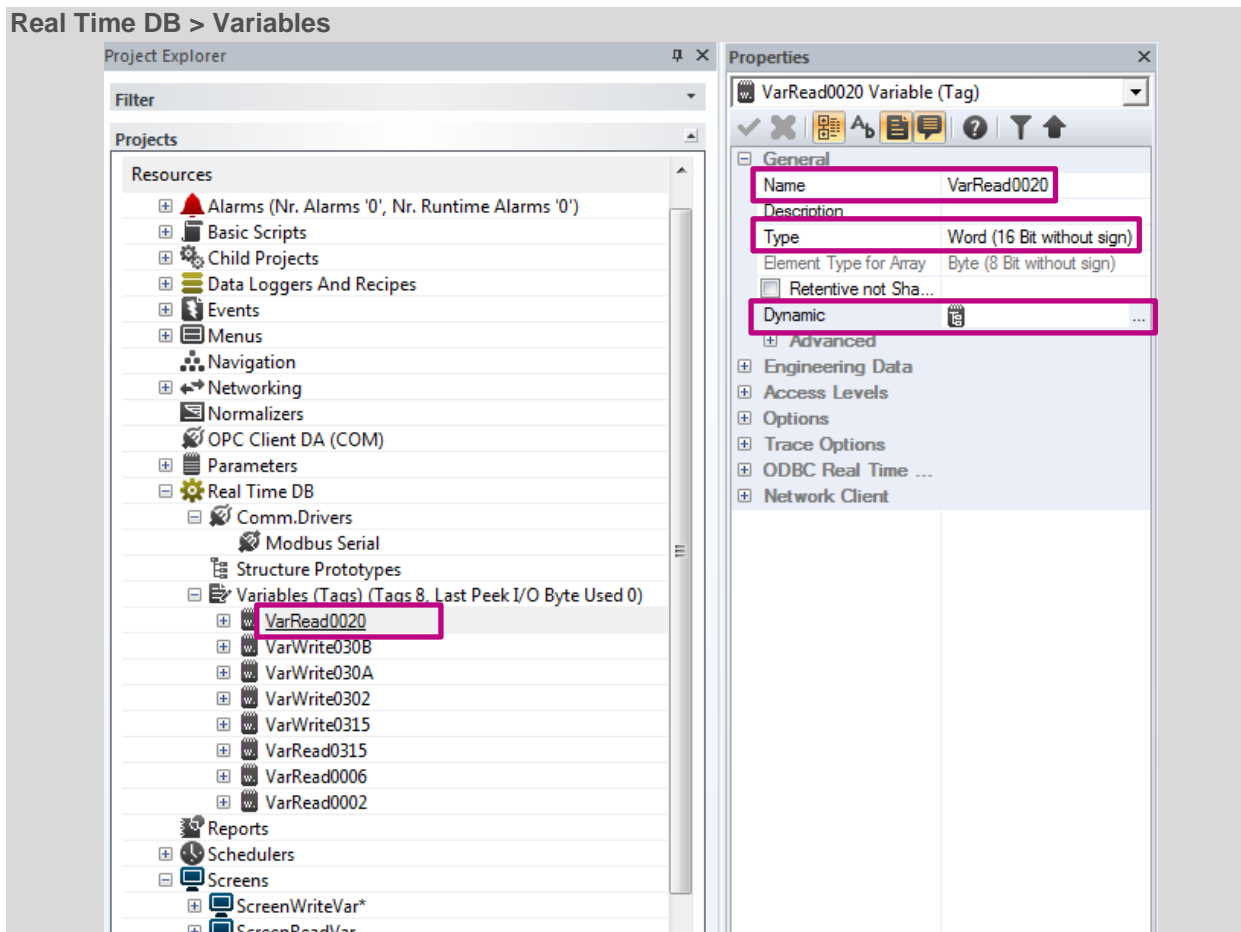


2. Add a station to the settings of the driver by right click on “**Modbus Serial**” > “**Stations**” > “**Add**”. Change following settings:
 - a. **Station ID**: Enter the ID-Node of your Operator (can be found/changed in the operator-parameter “**fb01: MDB_SlaveAdd_OP**”, 0x0281h).
 - b. **Station Name**: The Name of the Station, which is used in the HMI project.
 - c. **Port**: Number of used COM-Port of your HMI.
 - d. **Baudrate**: Baudrate of the operator (can be found/changed in the operator-parameter “**OS05: Diag Baudrate**”, 0x0185h).



Note: A test of the communication (“**Test Cable/Comm.**”) will not be successful even if the settings are correct.

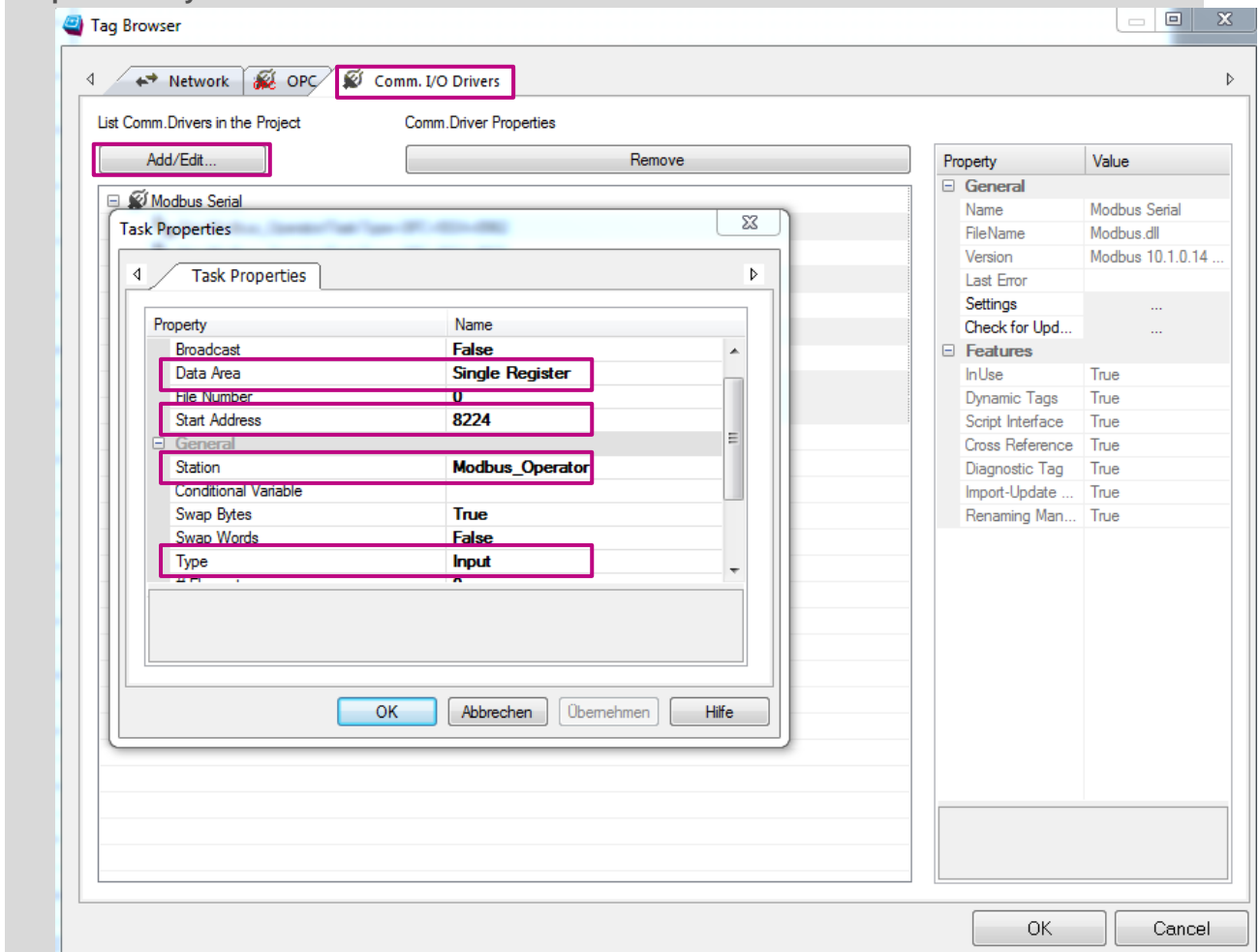
3. Add a new variable (e.g.: “VarRead0020”), choose the type and link it to the Modbus-driver by “Dynamic”.



4. Link the variable to the Modbus-communication-list. You have to fill in the “**Start Address**” (in decimal) of your parameter you want to read/write with an offset of 2000h = 8192d.

E.g.: Parameter you want to read (0020h = 32d) + Offset (2000h = 8192d) = 8224d.

Properties > Dynamic > Comm. I/O Drivers > Add/Edit....



Choose for reading parameter:

- a. Data Area = Single Register
- b. Type = Input
- c. Station = Name of used station for the Modbus-driver

Choose for writing parameter:

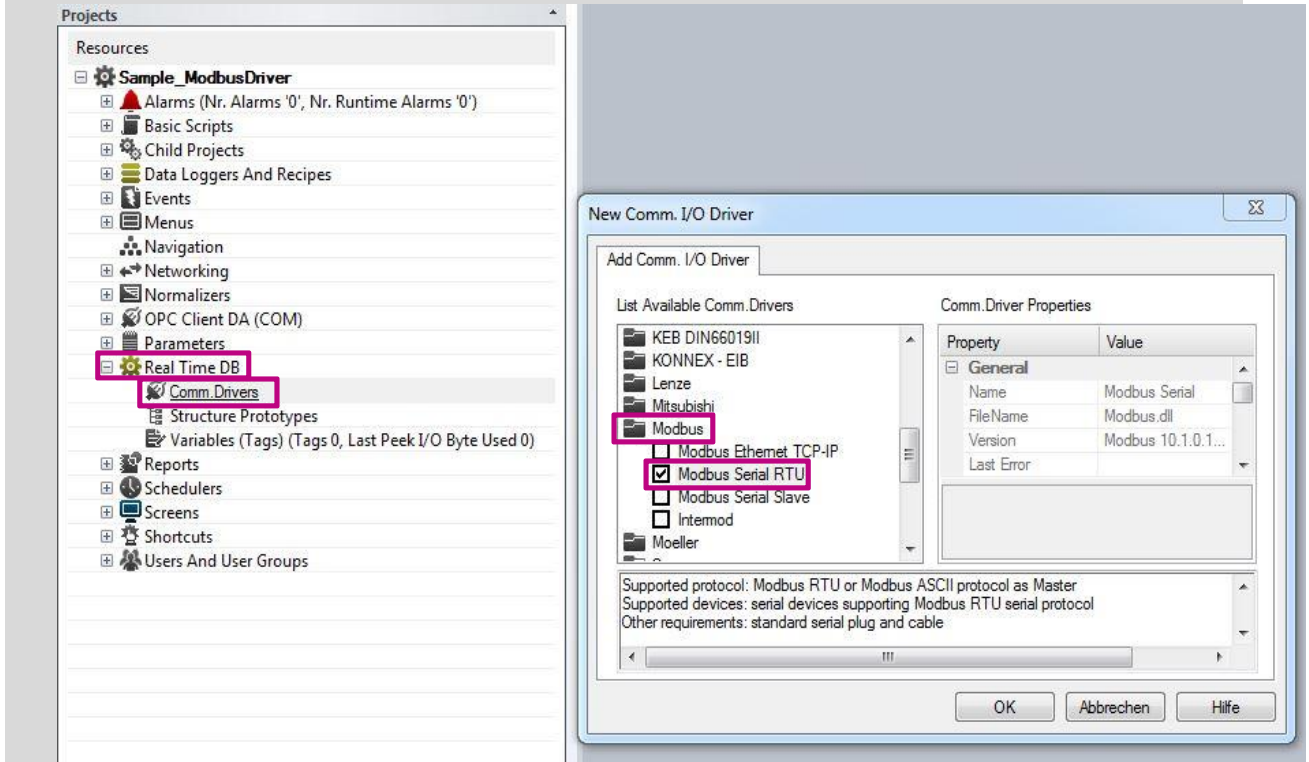
- a. Data Area = Single Register
- b. Type = Unconditional Output
- c. Station = Name of used station for the Modbus-driver

5. Now you can use your linked variables to the Modbus-driver.

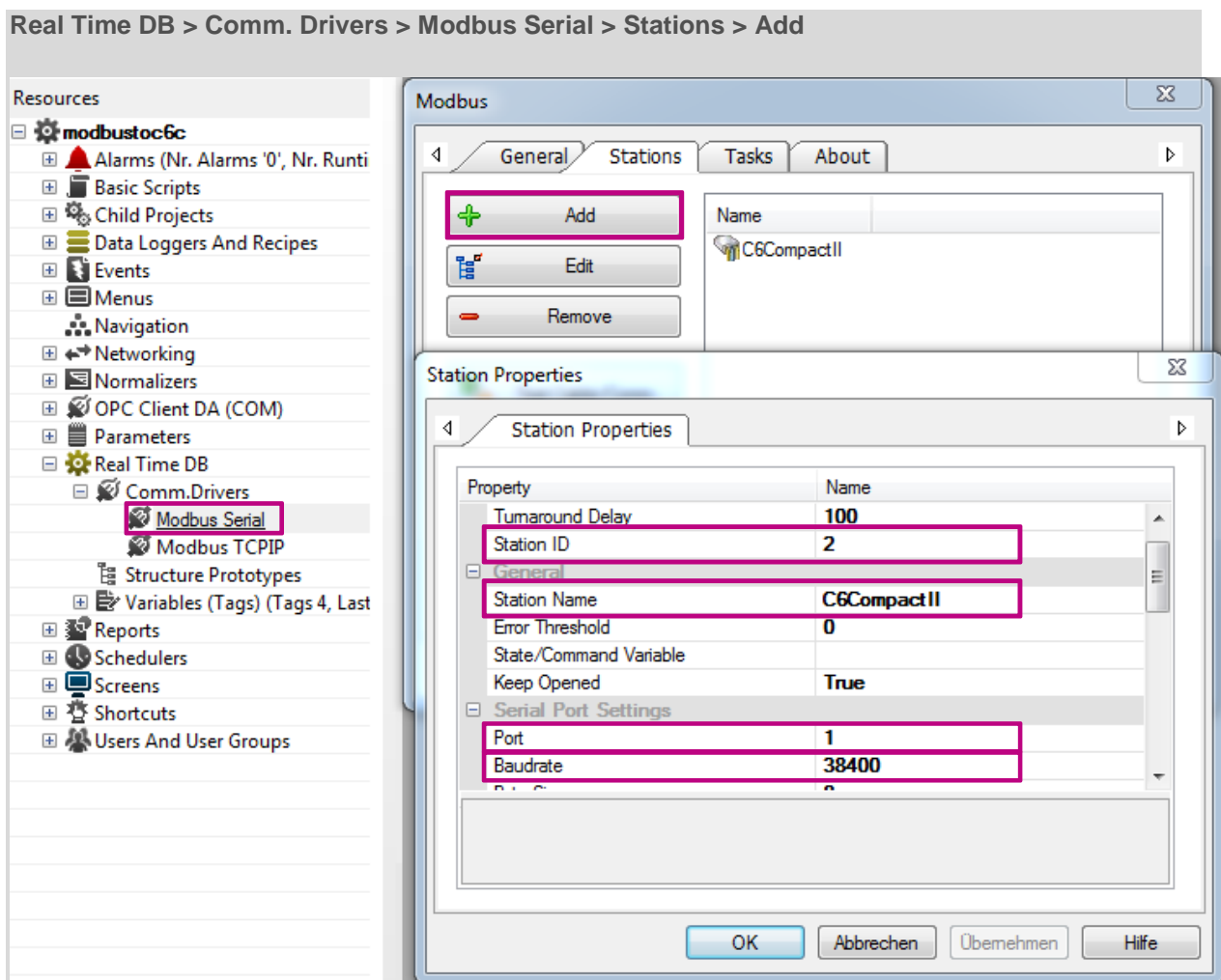
Reading and writing from/to a C6 Compact II

1. Add the "Modbus Serial RTU"- driver to the HMI project.

Real Time DB > Comm Drivers > Modbus



2. Add a station to the settings of the driver by right click on “**Modbus Serial**” > “**Stations**” > “**Add**”. Change following settings:
 - a. **Station ID**: Enter the set ID-Node of your PLC (can be set/changed in the PLC-functionblock **Modbus_Server_Ser > MdbUnit**).
 - b. **Station Name**: The name of the Station, which is used in the HMI project.
 - c. **Port**: Number of used COM-Port of your HMI (Default = 1).
 - d. **Baudrate**: Baudrate of the PLC (can be found/changed in the device-parameter “**Ud06: Baudrate**”, 0x0806h).

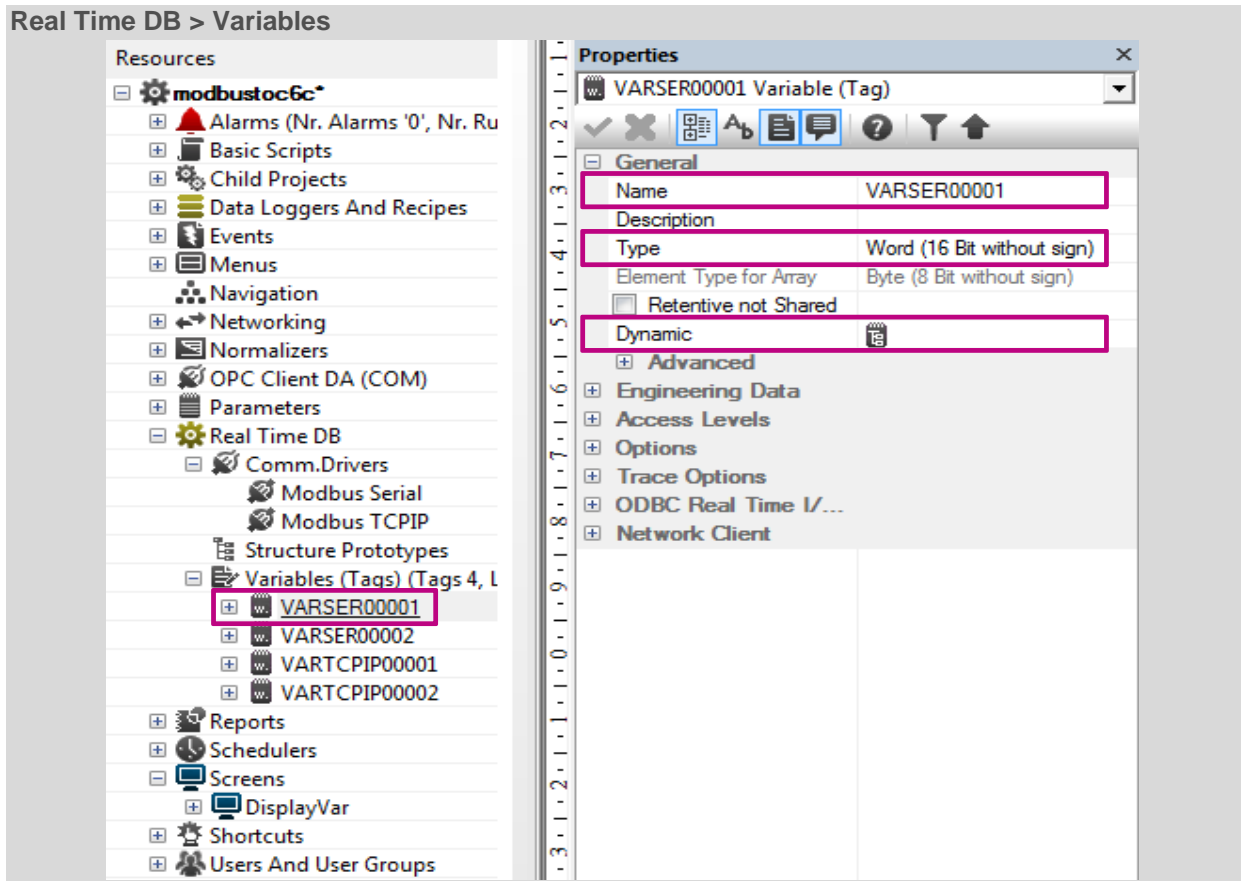


Note: A test of the communication (“**Test Cable/Comm.**”) will not be successful even if the Settings are correct.

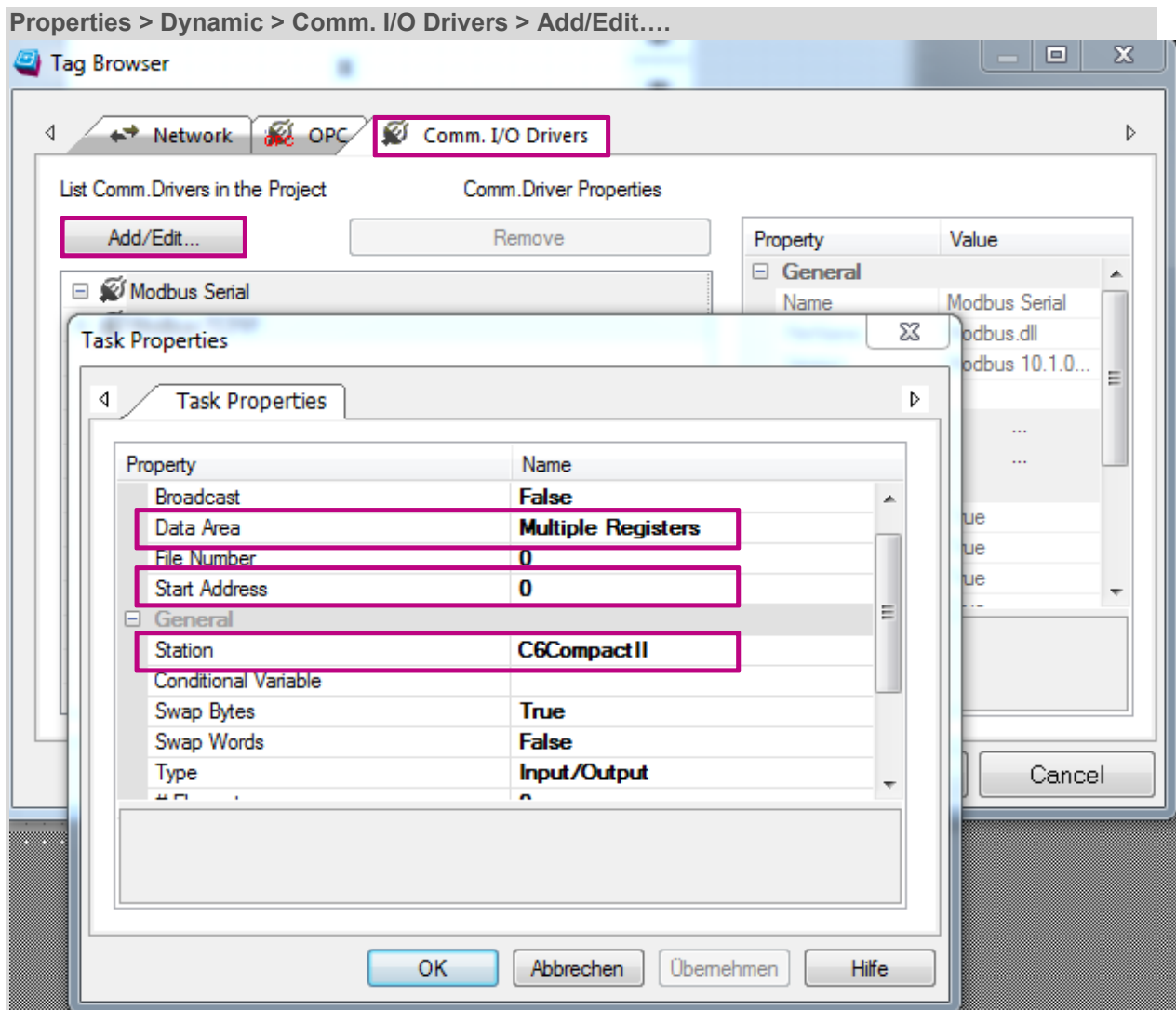
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3. Add a new variable (e.g.: "VARSER00001"), choose the type and link it to the Modbus-driver by "Dynamic".



4. Link the Modbus-variable to the Modbus-communication-list. Use the data Area “**Multiple Registers**”. You have to fill in the address (in decimal) of your parameter you want to read/write from/to your PLC in “**Start Address**” (e.g. Address 0 = first word you send, Address 1 = second word you send, ...). Choose the station you want to communicate to from step 2 (e.g. C6CompactII).

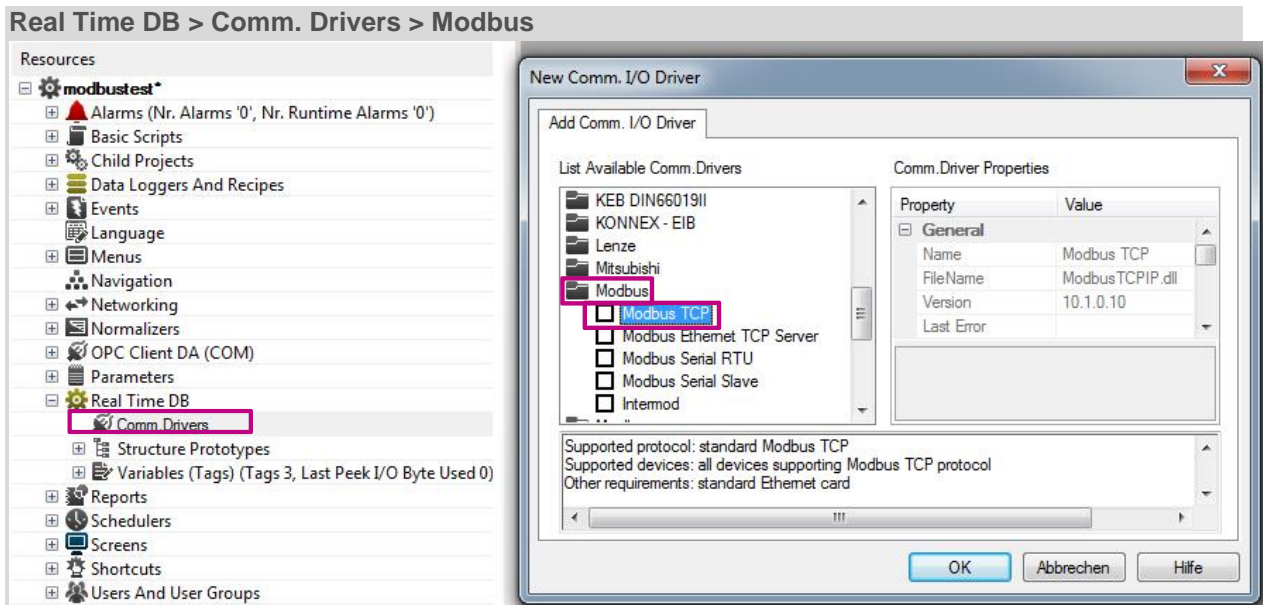


5. Now you can use your linked variables to the Modbus-driver.

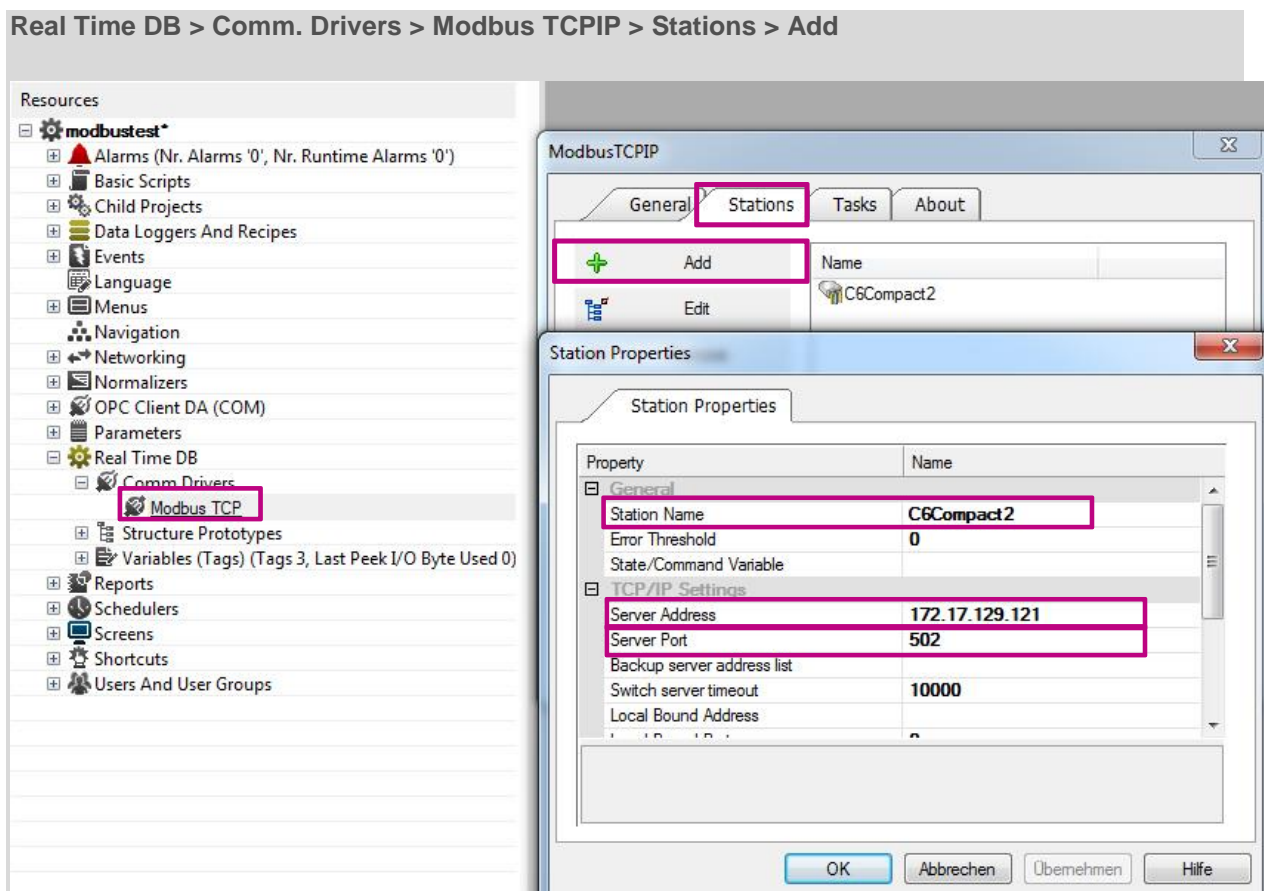
Modbus Ethernet TCP

Reading and writing from/to a C6 Compact II

1. Add the “Modbus Ethernet TCP”- driver to the HMI project.



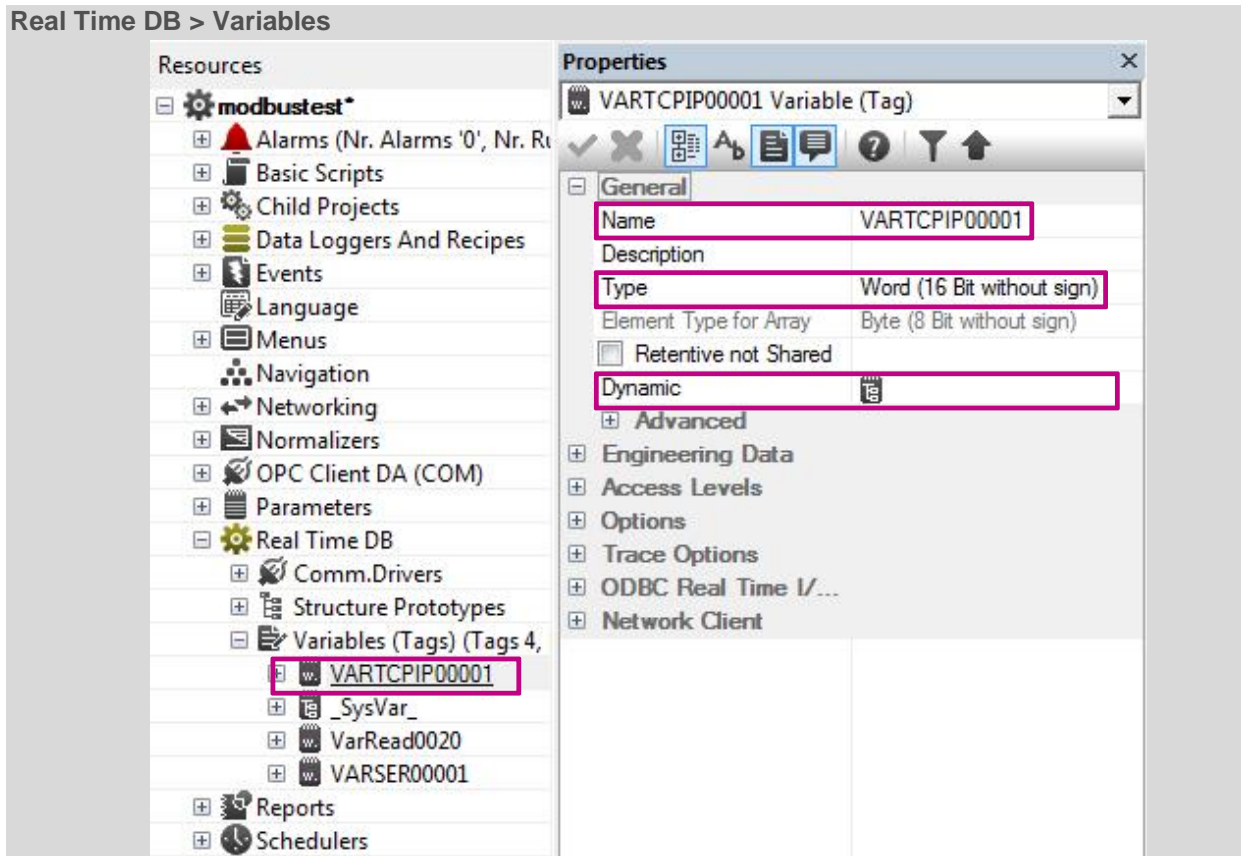
2. Add a station to the settings of the driver by right click on “Modbus TCP” > “Stations” > “Add”.
Change following settings:
 - a. **Station Name:** The Name of the Station, which is used in the HMI project.
 - b. **Server Address:** The IP-address of the PLC or from the Modbus TCP server.
 - c. **Server Port:** Used Modbus TCP-IP port of the PLC (Default = 502)



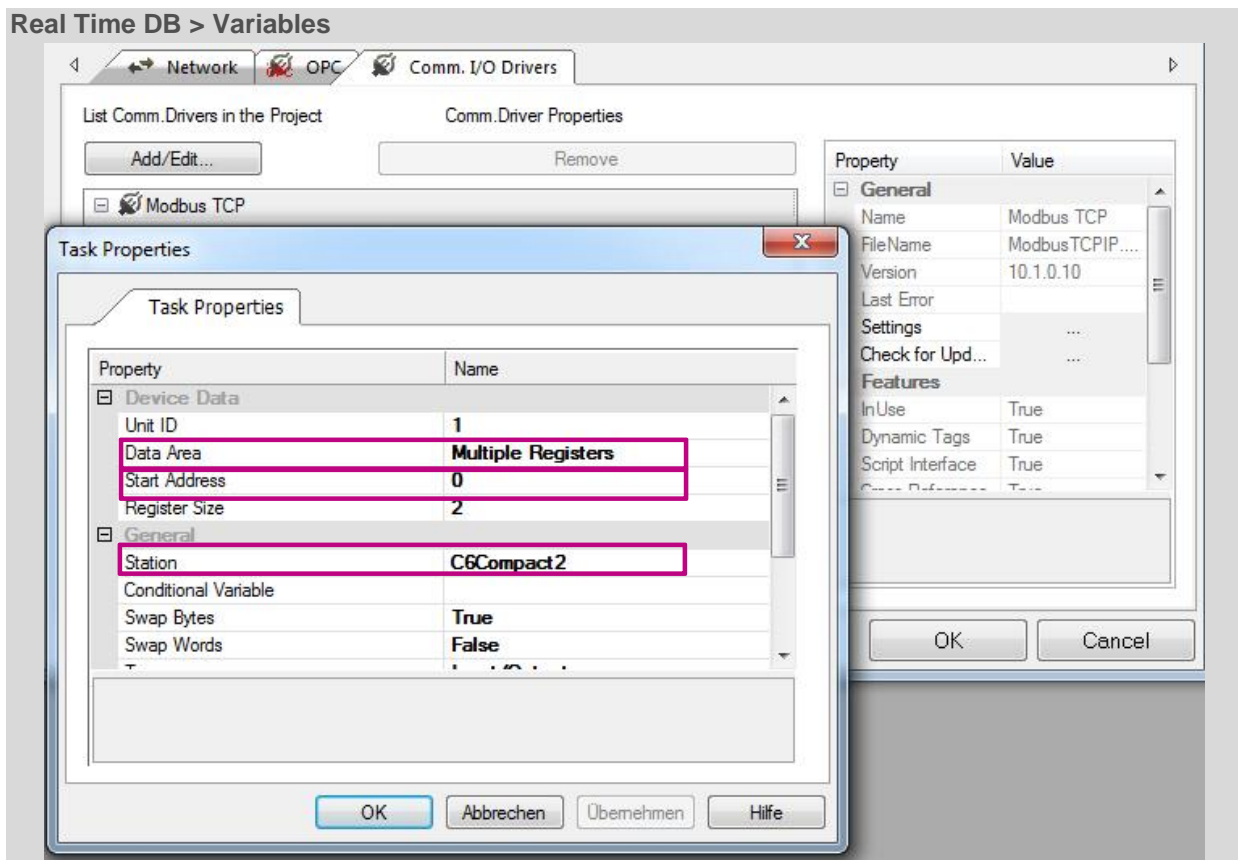
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3. Add a new variable (e.g.: "VARTCPIP00001"), choose the type and link it to the Modbus-driver by "Dynamic".



4. Link the Modbus-variable to the Modbus-communication-list. Use the data Area “**Multiple Registers**”. You have to fill in the address (in decimal) of your parameter you want to read/write from/to your PLC in “**Start Address**” (e.g. Address 0 = first word you send, Address 1 = second word you send....). Choose the station you want to communicate to from step 2 (e.g. C6CompactII).



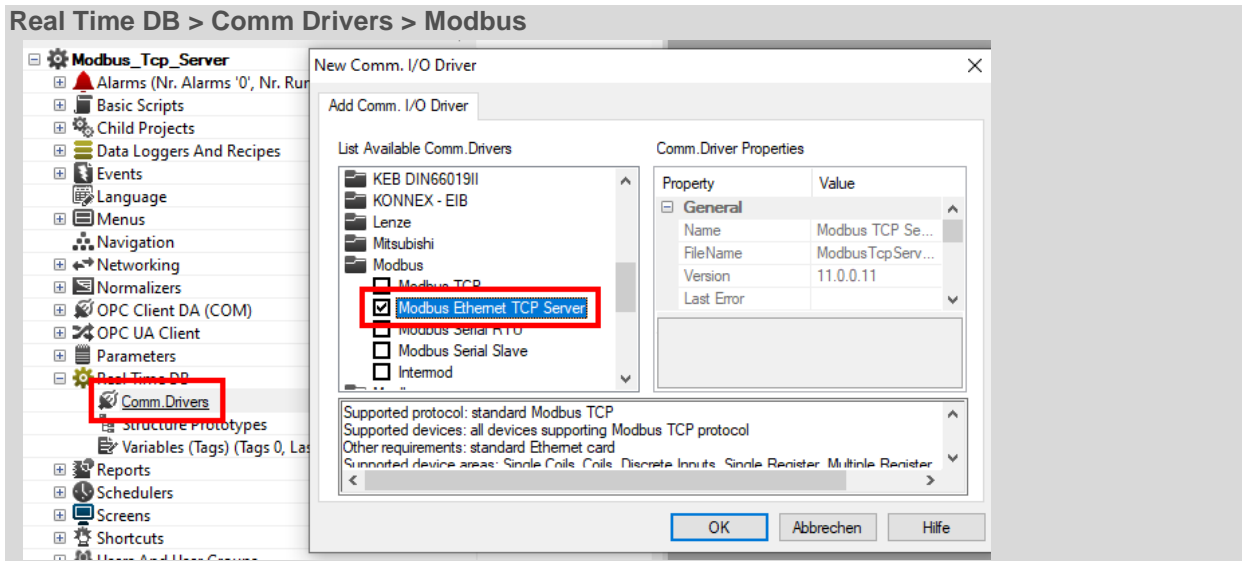
5. Now you can use your linked variables to the Modbus-driver.

Modbus Ethernet TCP Server

An offset of 40001 is necessary for the external modbus client if you use a modbus TCP Server.
(This offset is not necessary in this document)

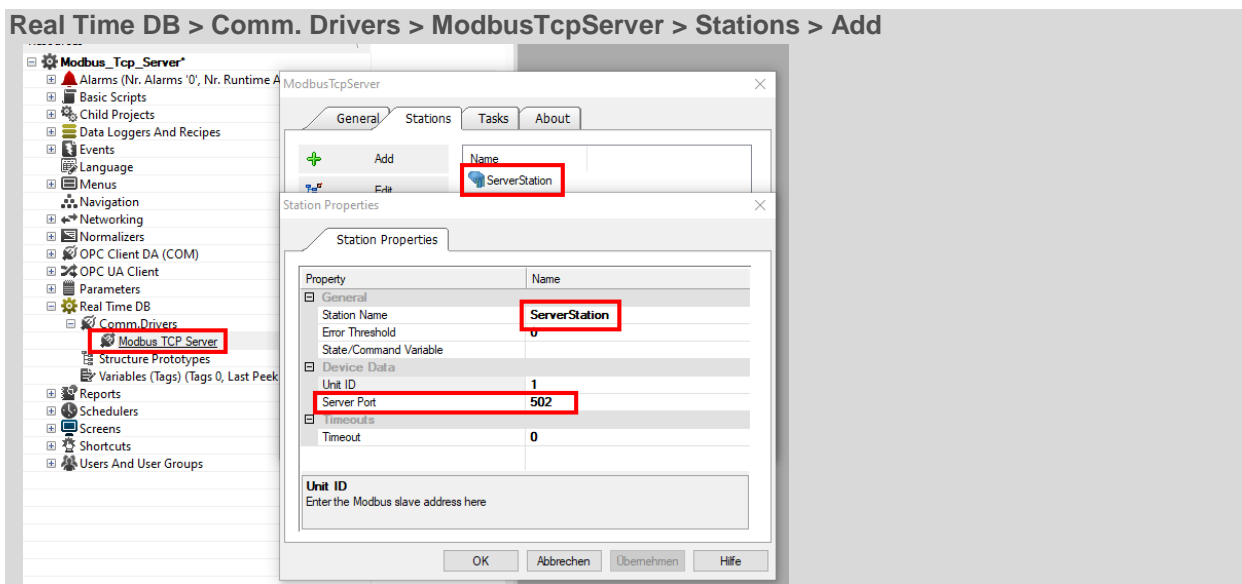
1. Add the “Modbus Ethernet TCP Server”- driver to the HMI project.

Real Time DB > Comm Drivers > Modbus

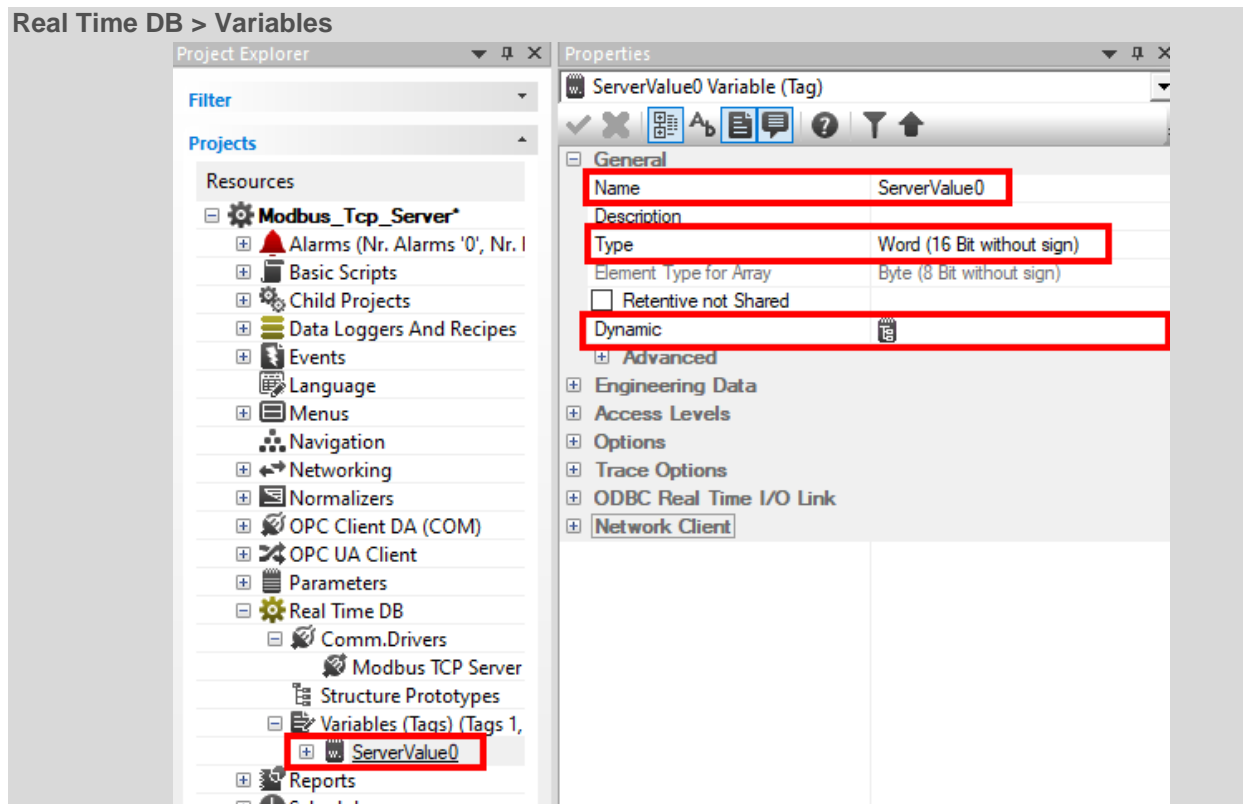


2. Add a station to the settings of the driver by right click on “Modbus TCP Server” > “Stations” > “Add”. Change following settings:
 - a. **Station Name:** The Name of the Station, which is used in the HMI project.
 - b. **Server Port:** Used Modbus TCP-IP port (Default = 502)

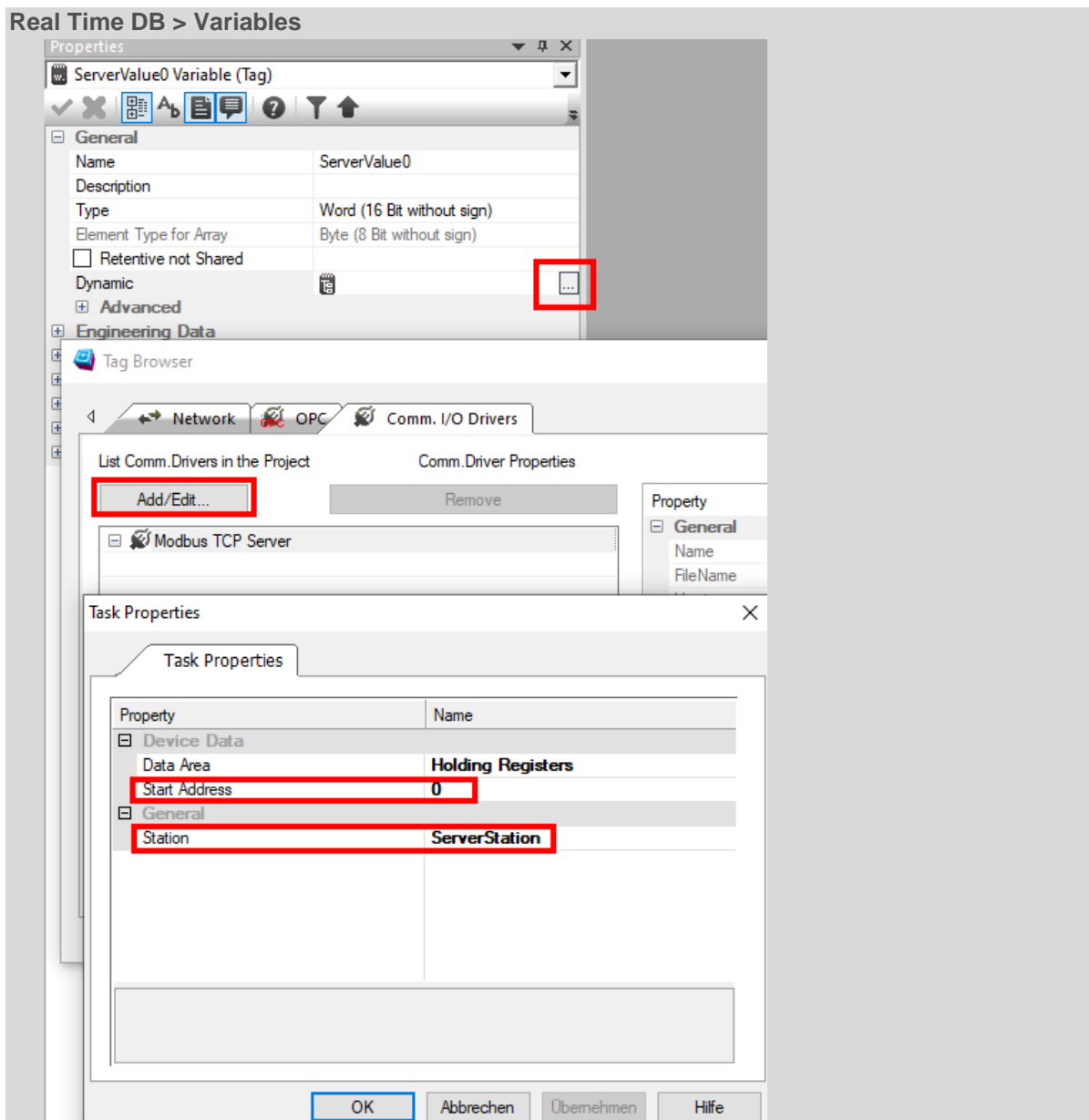
Real Time DB > Comm. Drivers > ModbusTcpServer > Stations > Add



3. Add a new variable (e.g.: "ServerValue0"), choose the type and link it to the Modbus TCP server driver by "Dynamic".



4. Link the Modbus variable to the Modbus communication list. You have to fill in the address (in decimal) of your parameter in **“Start Address”** (e.g. Address 0 = first word you send, Address 1 = second word you send....).
Choose the station you want to communicate to from step 2



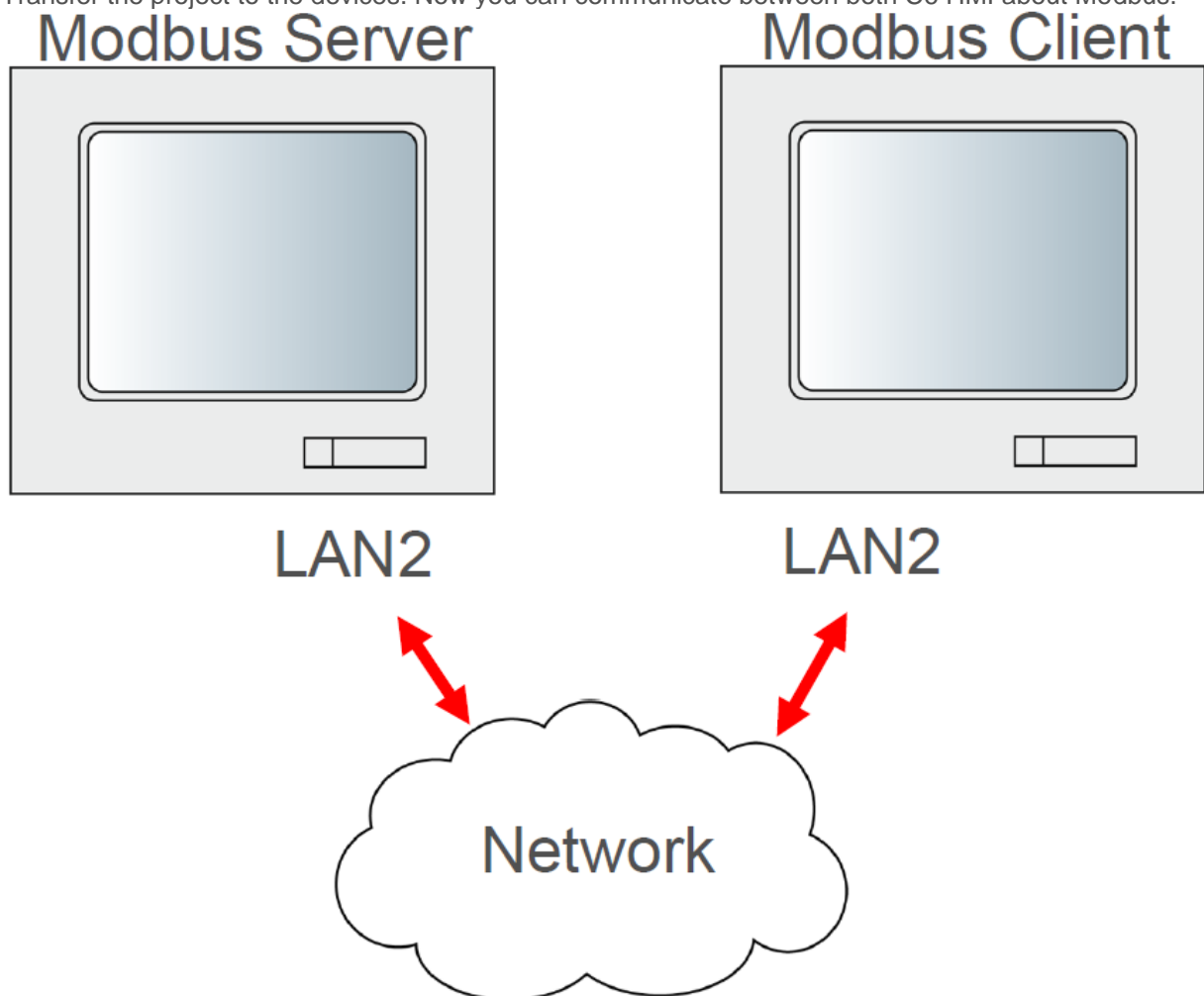
5. Now you can use your linked variables of the Modbus TCP Server driver in your project.

Example

Modbus TCP Server und Modbus TCP

The Modbus TCP Server has the LAN2 address 172.17.131.188 and the Modbus TCP client has the LAN2 address 172.17.131.87. Create a COMBIVIS studio HMI project for both devices. Follow the instruction of chapter [Modbus Ethernet TCP Server](#) for the “Modbus server”. Follow the instructions of chapter [Modbus Ethernet TCP](#) for the “Modbus client”.

Transfer the project to the devices. Now you can communicate between both C6 HMI about Modbus.



Disclaimer

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