

Technical Guide

Comunicação Modbus TCP entre controlador INLINE e PLCnext



PLCnext Technology
Designed by PHOENIX CONTACT



PLCnext Control



PLCnext Engineer



PLCnext Store



PLCnext Community

Comunicação MODBUS entre controlador INLINE e PLCnext

1. Fazer download das bibliotecas de comunicação MODBUS TCP
2. Configurando o controlador ILC como MODBUS Server
3. Vincular as variáveis do ILC a array de comunicação MODBUS
4. Criar um novo projeto no PLCnext Engineer configurando os parâmetros de rede
5. Criação da rotina com as funções de leitura e escrita MODBUS Client
6. Connect/Login, Download and Start, Debug e Watch Window.

1. Fazer download das bibliotecas de comunicação MODBUS TCP

Este tutorial utilizará bibliotecas para estabelecer a comunicação MODBUS TCP/IP entre os controladores.

As bibliotecas pode ser baixadas diretamente do site conforme a seguir:

Controle - ILC 131 ETH - 2700973





O controlador Inline oferece a possibilidade de comunicar através de PROFINET e Modbus/TCP. A programação é feita com o PC Worx Express ou PC Worx (IEC 61131-3).

[Criar PDF](#)

Visão geral Dados técnicos Acessórios Certificações **Downloads**

Módulo funcional

	Descrição	Idioma	Versão
<input type="checkbox"/>	[msi, 5 MB] Módulo funcional Módulos funcionais para a comunicação com o controlador através do protocolo Modbus TCP. PCW_6_Modbus_TCP_2_20200709.msi	Inglês	1

1. Fazer download das bibliotecas de comunicação MODBUS TCP

The screenshot shows the PLCnext Store website at plcnextstore.com/#/search?list-name=TopDownloads. The page features a large banner with the text "All you need for flexible engineering" and a "Explore" button. Below the banner, there is a "Filter" sidebar with options for Rating, Price, Type, and Hardware. The main content area displays a list of top-downloaded libraries, with the "Modbus_TCP" library highlighted by a red box.

Filter Reset all

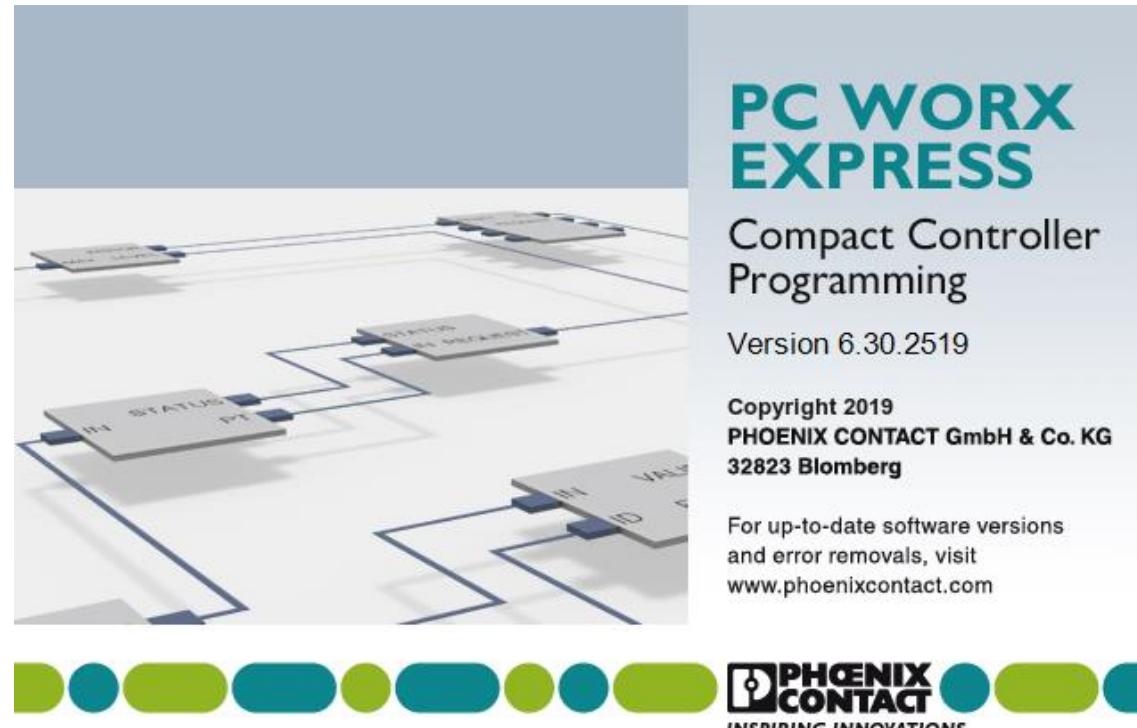
Promoted Best Rated **Top Downloads** Most Recent All

Library	Rating	Downloads	Details
AnalogTechnology	★★★★★	663	Phoenix Contact GmbH & Co. KG The AnalogTechnology library offers function blocks for acquisition and evaluation of analog signals. Free
Modbus_TCP	★★★★★	656	Phoenix Contact GmbH & Co. KG For the MB_TCP_Server function block, the registers used for Modbus correspond to the elements of the udtTCP_ComData array. Each WORD array element is to be considered as a 16-bit Modbus register. The...

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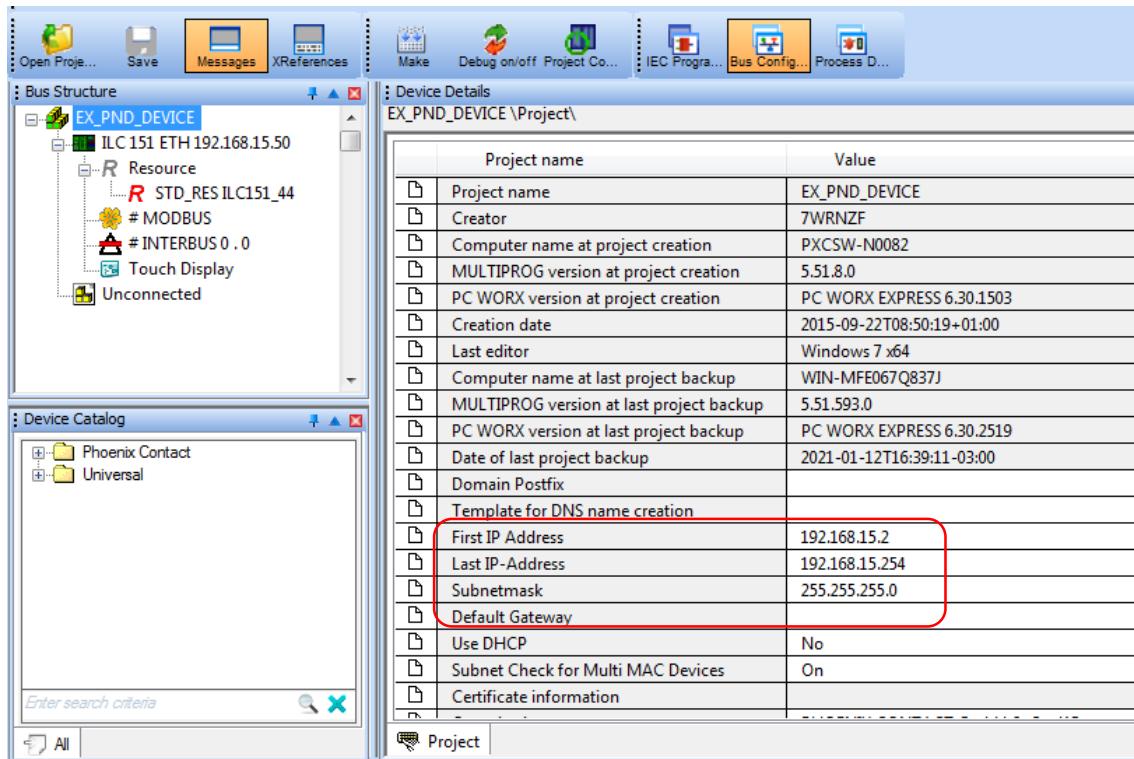
2. Configurando o controlador ILC como MODBUS Server

Os controladores da família INLINE são configurados e programados no software PCWORX

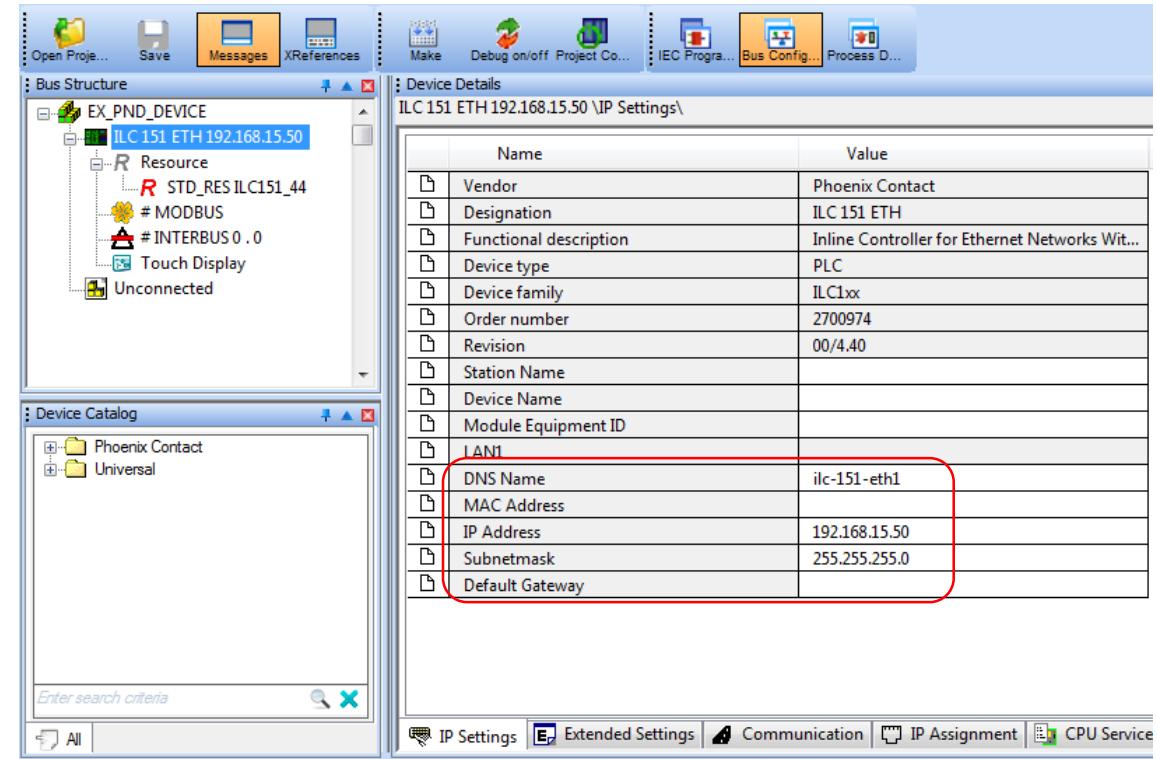


2. Configurando o controlador ILC como MODBUS Server

Configuração da faixa de IP do projeto

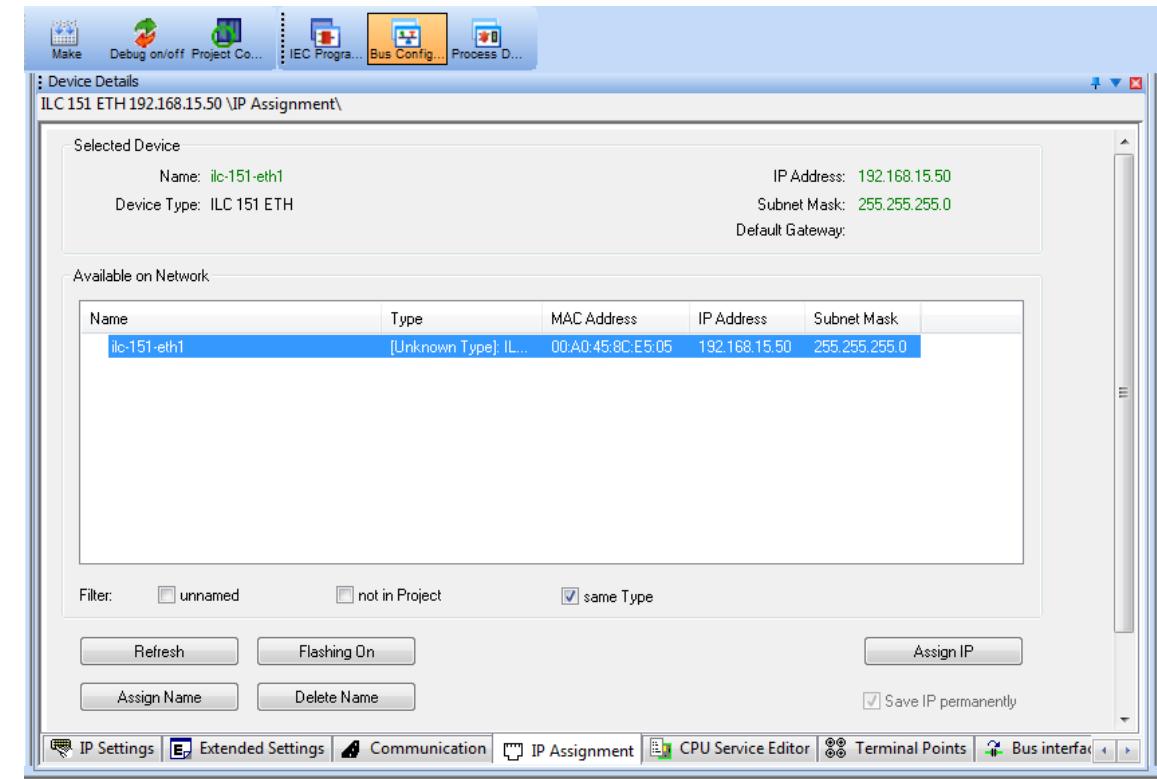
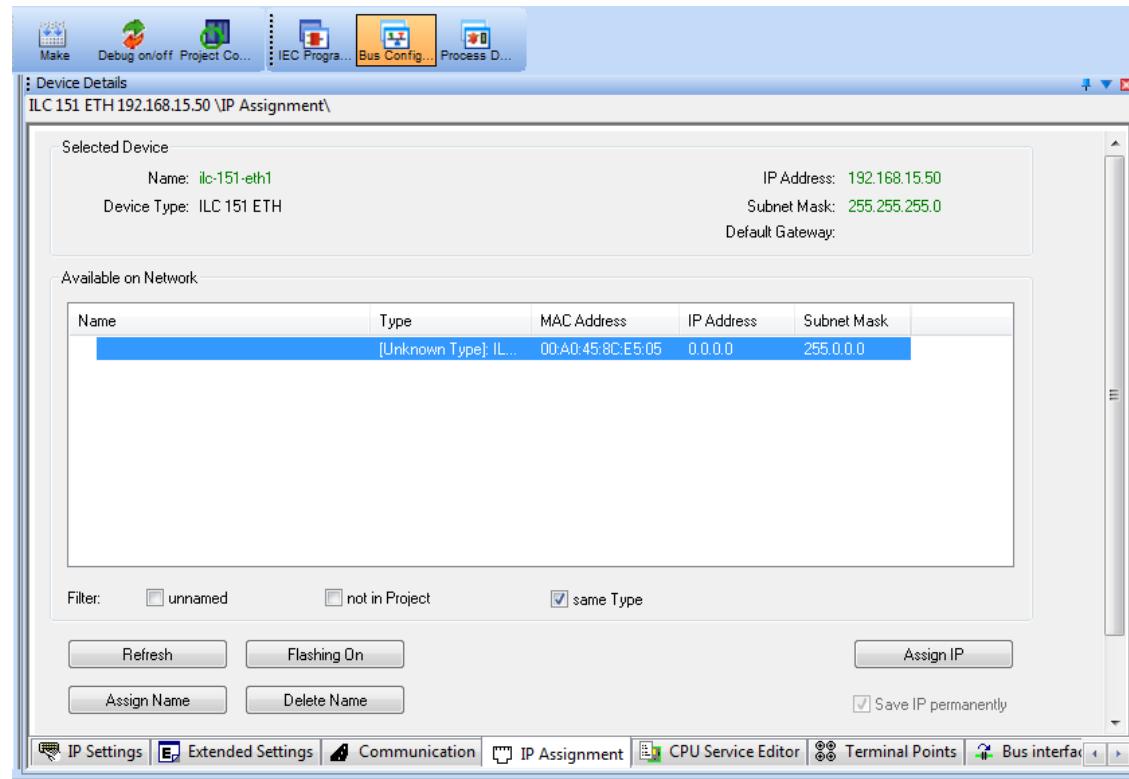


Configuração do IP e DNS name do controlador



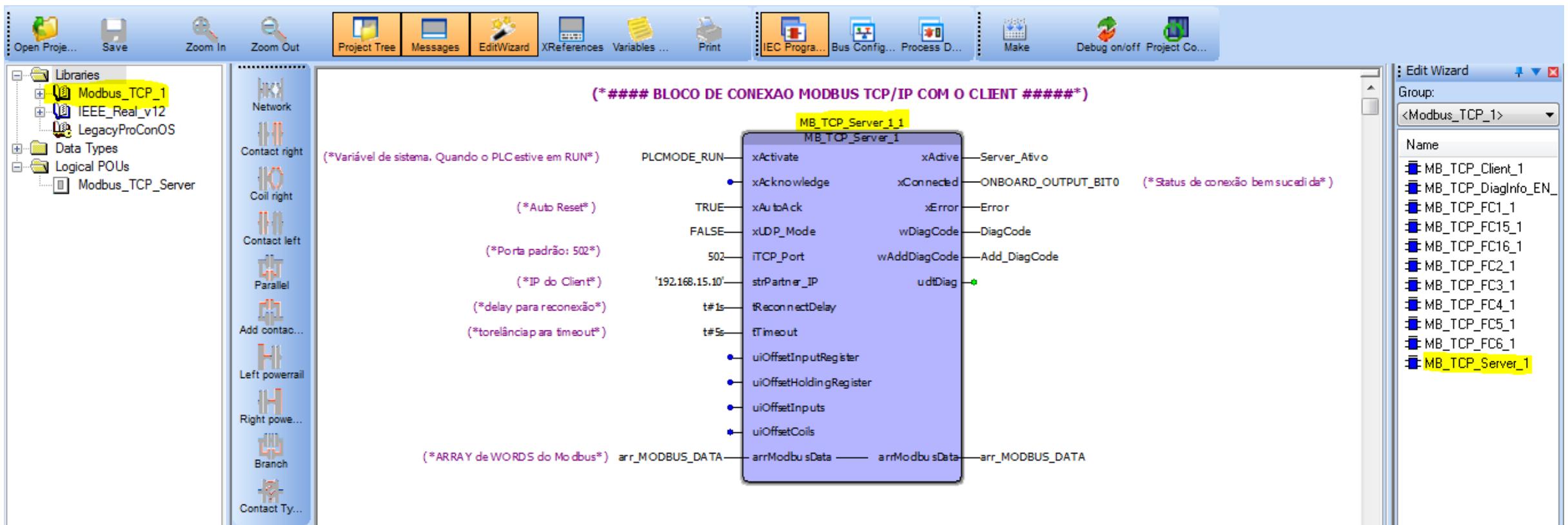
2. Configurando o controlador ILC como MODBUS Server

No PCWORX existe uma ferramenta a BootIP para atribuição de IP a assinatura do nome ao dispositivo

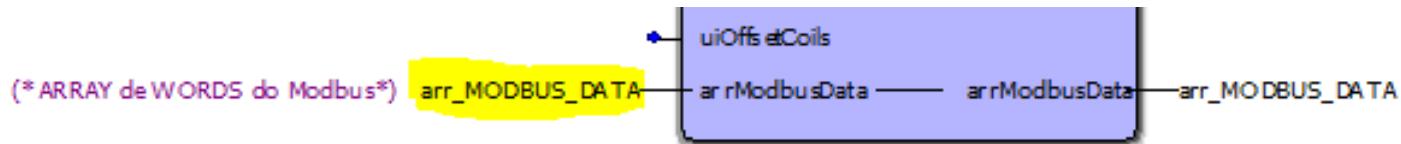


2. Configurando o controlador ILC como MODBUS Server

Incluir a biblioteca ao projeto e posteriormente instanciar o bloco MODBUS Server, conforme abaixo.

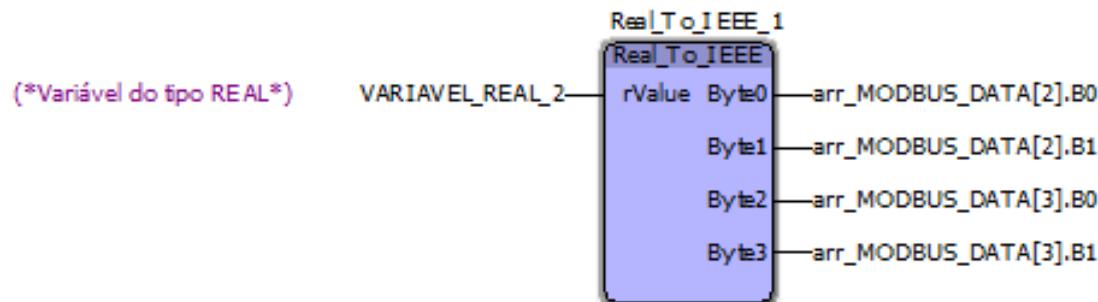


3. Vincular as variáveis do ILC a array de comunicação MODBUS



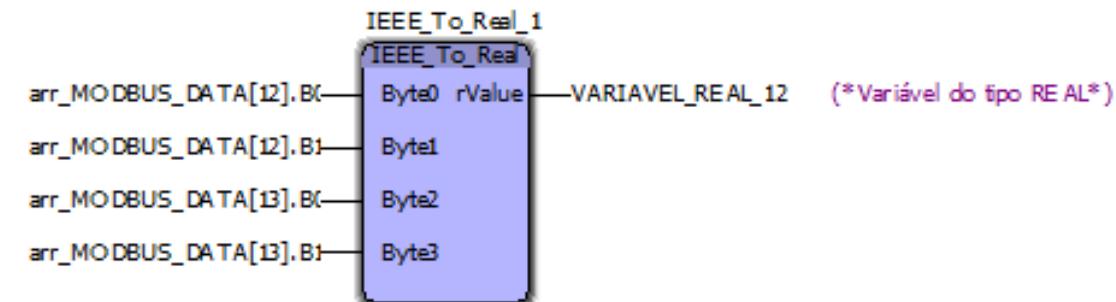
(*##### VARIÁVEIS QUE O CLIENTE VAI LER #####*)

(*Variável do tipo WORD*) VARIABEL_0 → arr_MODBUS_DATA[0]
(*Variável do tipo BOOL*) BIT_1 → arr_MODBUS_DATA[1].X0



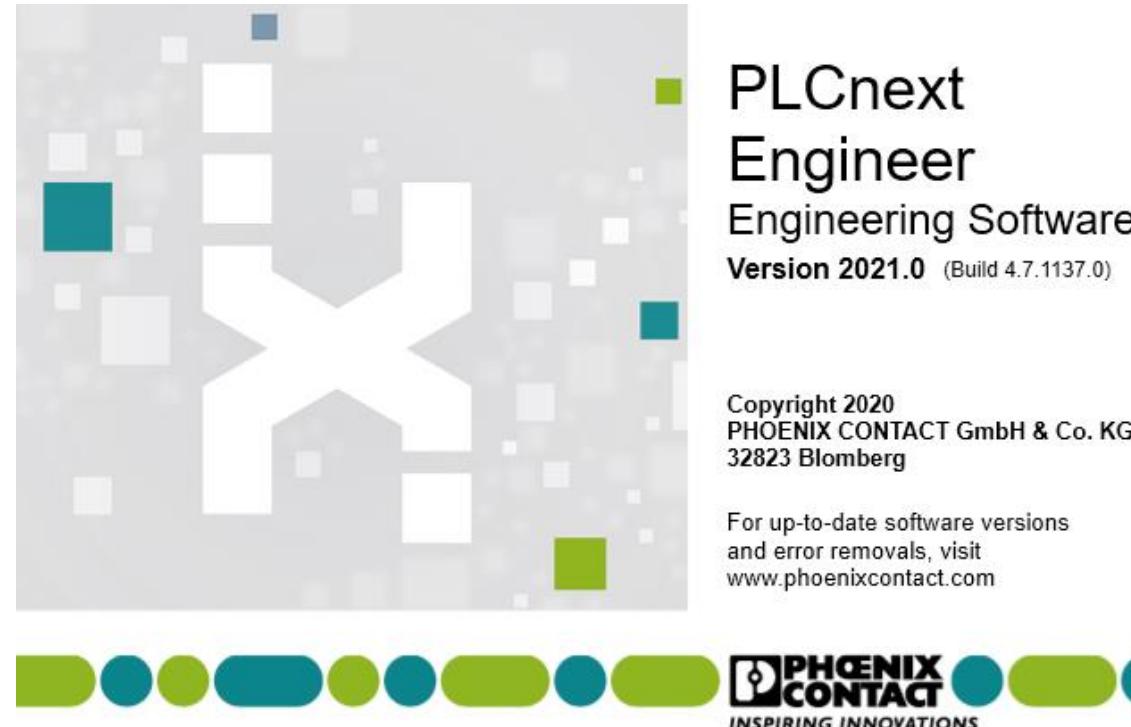
(*##### VARIÁVEIS EM QUE O CLIENTE VAI ESCREVER #####*)

arr_MODBUS_DATA[10] → VARIABEL_10 (*Variável do tipo WORD*)
arr_MODBUS_DATA[11].X0 → BIT_11 (*Variável do tipo BOOL*)



4. Criar um novo projeto no PLCnext Engineer configurando os parâmetros de rede

Os controladores da família PLCnext são configurados e programados no software PLCnext Engineer



4. Criar um novo projeto no PLCnext Engineer configurando os parâmetros de rede

Selecione o modelo do controlador e sua versão de firmware.

The screenshot shows the PLCnext Engineer 2021.0 Start Page. At the top, it displays the title "PLCnext Engineer 2021.0" and the build number "(Build 4.7.1137.0)". On the left, there is a "Recent projects" section with a single entry: "C:\Users\Public...\Projects\PROJETO_0_2021.pcwex". In the center, under "Project templates", there are five entries, each showing a small image of a PLC module and its name: "AXC F 1152 v00 / 2020.6.0", "AXC F 1152 v00 / 2021.0.0", "AXC F 2152 v00 / 2020.6.0", "AXC F 2152 v00 / 2021.0.0", and "AXC F 2152 v00 / 2021.0.0". The last entry is highlighted with a red rectangle. On the right, there is a "Need help?" sidebar with sections for "Welcome to PLCnext Engineer", "Recent projects", "Project templates", and "Further help".

Recent projects

C:\Users\Public...\Projects\PROJETO_0_2021.pcwex

Project templates

AXC F 1152 v00 / 2020.6.0

AXC F 1152 v00 / 2021.0.0

AXC F 2152 v00 / 2020.6.0

AXC F 2152 v00 / 2021.0.0

AXC F 2152 v00 / 2021.0.0

Need help?

Welcome to PLCnext Engineer

The Start Page welcomes you introducing PLCnext Engineer. The Start Page is shown every time you start PLCnext Engineer and is automatically closed when opening or creating a project.

Recent projects

The 'Recent projects' list shows the projects that you have recently opened in PLCnext Engineer. Click the project name to open the desired project.

Project templates

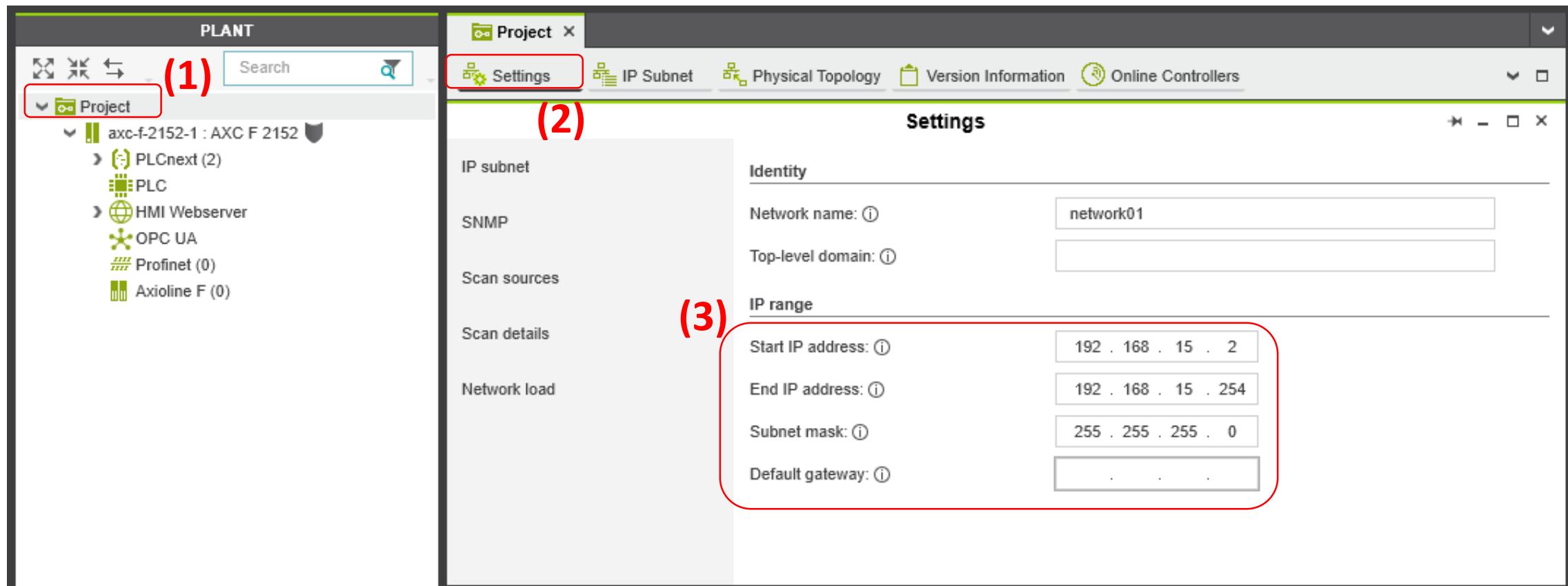
The 'Project templates' list provides a list of predefined project templates to help you get started. Selecting a project template creates a new PLCnext Engineer project with the desired controller type already added.

Further help

If you do not know what to do after a project is opened, you can find further help [here](#).

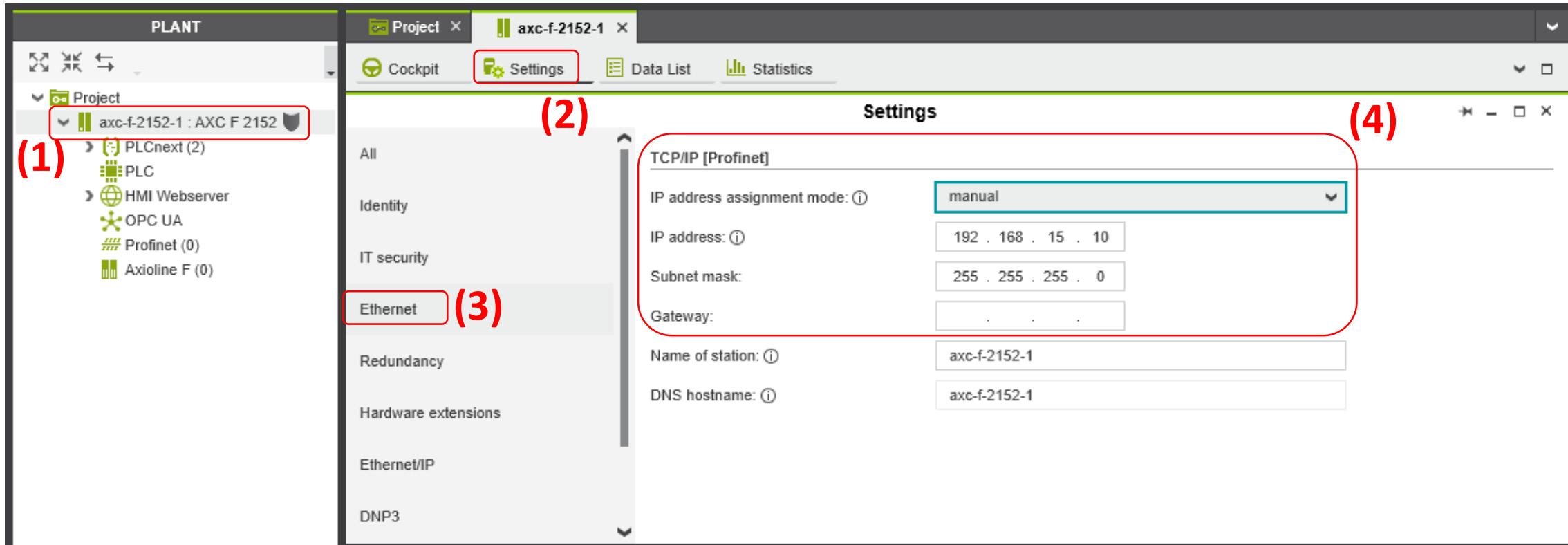
4. Criar um novo projeto no PLCnext Engineer configurando os parâmetros de rede

Configuração da faixa de IP do projeto.



4. Criar um novo projeto no PLCnext Engineer configurando os parâmetros de rede

Defina o IP do controlador do respectivo projeto.



4. Criar um novo projeto no PLCnext Engineer configurando os parâmetros de rede

Em modo automático o software sempre irá sugerir a faixa de IP configurada no projeto e IP com final 2.

TCP/IP [Profinet]

IP address assignment mode:	automatic
IP address:	192 . 168 . 15 . 2
Subnet mask:	255 . 255 . 255 . 0
Gateway:	

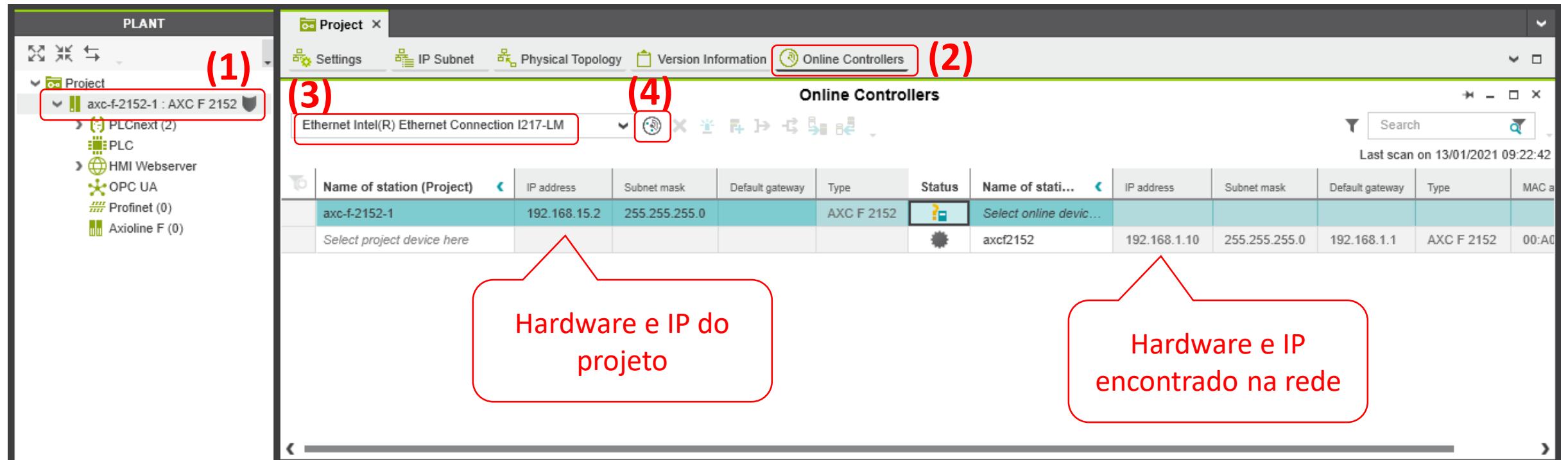
Em modo manual é possível configurar o IP conforme desejado.

TCP/IP [Profinet]

IP address assignment mode:	manual
IP address:	192 . 168 . 15 . 10
Subnet mask:	255 . 255 . 255 . 0
Gateway:	

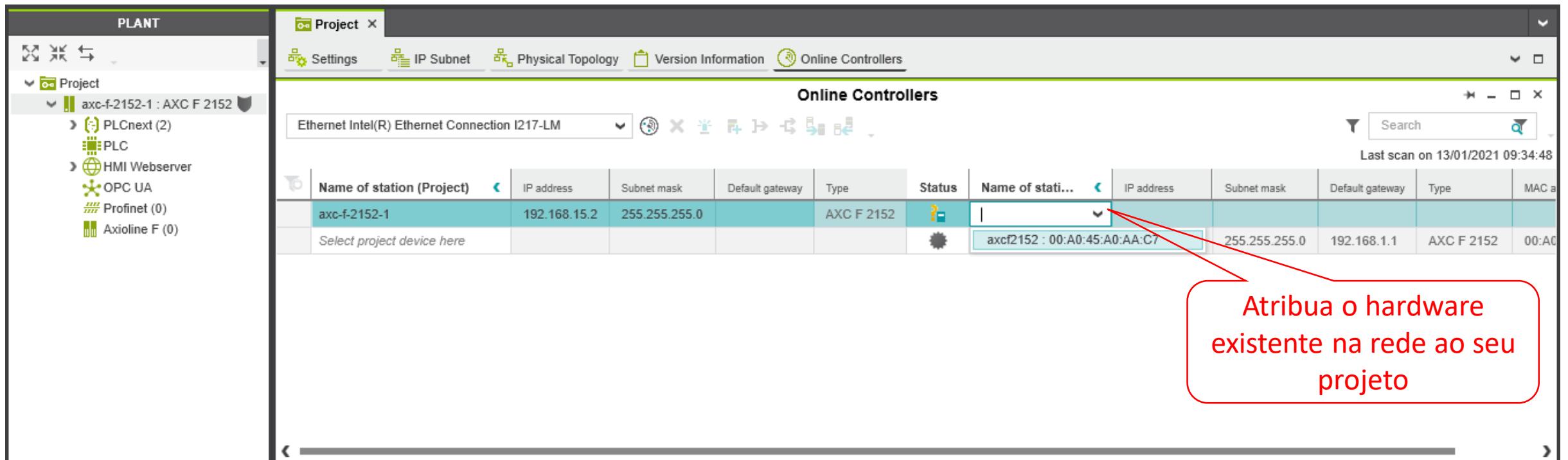
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Realize o SCAN dos dispositivo online e atribua as configurações do projeto ao controlador.



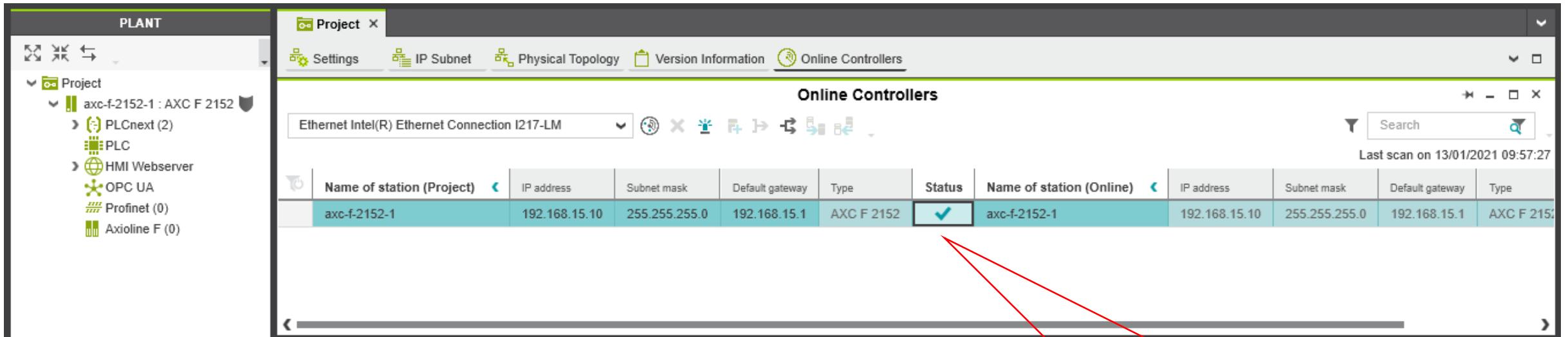
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4. Criar um novo projeto no PLCnext Engineer configurando os parâmetros de rede

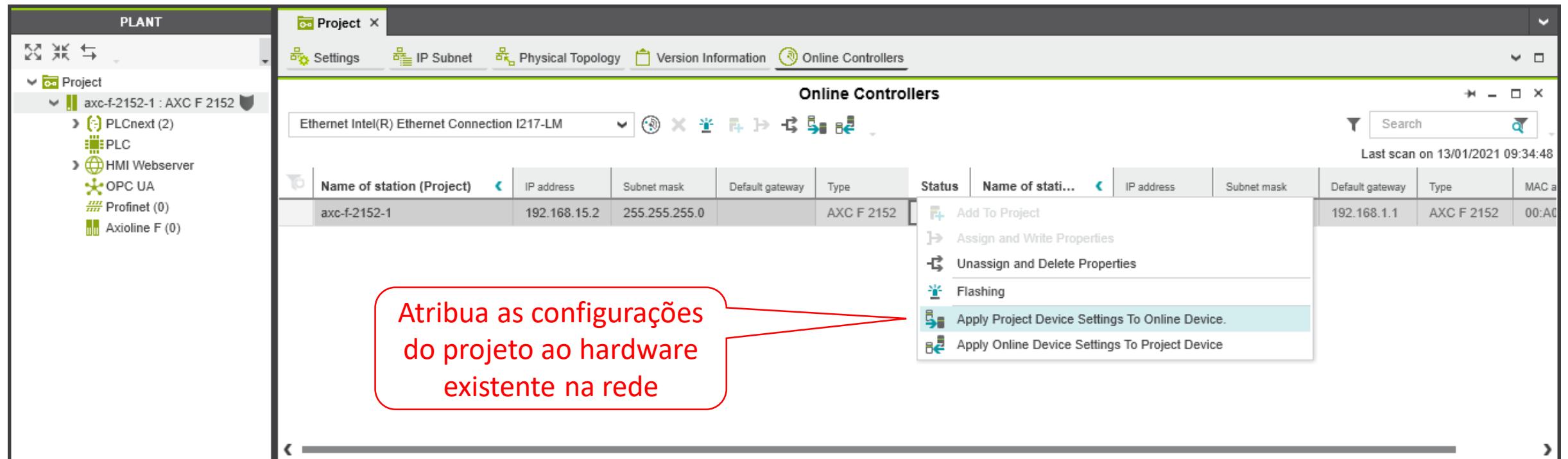
Realize o SCAN dos dispositivo online e atribua as configurações do projeto ao controlador.



Configurações atribuídas corretamente
O IP do hardware está igual ao do projeto

4. Criar um novo projeto no PLCnext Engineer configurando os parâmetros de rede

Realize o SCAN dos dispositivo online e atribua as configurações do projeto ao controlador.



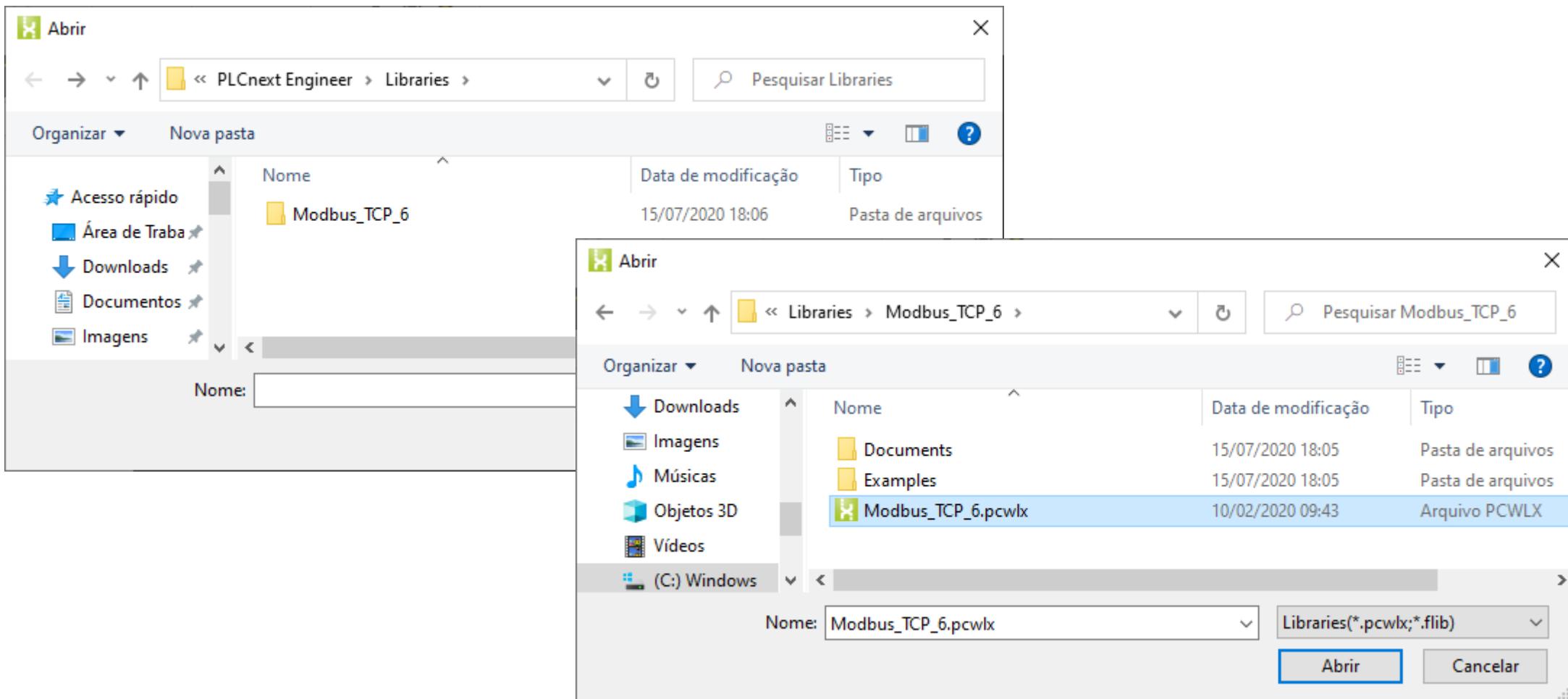
5. Criação da rotina com as funções de leitura e escrita MODBUS Client

Adicione a biblioteca Modbus TCP baixada do site.



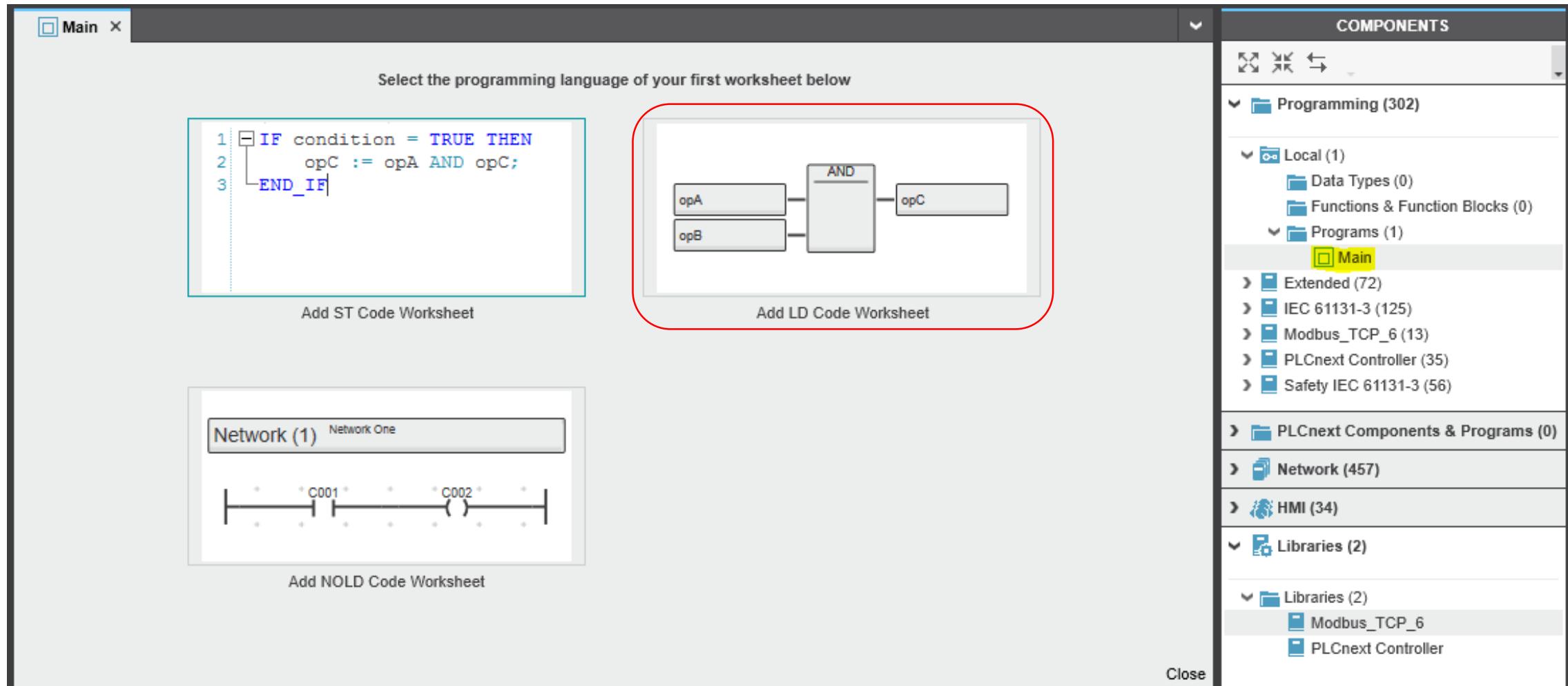
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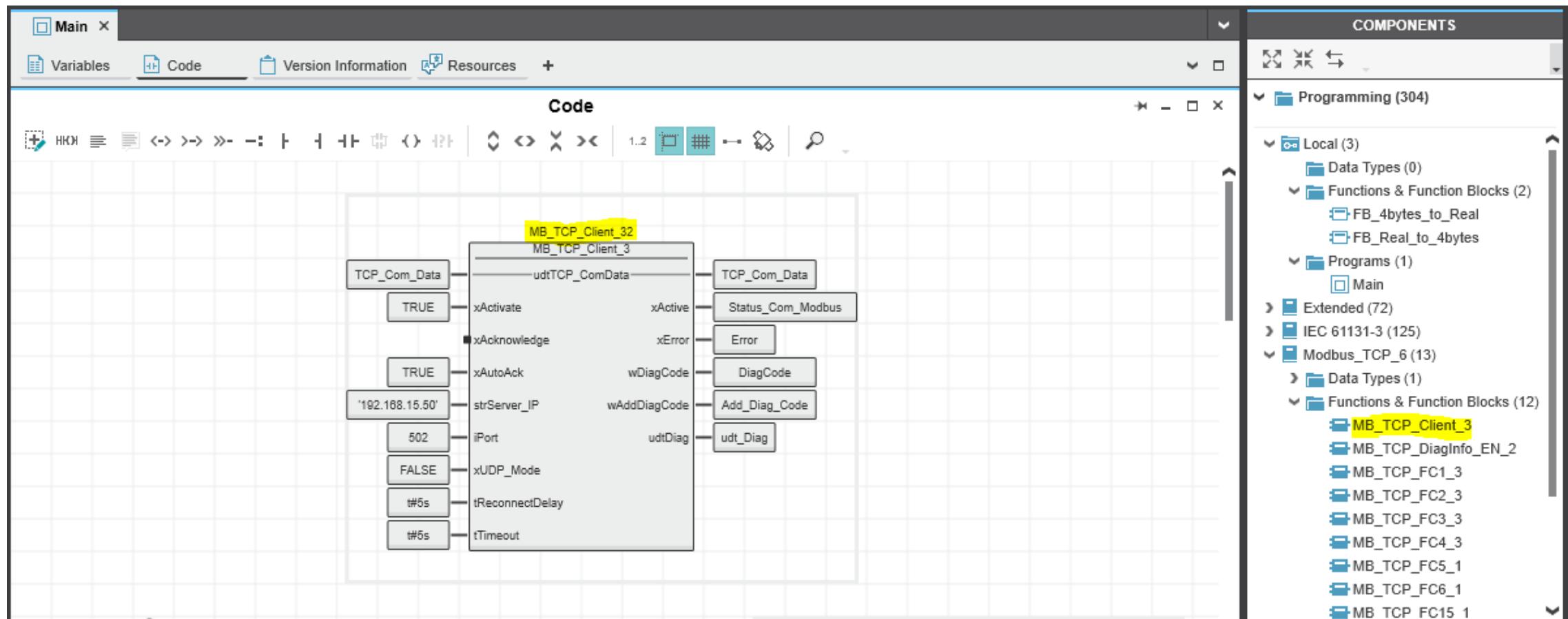
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Adicionar e configurar os blocos de função da biblioteca no program “Main” .



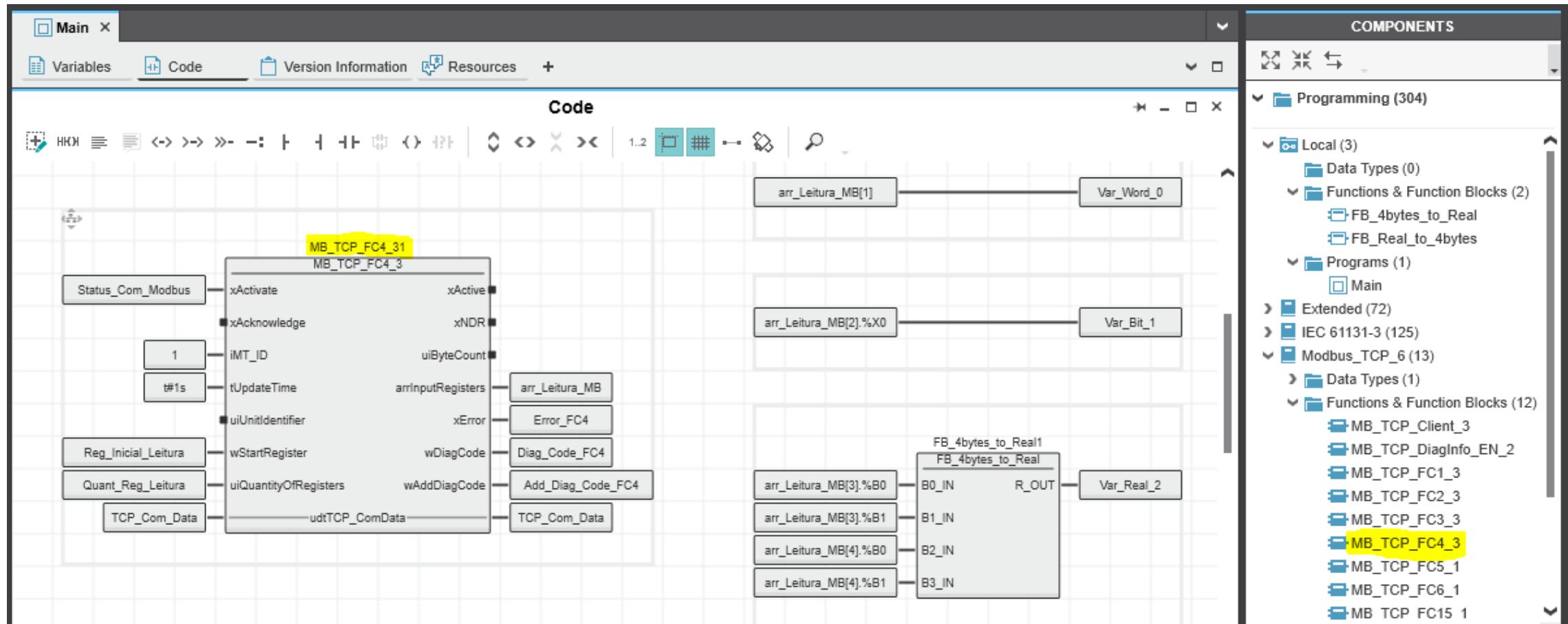
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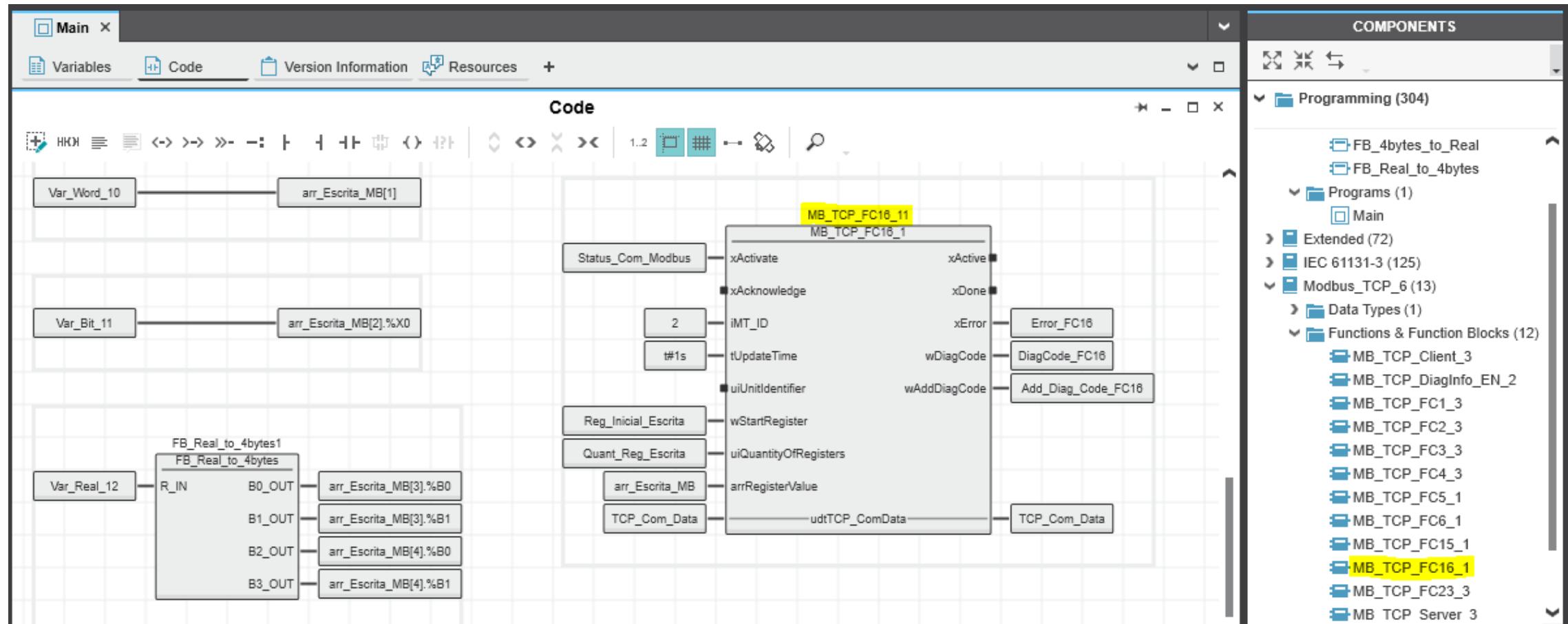
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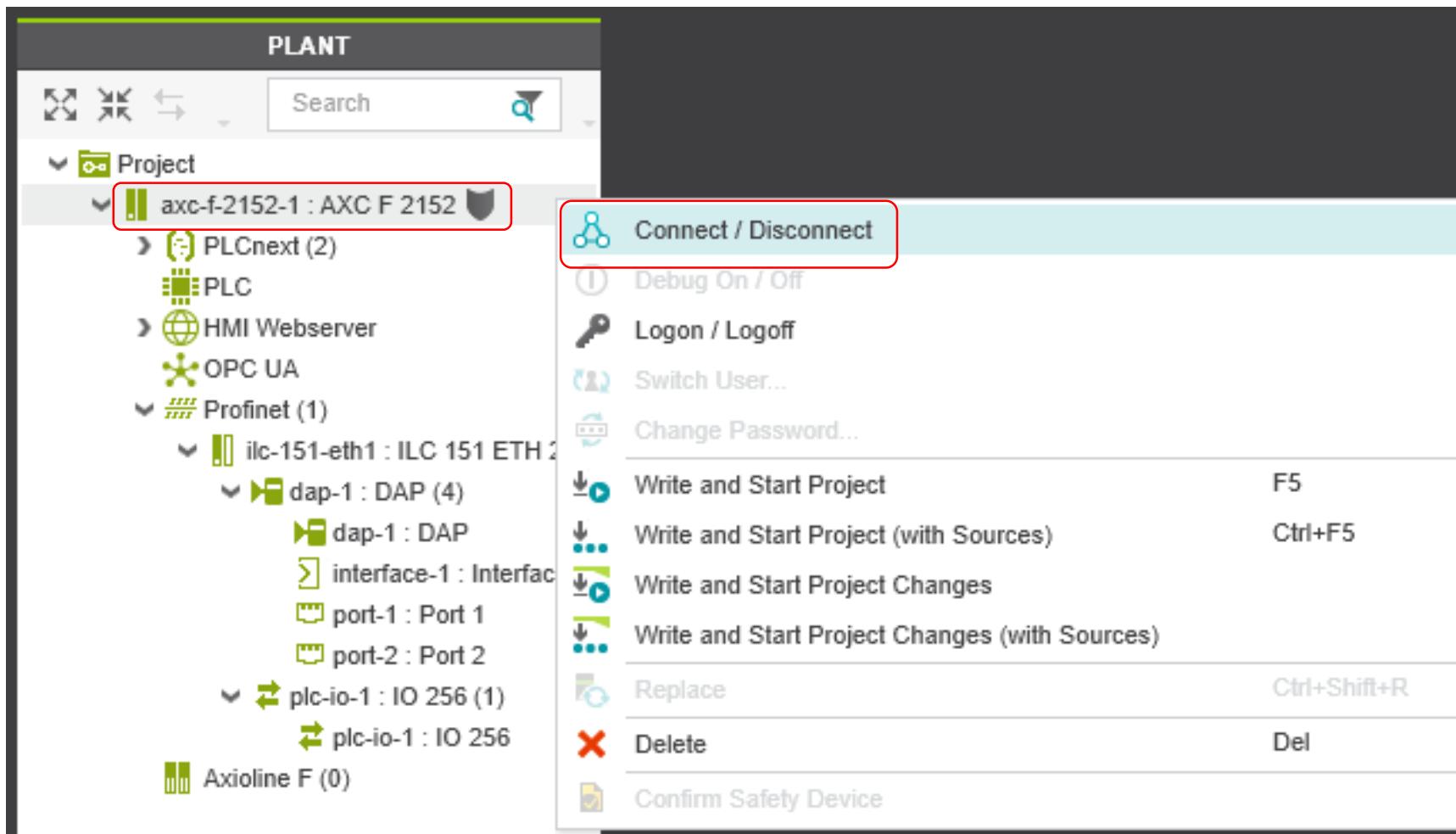


5. Criação da rotina com as funções de leitura e escrita MODBUS Client

Adicionar e configurar os blocos de função da biblioteca no programa “Main” .



6. Connect/Login, Download and Start, Debug e Watch Window.



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SECURE DEVICE LOGIN

Device serial number: 1356853622

Enter user name and password to authenticate with Controller 'AXC F 2152'

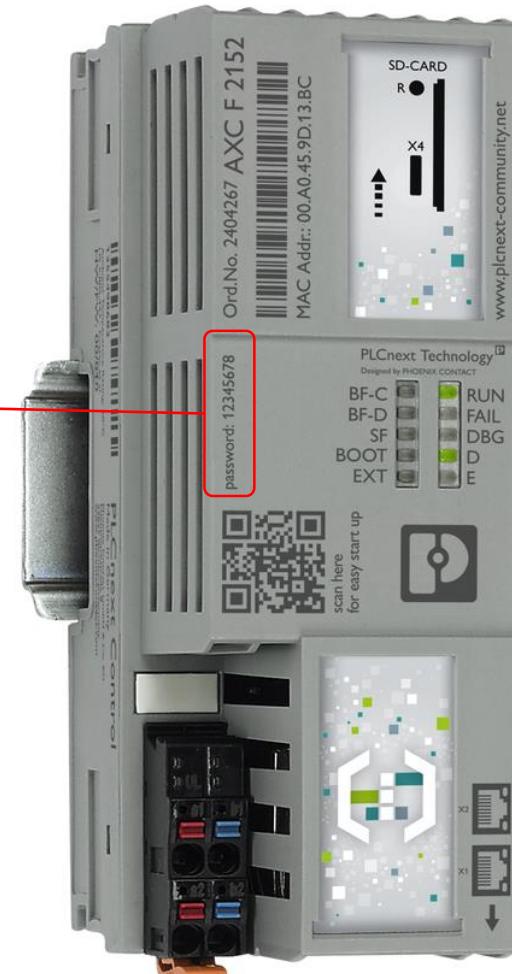
admin

Password 12345abcde ←

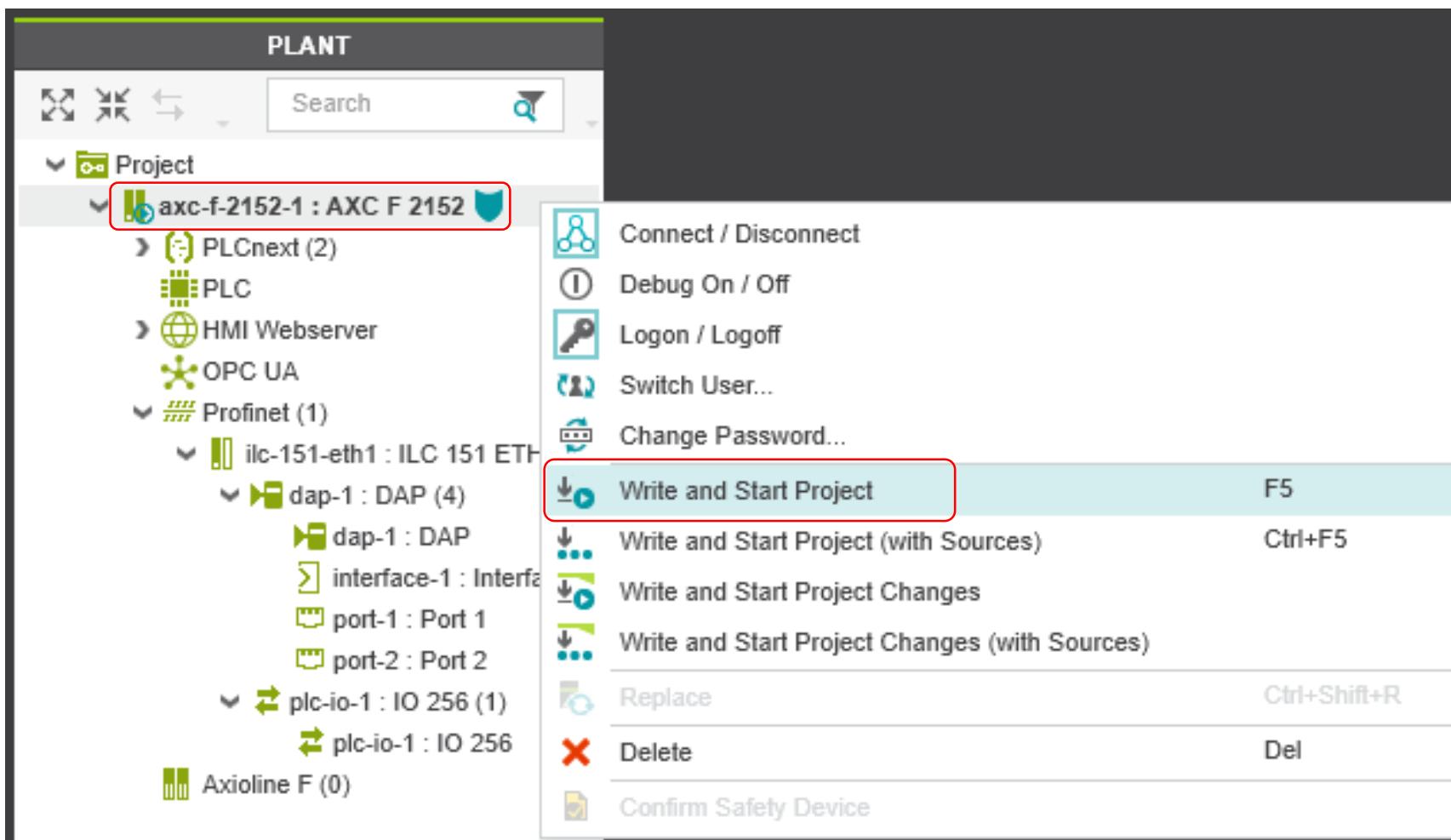
Remember credentials

Hinweis:
Dieses Gerät darf nur von autorisierten Benutzern für autorisierte Zwecke verwendet werden. Ihre Anmeldeinformationen und alle Benutzeraktionen auf diesem Gerät können überwacht, aufgezeichnet, kopiert und audited werden.
Durch die weitere Verwendung dieses Geräts erklären Sie sich mit diesen Bedingungen einverstanden.

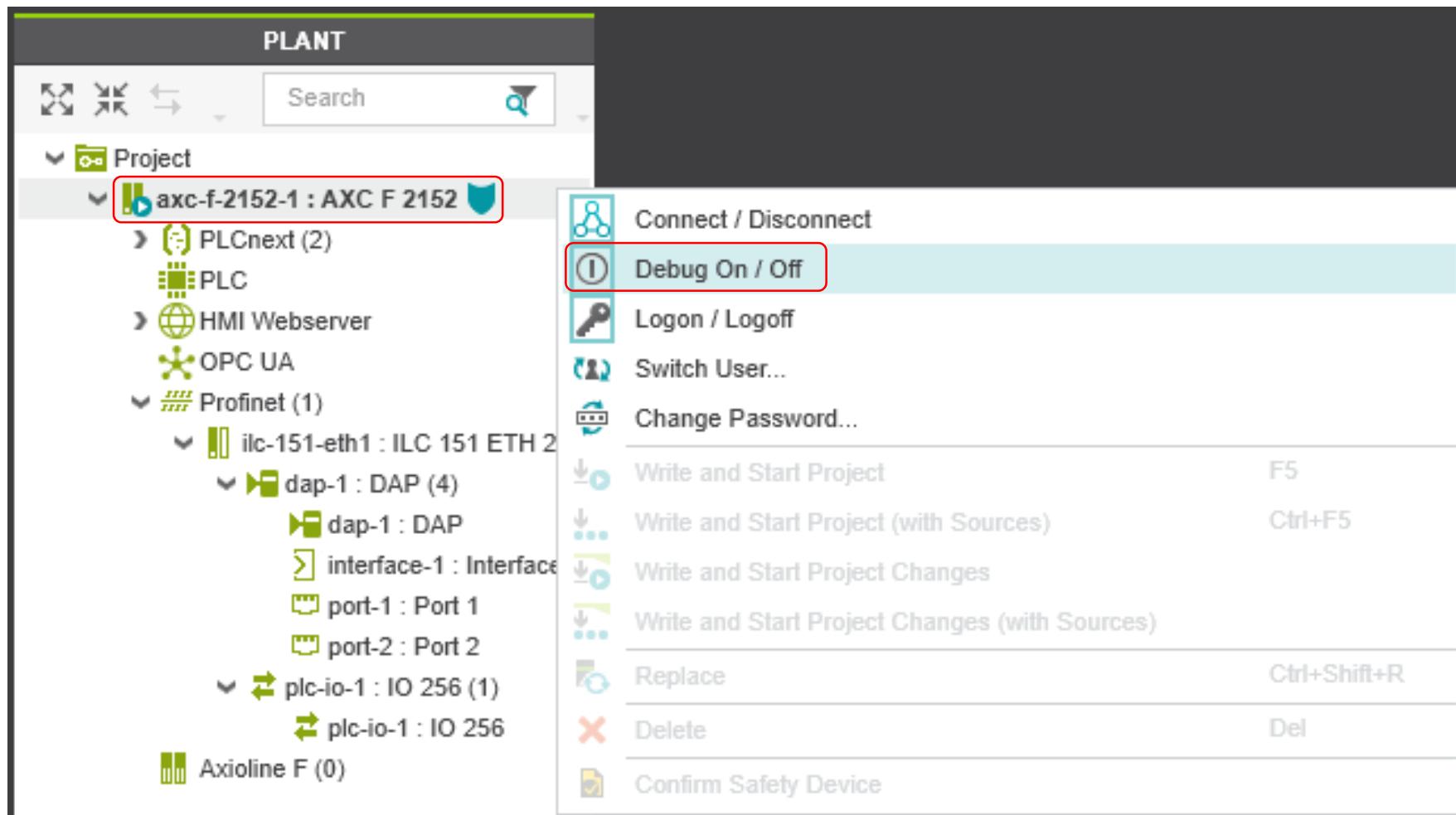
Notice:
This device may only be used by authorized users for authorized purposes. Your credentials and all user actions on this device can be monitored, recorded, copied and audited. By continuing to use this device, you agree to these terms.



6. Connect/Login, Download and Start, Debug e Watch Window.



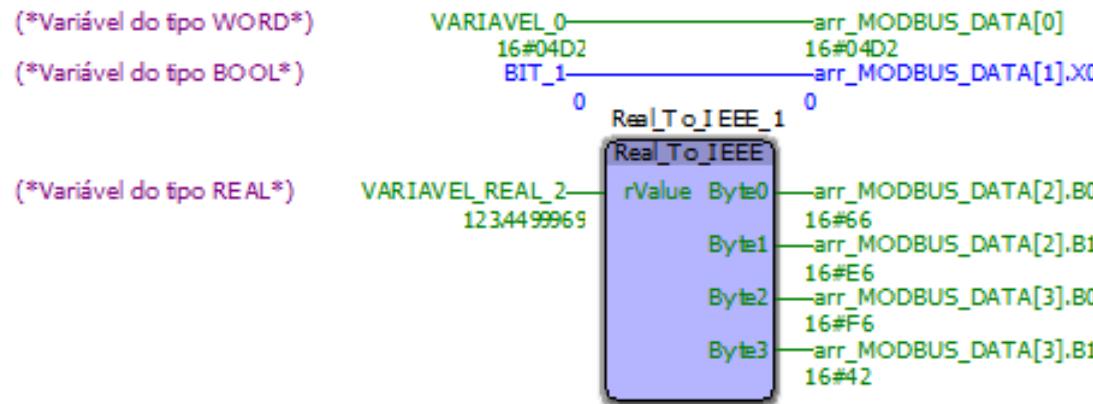
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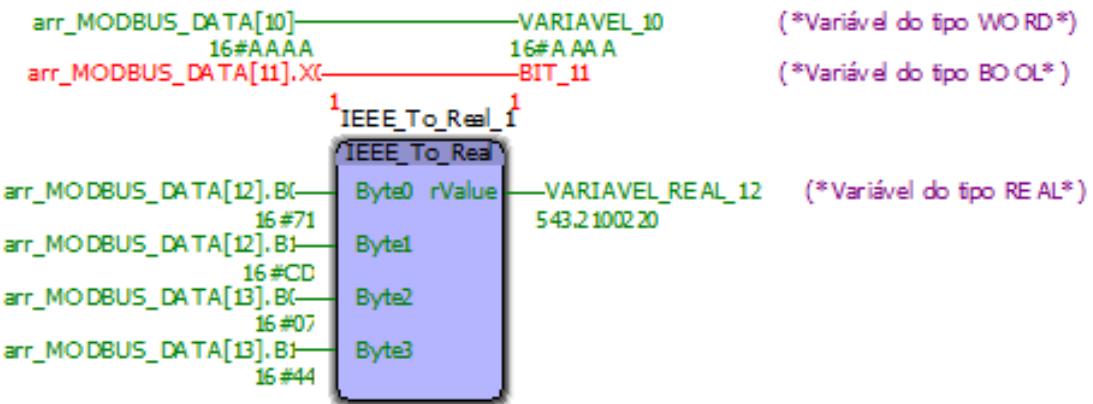
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Modo Debug(Online) no PCWORX

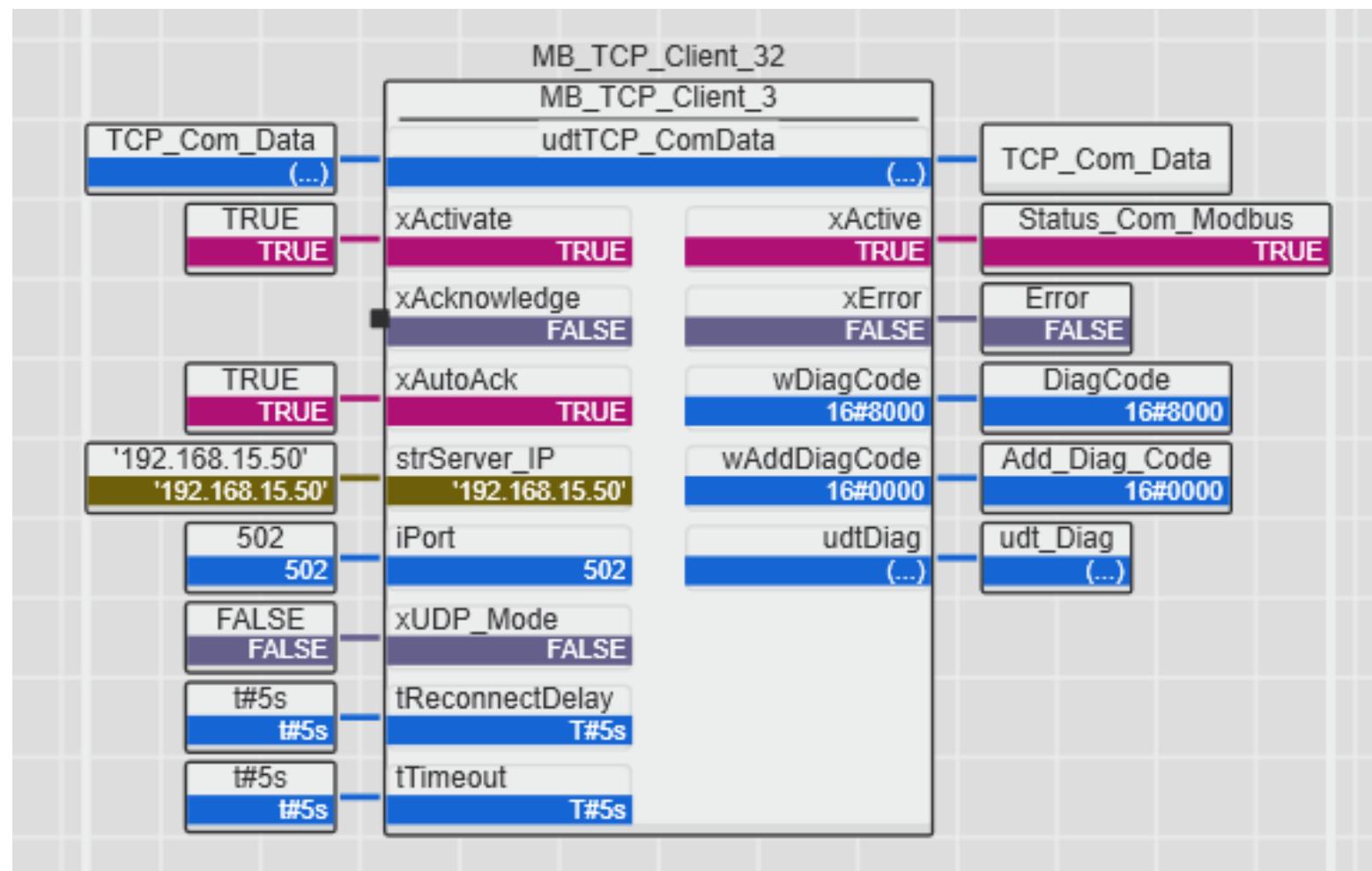
(*##### VARIÁVEIS QUE O CLIENT VAI LER #####*)



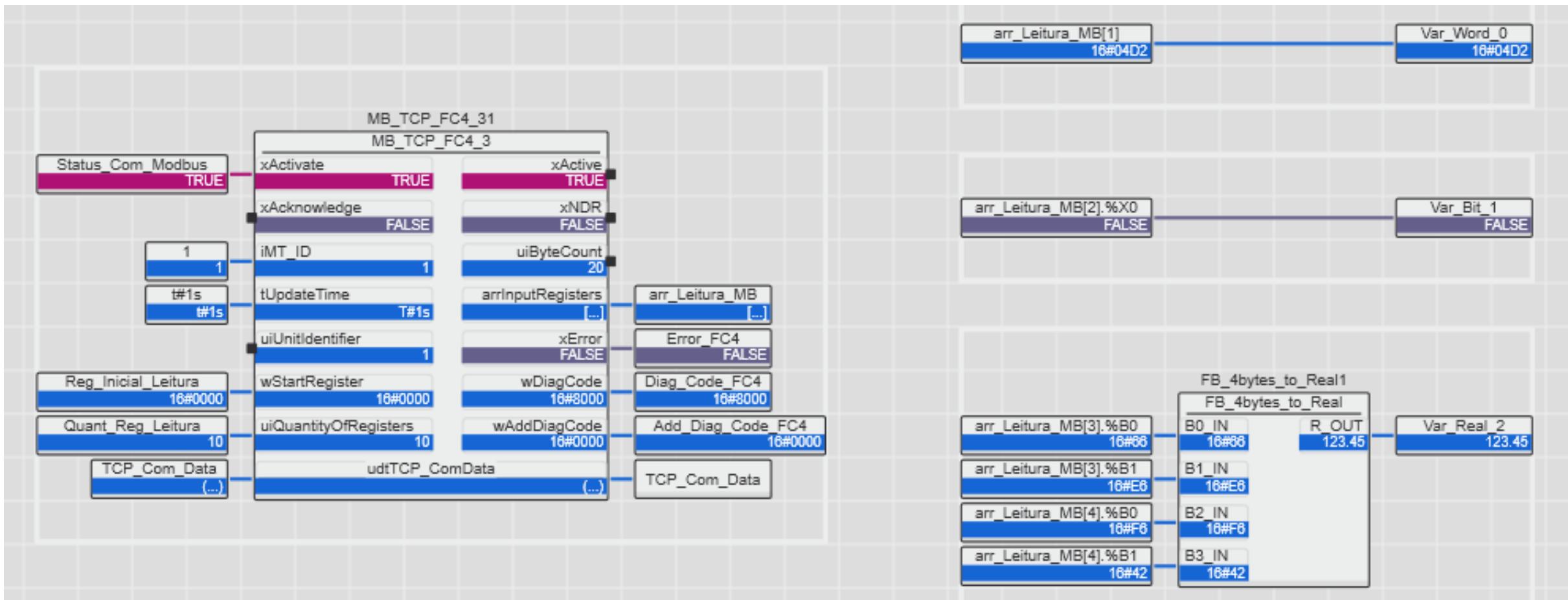
(*##### VARIÁVEIS EM QUE O CLIENT VAI ESCREVER #####*)



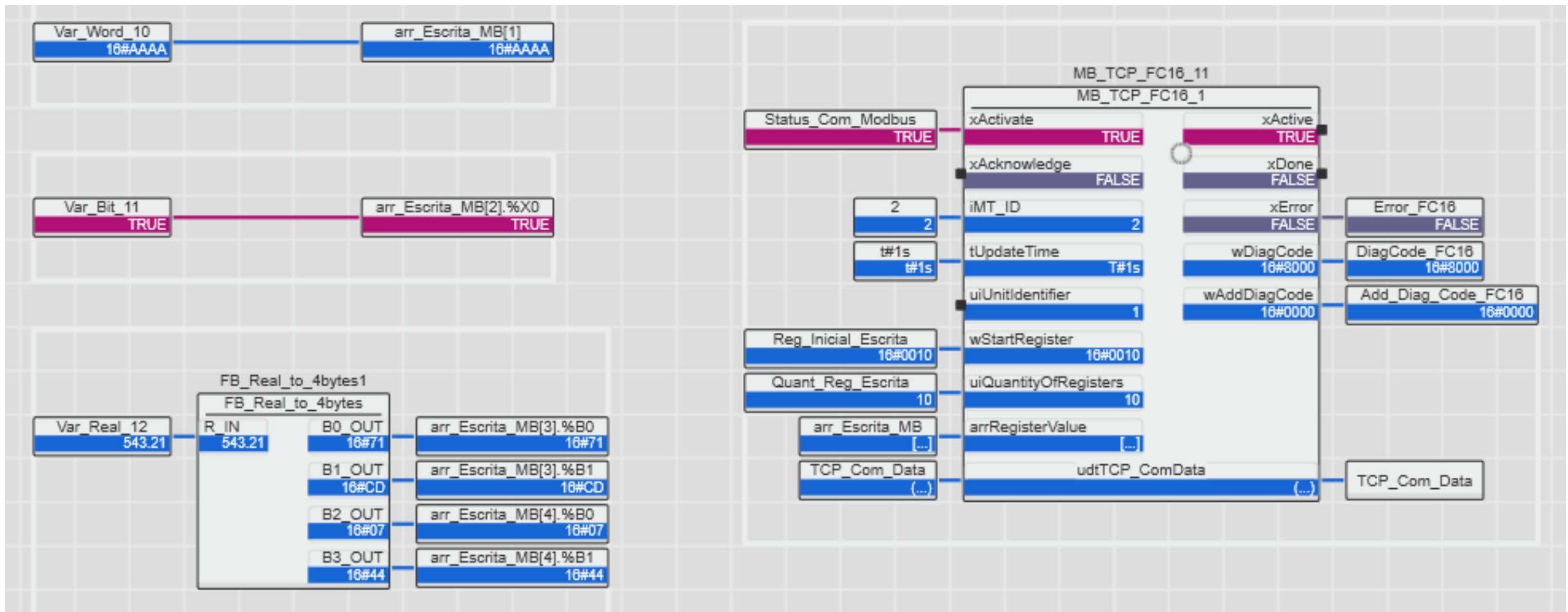
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Apresentação



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Obrigado...



PLCnext Technology[®]
Designed by PHOENIX CONTACT

The PLCnext Technology logo features a central white hexagon with a thick black outline. The hexagon is surrounded by a dynamic field of small, semi-transparent square particles in shades of blue, green, and white, creating a sense of motion and digital connectivity.