

# Technical Guide

Comunicação entre o PLCnext e o VISU+ utilizando OPC UA



PLCnext Technology   
Designed by PHOENIX CONTACT



PLCnext Control



PLCnext Engineer



PLCnext Store

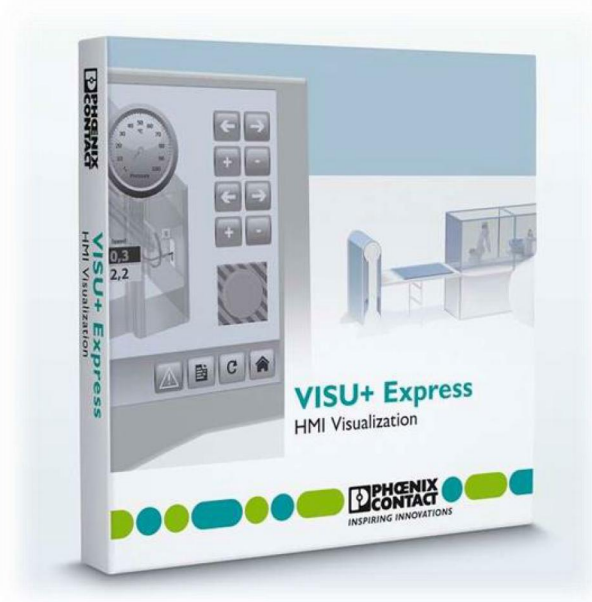


PLCnext Community

# VISU + Express – Software de supervisório SCADA

O VISU + Express é um versão **gratuita** do software de supervisório SCADA voltada a desenvolvimento de interface e visualização nas IHMs da Phoenix Contact.

Esse software possui uma grande variedade de drives para a comunicação direta com diversos marcas de controladores. Bem como o **OPC UA** que será utilizado neste guia técnico.



## VISU+ 2 EXPRESS - 2402774

# VISU + Express – Software de supervisorio SCADA

O download do VISU + Express pode ser feito diretamente do site da phoenix contact – [www.phoenixcontact.com.br](http://www.phoenixcontact.com.br)

## Software - VISU+ 2 EXPRESS - 2402774



Ambiente de desenvolvimento para todos os painéis táteis com Runtime integrado do software de visualização Visu+.

[Criar PDF](#)

Visão geral

Dados técnicos

**Downloads**

### Software

	Descrição	Idioma	Versão
<input type="checkbox"/>	<p>[zip, 828 MB] <b>Software</b></p> <p>Visu+ Express 2.53.1202.7 agora também suporta diversos drivers de comunicação. Além do mais, a versão inclui a correção de erros, melhorias da estabilidade do sistema, modelos de equipamento atualizados e otimizações do manuseio da engenharia. O instalador é fornecido em formato de arquivo ZIP. Este arquivo ZIP deve ser descompactado antes da instalação.</p> <hr/> <p>SHA256 Checksum: 5f5e06e962c804e55ff0553208a0a920386303fb86266a3e88bdb553ceb1dae6 <b>Visu_PlusExpress_2.53.1202.7_Setup.zip</b></p>	Internacional	<b>2.53</b>

# Comunicação entre o PLCnext e o VISU+ utilizando OPC UA

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



**PLCnext  
Engineer**  
Engineering Software  
Version 2021.0 (Build 4.7.1137.0)

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# Comunicação entre o PLCnext e o VISU+ utilizando OPC UA

Selecione o modelo do controlador e sua versão de firmware.

**Start Page**

**PHOENIX CONTACT**  
INSPIRING INNOVATIONS





## PLCnext Engineer 2021.0

(Build 4.7.1137.0)

**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

**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](#).

# Comunicação entre o PLCnext e o VISU+ utilizando OPC UA

Marque o checkbox **OPC** na tabela de variáveis do programa.

	Name	Type	Usage	Translate	Comment	Init	Retain	Constant	OPC	HMI	Proficlo...	I/Q
▼ Default												
	ENTRADA_0	BOOL	Local	<input type="checkbox"/>		FALSE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	SAIDA_0	BOOL	Local	<input type="checkbox"/>		FALSE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	MANUA_AUTOMATICO	BOOL	Local	<input type="checkbox"/>		FALSE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	LED	BOOL	Local	<input type="checkbox"/>		FALSE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	VALOR	INT	Local	<input type="checkbox"/>		INT#0	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	DATA_HORA	STRING	Local	<input type="checkbox"/>		"	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	FB_Toff_Ton1	FB_Toff_Ton	Local	<input type="checkbox"/>								
	CTU1	CTU	Local	<input type="checkbox"/>								
	RTC	RTC_TYPE	External	<input type="checkbox"/>								
	Concat_Data_Hora1	Concat_Data...	Local	<input type="checkbox"/>								

# Comunicação entre o PLCnext e o VISU+ utilizando OPC UA

Configuração do PLCnext : OPC server.

The screenshot displays the configuration interface for an OPC UA server within the PLCnext environment. The interface is divided into several sections:

- Left Panel (Project Tree):** Shows a hierarchical view of the project. Under the 'Project' folder, there is a sub-folder 'axc-f-2152-1 : AXC F 2152'. Inside this folder, 'OPC UA' is highlighted in yellow. Other items include 'PLCnext (2)', 'PLC', 'HMI Webserver', 'Profinet (0)', 'Axioline F (1)', and 'di-1 : AXL F DI16/1 1H'.
- Top Panel (Title Bar):** Shows the active window title as 'OPC UA / OPC UA Server' and a sub-tab labeled 'OPC UA'.
- Main Panel (Configuration):** Titled 'OPC UA', it contains a settings table with the following entries:

Section	Field	Value
Endpoint	DNS name / IP address:	axc-f-2152
	Information model	Visibility of variables: Marked
Subscription settings	Subscription kind:	Direct Read
- Left Sidebar (Navigation):** Lists configuration categories: 'Basic settings' (highlighted), 'Security', 'Discovery server', and 'File system'.

# Comunicação entre o PLCnext e o VISU+ utilizando OPC UA

Configuração do PLCnext : OPC server.

The screenshot displays the OPC UA configuration window in the PLCnext software. The left sidebar shows a project tree with the following structure:

- Project
  - axc-f-2152-1 : AXC F 2152
    - PLCnext (2)
      - PLC
      - HMI Webserver
      - OPC UA
      - Profinet (0)
    - Axioline F (1)
      - di-1 : AXL F DI16/1 1H

The main configuration area is titled 'OPC UA' and is divided into several sections:

- Basic settings**
- Security** (highlighted in teal)
  - Server certificate
    - Certificate: Self signed by controller
- Discovery server**
- File system**
- Subject 1**
  - Type of subject: Not set
- Subject 2**
  - Type of subject: Not set
- Subject 3**
  - Type of subject: Not set
- Subject 4**
  - Type of subject: Not set
- Security policies**
  - Enable basic 128 RSA15 algorithm: No
  - Enable basic 256 algorithm: Yes
  - Enable basic 256 SHA256 algorithm: No
  - Enable AES 128 SHA256 RSA OAEP algorithm: No
  - Enable AES 256 SHA256 RSA PSS algorithm: No
- Application**
  - Use the truststore for client authentication:
  - Check application URI against client certificate:



# Comunicação entre o PLCnext e o VISU+ utilizando OPC UA

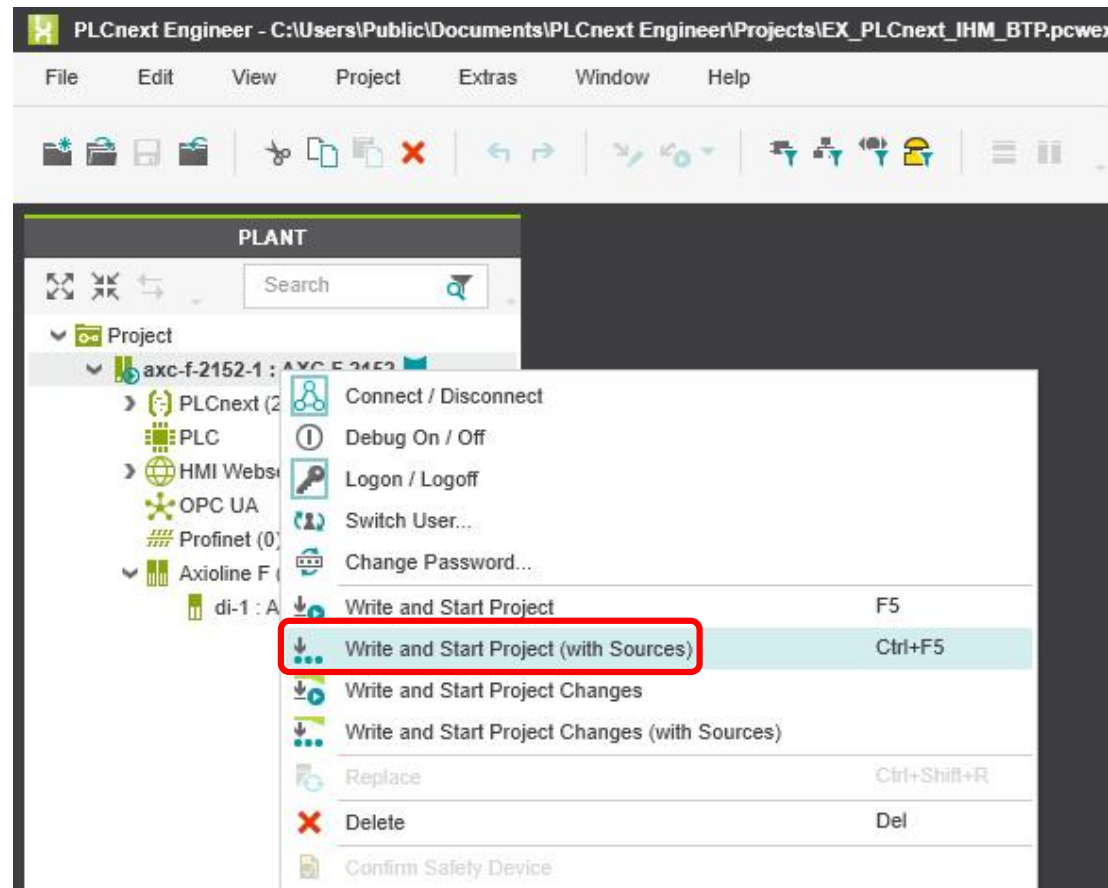
Configuração do PLCnext : OPC server.

The screenshot displays the configuration interface for the OPC UA server within the PLCnext environment. The left sidebar shows a project tree for 'axc-f-2152-1 : AXC F 2152', with 'OPC UA' selected. The main panel is titled 'OPC UA' and contains the following settings:

- File system**
  - OPC UA file transfer: Enabled
  - Show PLCnext Engineer project folder:
  - Show log files folder:
- Published folder 1**
  - Enable: No
- Published folder 2**
  - Enable: No
- Published folder 3**
  - Enable: No
- Published folder 4**
  - Enable: No

# Comunicação entre o PLCnext e o VISU+ utilizando OPC UA

Decarregando o projeto no PLC.



# Comunicação entre o PLCnext e o VISU+ utilizando OPC UA

Realizar o **Reboot** para que as configurações do OPC UA sejam adotadas pelo controlador.

The screenshot displays the PLCnext Engineer software interface. The main window is titled "axc-f-2152-1" and shows the "Cockpit" view. The "Cockpit" toolbar includes a "Reboot" icon (a circular arrow) which is highlighted with a red box. Below the toolbar, the "Diagnostics and status indicators" section shows a "Reboot the controller. (Ctrl+Alt+F6)" button, also highlighted with a red box. A dialog box titled "PLCnext Engineer" is open in the foreground, asking "Are you sure you want to reboot the controller?" with "Yes" and "No" buttons. The "Yes" button is highlighted with a red box. The left sidebar shows the project structure under "PLANT" and "Project", including "axc-f-2152-1 : AXC F 2152" and its components like "PLCnext (2)", "PLC", "HMI Webserver", "OPC UA", "Profinet (0)", "Axioline F (1)", and "di-1 : AXL F DI16/1 1H".

# Comunicação entre o PLCnext e o VISU+ utilizando OPC UA

Após o **Rebboot** aguardar alguns segundos até que o controlador entre em modo RUN.



# Comunicação entre o PLCnext e o VISU+ utilizando OPC UA

Configuração do VISU+ : OPC client.



## VISU+ Express HMI Visualization

Build:2.52

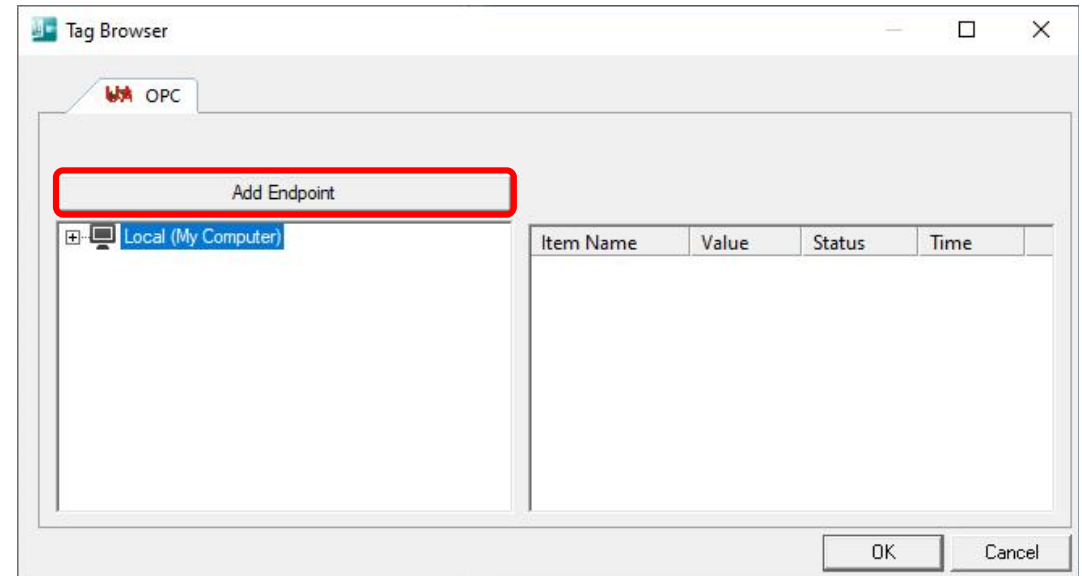
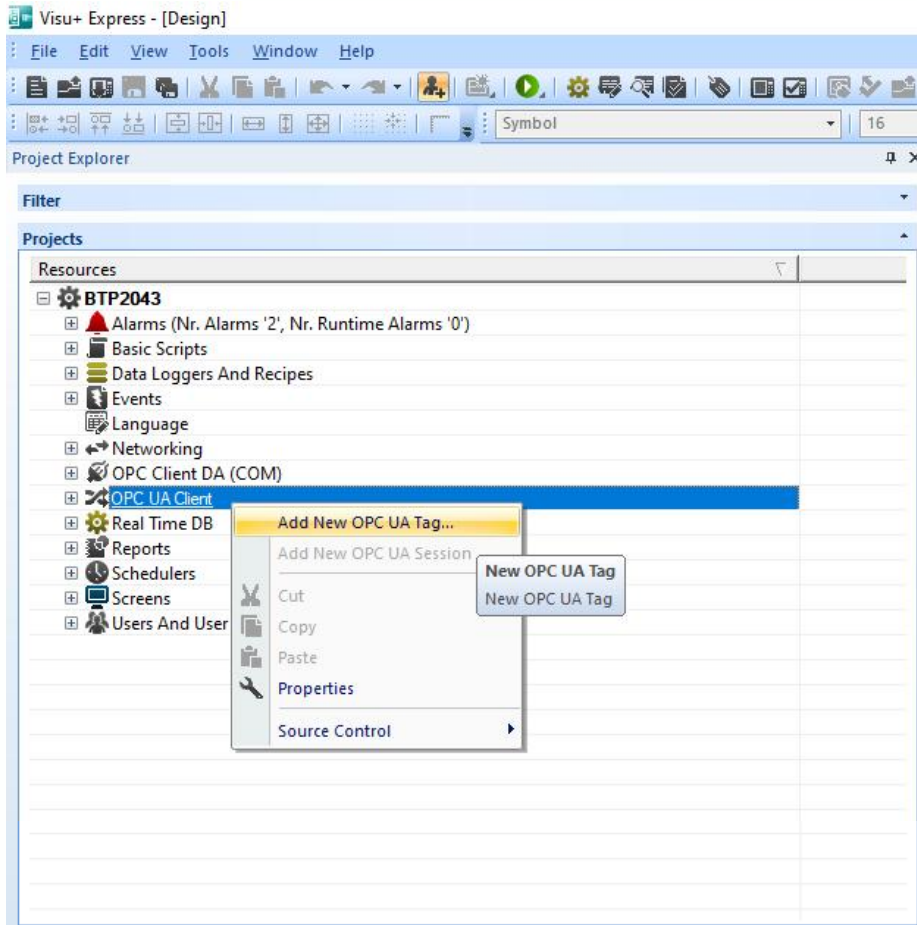
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# Comunicação entre o PLCnext e o VISU+ utilizando OPC UA

Configuração do VISU+ : OPC client.



# Comunicação entre o PLCnext e o VISU+ utilizando OPC UA

Configuração do VISU+ : OPC client.

New Endpoint

Endpoint (Eg. opc.tcp://localhost:4840)

opc.tcp://192.168.1.10:4840

Security

Sign

User Name

admin

Password

\*\*\*\*\*

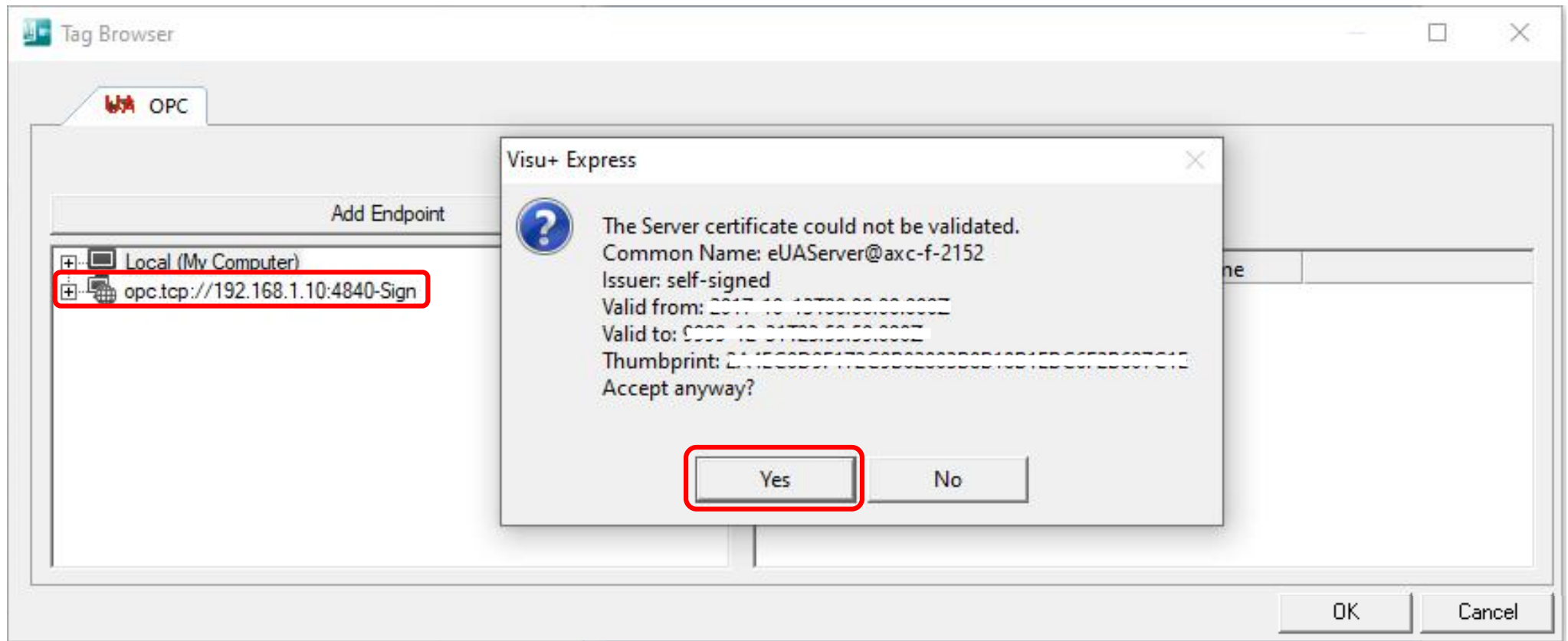
OK

Cancel

?

# Comunicação entre o PLCnext e o VISU+ utilizando OPC UA

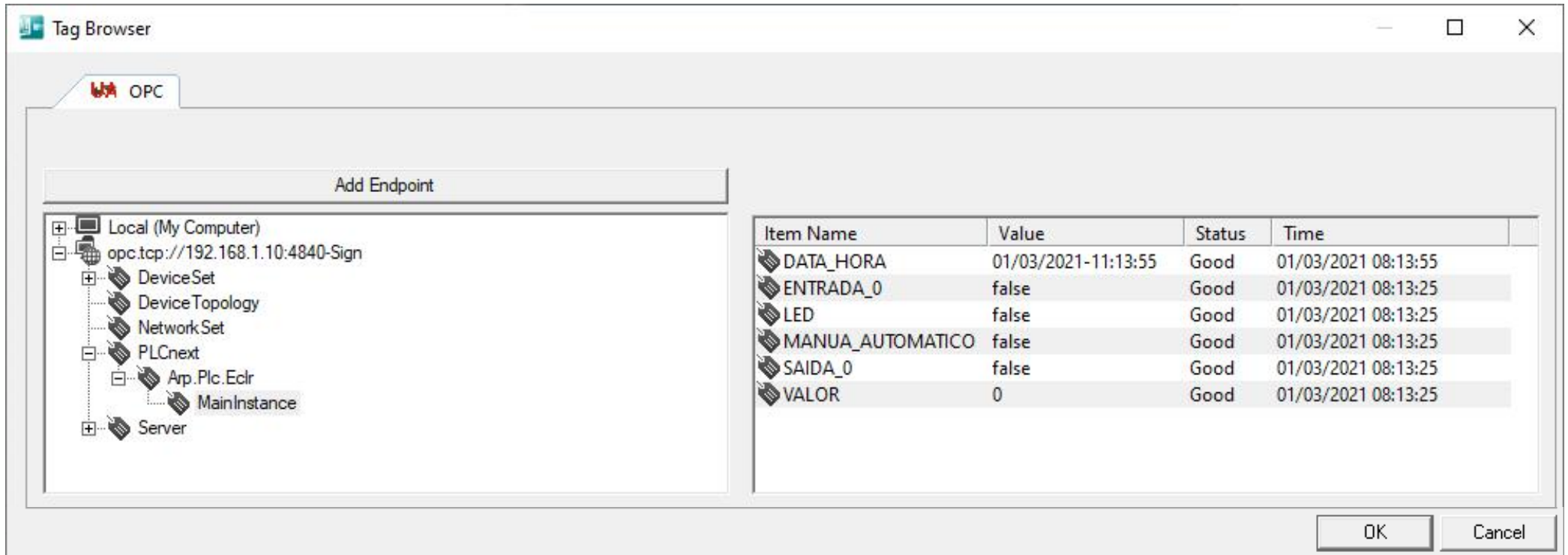
Configuração do VISU+ : OPC client.





# Comunicação entre o PLCnext e o VISU+ utilizando OPC UA

Visualização das variáveis OPC disponíveis no projeto.

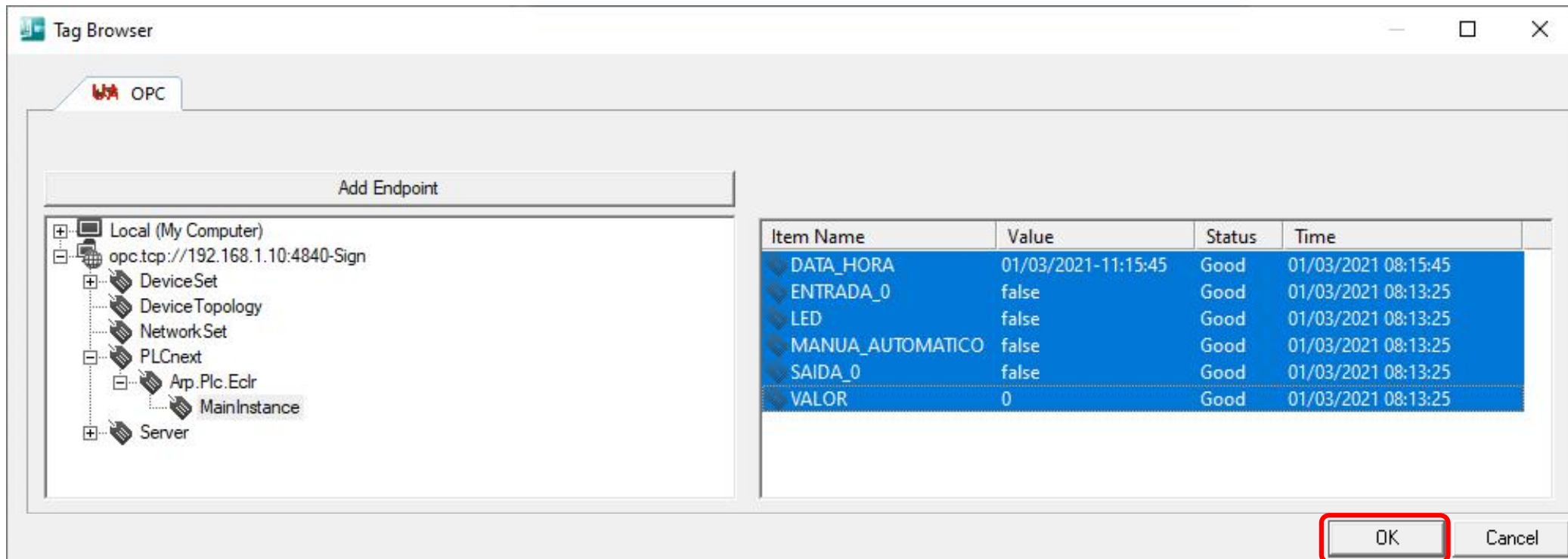


The screenshot shows the 'Tag Browser' window with the 'OPC' tab selected. The left pane displays a tree view of the OPC UA endpoints. The right pane shows a table of available variables.

Item Name	Value	Status	Time
DATA_HORA	01/03/2021-11:13:55	Good	01/03/2021 08:13:55
ENTRADA_0	false	Good	01/03/2021 08:13:25
LED	false	Good	01/03/2021 08:13:25
MANUA_AUTOMATICO	false	Good	01/03/2021 08:13:25
SAIDA_0	false	Good	01/03/2021 08:13:25
VALOR	0	Good	01/03/2021 08:13:25

# Comunicação entre o PLCnext e o VISU+ utilizando OPC UA

Selecione as variáveis a serem importadas ao projeto no VISU+.



The screenshot shows the 'Tag Browser' window in VISU+. The window title is 'Tag Browser'. At the top, there is a tab labeled 'OPC UA'. Below the tab, there is a section titled 'Add Endpoint'. The main area is divided into two panes. The left pane shows a tree view of the OPC UA endpoint structure. The right pane shows a table of available tags.

**Tree View Structure:**

- Local (My Computer)
- opc.tcp://192.168.1.10:4840-Sign
  - DeviceSet
  - DeviceTopology
  - NetworkSet
  - PLCnext
    - Arp.Plc.Eclr
      - MainInstance
  - Server

**Table of Available Tags:**

Item Name	Value	Status	Time
DATA_HORA	01/03/2021-11:15:45	Good	01/03/2021 08:15:45
ENTRADA_0	false	Good	01/03/2021 08:13:25
LED	false	Good	01/03/2021 08:13:25
MANUA_AUTOMATICO	false	Good	01/03/2021 08:13:25
SAIDA_0	false	Good	01/03/2021 08:13:25
VALOR	0	Good	01/03/2021 08:13:25

The 'OK' button is highlighted with a red rectangle.

*Obrigado...*



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