## CODESYS – OPC UA Information models



≟ OPC UA In	formation Models	×
Location	System	✓ Edit Locations
	C:\ProgramData\CODESYS\OPC UA Information Models)	
Installed OP	C UA information models	Install
Publisher		12

E Assign Documentation to OPC UP Information Models								
S Assign 🕥 Unassign 🛋 Rename								
OPC UA Information Models to install	Found PDF files							
•™ http://opcfoundation.org/UA/PlasticsRu	EUROMAP82.1_Release_1.01.pdf							
	OK Cancel							

Installed OPC UA information models										
Publisher:	(All publishers)	~								
• Mhttp:	//opcfoundation.org/UA/ 15/07/2020 opcfoundation.org									
• Mitp:	//opcfoundation.org/UA/DI/ 02/06/2020 opcfoundation.org									
• http:	//opcfoundation.org/UA/PlasticsRubber/TCD/ 01/06/2020 opcfoundation.org									
•™ https	://codesys.com/UA/objecttest/ 23/07/2021 codesys.com									

Install additional related (required) information models. E.g.:

# https://reference.opcfoundation.org/PlasticsRubber/GeneralTypes/v103/docs/A

• OPC UA Info	ormation Models	×
Location	Edit Locations	
-Installed OPC	UA information models	Install
Publisher:	(All publishers)	Uninstall
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৽ত http: তি http:	//opcfoundation.org/UA/PlasticsRubber/GeneralTypes/ 10/05/2021 opcfoundation.org //opcfoundation.org/UA/PlasticsRubber/TCD/ 01/06/2020 opcfoundation.org	Documentation
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Devices	<b>→</b> 쿠 🗙			
InformationModel		•		
🖹 👚 🚹 Device (CODESYS Contr	ol Win V3 x64)			
🖮 🗐 PLC Logic				
Applicat	Cut			
🗊 PLC I 🗎	Сору			
🖻 🎆 Task 🕮	Paste			
	Delete			
·	Refactoring	•		
e	Properties			Alarm Configuration
84-1	Add Object		0	Application
	Add Object	•	$\otimes$	Axis Group
-	Add Folder		8	Cam table
	Edit Object		X	CNC program
	Edit Object With			CNC settings
	SVN	•	(i)	Communication Manager
C)5	Login		5	Data Sources Manager

Devices		<b>→</b> ₽ >	×				
InformationModel			•				
🖮 🕤 Device (CODESYS Control Win V	3 x64	Ð					
🖹 📳 PLC Logic							
🖹 🔘 Application							
Communication Mar	u	<u>.</u>					
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PLC_PRG (PRG)		Сору			. 1		
😑 🌃 Task Configuration	Ē.	Paste			. 1		
🖮 🍪 MainTask (IEC-	$\mathbf{X}$	Delete			. 1		
PLC_PRG		Properties			1		
	*	Add Object		)			OPC UA Information Model
		Add Folder			6	$\sim$	OPC UA Servers.
	-01	5 IN 611			1.00	_	

Add OPC UA Information Model	×
Name	
OPC_UA_Symbols	
Information Model URI	
http://opcfoundation.org/UA/PlasticsRubber/TCD/	, 01/06/2020 (opcfound $ \smallsetminus $
http://opcfoundation.org/UA/, 15/07/2020 (opcfou http://opcfoundation.org/UA/DI/, 02/06/2020 (opc http://opcfoundation.org/UA/PlasticsRubber/Gene http://opcfoundation.org/UA/PlasticsRubber/TCD/ https://codesys.com/UA/objecttest/, 23/07/2021 (	undation.org) foundation.org) ralTypes/, 10/05/2021 (opcf , 01/06/2020 (opcfoundation (codesys.com)

Devices							
InformationModel							
🖮 🕤 Device (CODESYS Control Win V3 x64)							
🖻 🗐 PLC Logic							
🖹 💮 Application							
Communication Manager							
OPC_UA_Symbols							
Information Model							
🗀 OPC_UA_Symbols Objects							

Drag a "Data model" to the right side:

$\checkmark$ Information Model X							
Browse Information Model http://d	pcfoundation.org/UA/P	lasticsRubber/TCD/	01/06/2020 (opcfou	indation.org)			
Data Model							
				Y	Filter	by Name, OP	C UA Type
Турез	Element Type	Reference	Modelling	Na	me	IEC Type	OPC UA Typ
🖃 Object Types							
DeviceZoneType							
ExternalChannelsType					G	3	
EvternalChannelType							

Then generate IEC objects for the "data model". Click on Generate IEC declarations:

.org)		✓ Generate IEC declarations	(
Filter by Name, OPC UA Type			
Name	IEC Type	OPC UA Type	Gene
DeviceZoneType	FunctionBlock	DeviceZoneType	
🕮 - AnalogItemType	DUT	AnalogItemType	
. ∎Range	DUT	Range	
EUInformation	DUT	<u>EUInformation</u>	
ExternalChannelsType	FunctionBlock	ExternalChannelsType	
■ ExternalChannelType	FunctionBlock	ExternalChannelType	
• MultiStateValueDiscreteType	DUT	MultiStateValueDiscreteType	
🗷 - EnumValueType	DUT	EnumValueType	
• MonitoredParameterType	FunctionBlock	MonitoredParameterType	
ExternalSensorType	FunctionBlock	ExternalSensorType	
<sup>™</sup> ClosedLoopControlType	FunctionBlock	<u>ClosedLoopControlType</u>	
PIDParametersDataType	DUT	<u>PIDParametersDataType</u>	
<sup>i</sup> LeakStopperType	FunctionBlock	LeakStopperType	
MaintenanceInformationType	FunctionBlock	MaintenanceInformationType	
■ MaintenanceType	FunctionBlock	MaintenanceType	
MaintenanceStatusEnumeration	Enum	MaintenanceStatusEnumeration	
■ MouldEvacuationType	FunctionBlock	MouldEvacuationType	
ControlledParameterType	FunctionBlock	ControlledParameterType	

Now you could create an instance of a function block which is created. This can be done somewhere in the application:

Devices 👻 🕂 🗙		0	PLC	_PRG X
InformationModel		-	1	PROGRAM PLC_PRG
😑 🔟 Device (CODESYS Control Win V3 x64)	B	2	2	VAR
🖻 🗐 PLC Logic			3	<pre>fbControllerParameterTypel : ControlledParameterType;</pre>
🖹 💮 Application		4	4	END_VAR
Communication Manager				
OPC_UA_Symbols				
OPC_UA_Symbols Objects				
AnalogItemType (STRUCT)				
EnumValueType (STRUCT)				
EUInformation (STRUCT)				
IREAL_With_AnalogItemType (STRUCT)				
MaintenanceStatusEnumeration (ENUM)				
MultiStateValueDiscreteType (STRUCT)				
PIDParametersDataType (STRUCT)				
Range (STRUCT)				
UINT_With_MultiStateValueDiscreteType (STRUCT)				
ClosedLoopControlType (FB)				
ControlledParameterType (FB)				

### Then you can go back to the OPC\_UP\_Symbols and search for mapped instances:



#### This results in:

Image: Plc_PRG OPC_UA_Symbols [http://opcfoundation.org/UA/PlasticsRubber/TCD/]										
Objects										
🖗 Search for mapped instances 🗞 Create new instance   Root node: DeviceSet 🔹 🗸 Use access rights defined in the user management 🧟										
OPC UA Variable	OPC UA Variable OPC UA Type Map or create IEC Variable IEC Type Access Rights Maximal									
fbControllerParameterType1	ControlledParameterType	ୖୄ୶	PLC_PRG.fbControllerParameterType1	ControlledParameterType	N	<b>N</b>				

### You could also create a new instance in the OPC\_UA\_Symbols list:

PLC_PRG OPC_UA_Symbols [http://opcfoundation.org/UA/PlasticsRubber/TCD/] ×											
Objects											
🍫 Search for mapped instances 🌇 Create new instance Root node: DeviceSet 🔹 Use access rights defined in the user management 🗹											
OPC UA Variable	OPC UA Type	Map or create	IEC Variable	IEC Type	Access Rights	Maximal					
inst_1	DeviceZoneType	Create new stance	OPC_UA_Symbols.inst_1	DeviceZoneType	<b>N</b>	N					
fbControllerParameterType1	ControlledParameterType	<b>*</b>	PLC_PRG.fbControllerParameterType1	ControlledParameterType	5 <b>4</b> 0	<b>S</b>					

You are allowed to modify the created instances to add your own specific functionality:

	) C	ontrolledParameterType 🗙
	3	{attribute 'opcua.mapping.publicationdate' :=
	4	{attribute 'opcua.mapping.nodeid' := 'nsu=htt
	5	FUNCTION_BLOCK ControlledParameterType
в	6	VAR_INPUT
	7	rValue : REAL;
Ŀ.	8	END_VAR
в	9	VAR
	10	{attribute 'opcua.mapping.member.accesslev
	11	ActualValue : LREAL_With_AnalogItemType;
	12	END_VAR
	13	_
F	1	ActualValue.value : rValue;
		13

Or:

	D 🖹	eviceZoneType X
F	1	(attribute longua manning type))
	-	(attribute logge coming offer the latter (
	4	{attribute 'opcua.mapping.modeluri' := 'nttp:/
	3	{attribute 'opcua.mapping.publicationdate' :=
	4	{attribute 'opcua.mapping.nodeid' := 'nsu=http
	5	FUNCTION BLOCK DeviceZoneType
в	6	VAR INPUT
	7	rTemperature : REAL;
	8	END VAR
в	9	VAR
	10	Temperature : ControlledParameterType;
	11	END VAR
	12	-
H	1	Temperature (rValue - rTemperature) -
	-	remperature (rvaraci- riemperature),
-	_	

Then in your PLC application you can access these instances:



I got an error related to the following object which I manually changed:

After that I could build the application.

Then with OPC UaExpert, I could read the value:

MultiStateValueDiscreteType	
Device.Application.PLC_PRG	
Expression	
⊕ fbControllerParameterType1	
rTemperature	
fbControllerParameterType1	
ControlledParameterType	
Unified Automation UaExpert - The OPC Unified Architecture Client - NewProject*	
File View Server Document Settings Help	
📄 🖸 📂 🔝 🙆 🖕 👄 🔅 🗙 🔧 🤰 🖹 📓 🖾 🗔	
Project B × Data Access View	
✓	Value
Servers 1 OPCUAServer@ES NS7 Opaque 0x01000 ActualValue	99
✓ I Documents	
Data Access View	
Address Space & X	
✓ No Highlight	
Contemporaries and the second	
DeviceSet	
A DeviceFeatures	
🗸 💫 fbControllerParameterType1	
> Caral Actual Value	N
	3
Lemperature	
Actual/alue	