Beckhoff TwinCAT Service

Information on how to set up a TagProvider connection with Beckhoff TwinCAT.

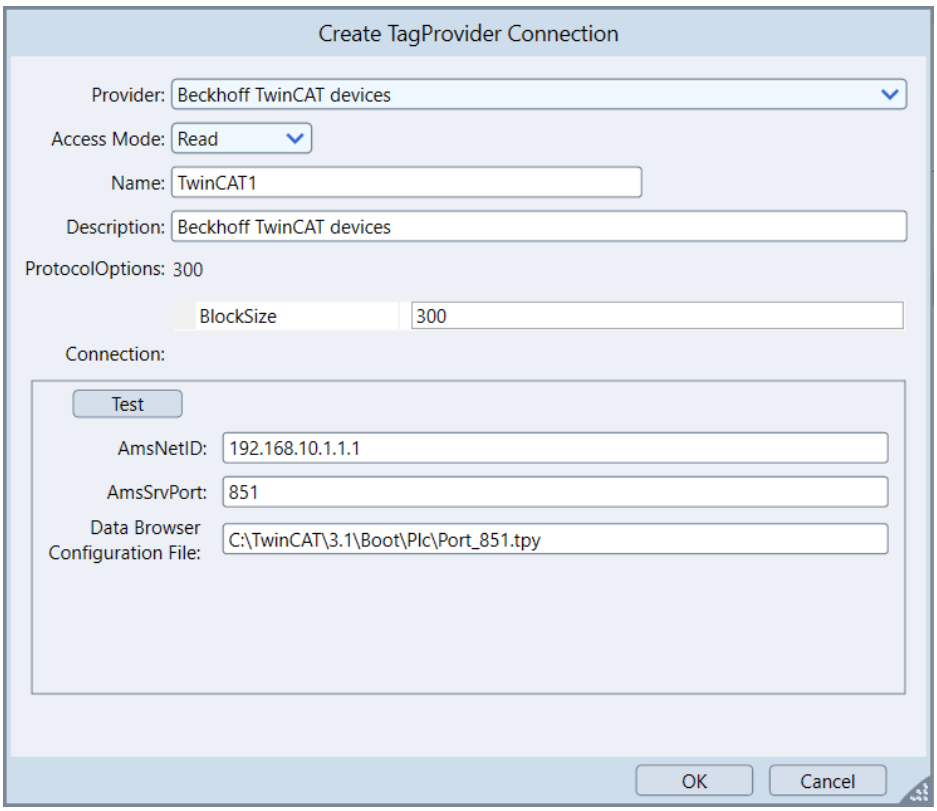
Reference Modules UNS UI Services Beckhoff

The Beckhoff TwinCAT devices TagProvider enables communication with Beckhoff PLCs using the ADS protocol and AMSNetID addressing. It provides access to real-time PLC variables by connecting through the TwinCAT Devices Communication Driver under Unified Namespaces > TagProvider Connections. After setup, the TagProvider loads symbols from the PLC project, making structured tags available in the Unified Namespace for use in visualization, logging, and scripting.

Configuration
Connections Parameters

Configuration

To set up a new TagProvider connection navigate to **Unified Namespace/TagProvider Connections** and press the add button to open the New TagProvider Connection dialog. You can also create your TagProvider Connection directly from the AssetTree. To do this, navigate to **Unified Namespace/Assets Tree** and press  to open the New TagProvider Connection dialog. In the configuration dialog, select the **Beckhoff TwinCAT devices** on the Provider field and insert the required connection parameters. After that, press the Ok button to finish the provider configuration. Creating the connection adds no folder to the Asset Tree. To use its data with Asset(), open **Unified Namespace / Assets Tree**, select a folder (create one first if needed) and click **Insert data from TagProvider** on the toolbar: the folder linked to the TagProvider is created inside the selected folder. A linked folder cannot sit at the root of the Asset Tree.



Connections Parameters

Field	Description
Provider	Specifies the system the TagProvider will interface with. In this case, it is Beckhoff TwinCAT devices.
Access Mode	Determines the permissions for interacting with tags: Read allows data reading, Write permits data writing, and ReadWrite enables both reading and writing.
Name	User-defined name for the TagProvider instance, used to identify the specific configuration in the system.
Description	A brief explanation of the TagProvider's purpose or the systems it interfaces with, providing context for its usage.

ProtocolOptions	A set of parameters that define specific communication settings for the connection to the device.
Connection	Defines the network settings for connecting to the device, including AmsNetID, AmsSrvPort, and Data Browser Configuration File.

The Test buttons verifies the connection settings to ensure successful communication with the specified device.

Field	Description
AmsNetID	Specifies the IP address of the device to establish a connection (e.g., 192.168.10.1.1.1).
AmsSrvPort	Sets the communication port number used for communication with the PLC. Port number is typically 801 or 851.
Data Browser Configuration File	Provide the path of the target configuration file (supported files: TMC and TPY).
Test	Verifies the connection settings to ensure successful communication with the specified device.

Note

When an array does not start at index zero, the Asset Tree still displays indices starting from 0. Only the indices that exist in TwinCAT will contain values; others will appear empty.

In this section...
