CODESYS STORE

CODESYS in Building Automation Examples

This package contains the examples from the video series “CODESYS in Building Automation” (https://www.codesys.com/industries/building-automation.html).

Product description

Licensing:

No license is required.

The sample projects demonstrate a selection of CODESYS features that are important in the field of building automation. Samples include:

- Programming in ST/CFC
- Libraries
- Integrated visualization
- BACnet
- OPC UA
- KNX
- Modbus
- CANopen
- Network variables
- Application Composer

We recommend working through the examples by following the video series “CODESYS in Building Automation”.

The collection of examples demonstrates the different aspects in a simple use case: a control system for blinds evaluates sensor values from a weather station (wind speed, wind direction) to move the blinds to a safe position in gusty or stormy wind conditions.

The library “Brief Demo Lib” contains the following:

- Interface “IWeatherStationInputs” to implement different weather sensor sources
- Weather station (function block “WeatherStation”) to evaluate and process the weather sensor values (computes the daily mean temperature and a weather category)
- Visualization elements for the weather station
- Algorithm to detect gusty or stormy wind conditions (function block “GustDetection”)

The video “Part 2 – CODESYS Standard Features in Building Automation” uses the project “Brief Demo” to demonstrate the following features:

- Programming in ST/CFC
- Integrated visualization
- Creating and using libraries

The video “Part 3 – Important Communication Protocols” uses the project “BACnet Brief Demo” to demonstrate how to use of CODESYS BACnet. “BACnet brief demo Server” implements a source of (simulated) weather sensor values that are published by means of BACnet server objects. “BACnet brief demo Client” uses these weather sensor values with BACnet-Client-Read-Property-Requests. “BACnet brief demo Server” has to be run on a separate controller (CODESYS Control for Raspberry Pi in the example) because BACnet(IP) devices use a dedicated UDP port. Another option is to run “BACnet brief demo Server” in a virtual environment. The advantage of this approach is that it is possible to watch the behavior of the “BACnet brief demo server” first with a BACnet explorer (for example, yabe “Yet Another Bacnet Explorer”) without complicated configuration work. Make sure that you have stopped the BACnet explorer that may be running on the same computer as the “BACnet brief demo Client” to prevent the BACnet explorer from blocking the required UDP port. The package “CODESYS BACnet SL” has to be installed in order to run “BACnet Brief Demo”.

The video “Part 3 – Important Communication Protocols” uses the project “OPC-UA Brief Demo” to demonstrate

how to use CODESYS OPC UA. This projects implements a source of (simulated) weather sensor values that are published via OPC UA. “UA Expert” (https://www.unified-automation.com/products/development-tools/uaexpert.html) can be used as OPC UA client.

The video “Part 3 – Important communication protocols” uses the project “KNX Brief Demo” to demonstrate how to use CODESYS KNX. This projects implements a source of (simulated) weather sensor values that are published via KNX data points. The package “CODESYS KNX SL” has to be installed in order to run “KNX Brief Demo”. An ETS5 installation is required to repeat the workflow as demonstrated in the video. An ETS5 DCA plug-in (CODESYS DCAPlugin DcaCodeSys.etsapp) included with the “CODESYS KNX SL” package has to be installed in ETS5.

The video “Part 3 – Important communication protocols” uses the project “Modbus Brief Demo” to demonstrate how to use CODESYS Modbus. “Modbus brief demo Slave” implements a source of (simulated) weather sensor values that are published via Modbus registers. “Modbus brief demo Master” uses these weather sensor values via Modbus TCPSlave and I/O mapping. “Modbus brief demo Slave” and “Modbus brief demo Master” can be run on two separate SoftPLCs that are running on your local computer. Make sure that the correct Ethernet interface is selected in the Ethernet devices of the project. In “Modbus brief demo Master”, the IP address of the Modbus slave needs to be configured.

The video “Part 3 – Important communication protocols” uses the project “CANopen brief demo” to demonstrate how to use CODESYS CANopen. “CANopen brief demo Slave” implements a source of (simulated) weather sensor values that are published via CANopen PDOs. “CANopen brief demo Master” uses these weather sensor values via CANopen_Manager and I/O mapping. The demonstration in the video uses two PCAN-USB adapters from the company PEAKSystem Technik GmbH.

The video “Part 3 – Important communication protocols” uses the project “Network variables brief demo” to demonstrate how to use CODESYS network variables. In this project, “NvWeatherStation” and “NvWeatherStationClient” are combined into a project to demonstrate the consistency check of network variables within a CODESYS project. “NvWeatherStation” implements a source of (simulated) weather sensor values that are published via CODESYS network variables. “NvWeatherStationClient” uses these weather sensor values.

The video “Part 4 – Application Composer” uses the project “Application Composer brief demo” to demonstrate the CODESYS Application Composer.

General information

Supplier:

CODESYS GmbH
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87439 Kempten
Germany

Support:

https://support.codesys.com

Item:
CODESYS in Building Automation Examples
Item number:
000111
Sales:

CODESYS Store
https://store.codesys.com

Included in delivery:
Package containing:

- Brief Demo Lib.library
- Brief Demo.project
- BACnet brief demo Server.project
- BACnet brief demo Client.project
- OPC UA.project
- KNX brief demo.project
- Modbus brief demo Slave.project
- Modbus brief demo Master.project
- CANopen brief demo Slave.project
- CANopen brief demo Master.project
- Network variables brief demo.project
- Application Composer brief demo.project

System requirements and restrictions

Development system	CODESYS Development System V3.5.14.0 or later
Runtime	CODESYS Control V3.5.14.0 or later
Supported platforms and devices	Note: Use the “Device Reader” project for locating the functions supported by the PLC. The “Device Reader” project is available in the CODESYS Store free of charge.
Additional requirements	Activation of the runtime components “CmpBACnet” and “CmpKNX” in the configuration file
Restrictions	-
Licensing	No license is required.
Required accessories	-

Note: Not all CODESYS features are available in all territories. For more information on geographic restrictions, please contact sales@codesys.com.
Note: Technical specifications are subject to change. Errors and omissions excepted. The content of the current online version of this document applies.