



Data Sheet CODESYS CANopen Device

Configurator, protocol stack and diagnostics for CANopen Device, fully integrated in the IEC 61131-3 development system.

Product description

The CANopen support in CODESYS is based on the standard implementation of the CAN-Interface (CAN Minidriver interface). If your target device programmable with CODESYS is equipped accordingly you can immediately use CODESYS CANopen.

CODESYS CANopen Device offers

- A CANopen Device configurator integrated in the Development System CODESYS
 - ⇒ No additional tools required for the configuration of the bus system or the I/O data.
- A CANopen communication stack in form of a CODESYS CiA 301 library
 - ⇒ The protocol stack is portable across different platforms and does not have to be fully implemented on the device.
 - ⇒ The IEC 61131-3 Development System compiles the stack and the application code into native machine code and loads it onto the controller.
- An application interface for diagnosis and object dictionary access
 - ⇒ Extensive functionality without needing any additional software tools

Configurator

	Editor for CANopen Local Device including
Editors	<ul style="list-style-type: none"> • general communication settings • PDO editor • Object Dictionary editor
Communication Settings	<ul style="list-style-type: none"> • Device identification • Node ID • Device profile • Easy creation of input/output ranges • Easy creation of objects readable/writable by SDO
PDO Editor	Editor for creating/deleting/modifying PDOs; All necessary objects will be automatically created.

- Free configurable object dictionary
- Mapping of IEC variables on object dictionary entries
- Import object dictionary from EDS
- Profile databases included

Object Dictionary Editor (for advanced users)

- Supported CiA 301 Datatypes:
 - BOOLEAN
 - UNSIGNED 8/16/24/32/40/48/56/64
 - INTEGER 8/16/24/32/40/48/56/64
 - REAL 32/64
 - VISIBLE_STRING (Restriction: not supported for I/O mapping)

EDS Export

CiA 306 compliant EDS export

Diagnosis

- Display of device state in device tree and on status page
- Display of Emergency information on status page

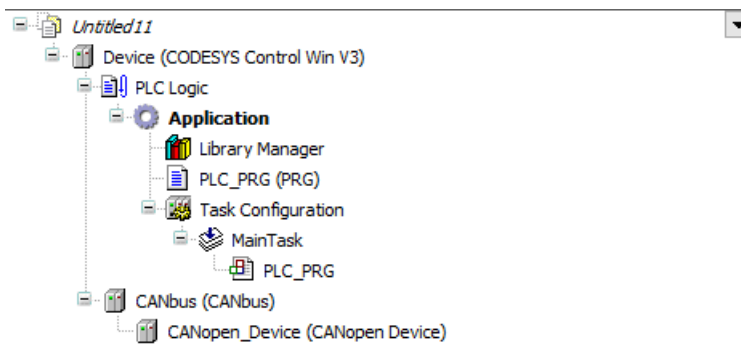


Image 1: Device Tree

Image 2: General Settings

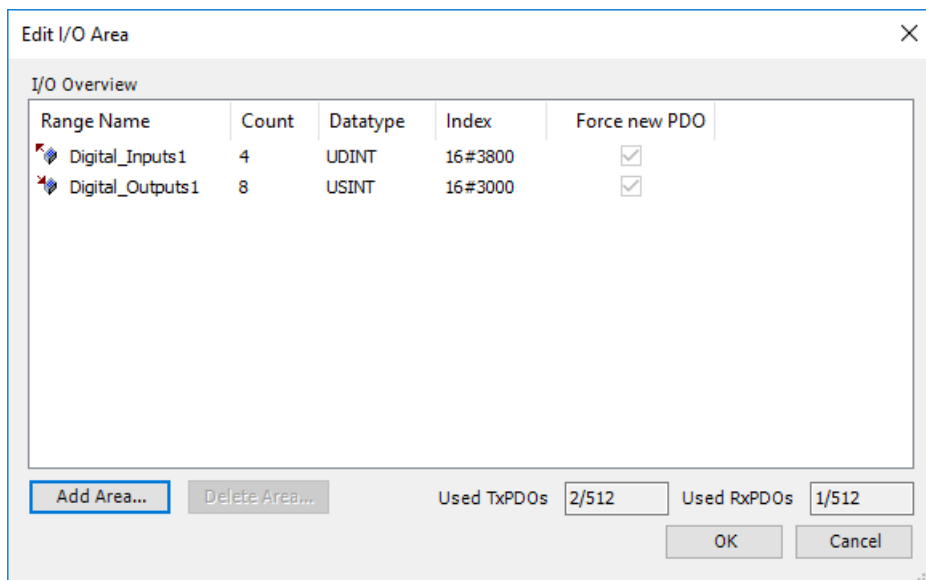


Image 3: I/O Areas

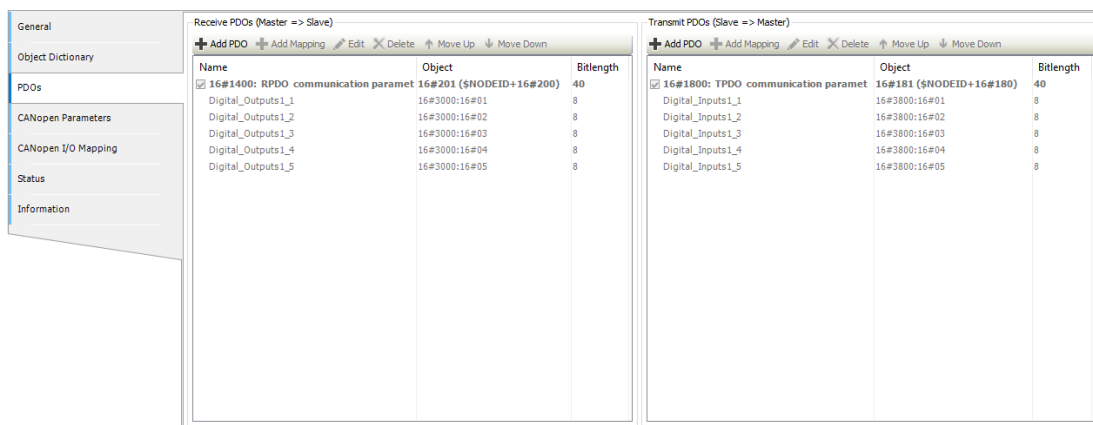


Image 4: PDO Editor

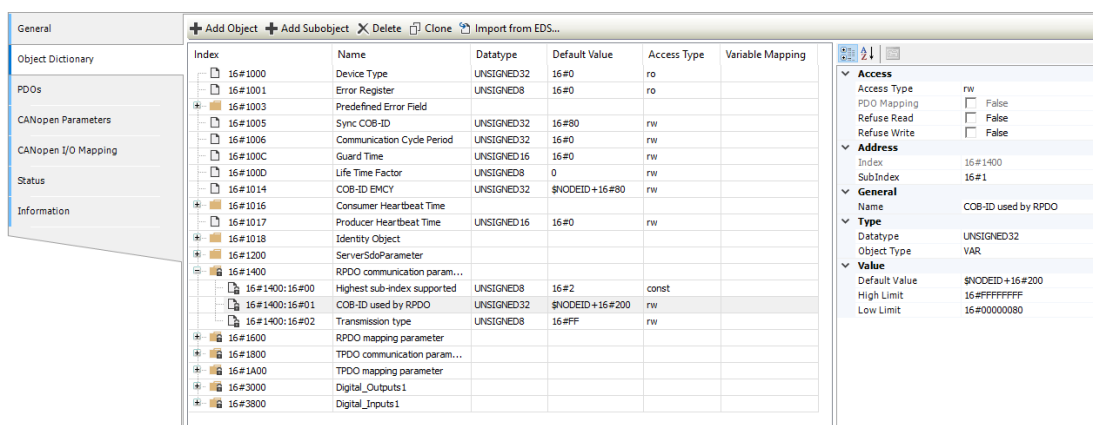


Image 5: Object Dictionary Editor

IEC Stack

Supported Platforms

- 32/64 bit
- Little/Big Endian

State machine

- CiA 306 compliant
- NMT server

CAN ID Length

11 bit (29 bit not supported for CANopen)

Guarding	<ul style="list-style-type: none"> • Nodeguarding • Heartbeat Producing/Consuming
SDO client	Not supported by CANopen Local Device. Supported by CANopenManager which can be used in parallel to the CANopen Local device on the same network.
SDO server	supported
SDO channels	only one supported
SDO protocols	<ul style="list-style-type: none"> • Expedited • Segmented • Block (CRC supported)
SYNC	<ul style="list-style-type: none"> • Producing • Consuming
TIME	Not Supported
Number of PDOs	<ul style="list-style-type: none"> • 512 TPDOs • 512 RPDOs
PDO mapping	static (changeable by configurator)
PDO Transmission Types	<ul style="list-style-type: none"> • TPDOs (Slave to Master) <ul style="list-style-type: none"> ◦ acyclic/cyclic synchronous ◦ asynchronous/synchronous RTR only ◦ asynchronous manufacturer/device profile specific • RPDOs (Master to Slave) <ul style="list-style-type: none"> ◦ acyclic/cyclic synchronous ◦ asynchronous manufacturer/device profile specific
PDO Event Time	supported for TPDOs (Slave to Master)
PDO Inhibit Time	supported for TPDOs (Slave to Master)
MPDO	not supported
EMCY	<ul style="list-style-type: none"> • Producing supported • Error Register • Predefined Error Field object
Conformance	no current data available
API	
RAW CAN	Access to CAN chip via CANL2 library (also in parallel to CANopen Stack)
Object Dictionary API	<ul style="list-style-type: none"> • Reading/Writing local objects • Object Dictionary callbacks with possibility for custom abort codes
NMT API	all CANopen state transitions possible by API
Dynamic Node ID	Node ID changeable at runtime by API
Reconfigure	<ul style="list-style-type: none"> • Dynamic changing of Baudrate and Network ID via Reconfigure (Device Diagnosis library); • Enabling/Disabling of stack

General information

Vendor:

CODESYS GmbH
 Memminger Strasse 151
 87439 Kempten
 Germany

Support:

<https://support.codesys.com>

Item:

CODESYS CANopen Device

Item number:

1103000003

Sales:

CODESYS Store

<https://store.codesys.com>

Included in delivery:

- License key

System requirements and restrictions

Programming System	CODESYS Development System V3.5.4.0 or higher
Runtime System	CODESYS Control V3.5.4.0 or higher
Supported Platforms/ Devices	Note: Use the project "Device Reader" to find out the supported features of your device. "Device Reader" is available for free in the CODESYS Store.
Additional Requirements	Target device needs CAN Minidriver implementation.
Restrictions	-
Licensing	License activation optional on CODESYS Key or Soft Key (Soft Key: free of charge component of CODESYS Controls)
Required Accessories	Optional: CODESYS Key

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.