



Data Sheet CODESYS PROFINET Device SL

The CODESYS PROFINET Device enables a CODESYS PLC to act as a PROFINET Device that is programmable with the CODESYS Development System.

Product description

PROFINET (Process Field Network) is an open standard for realtime industrial Ethernet systems in automation technology. It is promoted by the user organization PI (PROFIBUS & PROFINET International as an umbrella group of the PROFIBUS user organization PNO) and is regarded as the successor of PROFIBUS. PROFINET uses UDP/IP and IEEE 802.3 (Standard Ethernet) for acyclic services and/or I/O communication

The fully integrated CODESYS PROFINET Device Solution provides a uniform configurator for different variants of underlying PROFINET Device communication stacks:

- CODESYS PROFINET Device (IEC)
Protocol stack in the form of a CODESYS library (in IEC 61131-3 code), operates on standard network interface cards.
The Ethernet adapter is not used exclusively, it's still available for all other applications using TCP/IP on this adapter (e.g. CODESYS Visualization, Web Browser).
- CODESYS PROFINET Device (CIFX)
Driver for Hilscher netX hardware with PROFINET Device stack and Runtime system component for direct access to Hilscher CIFX card.

CODESYS PROFINET Device Configurator

- Configurator for settings of PROFINET Device
- Sample GSDML file included in scope of delivery
- Configuration of module's in- and output-mapping
- Status page with detailed view of currently pending diagnostics (V3.5.15.0)

Profinet-Stack (IEC and CIFX V3)

CODESYS PROFINET Device Stack in principle can run on any standard Ethernet adapter hardware (see requirements and restrictions). This Ethernet adapter is still be used for other services like CODESYS Communication (with IDE), Web-Server, or other CODESYS Fieldbuses (except EtherCAT). The CODESYS Runtime and the operating system (e.g. firewall) have to be configured correctly. For details, see CODESYS Online Help / Fieldbus Support (<https://help.codesys.com/>)

For Details on CIFX variant refer to Hilscher documentation for your specific firmware version. This document refers to Firmware Version V3.1.x.x. The CIFX variant is not available for Big-Endian systems!

Feature	CODESYS	CIFX
PROFINET Specification	V2.3	V2.3
Conformance Class	A	A, C
Max. IO-Data	1440 input and 1440 byte output	1440 input and 1440 byte output
Max. acyclic data	4068 bytes	4068 bytes
Platforms / OS (see restrictions)	Windows, Linux, VxWorks, WinCE	Windows, Linux, VxWorks
CPU	32/64 Bit Little-/Big-Endian	32/64 Bit Little-Endian only !
Provider-/Consumer-Status	yes	no
Shared Device	no	yes
Device Access AR	no	yes
Device Access AR	no	yes

Dual Port	no, see below	yes
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CODESYS PROFINET Device (IEC) and Dual-Port Interface: With standard Ethernet Adapter hardware only single port devices are possible, i.e. each PROFINET Device can handle just one port. (The system itself may have more than one Ethernet adapter, maybe running a PROFINET Controller on it). A Dual-Port Device (e.g. for a 'daisy-chain') may be implemented with special dual-port Ethernet chipsets, but this requires some runtime adaptations by the OEM.

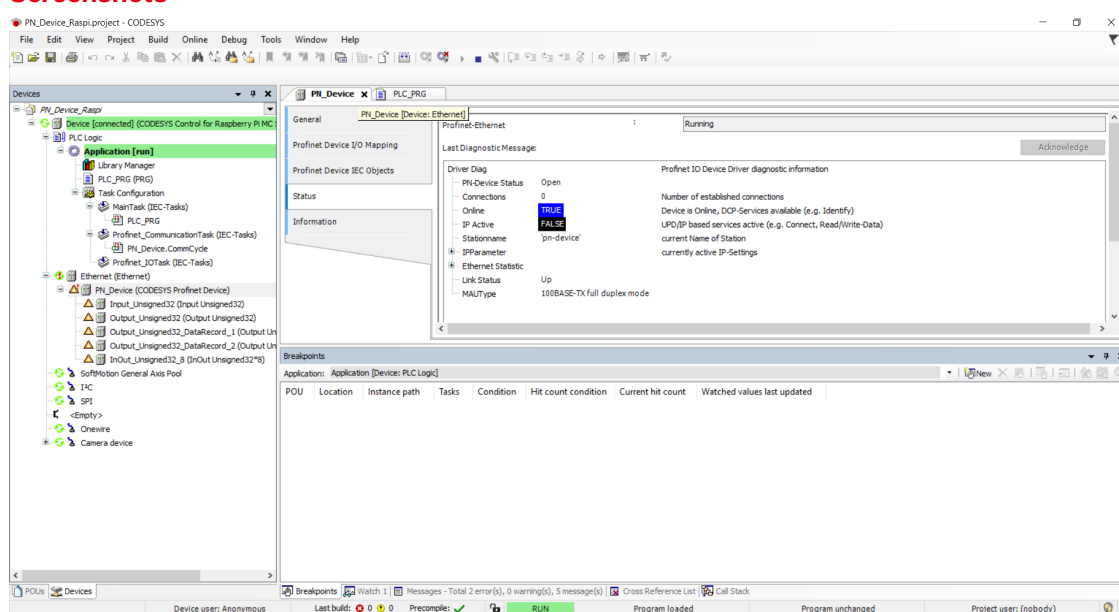
Programming Interface (API for IEC application)

The PROFINET Device provides an API for Profinet related functions and utilities that can be used by the application at runtime.

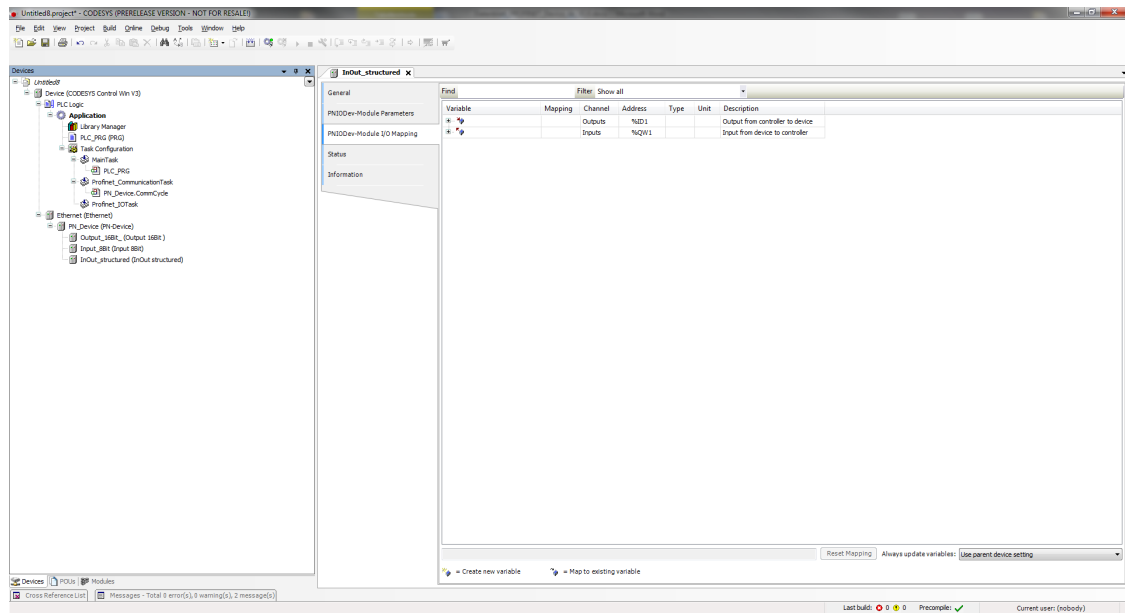
Some functions are not available for CIFX variant.

Function	CODESYS	CIFX	Description
Generic access on device- and module-configuration	yes	no	Function Block ProfinetCommon.Deviceliterator and Submoduleiterator Generic API for iterating Slave- or Module Configuration and Status
Add/Remove Diagnosis Entries	yes	no	Function Block ProfinetCommon.UpdateDiagnosisEntry Update the device's local Diagnosis Database, send diagnosis-alarm
Send Alarms	yes	no	Function Block CommFB.SALARM
Acyclic Services	yes	no	Function Block CommFB.PRIVREC / RCVREC e.g. Receive Parameters from PROFINET Controller
Reconfigure	yes	yes	Function Block DED.Reconfigure Enable/Disable modules or the complete PROFINET stack

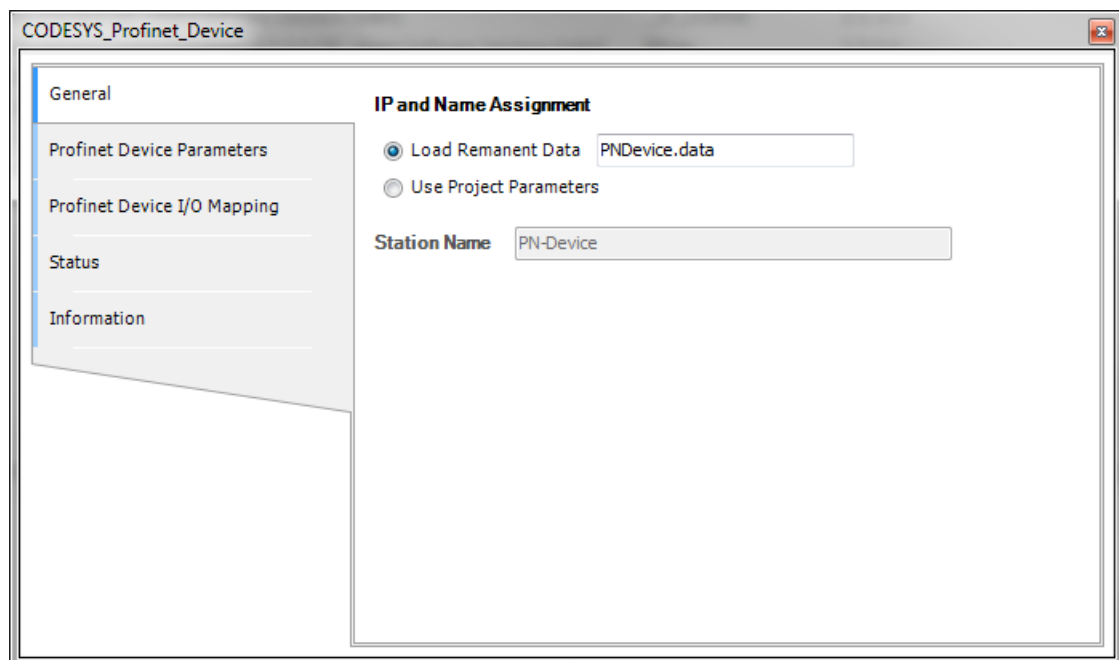
Screenshots



Device tree



Editor:



General information

Manufacturer:

3S-Smart Software Solutions GmbH
 Memminger Strasse 151
 87439 Kempten
 Germany

Support:

<https://support.codesys.com>

Item:

CODESYS PROFINET Device SL

Item number:

2303000021

Sales:

CODESYS Store

<https://store.codesys.com>

Included in delivery:

- License key

System requirements and restrictions

Programming System	CODESYS Development System V3.5.10.0 or higher
Runtime System	CODESYS Control V3.5.10.0 or higher CODESYS Control V3.5.14.0 or higher required for certification !
Supported Platforms/ Devices	Any that support the CODESYS runtime system. SysEthernet must be implemented on the device. Note: Use the project <i>Device Reader</i> to find out the supported features of your device. <i>Device Reader</i> is available for free in the CODESYS Store.
	Technical requirements
	<ul style="list-style-type: none"> • SysEthernet • SysSocket
Additional Requirements	Legal requirements
	<ul style="list-style-type: none"> • Certification of device at PI. • Membership at PNO. • Licensing of all pending patents – as far as they are not covered by PNO.
Restrictions	<ul style="list-style-type: none"> • Single Port Device • Conformance Class A • WinCE: Change IP DCP Commands is not possible !
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.