



Crypto Example

“Crypto Example” shows which cryptographic functions are available in CODESYS and how to use them.

Product description

Cryptographic techniques are important in order to achieve the following objectives when processing data:

- **Integrity** of data guarantees that the recipient can be sure that any changes to the data do not go unnoticed.
- **Authenticity** means that the recipient can be reasonably sure that a data set has actually been created by its alleged author.
- **Confidentiality** aims to prevent unauthorized access to the relevant data under all circumstances.

In CODESYS, the libraries `CmpCrypto.library` and `CmpX509Cert.library` are provided for this purpose. The sample project `CryptoDemo.project` included in the CODESYS package demonstrates how to use both libraries for different use cases.

More information

This example covers the following topics:

- Random number generation
- Hashing
- Hash-based message authentication code (HMAC)
- Encryption
 - Symmetric encryption
 - Example: AES-256 in CBC mode
 - Combination of signing and encryption
 - Asymmetric encryption
 - Key pair generation
 - Access to certificates
 - Encryption
 - Decryption
 - Signing of data
 - Validation
- Pay by use

The functionality of the sample project `CryptoDemo.project` is described in the document `CryptoDemo.pdf`. The project `CryptoCertDemo.project` shows how a message can be encrypted by a sender and decrypted by a recipient using certificates. The document is copied to the target directory when the CODESYS package is installed.

General information

Manufacturer:

3S-Smart Software Solutions GmbH
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 87439 Kempten
 Germany

Support:

<https://support.codesys.com>

Item:

Crypto Example

Item number:

000104

Sales:

CODESYS Store

<https://store.codesys.com>

Included in delivery:

CODESYS package with sample project and description (PDF)

System requirements and restrictions

Programming system	CODESYS Development System V3.5.12.0 or later
Runtime system	CODESYS Control V3.5.12.0 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	-
Restrictions	-
Licensing	-
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.