

Manual | EN

TX1200

TwinCAT 2 | PLC Library: TcSystemCX1000



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1 Foreword

1.1 Notes on the documentation

This description is only intended for the use of trained specialists in control and automation engineering who are familiar with applicable national standards.

It is essential that the documentation and the following notes and explanations are followed when installing and commissioning the components.

It is the duty of the technical personnel to use the documentation published at the respective time of each installation and commissioning.

The responsible staff must ensure that the application or use of the products described satisfy all the requirements for safety, including all the relevant laws, regulations, guidelines and standards.

Disclaimer

The documentation has been prepared with care. The products described are, however, constantly under development.

We reserve the right to revise and change the documentation at any time and without prior announcement.

No claims for the modification of products that have already been supplied may be made on the basis of the data, diagrams and descriptions in this documentation.

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The EtherCAT Technology is covered, including but not limited to the following patent applications and patents:

EP1590927, EP1789857, EP1456722, EP2137893, DE102015105702

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1.2 Safety instructions

Safety regulations

Please note the following safety instructions and explanations!
Product-specific safety instructions can be found on following pages or in the areas mounting, wiring, commissioning etc.

Exclusion of liability

All the components are supplied in particular hardware and software configurations appropriate for the application. Modifications to hardware or software configurations other than those described in the documentation are not permitted, and nullify the liability of Beckhoff Automation GmbH & Co. KG.

Personnel qualification

This description is only intended for trained specialists in control, automation and drive engineering who are familiar with the applicable national standards.

Description of symbols

In this documentation the following symbols are used with an accompanying safety instruction or note. The safety instructions must be read carefully and followed without fail!

DANGER

Serious risk of injury!

Failure to follow the safety instructions associated with this symbol directly endangers the life and health of persons.

WARNING

Risk of injury!

Failure to follow the safety instructions associated with this symbol endangers the life and health of persons.

CAUTION

Personal injuries!

Failure to follow the safety instructions associated with this symbol can lead to injuries to persons.

NOTE

Damage to the environment or devices

Failure to follow the instructions associated with this symbol can lead to damage to the environment or equipment.



Tip or pointer

This symbol indicates information that contributes to better understanding.

1.3 Notes on information security

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In addition, the recommendations from Beckhoff regarding appropriate protective measures should be observed. Further information regarding information security and industrial security can be found in our <https://www.beckhoff.com/secguide>.

Beckhoff products and solutions undergo continuous further development. This also applies to security functions. In light of this continuous further development, Beckhoff expressly recommends that the products are kept up to date at all times and that updates are installed for the products once they have been made available. Using outdated or unsupported product versions can increase the risk of cyber threats.

To stay informed about information security for Beckhoff products, subscribe to the RSS feed at <https://www.beckhoff.com/secinfo>.

2 Overview

This library contains functions which are using special features of the Embedded PC CX1000.

Functions

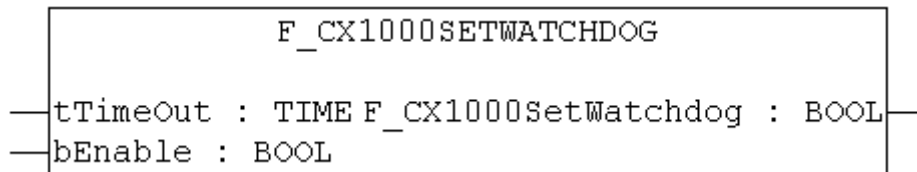
Name	Description
F_CX1000SetWatchdog [▶ 9]	activates/deactivates hardware watchdog (auto-reboot of CX1000 in case of PLC problems)
F_GetVersionTcSystemCX1000 [▶ 9]	The function returns library version info.

Requirements

Component	Version
TwinCAT on the development PC	2.9 Build 959 or higher
CX1000-Windows CE-Image	1.75 or higher
CX1000-Windows XP-Image	1.14 or higher

3 Functions

3.1 F_CX1000SetWatchdog



The function F_CX1000SetWatchdog activates a hardware watchdog on the CX1000. The watchdog is enabled with bEnable = TRUE and a timeout time. The minimum timeout time is a few times the cycle time in which the function F_CX1000SetWatchdog is called, the maximum timeout time is 65sec and 535 milliseconds.

Once the watchdog is activated, the function has to be called cyclically, because if the tTimeout-time expires then the CX1000 automatically reboots. The watchdog can be used to reboot the system if the PLC gets stuck (i.e. in an endless loop).

The watchdog can be disabled by bEnable = FALSE.



The Watchdog has to be disabled before using breakpoints, before a PLC reset or PLC reset all, before a TwinCAT Stop, a change to Config Mode or before activating the configuration, otherwise the CX1000 reboots immediately after the timeout time has expired!

FUNCTION F_CX1000SetWatchdog : BOOL

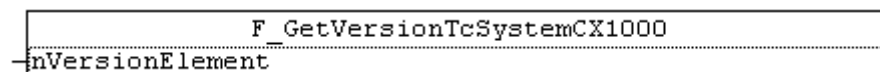
VAR_INPUT

```
VAR_INPUT
  tTimeout      : TIME;
  bEnable       : BOOL;
END_VAR
```

tTimeout : Watchdog time, if expired a reboot is automatically executed.

bEnable : Activate or deactivate the watchdog.

3.2 F_GetVersionTcSystemCX1000



The function returns library version info.

FUNCTION F_GetVersionTcSystemCX1000 : UINT

```
VAR_INPUT
  nVersionElement : INT;
END_VAR
```

nVersionElement : Version element:

- 1 : major number;
- 2 : minor number;
- 3 : revision number;

Requirements

Development environment	Target platform	PLC Libraries to include
TwinCAT v2.9.0	PC (i386)	TcSystemCX1000.Lib

More Information:
www.beckhoff.com/tx1200

Beckhoff Automation GmbH & Co. KG
Hülshorstweg 20
33415 Verl
Germany
Phone: +49 5246 9630
info@beckhoff.com
www.beckhoff.com

