BECKHOFF New Automation Technology

Manual | EN

TX1200

TwinCAT 2 | PLC Library: TcSMTPBC
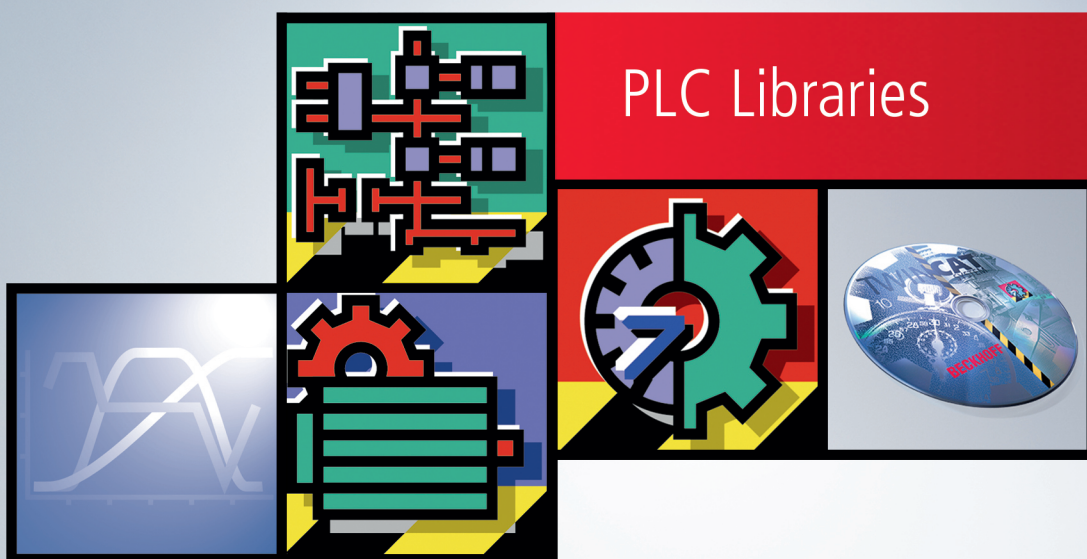
PLC Libraries

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Version: 1.0

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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Patent Pending

The EtherCAT Technology is covered, including but not limited to the following patent applications and patents:
EP1590927, EP1789857, EP1456722, EP2137893, DE102015105702
with corresponding applications or registrations in various other countries.

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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.

●
i   **Tip or pointer**

This symbol indicates information that contributes to better understanding.

1.3   Notes on information security

The products of Beckhoff Automation GmbH & Co. KG (Beckhoff), insofar as they can be accessed online, are equipped with security functions that support the secure operation of plants, systems, machines and networks. Despite the security functions, the creation, implementation and constant updating of a holistic security concept for the operation are necessary to protect the respective plant, system, machine and networks against cyber threats. The products sold by Beckhoff are only part of the overall security concept. The customer is responsible for preventing unauthorized access by third parties to its equipment, systems, machines and networks. The latter should be connected to the corporate network or the Internet only if appropriate protective measures have been set up.

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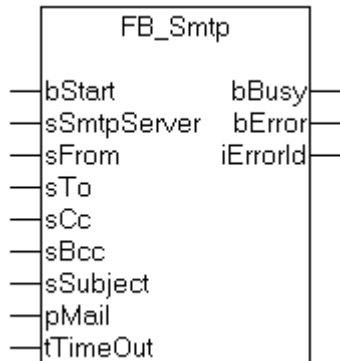
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2   Overview

The library contains useful function blocks for the **BC9000** Bus Terminal Controller for use of the SMTP protocol (simple mail transfer protocol).

Function blocks

Name	Description
FB_Smtp [▶ 9]	Sends e-mails.

3 Function blocks

3.1 FB_Smtp

This function block uses the SMTP protocol (simple mail transfer protocol) to send e-mails. The function block can, for instance, be used to send errors, diagnostic information, or warnings in the form of e-mails. The recipients' addresses are passed as strings to the *sTo*, *sCc*, *sBcc* and *sSubject* input variables. The maximum string length for recipients' addresses is limited to 80 characters in order to save resources. The string with the mail text itself may, however, be longer.

VAR_INPUT

```
VAR_INPUT
    bStart      : BOOL;
    sSmtpServer : STRING(15);
    sFrom       : STRING;
    sTo         : STRING;
    sCc         : STRING;
    sBcc        : STRING;
    sSubject    : STRING;
    pMail       : DWORD;
    tTimeOut    : TIME;
END_VAR
```

bStart: the function block is activated by a rising edge at this input.

sSmtpServer: IP address of the SMTP server as a string.

sFrom: a string containing the e-mail address of the sender. If the string supplied is empty, then the Bus Controller generates an e-mail address from the name of the Bus Controller and the MAC ID. The maximum string length is limited to 80 characters. It is possible to enter multiple recipient addresses separated by semicolons.

sTo : a string containing the e-mail address of the recipient. A valid e-mail address must be given. The maximum string length is limited to 80 characters. It is possible to enter multiple recipient addresses separated by semicolons.

sCc: a string containing the e-mail address of a further recipient (Cc = carbon copy). This string can also be empty. A copy of the e-mail is sent to this recipient. The e-mail address of this recipient is **visible** to other recipients. The maximum string length is limited to 80 characters. It is possible to enter multiple recipient addresses separated by semicolons.

sBcc : a string containing the e-mail address of a further recipient (Bcc=blind carbon copy). This string can also be empty. A copy of the e-mail is sent to this recipient. The e-mail address of this recipient is **not visible** to other recipients. The maximum string length is limited to 80 characters. It is possible to enter multiple recipient addresses separated by semicolons.

sSubject: a string containing the e-mail's subject line. This string can also be empty. The maximum string length is limited to 80 characters.

pMail: the address (pointer) of a null-terminated string containing the e-mail text. This string can also be empty. The address of the string can be determined with the ADR operator.

tTimeOut: maximum time, which must not be exceeded during command execution.

VAR_OUTPUT

```
VAR_OUTPUT
    bBusy       : BOOL;
    bError      : BOOL;
    iErrorId    : WORD;
END_VAR
```

bBusy: this output remains TRUE until the function block has executed a command, but at the longest for the duration supplied to the *Timeout* input.

bError: this output is switched to TRUE if an error occurs during the execution of a command. The command-specific error code is contained in *iErrorId*.

iErrorId: contains the command-specific error code of the most recently executed command (table).

Error code (hex)	Description
0x8000	SMTP server not found.
0x8001	Resource error.
0x8002	Socket resource error.
0x8003	Connection fault.
0x8004	Communication fault.
0x8005	Rx error. Communication time exceeded.
0x8006	Rx error. Communication fault.
0x8007	Rx error. Frame error.
0x8008	Communication error. Wrong response.
0x8009	Tx error. Communication fault.
0x800A	Communication shutdown error.
0x800B	Communication timeout.
0x8010	Invalid parameter.

Sample of a call in FBD:

```
PROGRAM MAIN
VAR
    fbSMTP  : FB_Smtp;
    bSend   : BOOL;
    sMsg    : STRING(100):='Test';
    bBusy   : BOOL;
    bError  : BOOL;
    nErrId  : UDINT;
END_VAR
```
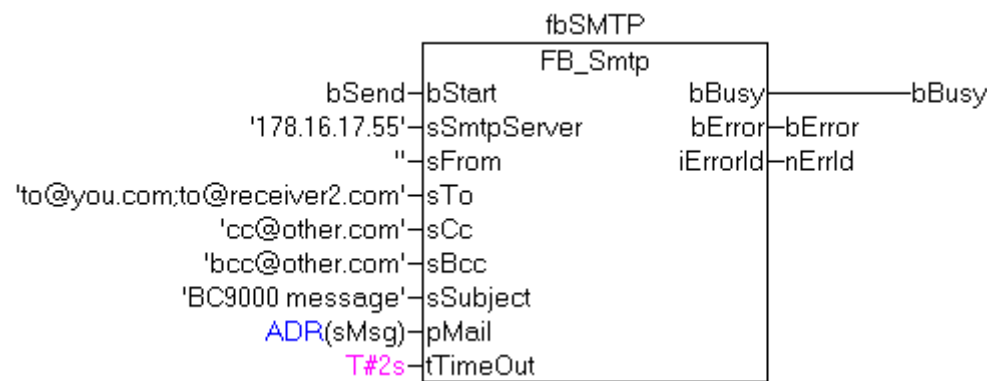

In this sample, a rising edge at the *bStart* input sends a mail to 4 recipients.

Requirements

Development environment	Target platform	PLC libraries to include
TwinCAT v2.7.0 and above	BC9xxx (165) firmware version >=0xB6	TcSMTPBC.Lb6

More Information:
www.beckhoff.com/tx1200