Platform MX6
Software option S002
USB Serial Interface

1 Identification

Identification	
Option ID	S002
Order number	S-05000203-0000
Short name	USB Serial Interface
Brief description	With this software option it is possible to connect one or more USB-Serial adapters to the device for additional serial interfaces.
Revision ID document	V1.0

2 System requirements and restrictions

System requirements and restrictions	
Supported Platforms and devices	Berghof PLC devices of the MX6 platform (e.g.: MCs, CCs, DCs). Additional information regarding availability and compatibility can be found in options section of the product catalog.
Firmware	MX6 Version 1.18.2 or higher
Additional requirements	— At least one free USB port — Berghof System Library MX6 (Target License Pro) in Version 1.11.0 or higher
Restrictions	— Only adapters with CP210X UART bridge controller or FTDI FT232 adapters are supported — Up to 4 interfaces can be used

3 Product description

With this option the PLC can be extended by one or more serial interfaces.
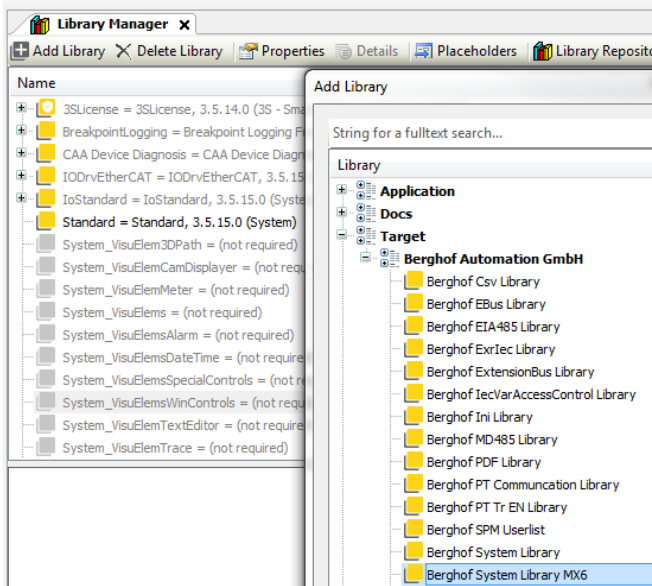
The serial interface (RS-232) still plays a major role in industry for communication between a wide variety of components. Berghof PLC devices can be supplemented or retrofitted with up to 4 of these interfaces. The supported adapters thus enable communication with additional components. These interfaces are available to CODESYS or PLC programs that can use them to exchange data with components connected to it.

An USB serial adapter can be connected at any time during operation (hotplug) or when the PLC is switched off. The configuration is done exclusively by CODESYS respectively by the PLC program. The PLC program has to ensure that newly inserted or removed adapters are handled correctly.
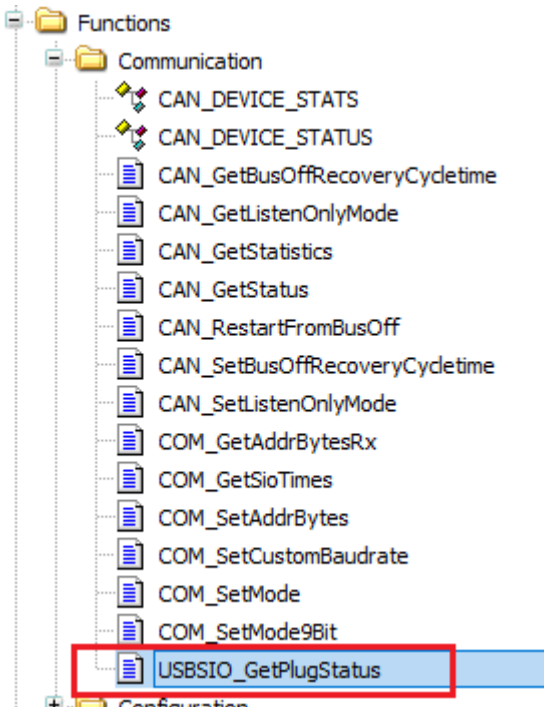
4   Quick Start Guide

4.1 CODESYS functions

For configuration and communication with and via the serial interfaces within the CODESYS application, the "Berghof System Library MX6" has to be included by the project's library manager. This is part of the Berghof Target Pro.

Available function for handling the USB serial interfaces (framed by a red line):

The example below shows a function block in CODESYS that checks the state of all 4 maximum possible USB serial interfaces and returns the first USBCOM Port interface found. If no interface is found, the function reports -1. The default COM Port for USBSIO devices starts at COM10 to COM13.

```
FUNCTION_BLOCK DetectComPort
VAR
    nIndex      : INT;
    nPortNr     : UDINT := 16#FFFF;
    szDummy     : STRING(1024) := '';
END_VAR

VAR_OUTPUT
    nPortAvailable : DINT := -1;
END_VAR
```

```
FOR nIndex := USB_COMPORT1 TO USB_COMPORT4 DO
    IF USBSIO_GetPlugStatus(ePort := nIndex, psLocation := ADR(szDummy)) = 1 THEN
        IF nPortNr = 16#FFFF THEN
            nPortNr := INT_TO_UDINT(nIndex);
        END_IF
    END_IF
END_FOR

IF nPortNr <> 16#FFFF THEN
    nPortAvailable := UDINT_TO_DINT(nPortNr);
END_IF
```

The function USBSIO_GetPlugStatus is intended for handling the USB serial adapters exclusively. All other COM functions can also be used with the already existing interfaces. After the correct USBCOM Port is determined you can use it for serial communication with the CODESYS standard SysCom Library or with the extended COM functions in the Berghof System Library.