Parker Motion Controller

PAC340

Interfaces

ENGINEERING YOUR SUCCESS.

1 USB Ethernet

1.1 Identification

Identification	
Short name	USB Ethernet
Brief description	With this software option it is possible to connect a USB Ethernet adapter to the plc as additional Ethernet interface
Revision ID document	V1.0

1.2 System requirements and restrictions

System requirements and restrictions	
Supported devices	PAC340-CWB11-3X-00-01 und PAC340-MWB11-3X-00-01
Firmware	1.1.0 or higher
Additional requirements	— one free USB port
Restrictions	— Fieldbuses are not supported via this interface — Only adapters equipped with ASIX AX88xxx or AX88179/178A chips or which based on MosChip MCS7830 are supporte

1.3 Product description

With this option the PLC can be extended by an additional Ethernet interface.

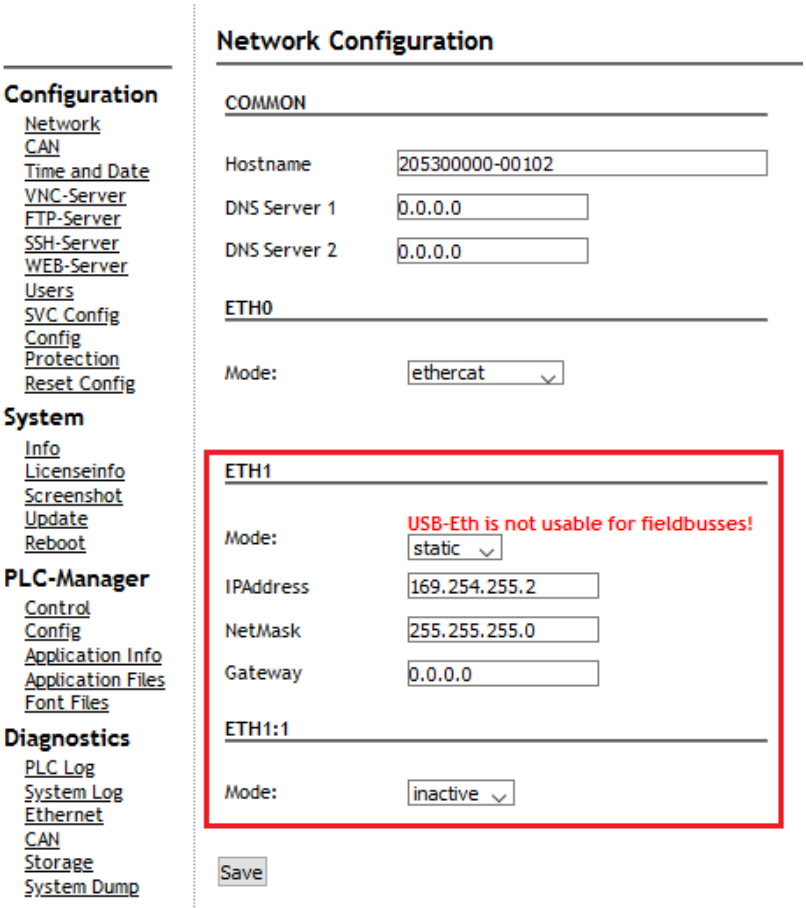
For devices with only one Ethernet interface, only one operating mode is possible. The interface can be used either for communication via fieldbus (e.g. EtherCAT ®) or as a normal TCP/IP interface for accessing a network. A mixed operation is not possible. By using an USB Ethernet adapter, both forms of communication can be used. The access to a network (company or local network) can be done via the USB Ethernet adapter, while the communication via fieldbus is done with the built-in Ethernet interface.

The USB Ethernet adapter can be connected at any time during operation (hotplug) or when the PLC is switched off. Configuration of the adapter via the web interface is only possible if the adapter is connected to the PLC and integrated. The configuration is retained even if the adapter is not connected to the PLC. It is available as soon as the USB Ethernet adapter is connected to the PLC again.

1.4 Quick Start Guide

1.4.1 Network settings in the web interface

To be able to enter or change the network settings for the USB Ethernet adapter, it has to be plugged into a free USB port on the PLC first and recognized by the operating system. If done so, select "Network" on the left side under "Configuration" in the web interface. In the example below, the PLC has a permanently installed network interface (ETH0) configured for EtherCAT ®. The USB Ethernet adapter is assigned the network interface ETH1 (bordered in red). The assigned network interface depends on how many interfaces the PLC already has. Additionally the USB-Ethernet interface is marked with the text "USB-Eth is not usable for fieldbusses!“. This interface can now be set up for communication with a local network or the Internet. For this purpose, use the parameters valid in your network. You can configure the new interface either with a static (fixed) IP address (this includes the network mask, gateway and DNS server) or obtain the configuration from a DHCP server, if one is available in the network.
As soon as all required data has been entered and confirmed with the Save button, the PLC must be restarted in order to use the changed configuration.



Attention: The network settings shown in the figure are only for illustration.

2 USB Keyboard

2.1 Identification

Identification	
Short name	USB Keyboard
Brief description	With this software option it is possible to connect an external USB keyboard to the device to use it for input and program operation
Revision ID document	V1.0

2.2 System requirements and restrictions

System requirements and restrictions	
Supported devices	PAC340-CWB11-3X-00-01 und PAC340-MWB11-3X-00-01
Firmware	1.1.0 or higher
Additional requirements	— BghSystemMX6 library V1.11 or higher required for use with CODESYS — one free USB port
Restrictions	— Only german and english (US) keyboard layouts are supported — USB keyboard has to be connected to the PLC before power on

2.3 Product description

With this extension it is possible to connect an external USB keyboard, a barcode scanner or USB devices that are identified as keyboard input devices to the PLC. This allows e.g. program operation via keyboard (triggering CODESYS program actions by function keys) or data input via a barcode scanner.

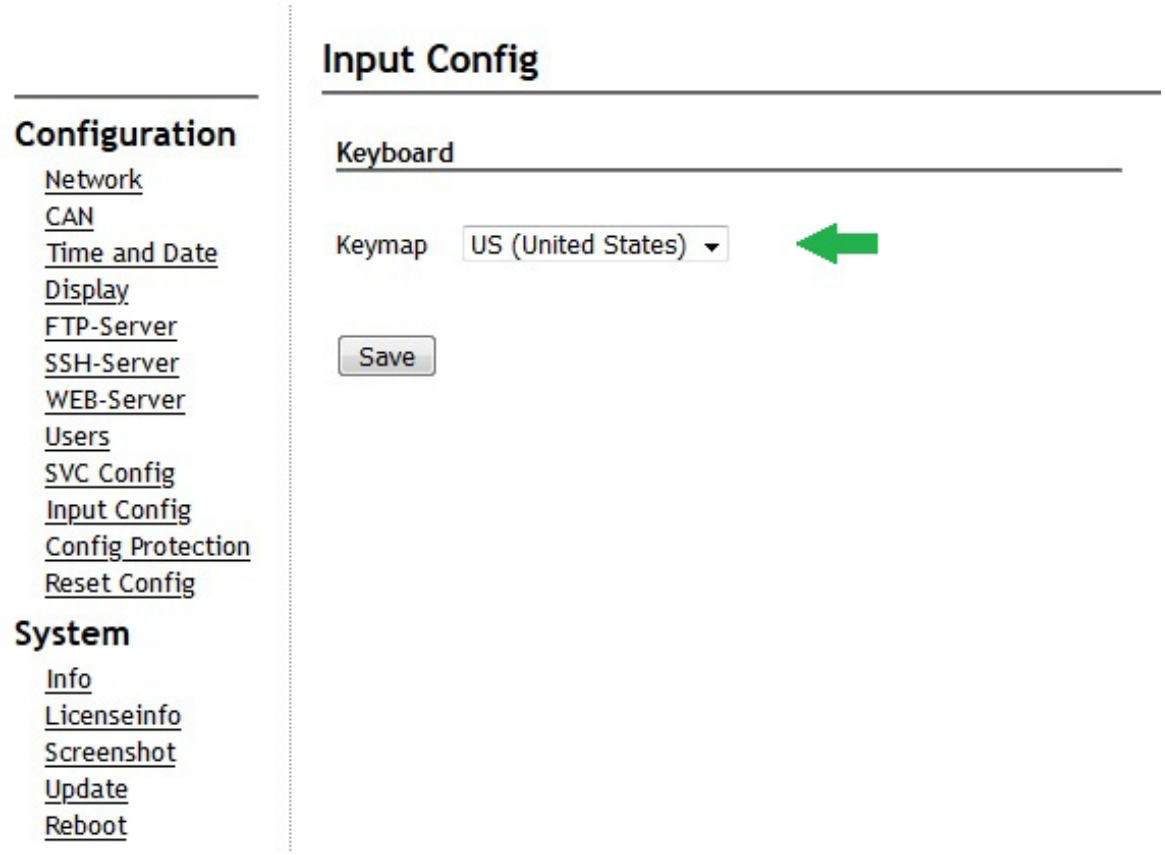
Keyboards with german or english (US) layout are supported. The layout can be set via the web interface or in the CODESYS software. Switching during operation of the PLC is not possible. As long as no changes have been made to the keyboard layout, the english (US) layout is active.

The USB input device to be used must be connected before switching on the PLC. It is possible to connect it to the PLC that is already running, but it cannot be used until the next time the PLC is started.

2.4 Quick Start Guide

2.4.1 Setting the keyboard layout in the web interface

To change the keyboard layout, select "Input Config" on the left side under "Configuration". By activating the small arrow in the drop-down field (see green arrow), the selectable layouts to which the keyboard layout can be set are displayed. You can choose between US (United States) and DE (Germany). For the new layout to take effect, it must be specified by activating the "Save" button. After a restart, the PLC uses the selected layout.



3 USB Serial Interface

3.1 Identification

Identification	
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

3.2 System requirements and restrictions

System requirements and restrictions	
Supported devices	PAC340-CWB11-3X-00-01 und PAC340-MWB11-3X-00-01
Firmware	1.1.0 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

3.3 Product description

With this option the PLC can be extended by one or more serial interfaces.

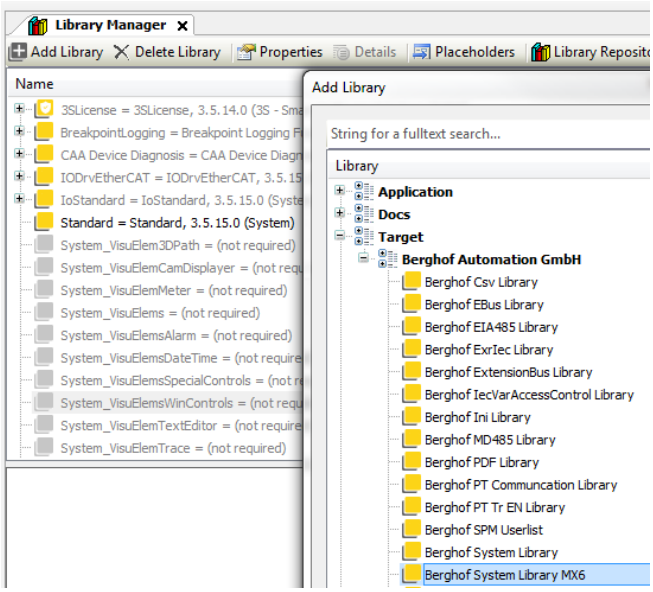
The serial interface (RS-232) still plays a major role in industry for communication between a wide variety of components. Berghof PLC devices can be supplemented or retrofitted with up to 4 of these interfaces. The supported adapters thus enable communication with additional components. These interfaces 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.

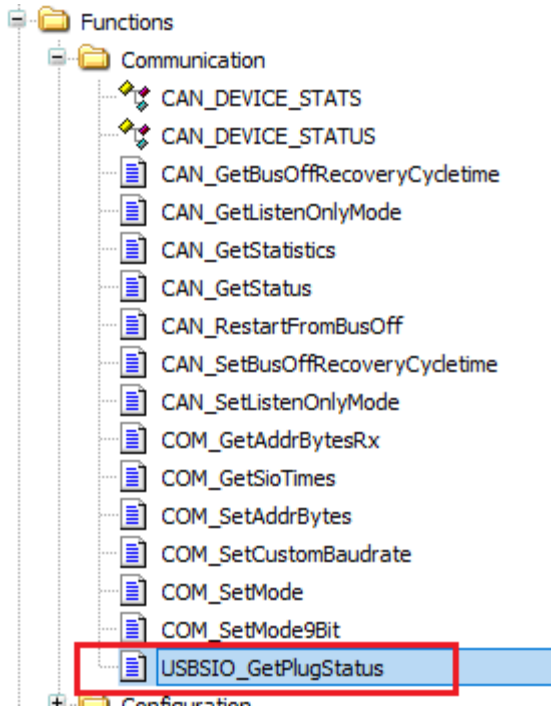
3.4 Quick Start Guide

3.4.1 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.

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