

OPERATING INSTRUCTIONS

BTC-PN/PB Extension

- Original operating instructions -



NOTE

In case of doubt, the original German version of the operating instructions applies.

HST-BTC-PN/PB

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1 Operating principles

Dear customers,

thank you for choosing a HS-Technik GmbH product.

This quality product „Made in Germany“ fulfils the highest requirements with regard to performance, quality and accuracy. When used correctly the product will undoubtedly perform very well for many years.

These operating instructions contain information on safety and for the operation of the BTC-PN/PB. In addition it contains information on the dimensions and technical data. We would be happy to assist you with additional information or to answer your questions. Our technical support and our technicians would be happy to assist you.

1.1 Scope of delivery

- BTC-PN/PB extension
- Communication cable with M8 Connectors
- Cable for power supply
- Operating instructions

1.2 General information

Read the device operating manual before initial operation. **Please pay particular attention to Chapter 2 „General Safety Notes“.**

This manual should make it easier for the operator to get used to the device and of its intended application possibilities. The operating instructions include important information related to the safe and proper operation of the device. Compliance with these instructions helps you to:

- Avoid dangers
- Avoid repair costs and downtimes
- Increase the reliability and the lifespan of the product.

This manual must be read and applied by every person who is assigned to conduct work using this device.

In addition to this operating instructions the applicable regulations on accident prevention and environmental protection should be observed.









NOTE

After reading, keep the operating instructions in a place accessible to every operator. If you have any further questions, please feel free to contact us.




1.3 Signs and symbols used

The following signs and symbols will be used in this manual, or on the product:

Symbol	Explanation
	Read this operating manual
	Do not dispose of with household waste
	EU conformity marking
	Registered trademark
	Use only indoors
	Universal Recycling Symbol

1.4 Structure of the warnings

The warnings are structured as follows:

	DANGER Indicates an immediate dangerous situation that can lead to serious or even deadly injuries and/or that could seriously damage or even destroy the device.
	WARNING Indicates a potentially dangerous situation that can lead to serious injuries and/or damage to the device.
	NOTE Important and useful information on using this device.

1.5 Technical terms and abbreviations used

Abbreviation	Meaning
°C	Degrees Celsius, temperature
AC	Alternate current
Hz	Hertz, Frequency
mNN	Meters above sea level, height
SN	Serial number
V	Volts, electrical voltage
W	Watts, electrical power

1.6 Intended use

This device was designed to connect the BTC-Tool Controller to a higher-level system via Profinet/Profibus.



WARNING

Intended use also includes

- following all indications of the operating instructions and
- observance of inspection and maintenance works.

Any other use or use beyond that is considered improper use. HS-Technik GmbH is not liable for any damage resulting from this.

1.7 Improper use



DANGER

The use of this device for other purposes is not permitted. Improper use or incorrect accessories can lead to dangers with unforeseeable consequences.

We accept no liability for damage and malfunctions resulting from non-observance of these operating instructions and improper use.

1.8 Duties of the operator

The operator committed to only allow people who are familiar with the basic regulations on work safety and accident prevention and who have been trained on how to use the device at the workplace and to work with this device.

The safety awareness of the personnel while working will be reviewed at regular intervals.

There is also a need to take safety measures for operator protection based on an estimate of the vibration exposure during actual conditions of use.

1.9 Duties of personnel

Prior to its use all people who work with this device are obligated to inform themselves of the applicable workplace safety and accident prevention regulations for this device and to observe them.

1.10 Training of personnel

Only trained and instructed personnel should work with this device. The responsibilities of the personnel must be clearly defined. Trainees may only work with this device under the supervision of an experienced person.

1.11 Guarantee and liability

Guarantee and liability claims for personal injury and property damage are excluded, if caused by one or more of the following:

- improper use
- failure to observe these operating instructions
- improper installation, commissioning, operation and maintenance of the device
- Operating the device with defective safety devices or improperly installed, or non-functioning safety and protective devices
- Failure to observe the information in the operating instructions regarding transport, storage, assembly, commissioning, operation and maintenance of the device
- unauthorised structural modifications to the device
- improperly performed repairs
- catastrophes due to external influences and acts of God

1.12 Copyright

These operating instructions are intended solely for the operator and its personnel.

They contain guidelines and information which may not be fully, or partially

- reproduced
- distributed or
- otherwise shared.

The copyright of these operating instructions is retained by HS-Technik GmbH.

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Internet: www.hs-technik.com

2 General safety information for power tools



DANGER

Read all the safety information, instructions, illustrations and technical data which is provided with this device. Failure to follow the instructions below may result in electric shock, fire and/or serious injury.



WARNING

This device was manufactured in accordance with current state-of-the-art technology and recognised technological safety guidelines. However, its use may jeopardise the health and life of the user or third parties, or risk damage to other property.



WARNING

The workplace must only be used in accordance with its intended use and in technically perfect condition.



NOTE

Keep all safety information and instructions for the future.



NOTE

Only have your device repaired by qualified professional staff and only with original replacement parts which are available at HS-Technik GmbH. This ensures that the safety of the device is maintained.

3 Important information about this device

3.1 Structural modifications

No changes, additions or conversions to the device may be made without the approval of the manufacturer.

All conversion measures require written permission and confirmation by **HS-Technik GmbH**.



WARNING

In the event of the replacement of wear and tear parts only original replacement parts may be used.

3.2 Cleaning the device and disposal

Substances and materials used must be handled and disposed of properly, particularly when cleaning with solvents.



4 Start-up and use

DANGER

Risk of injury from damaged devices

Damaged devices can lead to injuries or damages.

- All damaged parts must be repaired before use.



Risk of injury from falling devices

Falling devices can lead to injuries or damages.

- Avoid dropping the device.

Risk of injury due to improper use

Improper use can lead to injuries or damage.

- Use the device only for the intended purposes.



NOTE

Maintain your device with care. Follow the operating instructions during maintenance and cleaning.



NOTE

Do not drop the device, and do not let any other objects fall onto the device. Protect it from impacts.

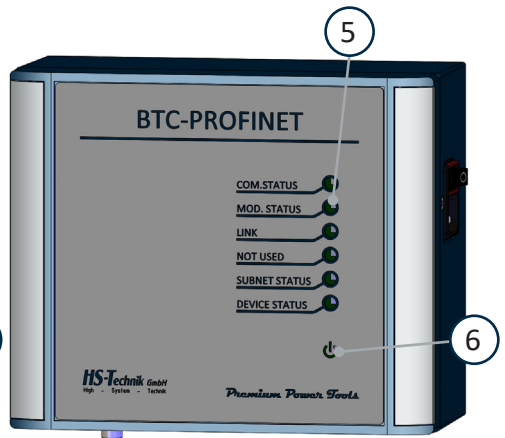
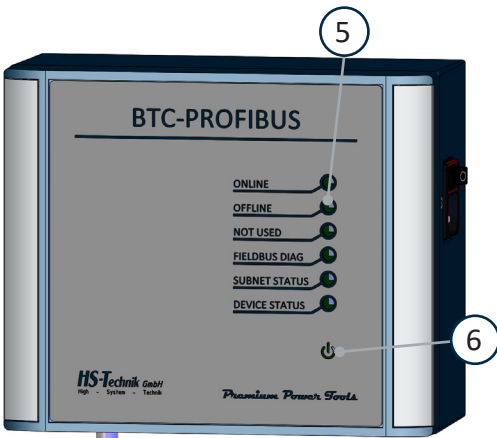
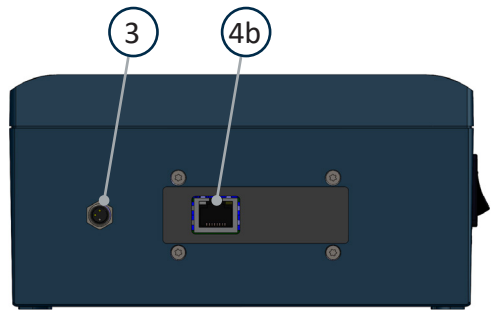
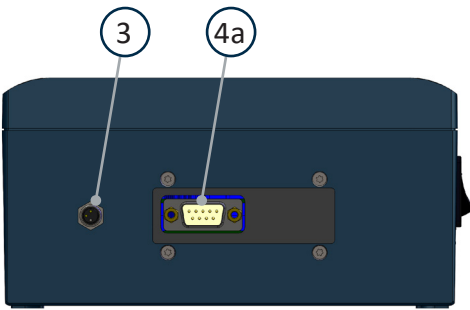
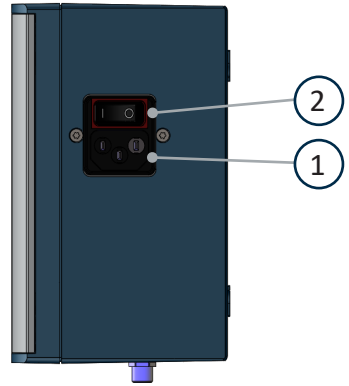


NOTE

Ensure that the device does not come into contact with splashing water or oil.

4.1 Device structure

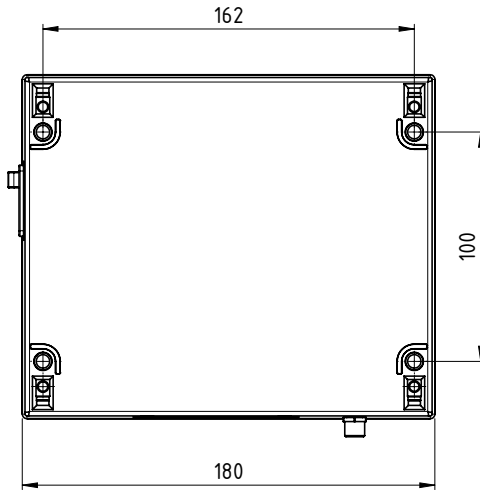
1. Power supply
2. Main switch
3. Subnet connection
4. a) ProfiBus connection
b) ProfiNet connection
5. LED state displays
6. Power supply display



4.2 Start-up of the BTC-PN/PB

4.2.1 Assembly of the BTC-PN/PB

The BTC-PN/PB is intended for wall mounting. This requires 4xM5 mounting screws.



NOTE

Please install the controller so that the connection socket is easily accessible in order to ensure a quick and safe disconnection from the network in an emergency.

4.2.2 Connection to the corporate network

A detailed software description is described in the separate document „Docu BTC Profinet Profibus“. You can request this at the following email address: support@hs-technik.com

4.3 Display notification

Profibus		
LED	State	Status
ONLINE	off	not online
	green blinking	online
OFFLINE	off	not online
	red light	offline
NOT USED	-	-
FIELD BUS DIAG	off	no diagnosis available
	red blinking 1Hz	configuration error
	red blinking 2Hz	user parameter error
	red blinking 4Hz	Initialization error
SUBNET STATUS¹	off	off
	green blinking	Running correctly, but one or more transaction errors occurred
	green light	RUN
	red light	Transaction error / timeout or subnet stopped
DEVICE STATUS	off	off
	switch red/green	Incorrect or missing configuration
	green light	initialization
	green blinking	RUN
	red light	Bootloader Modus ²
	red blinking	If the Device Status LED flashes and the sequence starts with the red LED flashing once or several times, please note the sequence pattern and contact support.

¹ This LED lights up green when all transactions have been active at least once. This includes all transactions that use State Change or State Change on Trigger. When a transaction times out, this LED will glow red.

² The gateway is in bootloader mode and the firmware needs to be restored in order for it to function properly. In this case, please contact our service: repaircenter@hs-technik.com

Profinet		
LED	State	Status
COM.STATUS	off	Offline - no connection with the IO-controller
	green light	Online RUN - connection with IO-controller established (IO-controller in RUN-Mode)
	green blinking	Online STOP - connection with IO-controller established (IO-controller in STOP-Mode)
MOD:STATUS	off	off or not initialized
	green light	Initialized, no error
	green 1x blinking	Diagnostic data available
	green 2x blinking	Flashing, used by engineering tools for identification
	red 1x blinking	Configuration error (too many modules / submodules or I/O size/configuration different)
	red 3x blinking	No station name entered in the IP address
	red 4x blinking	Internal error
LINK	off	No connection or switched off
	green light	connected
	green blinking	Receipt/transmission of data
NOT USED	-	-
SUBNET STATUS¹	off	off
	green blinking	Running correctly, but one or more transaction errors occurred
	green light	RUN
	red light	Transaction error / timeout or subnet stopped
DEVICE STATUS	off	off
	switch red/green	Incorrect or missing configuration
	green light	initialization
	green blinking	RUN
	red light	Bootloader Modus ²
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4.4 Maintenance and servicing

Apart from the regular cleaning and the visual inspection for damages the device is nearly maintenance-free.

4.5 Cleaning



NOTE

Observe the following information for cleaning your device. Incorrect cleaning supplies or improper procedures when cleaning can lead to damage to the device.

Do not use any degreasing or corrosive cleaning supplies and no water. Do not spray any cleaning supplies, solvents or easily flammable materials into the openings of the housing!



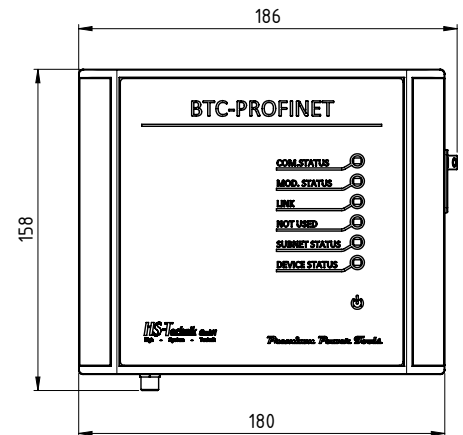
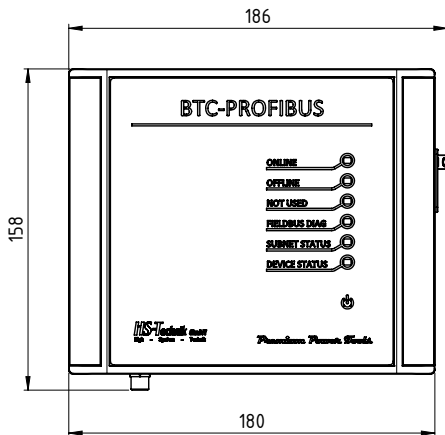
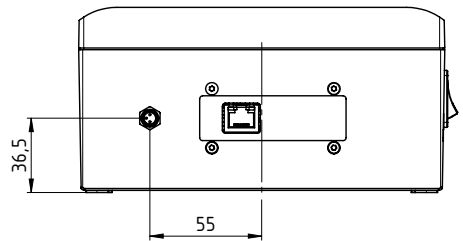
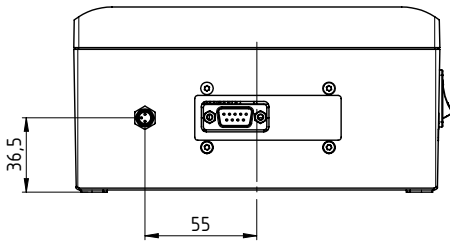
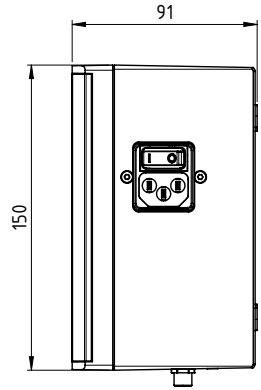
5 Storage

Observe the following information when storing the BTC-PN/PB:

- Store the device in a dry environment protected against splashing water.
- Store the device in a well ventilated space and protected against exposure to dust.
- Ensure that the storage environment is free of aggressive chemicals and vapours.

6 Technical data

Description	BTC-PN/PB
Operating voltage	110 ... 240 VAC
Grid frequency	50 ... 60 Hz
Power consumption	max. 15 W
Connector type	Typ F
Operating altitude	< 2000 mNN
Operating temperature	10 - 40 °C
Storage temperature	0 - 50 °C
Dimensions w/o antenna (L × W × H)	180 × 150 × 91 mm
Weight	approx. 1.6 kg



Specifications in mm
Not shown to scale

7 Troubleshooting and Fault repair

The BTC-PN/PB by HS-Technik is a very long-lasting tool.

If, however, a device does not work properly you can find, and eliminate, the most frequent causes for errors in the table below.

Error	Possible cause	Remedy
No function, no light indications turned on	Missing power supply	Check the cable and the main switch
SPS has no connection to the BTC-PN/PB	1. Cable for the subnetwork defective or not plugged in. 2. Connection cable defective or not plugged in.	Check the cable

If the error still persists or is not listed, please contact HS-Technik GmbH.

Repairs:

Telephone: +49 (0)7628 / 91 11-0

E-mail: repaircenter@hs-technik.com

Programming:

Telephone: +49 (0)7628 / 91 11-0

E-mail: support@hs-technik.com

Please note the following information:

- Serial number of the device
- What error has occurred?
- Display
- When did the error first appear?
- What have you done to fix the error?

We reserve the right to make errors, technical changes to our products and changes to the delivery program in the course of further development.

CE Declaration of conformity

We, the manufacturer, hereby declare that the named device complies with the essential protection requirements of the listed EU directives regarding design and construction type.

The prerequisite for this is the intended use of the device as well as compliance with the installation and commissioning instructions.

If the product or its accessories are modified without our permission, this declaration becomes invalid.

Device description: BTC-Profinet/Profibus extension

Type designation: HST-BTC-PN/PB

Manufacturer: HS-Technik GmbH
Im Martelacker 12
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Directives: 2014/30/EU
2014/35/EU

Applied standards: EN 62368-1:2014
EN 61000-6-2 (2005)
EN 61000-6-4 (2007) + A1 (2011)

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August 2020



Florian Hanke
CEO

HS-Technik GmbH
High - System - Technik

Notes

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