



ibaPADU-C-8AI

Mains Independent Data Logger

Manual

Issue 1.12

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The current version is available for download on our website <http://www.iba-ag.com>.

Protection note

Windows® is a label and registered trademark of the Microsoft Corporation. Other product and company names mentioned in this manual may be labels or registered trademarks of the corresponding owners.

Certification

The device is certified according to the European standards and directives. This device corresponds to general safety and health requirements. Further international customary standards and directives have been observed.



Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Issue	Date	Revision	Chapter	Author	Version HW / FW
1.12	12-2020	Connection diagram, FCC declaration			

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1 About this manual

This manual describes the structure, use and operation of the device ibaPADU-C-8AI.

1.1 Target group

This manual addresses, in particular, qualified professionals who are familiar with handling electrical and electronic modules as well as communication and measurement technology. A person is regarded to be a professional if he/she is capable of assessing safety and recognizing possible consequences and risks on the basis of his/her specialist training, knowledge and experience and knowledge of the standard regulations.

1.2 Designations

The following designations are used in this manual:

Action	Designations
Menu command	Menu "Logic diagram"
Call of menu command	"Step 1 – Step 2 – Step 3 – Step x" Example: Select menu "Logic diagram New logic diagram"
Keys	<Key name> Example: <Alt>; <F1>
Press keys simultaneously	<Key name> + <Key name> Example: <Alt> + <Ctrl>
Buttons	<Button name> Example: <OK>; <Cancel>
File names, Paths	"File name", "Path" Example: "Test.doc"

1.3 Symbols used

If safety instructions or other notes are used in this manual, they mean:

DANGER

The non-observance of this safety information may result in an imminent risk of death or severe injury:

- By an electric shock!
- Due to the improper handling of software products which are coupled to input and output procedures with control function!

If you do not observe the safety instructions regarding the process and the system or machine to be controlled, there is a risk of death or severe injury!

WARNING

The non-observance of this safety information may result in a potential risk of death or severe injury!

CAUTION

The non-observance of this safety information may result in a potential risk of injury or material damage!



Note

A note specifies special requirements or actions to be observed.



Important note

Note if some special features must be observed, for example exceptions from the rule.



Tip

Tip or example as a helpful note or insider tip to make the work a little bit easier.



Other documentation

Reference to additional documentation or further reading.

2 Introduction

The ibaPADU-C-8AI is intended for off-line data recording of process data. With the internal lithium ion battery the device can be powered for about 19 - 24 h independent of the main power. Once the ibaPADU-C-8AI is connected to the mains power grid, the internal battery will be charged automatically, and thereby provides by-pass protection during unexpected power failure.

The device is characterized by its simple handling. It is configured via an editable text file that is saved on the device in the "config" directory.

The sampling time can be adjusted for long-term measurements (sampling rate 1 sample/min) and measurements with high sampling rates (1000 samples/s).

The measurement data recording is started and stopped by:

- keystroke (manual) or
- external signal (triggered)

To read the measurement data, the device is connected to a PC via an USB connection. The PC recognizes the devices per plug and play like a mass storage device. In addition, it is possible to retrieve the data using the network connectivity via FTP.

The ibaAnalyzer¹ software product can be used to display and analyze the measurement data.

The device is available in two versions:

- ibaPADU-C-8AI-Z1 with 4 GB memory (1000 days at 1 s / 1 day at 1 ms)
- ibaPADU-C-8AI-Z2 with 32 GB memory

Overview of the most important features:

- Network independent battery powered data logger with integrated lithium ion battery
- 8 analog inputs, 16 bit resolution
- 8 digital inputs
- Time synchronization with NTP server
- Synchronous data recording of all channels
- Creates binary files in iba format or .csv files
- Sampling rate of 1000/s samples to 1 sample/min
- External trigger
- Integrated 4 or 32 GB data storage
- USB connection
- Battery run-time about 19 - 24 h during normal operation
- Rugged metal housing, DIN rail mountable

¹ Analysis software with free license if used to analyze files in *.dat format generated by a licensed iba software.

3 Scope of delivery

The scope of delivery of an ibaPADU-C-8AI contains the following components:

- ibaPADU-C-8AI-XX
- 2-pin Wago F-connector RM 5.08 mm
- 18x2-pin Wago F-connector RM 3.5 mm
- USB cable A-B, 70 cm, rollable
- Strain relief plate
- Manual

4 Safety instructions

⚠ CAUTION**Maintaining the operational voltage range**

Operate the device only with a voltage of 9 - 30 V DC! Too high of an operational voltage will destroy the device!

**Important note**

Do not open the device!

There are no components that require maintenance within the device.

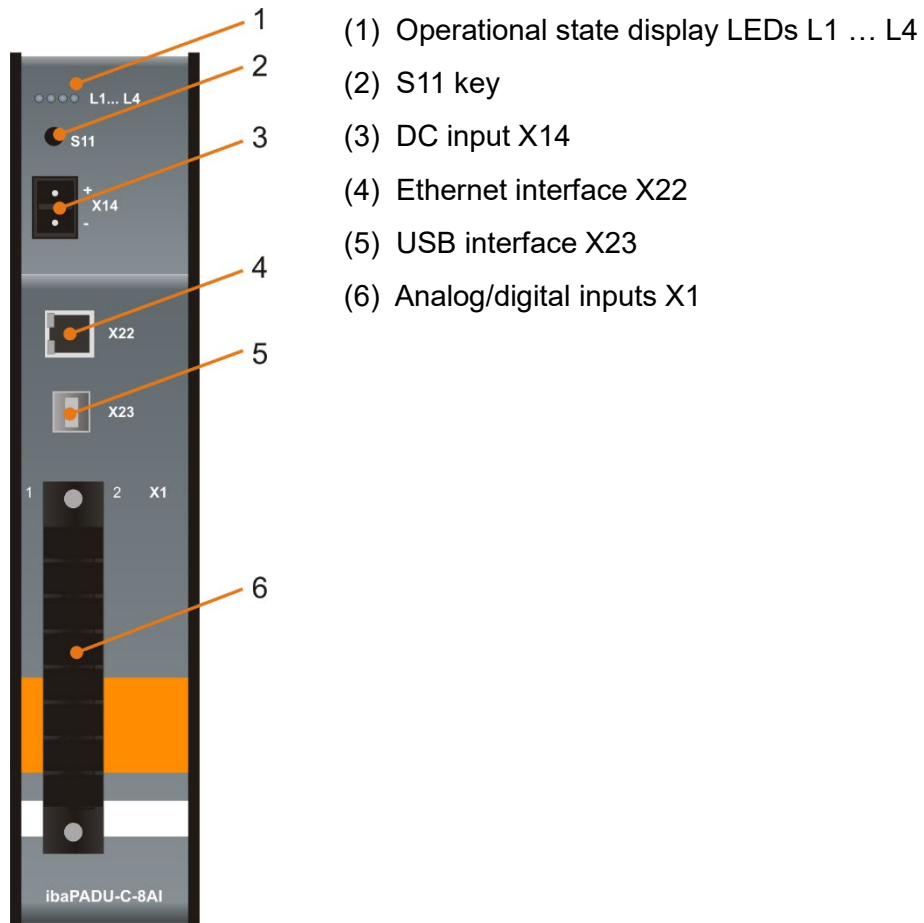
All warranty claims become void if the device is opened.

**Note****Cleaning**

To clean the device use a dry or slightly moistened cloth.

5 Description of the device

5.1 Device overview



Front view

5.2 Display elements

Colored light emitting diodes (LEDs) at the device indicate the operational state.

Operational state

State	L1 (Application)	L2 (Battery)	L3 (DC input)	L4 (USB)
off	-	Battery is not being charged or is full	Not plugged	Not plugged
Lights up green	Waiting for trigger signal	Battery is being charged	Plugged	Plugged
Flashes green	Data is being recorded	-	-	-
Lights up orange	Device is ready (access via USB is possible)	-	-	-
Flashes orange	-	-	-	-
Lights up red	-	Battery is almost empty	-	-
Flashes red	Error status	-	-	-
All LEDs light up red	Boot process			
All LEDs flash orange	Update is being loaded			
All LEDs are off	Not in operation, no power supply			

Ethernet status

State	Green (speed)	Yellow (connection/data traffic)
Off	10 Mbit/s	No connection
Lights up	100 Mbit/s	Link OK
Flashes	-	Data traffic

5.3 Control elements

The device is operated via the S11 key.

Action	Description
Press key for a long time	Switching on or switching off the device
Press key for a short time	Starting or stopping the measurement recording
Press key for a long time when the DC power supply or the USB is plugged in	Reboots the device

5.4 Interfaces

5.4.1 DC input X14

An external power supply (9-30 V, DC) can be connected via the DC input and the internal battery can thus be charged.

The device switches to battery operation if there is no external power supply available.



5.4.2 Ethernet interface X22

Connectivity to a network to retrieve the data via FTP.



Note

This is only possible if the device is not connected as a mass storage via USB and an IP address has been configured.

5.4.3 USB interface X23

A PC can be connected via this USB interface in order to read data. At the same time the internal battery is charged.



Important note

When a PC is connected to the device via USB while measuring, the measuring accuracy < 0.1% of the total measuring range could be exceeded due to ground loops. Therefore we recommend disconnecting the USB connection from the PC while measuring.

Power should be supplied via the DC input or the internal battery. The access to the data via Ethernet has no effect on the measuring accuracy.

5.4.4 Analog/digital inputs X1

Connection for

- 8 digital and analog input signals
- 2 earthing
- Trigger input

Connection plug arrangement of the analog/digital inputs

		E	1	2	E				
±10 V	A0	+	3	4	+	A4	±10 V		
		GND	5	6	GND				
	A1	+	7	8	+	A5			
		GND	9	10	GND				
	A2	+	11	12	+	A6			
		GND	13	14	GND				
	A3	+	15	16	+	A7			
		GND	17	18	GND				
			GND	19	20	GND			
			D0	21	22	D4			
			D1	23	24	D5			
			D2	25	26	D6			
			D3	27	28	D7			
			GND	29	30	GND			
			NC	31	32	+		Trigger	
			NC	33	34	IN			
		GND	35	36	NC				



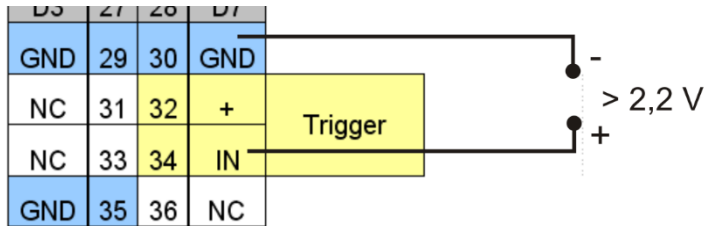
Tip

For your notes, you can find the diagram for the connection plug arrangement again in Chapter 7 „Technical Data“.

Trigger signal connection

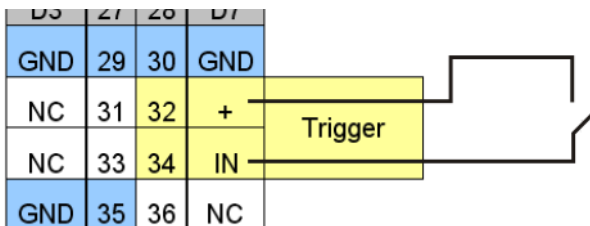
The trigger input design is identical to the digital input design. There are 2 ways to connect the trigger signal:

- Signal level against GND



Signal level	Trigger
$> 2.2 \text{ V}$	active
$0.9 \text{ V} < \text{signal level} < 2.2 \text{ V}$	undefined
$< 0.9 \text{ V}$	inactive

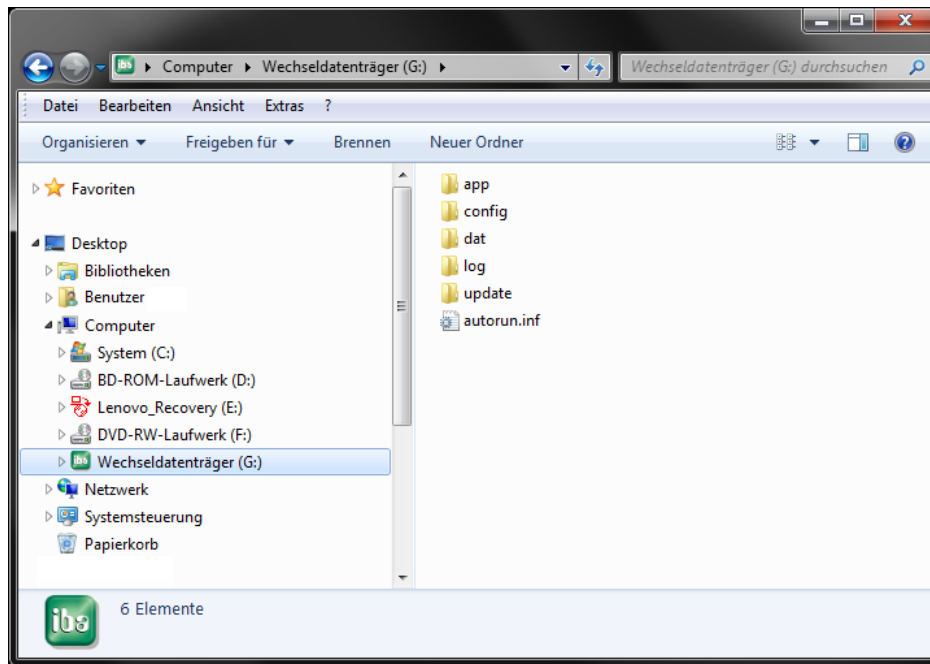
- external switch between Trigger IN and Trigger +



Switch	Trigger
Open	inactive
Close	active

5.5 Internal memory

The device has an internal SD memory card with the following directory structure:



Directory	Contents
app	ibaAnalyzer application
config	Configuration file config.ini Example of configuration file template_config.ini
dat	Directory of the measurement data
log	Directory for log files
update	Directory in which the update files are copied

6 Commissioning and configuration

The configuration is done via a text file (config.ini), which is stored in the memory of the device in the directory "config". The file can be accessed and adjustments can be made by a PC connected via the USB or the Ethernet. Subsequently the file is stored in the device memory.



Note

During the initial start-up the PC can only be connected via the USB. Only once the device IP address has been changed according to its network environment, you will have access to the device via the Ethernet.

The following parameter can be set:

- sampling rate
- trigger
- time zone (hours and minutes)
- data format (dat or csv)
- DHCP
- device IP address
- subnet mask
- gateway IP address (for time synchronization)
- signal name
- scaling
- unit name
- time until an automatic shut-down

6.1 Requirements

- PC with USB interface
- Operating system Windows XP/Vista/7, Linux, Mac OSX
- Windows operating system to analyze the measurement data in dat format using the ibaAnalyzer

6.2 Configuration

To configure the device proceed as follows:

1. For the initial start-up connect the device to the PC using the USB cable.
2. The device will boot up automatically.
3. The device appears on the PC as a USB mass storage.
4. Open the configuration file "config.ini" in the "config" directory and edit it.

```

### configuration file for PADU-C 8AI ### www.iba-ag.com #####
# use '#' at the beginning of a line to comment it out

[common]
dhcp = yes ; # values: [yes] or [no]
#ipAddress = 192.168.0.100 ; # format: [d.d.d.d] without leading zeros
#subnetMask = 255.255.255.0 ; # format: [d.d.d.d] without leading zeros
#gatewayIpAddress = 192.168.0.1 ; # format: [d.d.d.d] without leading zeros

timeServerIp = 130.133.1.10 ; # format: [d.d.d.d] without leading zeros
timeZone_h = +2 ; # values: [-24...+24]
timeZone_min = 0 ; # values: [-60...+60]
autoShutdown_min = 5 ; # values: [0...60] (0=never; 1min...60min)

[measurement]
sampleRate_ms = 1 ; # values: [1...60000] (1ms...1min)
filetype = dat ; # values: [dat] or [csv]
trigger = none ; # values: [none] or [highPulse]
autoCleanup = off ; # values: [on] or [off]

[analogInput_A0]
name = voltage[0]; # up to 63 characters
unit = v; # up to 7 characters
max = +10.0; # values: +/- dddd.dd
min = -10.0; # values: +/- dddd.dd

[analogInput_A1]
name = voltage[1]; # up to 63 characters
unit = v; # up to 7 characters
max = +10.0; # values: +/- dddd.dd
min = -10.0; # values: +/- dddd.dd

```



Note

The entries in the “config.ini” file, which can be modified, are highlighted in yellow in the figure above. Other entries must not be modified.

When the network settings are to be activated, the hash signs “#” before the entries “ipAddress”, “subnetMask” and “gatewayIpAddress”, which are marked green in the figure above, have to be removed in the “config.ini” file.

The IP address is given according to the "standard IPv4 dotted-decimal format": **d.d.d.d**. „d“ is a decimal number without leading zeros between 0 and 255.

5. Possible settings:

dhcp	This setting determines, whether the IP address of the device should be assigned by a DHCP server in the network
ipAddress:	IP address of the device This setting will be ignored, if DHCP is activated
subnetMask:	subnet mask of your network This setting will be ignored, if DHCP is activated
gatewayIpAddress:	Gateway IP address (for time synchronization) This setting will be ignored, if DHCP is activated
timeServerIp:	Enter here the IP address of a timeserver (NTP), option
timeZone_h:	GMT (Greenwich Mean Time) + x (hours), Example Kathmandu: +5
timeZone_min:	GMT (Greenwich Mean Time) + x (minutes), Example Kathmandu: +45
autoShutdown_min:	Time until an automatic shut-down in minutes, can be set from 1 to 60 min, 0 = no automatic shut-down

**Note**

The function “automatic shut-down” is a protection against battery discharging. When the device is not active it will be shut down automatically after the time set here. The device will not be shut down, when data capturing is active or when an external power supply is applied via USB or DC.

The function is switched off, when the time is set to zero.

sampleRate_ms:	sampling rate in ms
fileType:	possible configuration "dat" or "csv"
trigger:	possible configuration "none" or "highPulse"
autoCleanup:	<p>on: At least 100 MB of hard disk memory space remain free by deleting the oldest measuring files. The recording of measuring data continues.</p> <p>off: If free memory space on the internal hard disk is below 40 MB, the recording of measurement data will be automatically cancelled.</p> <p>Default setting: „off“.</p>

**Note**

Only files with the following format are deleted by the “auto cleanup” function:
paduc_2014-12-31_23.59.59.dat

Only empty directories with the following format are deleted: **2014-12-31**

name:	Names can be assigned to the 8 analog and 8 digital input signals. These names will be visualized for example in the application ibaAnalyzer. The name may have up to 63 characters. The default name for analog signals is „Voltage[0]“ to „Voltage[7]“, for the digital signals „Digital[0]“ to „Digital[7]“.
unit:	Unit of the value to be measured The maximum length of the name is 7 characters Example: W (power given in Watt)
max:	Maximum value, used for scaling ² Example: 10 V input voltage = 100 W
min:	Minimum value, used for scaling Example: -10 V input voltage = -100 W
	It is also possible to scale the signals asymmetrically: Example: 10 V input voltage = 250 A -10 V inputs voltage = -100 A

6. Save the configuration file again under "config.ini" in the "config" directory.

² The scaling factors can be entered according to scientific notation, i.e. 10^3 complies with 1 E3. If invalid values are entered (letters except E or special characters), scaling will be ignored.

7. Close the explorer and remove the device symbol from the system bar with "Securely remove hardware".
8. Briefly press the S11 key or start the device anew to accept the changed configuration file.



Note

Should the time synchronization be done via the gateway, then the device must have access to the Internet.

CAUTION

The file system can be destroyed and the risk of data loss is present when the mass storage is improperly removed.



Tip

Files in csv format are uncompressed and therefore occupy more storage space. It is therefore recommended to use files in dat format.



Tip

During a faulty configuration an error log is stored in the "log" directory, which indicates the current error in clear text.

6.2.1 Time synchronization

The time can be synchronized via an external server. The timeserver address is stored in the device (default time server is FU Berlin):

URL: time.fu-berlin.de

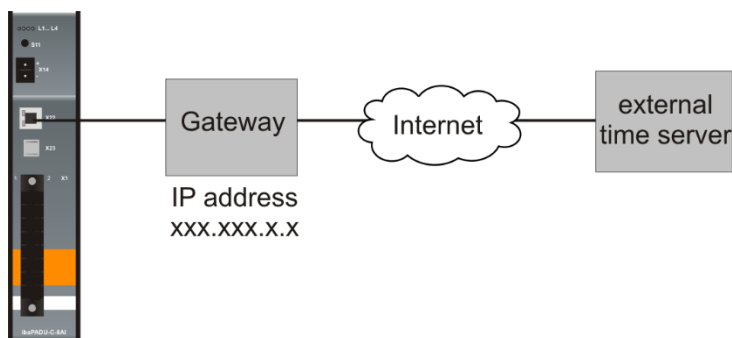
IP: 130.133.1.10

Protocol: Time Protocol

If a NTP timeserver is available in the network, it can be used for time synchronization. For this purpose, enter the IP address of the NTP timeserver in the config.ini file.

If you want to use an external timeserver via the Internet, enter the IP address of this timeserver in the config.ini file. To have access to the timeserver when it has a fixed IP address, the gateway address for the Internet access must be set in the "config.ini" file:

Example: gatewayIpAddress = 192.168.0.1



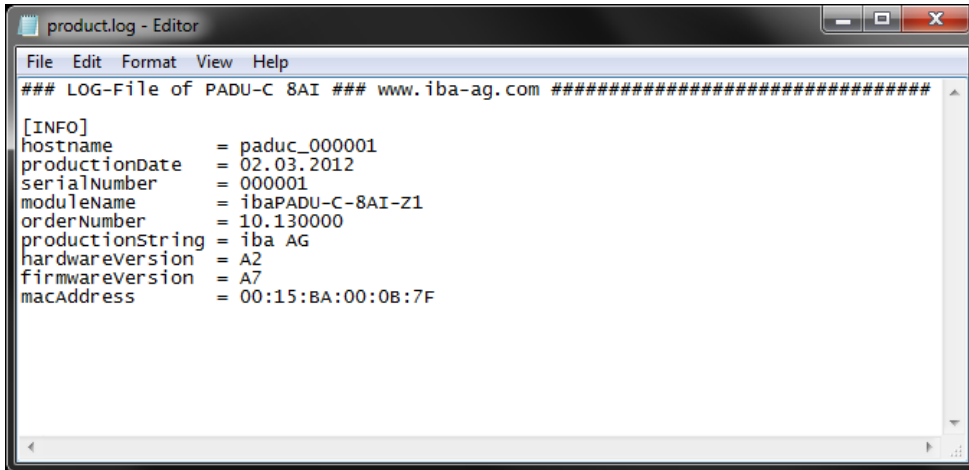
The time will be synchronized every time when the device boots up and when data capturing starts.

**Note**

If the timeserver is not available, measurement will be started without synchronization.

6.2.2 Product information

The file “product.log” is stored on the device in the “log” directory. It contains important device information, such as hostname, serial number, hardware and firmware versions, MAC address etc.



```
product.log - Editor
File Edit Format View Help
### LOG-File of PADU-C 8AI ### www.iba-ag.com #####
[INFO]
hostname      = paduc_000001
productionDate = 02.03.2012
serialNumber  = 000001
moduleName    = ibaPADU-C-8AI-Z1
orderNumber   = 10.130000
productionString = iba AG
hardwareVersion = A2
firmwareVersion = A7
macAddress    = 00:15:BA:00:0B:7F
```

6.3 Start measurement process

First connect the input signals with the analog or digital inputs. The measurement can be started in two ways:

6.3.1 Start measurement process manually

The manual measurement process is started and stopped by briefly pressing the S11 key. Proceed as follows:

1. Switch the device on by briefly pressing the S11 key. All LEDs initially light up in red, once the device is ready L1 lights up orange.
2. Start the measurement by briefly pressing the S11 key. As long as the measurement process is running, the L1 will flash in green.
3. You can stop the measurement by briefly pressing the S11 key again. L1 lights up orange.

6.3.2 Start measurement process triggered

If the measurement process should be started via a trigger signal, then it must be entered in the configuration file "config.ini":

Configuration for "trigger": [highPulse]

The measurement process only takes as long as the trigger signal is pending (digital signal, start trigger increasing flange, stop trigger decreasing flange). The trigger signal must be pending at least as long as the configured sample rate in order to start the data recording.

The trigger signal connection is described in chapter 5.4.4 "Analog/digital inputs X1".

Proceed as follows:

1. Switch the device on by pressing the S11 key for a longer period. All LEDs initially light up in red, once the device is ready L1 lights up orange.
2. Go to the "wait for trigger" state by briefly pressing the S11 key. L1 lights up green.
3. L1 flashes green when the trigger signal is pending and the measurement starts. Data is only saved while the trigger signal is pending.
4. Once the trigger signal is no longer pending, the measurement is ended and L1 lights up green.
5. To leave the "waiting for trigger" state, briefly press S11.



Note

During each measurement a new measurement file is created. During long-term recordings new measurement files are automatically created after every 100,000 samples.

Once the free memory space on the internal memory falls below 40 MB, the measurement data recording is automatically aborted. This is indicated by the LED L1 flashing red. In addition, an error message file "Error.log" is stored in the "log" directory with the following content: „[ERROR] stopped measuring --> running out of disk space“.

6.4 Reading measurement data

The measurement data file can be read via the USB connection or via the Ethernet connection using FTP. When accessing via the Ethernet, the device must not be connected via the USB as a mass storage and a fixed IP address must be configured in the configuration file "config.ini" or DHCP must be activated.

6.4.1 Reading measurement data via USB

The measurement data files are stored in the device and can be read via the USB interface. Proceed as follows:

1. Connect the device via the USB cable to the PC, the device will boot up automatically.
2. The device appears on the PC as a USB mass storage.
3. Open the symbol in explorer. Copy the measurement files into the "dat" directory on your PC.
4. Close the explorer and remove the device symbol from the system bar with "Securely remove hardware".



Note

The measurement data should be deleted after successfully transmitting to the PC in order to always have the maximum memory space available for the measurement.

CAUTION

The file system can be destroyed and the risk of data loss is present when the mass storage is improperly removed.

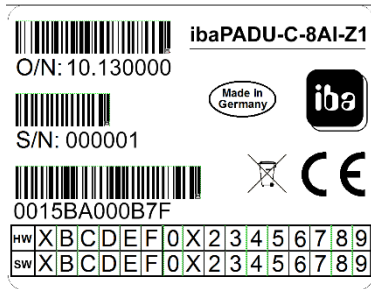
6.4.2 Reading measurement data via Ethernet

Connect the PC and the device via the Ethernet interface using a network cable. When accessing via the Ethernet, the device must not be connected via the USB as a mass storage and a fixed IP address must be configured in the configuration file "config.ini" or DHCP must be activated. You can access the device via a FTP application or with your web browser.

1. Enter the device's IP address or the hostname
 - as server address into the FTP application
 - or in the address bar in the web browser
2. Copy the data into the "dat" directory on your PC.

**Note**

The hostname consists of the product name and the 6-digit serial number of the device. You find the serial number on the type label on the device.



Example: serial number 000001

Hostname: paduc_000001

The hostname can also be found in the product.log file in the log directory.

6.5 Firmware update



Important Note

If you are performing a Firmware update, connect the device to an external power supply! The update could fail if the battery is too weak.

Do not switch off the device during the update process.

6.5.1 Update via USB

You can perform a Firmware update by saving the update file onto the internal memory of the device and restart. Proceed as follows:

1. Connect the device via the USB cable to the PC. The device will boot up automatically.
2. The device appears on the PC as a USB mass storage.
3. Open the symbol in explorer and copy the update file to the device memory in the "update" directory.
4. Close the explorer and remove the device symbol from the system bar.
5. Restart the device by pressing the S11 key longer than 3 s. All LEDs then extinguish and after a brief period the device restarts.
6. The update is being performed and all LEDs flash orange. The process can last several minutes.
7. The device will restart once the update installation is ended.

6.5.2 Update via FTP

1. Enter the device IP address or the hostname as server address.
➤ Notes, regarding the hostname nomenclature, see chap. 6.4.2
2. Copy the update data into the "update" directory.
3. Restart the device by pressing the S11 key longer than 3 s. All LEDs then extinguish and after a brief period the device restarts.
4. The update is being performed and all LEDs flash orange. The process can last several minutes.
5. The device will restart once the update installation is ended.

6.6 Charging the battery

The device contains a lithium ion battery. The battery can be charged via USB or via an external power supply at the DC input (9-30 V).

L2 will light up green during the charging process. Once the battery is completely charged the L2 will extinguish.

The battery charges about 3 times faster via the DC input than via the USB interface. The device can be powered for about 19 - 24 hours with a fully charged battery.

The battery is not included in the warranty period given by iba for iba products.



Important note


The battery must be charged at least every six months to maintain the best possible lifetime.



Important Note

Used batteries must not be disposed of as residual waste.

For proper disposal or exchange send the complete device via post, using sufficient stamps, back to iba.

The batteries are manufactured with components made of valuable materials which can be recycled and reused. When the  symbol is attached to a product, it means the product is covered by the European Directive 2002/96/EC. In connection with the sale of batteries or rechargeable batteries, or devices that are operated with batteries or rechargeable batteries, we are committed as a dealer under the battery law to inform about relevant rules and obligations:

Old batteries must not be disposed with normal household waste. Consumers are legally obliged to bring batteries to a suitable collection point to the trade or the community. The submission is free of charge.

The correct disposal of your old product will help prevent potential negative consequences for the environment and human health.

7 Technical Data

7.1 Main data

Manufacturer	iba AG, Germany	
Name	ibaPADU-C-8AI-Z1 (4 GB memory)	ibaPADU-C-8AI-Z2 (32 GB memory)
Order number	10.130000	10.130001
Description	Mains independent data logger with 8 analog and 8 digital inputs	
Analog inputs		
Number	8	
Version	Single-ended, R/C-Filter 8 kHz, no galvanic isolation	
Solution	16-bit	
Input signal range	-10 V to +10 V	
Input impedance	680 k Ω (580 k Ω with device switched off)	
Sampling rate	Configurable max. 1 kHz	
Accuracy	< 0.1% of the total measuring range	
Digital inputs		
Number	8	
Version	Single-ended, no galvanic isolation	
Input signal range	0 V to +30 V	
Signal level log. 0	< 0.9 V	
Signal level log. 1	> 2.2 V	
Sampling rate	Linked with analog sampling	
Communication interface		
USB	USB 2.0 Full Speed (12 Mbit/s)	
Ethernet	10/100Base-T (RJ45)	
Supply, memory, operating and display elements		
Trigger input	External closer or level (signal level same as digital inputs)	
Power supply	DC input 9 V to 30 V, USB, integrated battery	
Integrated lithium ion battery	Capacity 6.8 Ah at 3.7 V, battery runtime about 19 - 24 h during normal operation	
Input power	Max. 6 W depending on the parameterization and the operational state	
Data memory	4 GByte	32 GByte
Displays	4 LEDs for the operational state of the device	

Connection technology signal inputs	36-pin multi-pin connector, plug with clamping technique, enclosed Cable inflexible/flexible (0.2 mm to 1.5 mm) Flexible with cable end sleeve without plastic sleeve (0.25 mm to 1.5 mm) Flexible with cable end sleeve with plastic sleeve (0.25 mm to 0.75 mm)
Operational and ambient conditions	
Operational temperature range	32 °F to 122 °F (0 °C to +50 °C)
Storage temperature range	-4 °F to 140 °F (-20 °C to +60 °C)
Transport temperature range	-4 °F to 140 °F (-20 °C to +60 °C)
Humidity class acc. to DIN 40040	F, no condensation
Protection class acc. to DIN EN 60529	IP20
Permits/standards	CE, EMC (DIN IEC 61326-1: 2006-10) FCC part 15 class A
Dimensions and weight	
Dimensions (Width x Height x Depth)	1.61 in x 7.40 in x 5.28 in (41 mm x 188 mm x 134 mm)
Weight (incl. packaging and manual)	Approx. 2.43 lbs (1.1 kg)

**Supplier's Declaration of Conformity
47 CFR § 2.1077 Compliance Information**

Unique Identifier: 10.130000 ibaPADU-C-8AI-Z1

Responsible Party - U.S. Contact Information

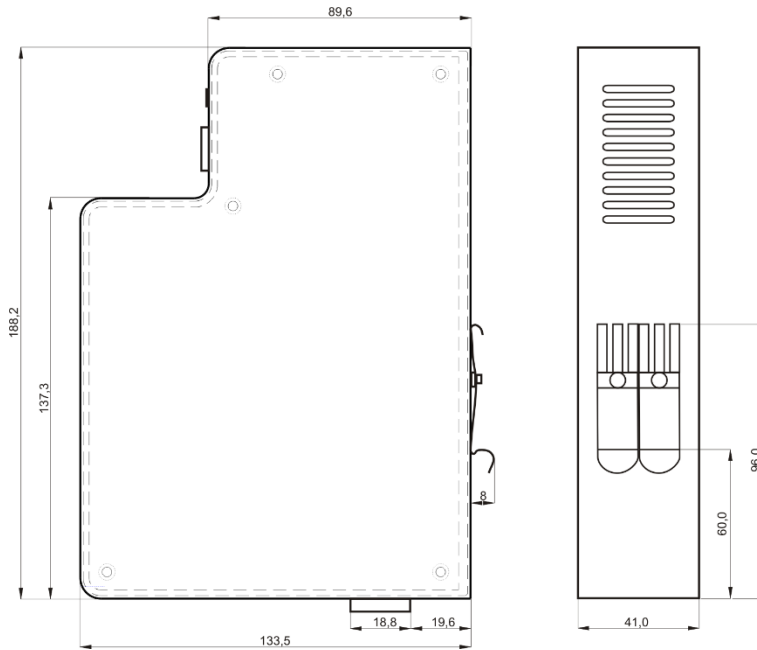
iba America, LLC
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30004

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FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

7.2 Dimensional drawing



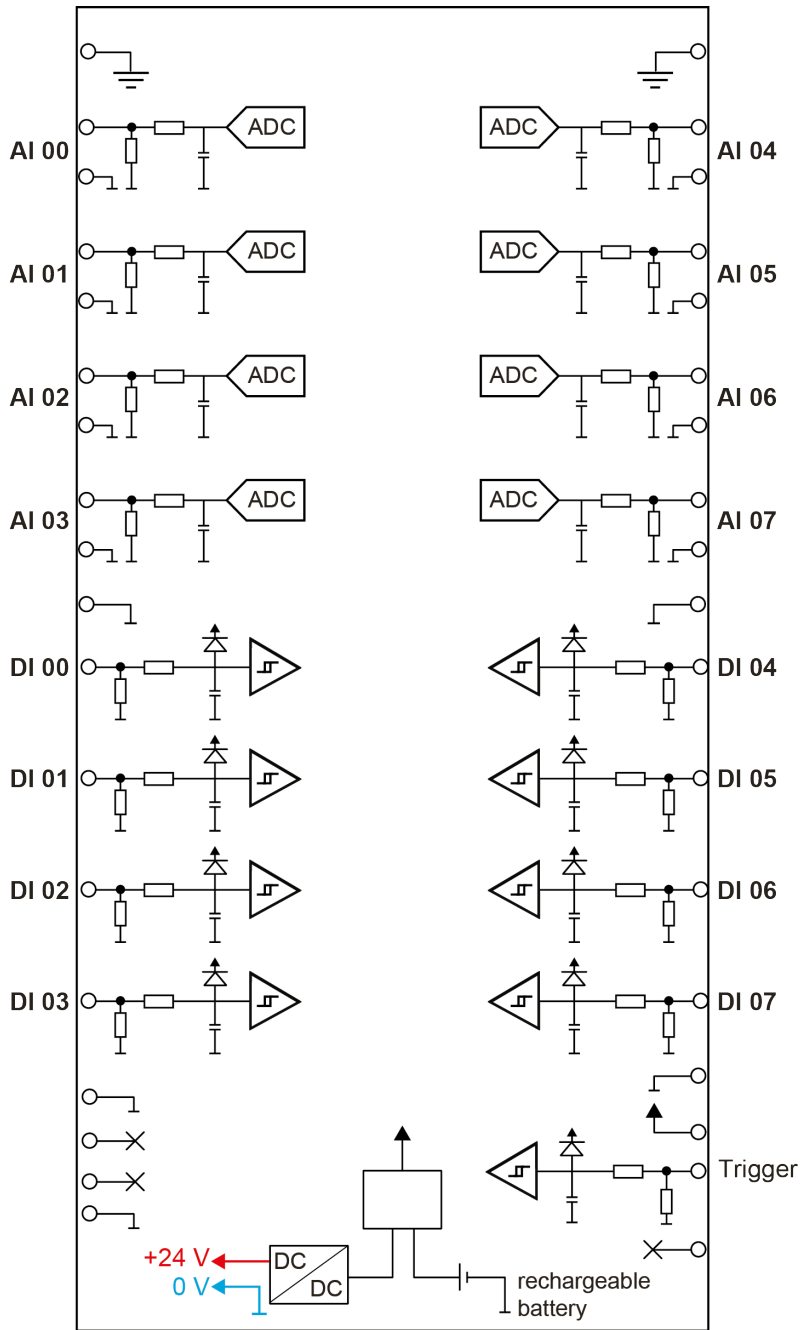
(Dimensions in mm)

7.3 Connection plug arrangement of the analog/digital inputs

7.3.1 Graphic for notes

		PE	1	2	PE	
	A0	+	3	4	+	A4
		GND	5	6	GND	
	A1	+	7	8	+	A5
		GND	9	10	GND	
	A2	+	11	12	+	A6
		GND	13	14	GND	
	A3	+	15	16	+	A7
		GND	17	18	GND	
		GND	19	20	GND	
		D0	21	22	D4	
		D1	23	24	D5	
		D2	25	26	D6	
		D3	27	28	D7	
		GND	29	30	GND	
		NC	31	32	+	Trigger
		NC	33	34	IN	
		GND	35	36	NC	

7.3.2 Connection diagram



8 Support and contact

Support

Phone: +49 911 97282-14

Fax: +49 911 97282-33

E-Mail: support@iba-ag.com



Note

If you require support, specify the serial number (iba-S/N) of the product.

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