FP° Secure IoT

FP S-Compact BB / LAN

Installation and Safety

This guide applies to the following products:
– FP S-Compact C851 LAN (50.0058.1320.00)
– FP S-Compact C851 BB (50.0058.1330.00).

Contents

1 About this guide

Please read this guide carefully before you plan to use an FP S-Compact BB or an FP S-Compact LAN, install the device and put it into operation. Keep this guide easily accessible near the device.

Target group   This guide is intended exclusively for qualified electricians who are familiar with the safety standards of electrical and automation engineering.

Project planning, installation, start-up, maintenance and testing of the FP S-Compact devices may only be carried out by a recognised qualified electrician.

Contents   This guide provides basic instructions for the proper and safe use of the FP S-Compact BB and the FP S-Compact LAN and describes their initial start-up.

Other Documents   In addition to this guide, the following documents, among others, are available for the FP S-Compact devices:
– Datasheet
– Declaration of conformity
(Download at https://www.inovolabs.com/infobereich/downloads/handbucher-datenblatter).

Signal words and symbols   This guide contains warnings at the appropriate points, which indicate possible dangerous situations or actions and give instructions on how to avoid the danger. Follow these instructions.

The following signal words, colours and symbols identify the warning messages and additional information in the set of documentation for the FP S-Compact devices:

⚠ DANGER   Warning of immediate danger to life or serious injury!

⚠ WARNING   Warning of potential danger to life or serious injuries!

⚠ CAUTION   Warning of potential minor injuries!

ATTENTION   Notice of potential damage to property: Damage to the device, the software or other material assets.

A useful tip, recommendation or additional information for handling the device.

2 For your safety

Please read these safety instructions carefully before planning to use an FP S-Compact BB or an FP S-Compact LAN, installing and starting up a device or performing maintenance work and tests.

Make sure that you have understood all instructions.

2.1 Intended use

The IIoT Gateways FP S-Compact BB and FP S-Compact LAN are devices for collecting, processing and transmitting energy data, e.g. in boiler rooms.

▶ Use the FP S-Compact BB / FP S-Compact LAN only for applications that comply with the device specification. Observe the specified characteristics.

▶ When project planning, installing, starting up, maintaining and testing the device, observe the safety and accident prevention regulations applicable for the specific application and location.

▶ Operate the device only as described in the product documentation for the FP S-Compact BB / LAN.

▶ Do not carry out any unauthorised interventions in the hardware and software.

2.2 Basic instructions for safe use

The device complies with the applicable safety provisions for operation in a controlled environment. Please observe the following tips for your own safety.

Danger! Do not use in a potentially explosive environment

Sparks can cause explosion and fire.

▶ Do not use the device in a potentially explosive environment or in the vicinity of flammable gases, vapours, dust or conductive dusts.

Avoiding danger from electrical voltage

▶ Only use copper conductors for the power supply that meet the specifications in the Technical data.

▶ Operate the device only with a properly installed electrical system that has an easily accessible, all-pole (L,N) disconnect device equipped with a minimum contact spacing of 3 mm (0.12").

▶ Make sure that the device is connected to the mains-side protective conductor.

▶ Disconnect the device from the power supply immediately in the event of danger.

Avoid potential hazards due to unsuitable environmental conditions

▶ Only use the device in enclosed and clean spaces.

▶ Avoid harmful environmental conditions such as heat, sunlight, strong shocks and vibrations.

2.3 Safety instructions for installation work

Avoiding danger from electrical voltage

Live components and unexpected short circuits can lead to danger to life through electric shock.

▶ Before starting assembly and installation tasks, disconnect the cables from the power supply and secure them against being switched on again.

▶ Check that the cables to which the device is connected are voltage-free.

▶ Only use copper conductors for the power supply that meet the specifications in the Technical data.

▶ Ensure that the supply voltage and earthing is connected correctly (L, N, earth, compliance with the characteristic values, sufficient conductor cross-section).

▶ Any interventions in the hardware and software, unless they are described in these instructions, may only be carried out by qualified personnel provided by the manufacturer. Hazards from electrical voltage and incalculable behaviour may occur.

▶ Do not use the device if it is damaged.

2.4 Safety instructions for working on an already installed FP S-Compact

Hazardous areas with live parts

When working on an already installed FP S-Compact, there are areas where there is a hazard of electric voltage. Inside the device there are live parts behind the protective cover for the mains supply.

– Danger to life from electric shock when touching live parts.

– Risk of injury from startled reactions when touching live parts.

– Danger of injury by triggering an electrical arc.

Avoiding danger from electrical voltage

Carry out the following safety measures to avoid hazards due to electrical voltage.

Before removing the protective cover for the power supply inside the FP S-Compact:
▶ Disconnect the device from the power supply.
▶ Secure it against restarting.
▶ Keep unauthorised persons away from the device.

Before starting work on the FP S-Compact:
▶ Make sure that the device is voltage-free.
▶ Observe the safety and accident prevention regulations applicable for the specific application and location.

Before putting the FP S-Compact back into operation:
▶ Make sure that the protective cover for the power supply is properly attached.
▶ Check that all unused cable glands have been sealed with a suitable sealing plug. This is the only way to maintain the IP65 protection rating.
▶ Fasten the housing cover to the housing with the four fastening screws. Tighten the screws with a torque of 0.7 Nm to 1 Nm (0.52 ft lb to 0.73 ft lb).
▶ Make sure that the device is closed correctly.

2.5   Accessories and consumables

▶ Use the supplied cables or cables that have been approved by FP InovoLabs. Make sure that the cables are not damaged.
▶ We recommend to use only approved FP equipment and FP original parts.
The manufacturer FP has established reliability, safety and applicability.
The manufacturer cannot assess the reliability, safety and applicability for products not approved by FP, and therefore not vouch for such products.
▶ Observe the manufacturer's specifications for the hardware modules used.
▶ If you pass the FP S-Compact on to someone else, make sure that this guide is also passed on along with the device.

2.6 How to avoid damage to property

Observe the following instructions to avoid damage to the device, the peripherals and potential consequential damage:

▶ Only use the device in enclosed and clean spaces.

▶ Avoid harmful environmental conditions such as heat, sunlight, strong shocks and vibrations.

▶ Please note the special instructions for handling the SIM card.

▶ Protect the interfaces from electrical damage by avoiding mixing up connections.

▶ Use a torque screwdriver to avoid mechanical damage to the connections.

▶ Ensure that the supply voltage and earthing is connected correctly (L, N, earth, compliance with the characteristic values, sufficient conductor cross-section).

▶ Only carry out a software update if no peripherals are connected.

▶ Ensure the correct termination of the end devices. Incorrect or missing termination can lead to communication problems.

2.7 Explanation of the symbols on the serial number plate and in the device

General safety sign.

Read the related documents for more information. Observe the notes on safe handling in accordance with these instructions.

Warning of electrical voltage.

Disconnect the device from the power supply before opening. Only electricians are permitted to open the device.

The terminal point for connecting the power supply is marked with this symbol.

This symbol is embossed on the protective cover for the mains supply.

By affixing the CE marking, the manufacturer declares that the product complies with the requirements of all applicable EU directives requiring such marking.

The manufacturer's EU declarations of conformity for the FP S-Compact devices are available at the following internet address: https://www.inovolabs.com/infobereich/downloads/handbucher-datenblatter.

Labelling in accordance with the WEEE Directive for electrical and electronic equipment. The product and accessories (e.g. cables) marked in this way must not be disposed of in the household waste.

Devices with this symbol may only be operated in enclosed spaces.

The symbol indicates the terminal point for connecting the earth (protective earth conductor).

3 FP S-Compact BB / LAN (Overview)

3.1 Equipment

Legend ● Standard O Option N× Number – Not available	**FP S-Compact LAN** 50.0058.1320.00	**FP S-Compact BB** 50.0058.1330.00
2-piece plastic housing, housing colours: RAL 9005 (bottom part) and RAL D2 000 90 00 (cover)	●	●
Built-in power supply unit, 100 - 240 V AC	●	●
CPU 492 MHz, ARM Cortex-A5, ATMEL SAMA5D27	●	●
128 MB RAM	●	●
128 MB FLASH Memory	●	●
USB 2.0	1×	1×
RS232	1×	1×
RS485	1×	1×
Insertion slot for I/O expansion module (occupied with S1-MB10)	1×	1×
M-Bus master for up to 10 M-Bus loads via pre-installed expansion module S1-MB10	●	●
Ethernet / LAN connection	●	●
Antenna connection (SMA socket, female)	–	●
LTE Modem	–	●
WiFi stick (90.0072.8100.00)	O	O

3.2 LEDs and their meaning

*Front view
(extract)*
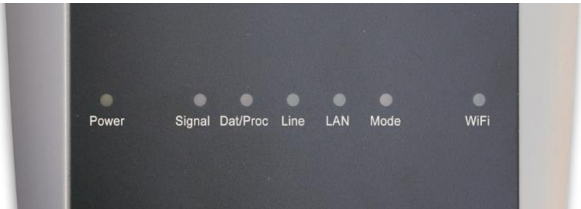
The LEDs indicate the operating states of the FP S-Compact.
The following overview lists and explains them.

LED	Status	Meaning
Power	◯ *(off)*	No power supply
	🟡	Operating voltage present
Signal	◯ / 🟢 / 🔴 ((🟢)) / ((🔴))	Application-specific, user-programmable (both colours can also be active at the same time)
Dat/Proc	◯ *(off)*	No process, no outbound messages
	🟢	Display of outbound messages
	🔴	Processing
Line		Mobile communications status display *(only FP S-Compact BB)*
	◯ *(off)*	No coverage, low signal quality
	((🟢)) *(flashes rapidly)*	Establishing connection
	🟢	Connection established
	((🟢)) *(flashes slowly 1 x per second)*	Device is logged into the mobile network
Dat/Proc + Line	((🔴)) + ((🟢)) *(flashes rapidly)*	Error accessing the mobile communications module (SIM card missing, wrong PIN, mobile communications module defective).

LED	Status		Meaning
LAN			LAN interface status display
	◯	*(off)*	No connection
	🟡		Ethernet active
	((🟡))		IP address conflict or no IP address received via DHCP
Mode	🔴		Remote Service (Serial IP) is active
WiFi	◯	*(off)*	WiFi not active / no USB memory stick loaded
	((🟢))	*(flashes briefly)*	WiFi mode active
	🟢		USB memory stick detected and loaded
In the interior of the device:			
Ethernet port RJ45	☐	*(yellow off)*	No connection
	🟨		Connection active (10 / 100 Mbit/s)
	((🟨))	*(flashes)*	Data is being transferred
	Info: The green LED is not used.		

3.3 Connection diagram

Protective cover
(shown here transparently)
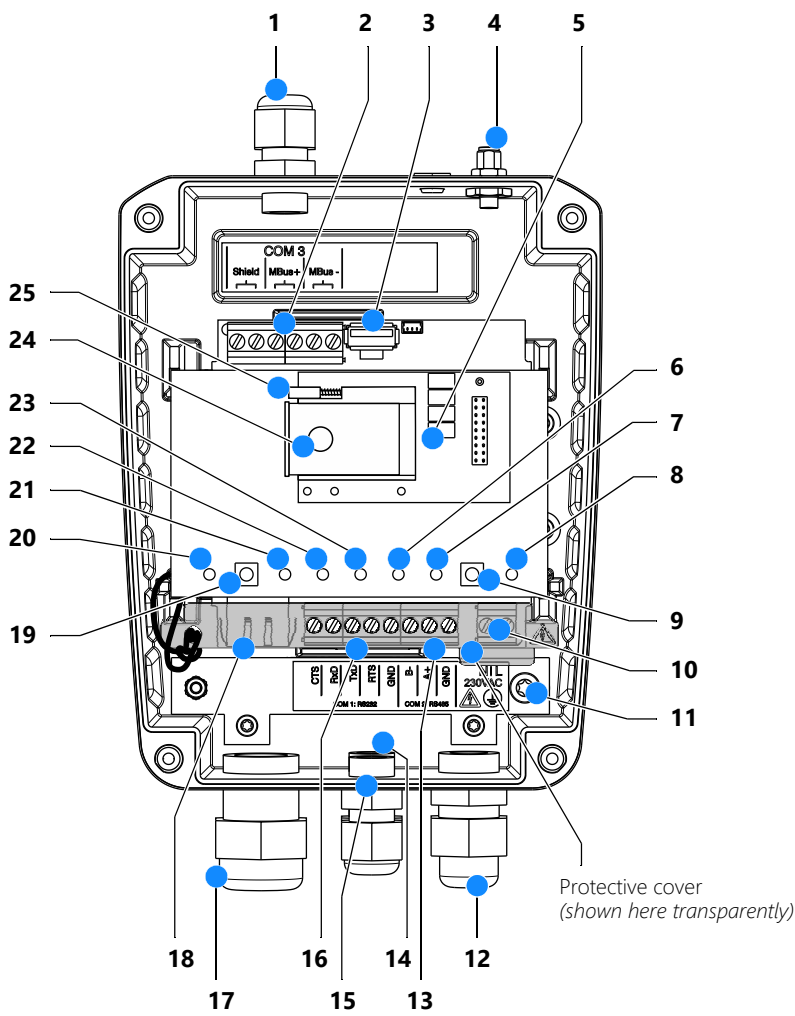
The figure shows the connection diagram for the model FP S-Compact BB.

1	M-Bus cable gland
2	M-Bus connection terminals
3	USB-A port (host)
4	SMA antenna socket, female *(only model FP S-Compact BB)*
5	PG module LTE *(only model FP S-Compact BB)*
6	'LAN' LED
7	'Mode' LED
8	'WiFi' LED
9	'WiFi / Unmount' button *(only accessible when the housing is open)*
10	Mains power connection 230 V (L / N)
11	Connection for protective earth conductor
12	230 V cable gland
13	RS485 connection (COM2)
14	Cable gland RS485 / RS232
15	Cable gland RS485 / RS232
16	RS232 connection (COM1)
17	LAN cable gland
18	LAN connection, RJ45 socket
19	'Service' button *(only accessible when the housing is open)* Function: Application specific, user programmable
20	'Power' LED
21	'Signal' LED
22	'Data out / Process' LED
23	'Line' LED
24	SIM drawer *(only model FP S-Compact BB)*
25	SIM drawer ejection button *(only model FP S-Compact BB)*

4   Installing the FP S-Compact

In the following, the installation for all FP S-Compact devices is described. If one step does not apply to your model, simply continue with the next step.

Step 1:   Check the delivery

⚠ DANGER	**Danger to life through electric shock!** Damage or missing parts can result in injuries and hazards due to electrical power. ▶ Check that the contents of the package is complete and free from any damage. ▶ If parts are damaged or missing, do not start operating the FP S-Compact. Please contact FP InovoLabs.

Scope of delivery

– FP S-Compact
– 2x fastening screws Ejot PT 40x10 Torx
– 1x oval-head screw M4x8 Cu Torx
– 2x M4 toothed washer for main earth
– 1x M3 self-locking nut
– 5x M3 toothed washer for ancillary earth
– 3x sealing plugs for cable glands
– USB stick with license information
– 'Installation and Safety' manual *(this document)*

Important data (device type, serial number, etc.) that you will require later when configuring the devices, can be found on the serial number plate and on the packaging of the device.

Step 2: Selecting installation location and mounting the unit

The FP S-Compact is designed for wall mounting or mounting on a top-hat rail.

⚠ DANGER

Danger to life from explosion!
Sparks can cause explosion and fire!
▶ Do not use the device in a potentially explosive environment or in the vicinity of flammable gases, vapours, dust or conductive dusts.

ATTENTION

Possible damage to the device by external influences!
▶ Only use the device in enclosed and clean spaces.
▶ Protect the device from heat and direct sunlight.
▶ Do not expose the device to strong shocks or vibrations.

Selecting installation location

▶ Choose a location that offers sufficient space for installation and connection of the device.
Details on housing dimensions and weight can be found in the 'Technical data' section.

▶ Make sure that the electrical system meets the requirements mentioned in the 'For your safety' section.

FP S-Compact BB

▶ Select a location with good reception quality for an FP S-Compact with a mobile modem.

Key to a good reception quality is the location of the antenna. To find a suitable location with good reception, the operating software can be used to display the reception quality. You can also test the reception quality with a smartphone.

Notes on signal strength

– For reliable data connections (for remote parametrisation, Internet dial-up) the signal strength should be at least -85 to -73 dBm.

– In the range from -87 to -103 dBm, SMS still works in most cases, but the connections often break down.
No operation is possible below -103 dBm.

Fastening

The FP S-Compact is designed for wall mounting or mounting on a top-hat rail. Mounting material is optionally available from FP InovoLabs.

Note down the serial number of the device located on the serial number plate. After mounting the device on the wall, the serial number plate is no longer visible.

▶ Use the two fastening screws provided (EJOT PT K40x10 WN 1452, Tool: T20) and the holes on the back provided for these.

ATTENTION

Damage to the device and loss of the IP65 protection rating by screwing the fastening screws in too deep!
▶ Do not screw the fastening screws deeper than 8 mm (0.31") into the housing.

Rear of the FP S-Compact

Fastening screws for wall mounting or top-hat rail mounting

Serial number plate
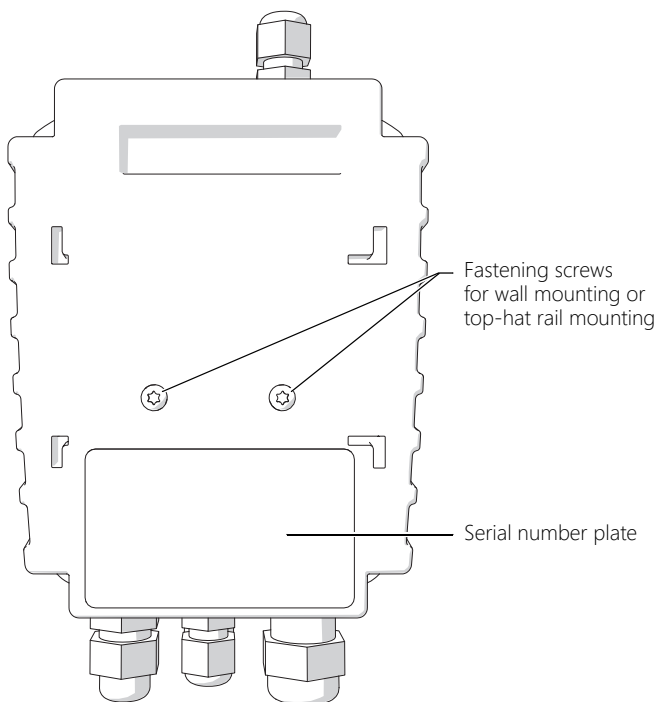
Step 3:   Removing the cover

▶ Loosen the four fastening screws on the cover
  (M3x8, Tool: Torx T8).

▶ Remove the cover.

▶ Keep the cover and screws in a safe place.

Fastening screws
for housing cover
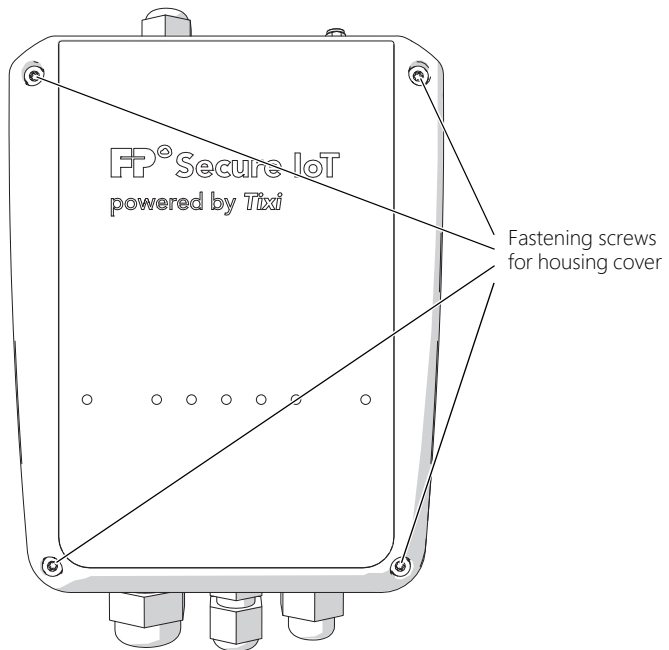
Step 4: Connecting the mobile communications antenna
(only FP S-Compact BB)

The FP S-Compact BB is equipped with a certified LTE module (article number 58.0070.3002.00) for the broadband connection.

Information for the antennae to be used can be obtained from FP InovoLabs. We recommend the antenna with article number 90.4771.8002.00.

Use an antenna with high antenna gain if the signal strength at the receiving location is too low.

SMA socket, female
(Connection for mobile communications antenna)
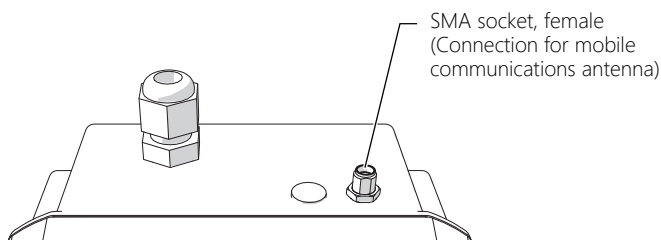
▶ Screw the antenna or antenna cable to the SMA socket on the housing.

Step 5: **Inserting the SIM card** *(only FP S-Compact BB)*

ATTENTION	**Damage to the device due to incorrect handling of the SIM card!**

▶ Only insert the SIM card when the device is in a voltage-free state.

▶ Make sure that no SMS messages are stored on the SIM card by inserting the card into a mobile phone.

ATTENTION	**Possible damage to the SIM card due to improper handling!**

▶ Do not touch the contacts on the SIM card.

ATTENTION	**Blocking of the SIM card if another SIM card was previously used in the device!**

▶ First load a project with the PIN of the new SIM card into the device to avoid blocking the new SIM card.

Inserting SIM card

Eject button
SIM drawer
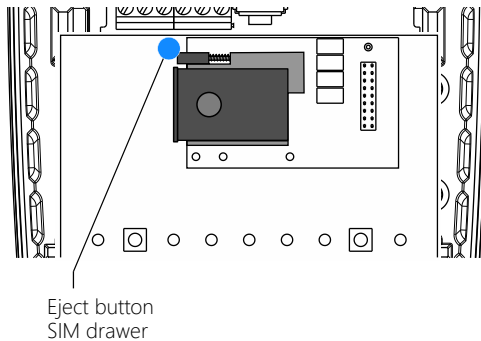
▶ Unlock the receiving drawer: To do so, use your finger to press the eject button for the SIM drawer.

▶ Pull out the drawer carefully.

▶ Insert the SIM card. The contacts of the SIM card are facing downwards.

▶ Slide the receiving drawer back in until it clicks into place.

Step 6:   Connecting peripherals

Damage to the connection terminals due to excessive torque!

▶ Use a torque screwdriver.

▶ Tighten the clamping screws to a torque of 0.5 Nm (0.37 ft lb).

Connecting peripherals

▶ Connect all cable connections intended for the application.

The connection diagram shows the interfaces available (see page 14).

Connecting the M-Bus counter

M-Bus connection

Cable gland

M-Bus connection terminals
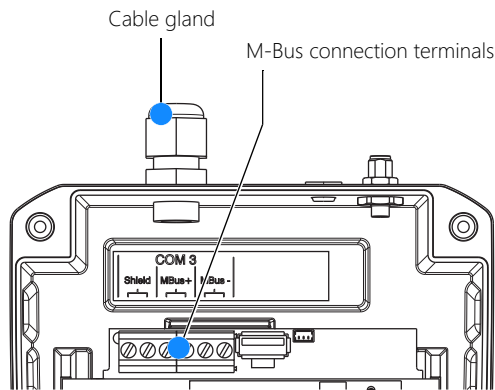
▶ Feed a suitable cable through the cable gland.

▶ Connect the two cores to the terminals (MBus + / MBus -).

▶ Tighten the clamping screws to a torque of 0.5 Nm (0.37 ft lb).

The M-Bus can be loaded with max. 10 M-Bus loads and is not galvanically isolated. The cable length shall not exceed a total length of 50 metres (164 ft). The M-Bus connection is short-circuit proof.

Serial interfaces RS232 / RS485

Connections:
RS232 (COM1)
RS485 (COM2)

Protective cover

RS232 connection
(COM1)

RS485 connection
(COM2)

2× cable glands
RS485 / RS232
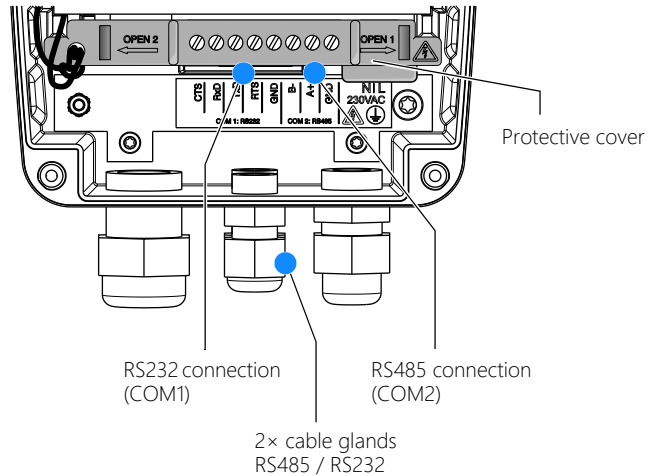
▶ Connect the peripheral intended for the application to the
RS232 interface (COM1) and the RS485 interface (COM2).

▶ Tighten the clamping screws to a torque of 0.5 Nm (0.37 ft lb).

Step 7: **Inserting the WiFi stick** *(optional)*

Use the optionally available WiFi stick (order no. 90.0072.8100.00) for wireless start-up of the FP S-Compact.
FP S-Compact acts as an access point.
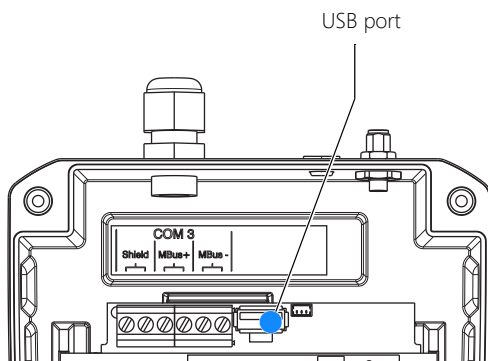
USB port

▶ Insert the WiFi stick into the USB port.

After start-up, the Access Points must still be activated (see chapter 6.1).

Step 8: Connecting to the power supply

⚠ **DANGER**	**Danger to life through electric shock!**

Danger to life through electric shock!
There is danger to life when touching live parts.
▶ Disconnect the cables to which the device is connected from the power supply and secure them against being switched on again.
▶ Check that the cables to which the device is connected are voltage-free.
▶ Do not connect the power supply until all other installation work has been completed.

⚠ **DANGER**

Danger to life through electric shock when operating on an unsuitable electrical system!
▶ Connect the device only to a properly installed electrical system that has an easily accessible, all-pole (L,N) disconnect device equipped with a minimum contact spacing of 3 mm (0.12").

Removing the protective cover

The protective cover is fastened in place with a snap hook on both the left and right sides.

Removing the protective cover

Snap hook

Slotted screwdriver

Snap hook
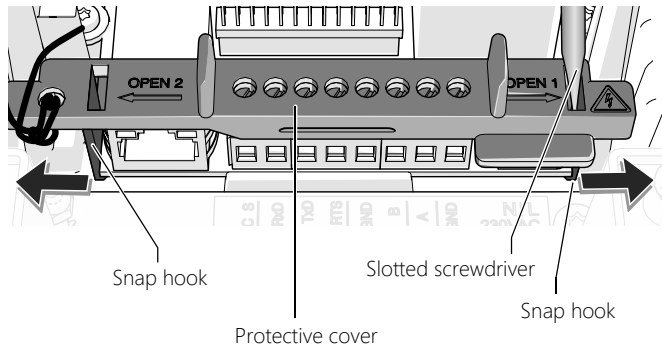
Protective cover

▶ First loosen the fastening on the right side: Insert a slotted screwdriver into the 'OPEN 1' opening and press the snap hooks gently outwards (towards the arrow).

▶ Loosen the fastening on the left side (OPEN 2) in the same way.

▶ Take off the protective cover.
The protective cover is fastened to the device with a rubber ring so that it cannot be lost.

Connecting the mains cable

ATTENTION

Malfunction due to incorrect power supply wiring!
▶ Only use conductors that meet the following specifications:
– Max. conductor cross-section size: 2,5 mm² (AWG 14)
– Copper (CU) conductors only.
▶ Only use cables with sufficient conductor cross-section for connection.

ATTENTION

Damage to the connection terminals due to excessive torque!
▶ Use a torque screwdriver.
▶ Tighten the clamping screws to a torque of 0.5 Nm (0.37 ft lb).

ATTENTION

Damage to the device due to incorrect voltage connection!
▶ Make sure that the cable is connected correctly.
▶ Make sure that the characteristic values U = 100 - 240 V are observed.

Connection diagram (extract)

Connection terminals (power connection)

Connection for protective earth conductor
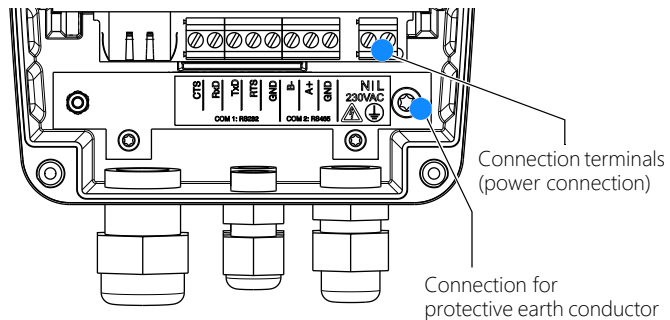
The following types can be used for the mains cable:
– Flexible: e.g. H05VV-F 3G 0.75 mm²
– Rigid: e.g. H07 VV-U 3 G 1.5 mm².

▶ Connect the phase (L) to the screw terminal with the 'L' marking. Please use wire end ferrules (pin length 6 mm / 0.24").

▶ Connect the neutral line (N) to the screw terminal with the 'N' marking. Please use wire end ferrules (pin length 6 mm / 0.24").

▶ Attach a ring eyelet (M4) to the end of the protective earth wire.

▶ Screw the protective earth wire onto the connection point marked with the earthing symbol. Use the copper screw (M4) provided to fasten it on as well as a toothed washer (M4 DIN6797A) above and below the ring eyelet.

▶ Tighten the clamping screws to a torque of 0.5 Nm (0.37 ft lb).

Fitting the protective cover
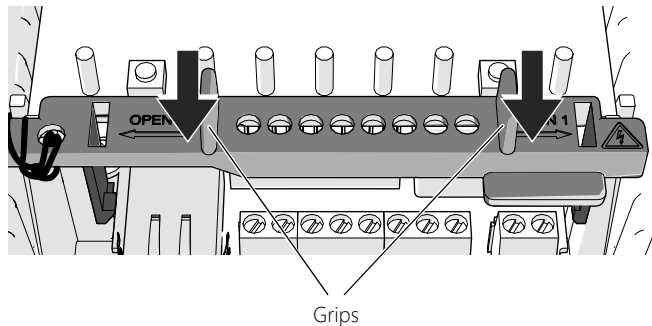
Grips

▶ Pick up the protective cover with both grips and set the protective cover down as shown in the illustration.

▶ Press the protective cover onto the holder.

The snap hooks latch into place. The protective cover is then correctly fitted again.

Step 9: Inserting the sealing plugs
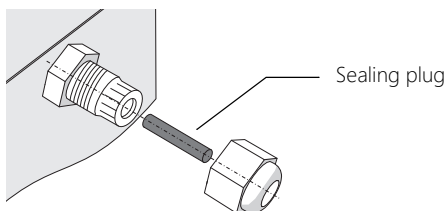
Sealing plug

▶ Seal all unused cable glands with one of the sealing plugs provided. This is the only way to maintain the IP65 protection rating.

Step 10: Mounting the cover

FP® Secure IoT
powered by *Tixi*

Fastening screws for housing cover
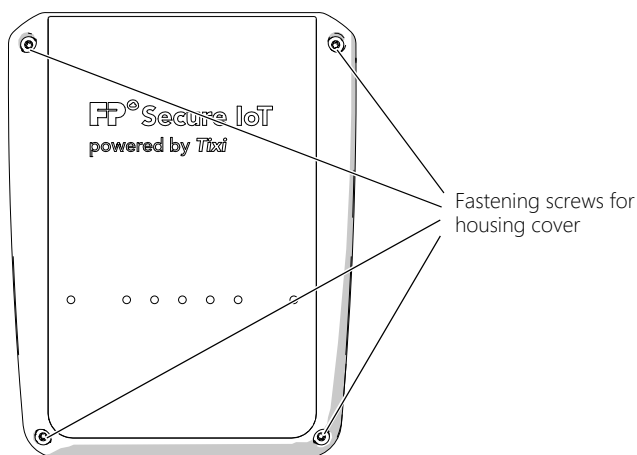
▶ Fit the cover.

▶ Fasten the cover with the four fastening screws (M3x8, Tool: Torx T8). Tighten the fastening screws with a torque of 0.7 Nm to 1 Nm (0.52 ft lb to 0.73 ft lb).

Step 11: Putting into operation

When all installation steps are completed, the FP S-Compact can be put into operation.

▶ Switch on the supply voltage.

Self-test   After applying the operating voltage, the device carries out an extensive self-test. The LEDs indicate the status.

Power	Dat / Proc	Line	LAN	Mode	Remarks
🟡	🔴				Load firmware, check checksum
🟡	((🔴)) + ((🟢)) (flashes)				Unpacking of the firmware
🟡	🔴 + 🟢				Launching the Kernel
🟡	🟢				Launching the Linux application
⚪	⚪	⚪	⚪	⚪	All LEDs turned off for approx. 5 s
🟡	((🟢)) (flashes)	((🟢)) (flashes)	((🟡)) (flashes)		Multiple simultaneous flashing of Data Out / Line / LAN
🟡					Self-test completed

When the self-test is completed, the yellow 'Power' LED lights up.

FP S-Compact must still be configured for operation. Software tools for this can be purchased from FP InovoLabs.

5 Access to device configuration

The FP S-Compact is shipped from the factory without configuration software.
The FP S-Compact devices can be configured via the LAN connection for operation by means of software tools (TILA, TICO). With the WiFi stick from FP, wireless access is also possible (see chapter 6.1).

5.1 IP address of the device (LAN connection)

On delivery or after a factory reset, the FP S-Compact has a fixed IP address or can be addressed via a defined host name in a network with DHCP server.

Network <u>without</u> DHCP server
Direct connection to PC.
The device tries to obtain an IP address from a DHCP server for about 30 seconds after turning on. If it has not received an answer after 30 seconds, the device's LAN LED flashes and the default IP address is set as follows.

IP address at the LAN port	192.168.0.1
IP address over WiFi	192.168.100.1

Network <u>with</u> DHCP server
In a network with DHCP server, the host name is formed in accordance with the following scheme:

Tixicom device type SN

Device type = C851-BB-M10 for model FP S-Compact BB
C851-LAN-M10 for model FP S-Compact LAN

SN = 8-digit serial number of the device *(see serial number plate)*

Example
Standard host name for the device 'FP S-Compact BB' with the serial number '12345678':
Tixicom-C851-BB-M10-12345678

If you have integrated the device into a domain network with DHCP server, it is usually necessary to add the local address of your domain network to the host name (e.g. in the Tixi.Com company network Tixicom-C851-BB-M10-12345678.**tixicom.local**).

5.2 Access to the web server

On delivery and after a factory reset, a standard website is installed on the
FP S-Compact.

Calling up the standard website

▶ Enter the IP address or host name of your device in the
address line of your browser.

Access via host names (example)

← tixicom-C851-BB-M10-12345678

Access via WiFi / fixed IP address

← 192.168.100.1
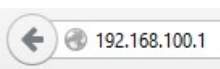
FP S-Compact BB + RS232 + RS485 + USB + S1

Hardware			LAN	
Device type	C851 BB-M10		Hostname	n/a
Serial number			IP address	192.168.178.73
Filesystem size	85.377.024 Bytes		Subnet mask	255.255.255.0
Free Memory	82.128.896 Bytes		Gateway	192.168.178.1
Software			DNS	192.168.178.1
Firmware	6.00.00.220		Link speed	100 MBit/s
Firmware Date	2020-10-29 11:01:35		MAC address	
Linux Kernel	Linux buildroot 4.13.16-740cd79ed #1 PREEMPT Thu Oct 29 10:58:01 CET 2020 armv7l GNU/Linux		**WLAN**	
			Role	Access Point
UBoot	2017.03-linux4sam_5.7 Tixi 1.2 (Aug 09 2018 - 17:02:55 +0200)		SSID	Tixi-C851 BB-M10-
Webserver			Active connections	1
HTTP port	80		Signal strength (dBm)	-53
Connection timeout	300s		Rate (Mbit/s)	5.5
GSM			Hostname	mytixi
Signal strength (0-31)	28		IP address	192.168.100.1
Operator	Telekom.de		Subnet mask	255.255.255.0
Local IP address	100.116.172.13		Gateway	192.168.100.1
GPRS APN	iot.1nce.net		DNS	192.168.100.1
GPRS Connection time	24h		**Times**	
IMEI			System time	Fri, 30 Oct 20 09:08:00 +0000
IMSI			Timezone	+0000
			Last power-on time	2020/10/30,07:18:48
			Last power-off time	2020/10/30,07:15:37

System links	
System config	System properties
Local User Data Bus Config	Local User Data Tree

Upload a custom website	
Choose file (.txt):	Datei auswählen Keine ausgewählt Upload

The standard website clearly displays a variety of information on the hardware and configuration of your FP S-Compact.

Additionally, the configuration can be displayed in a separate window via the 'System config' button and the process data for the connected sensors (counter, etc., if configured) via the 'System properties' button.

5.3   Access with the TILA software

▶ Start TILA.

▶ Click the 'Online' button on the home page.

Mit dem FP Gateway verbinden
Für die Online-Konfiguration müssen Sie nur den FP Gateway Editor mit dem FP Gateway verbinden.

Online...

▶ Double-click on the appropriate entry in the list of possible connections:

– **GPRS/Internet/LAN**   For connections via the LAN connection of the FP S-Compact

– **FP WLAN Stick**   For connections via WiFi with the WiFi stick

▶ Enter the IP address or host name of the FP S-Compact in the 'IP Einstellungen' (IP Settings) section.

IP Einstellungen
Einstellungen, mit denen das entfernte Modem über TCP/IP erreicht werden soll.

IP-Adresse: 192.168.100.1
IP-Port: 8300

If the 'FP WLAN Stick' (FP WiFi stick) option has been selected, the IP address is already preset and need not be adjusted.

▶ Now click on the 'Verbinden' (Connect) button.

Status der Verbindung: Nicht verbunden

Verbinden

Connection with
FP S-Compact
established

Once the connection to the FP S-Compact has been successfully established, TILA displays the following message at the top right of the window:

Mit Gerät verbunden 🟢

5.4 Access with the TICO software

▶ Start TICO.

▶ Click on the 'Settings' menu item and select 'TCP/IP'.
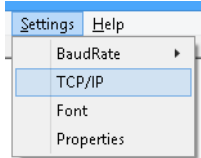
▶ Enter the IP address or the host name in the dialogue and click 'OK'.
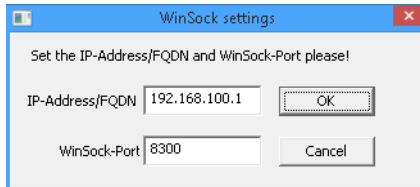
The example shows the settings for connection via WiFi stick.

▶ If the 'Online' option (in the middle of the TICO window) is activated:
Deactivate the option with a single mouse click.

▶ Click on the 'Port' menu item and select 'TCP/IP'.
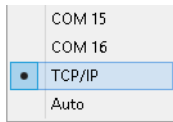
Once the connection to the FP S-Compact has been successfully established, the 'Online' option is activated.

6   Operating with WiFi stick *(optional)*

6.1   Using FP S-Compact as Access Point

With a WiFi stick in mini format (available from FP InovoLabs GmbH under order number: 90.0072.8100.00), the device can be used as an Access Point. This enables wireless access for configuring the FP S-Compact.

Inserting the WiFi stick

▶ Unscrew the housing cover (see page 19).

▶ Keep the housing cover and the four screws in a safe place.

▶ Insert the WiFi stick into the USB port.

Activating the Access Point

FP S-Compact without cover (extract)

WiFi stick
(plugged into the USB port)

'WiFi / Unmount' button
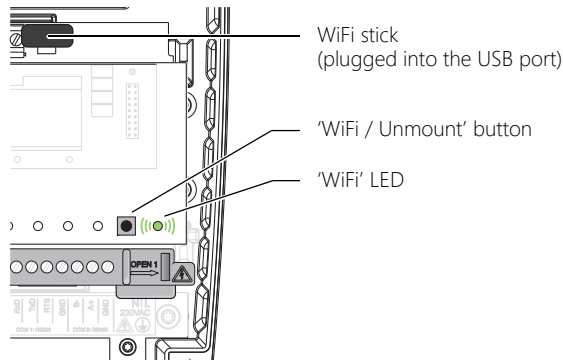
'WiFi' LED

▶ Wait for a few seconds after inserting the WiFi stick.

▶ Press the 'WiFi/Unmount' button for at least 4 seconds.

If the green 'WiFi' LED flashes briefly every second, the Access Point is active. FP S-Compact is ready for wireless start-up.

▶ Fasten the housing cover to the housing with the four fastening screws. Tighten the fastening screws with a torque of 0.7 Nm to 1 Nm (0.52 ft lb to 0.73 ft lb).

You can now connect your end device (smartphone, laptop) to the FP S-Compact.

WiFi configuration / access data (factory settings)

SSID	Tixi device type SN
	Device type = C851-BB-M10 for model FP S-Compact BB
	C851-LAN-M10 for model FP S-Compact LAN
	SN = 8-digit serial number of the device *(see serial number plate)*
Authentication	WPA2
Password	berlin2000
Host name	Tixi device type SN *(see above)*
Number of client connections	1
IP address via WiFi	192.168.100.1

Adapting the WiFi configuration

The WiFi configuration can be adjusted via the ISP database **WLAN_AP.**

All following database entries are optional. If individual entries are omitted, the respective default values apply.

Example
```
[<SetConfig _="ISP" ver="v">
<WLAN_AP>
  <SSID _="MySSID" />
  <EnableOnStartup _="0" />
  <AllowedConnections _="1" />
  <Authentication _="WPA2" />
  <Password _="Secret password" />
  <HostName _="MyHostname" />
</WLAN_AP>
</SetConfig>]
```

SSID	Name of the Access Point (ASCII characters, no special characters). Standard: Tixi device type SN (see page 36).
EnableOnStartup	This parameter determines whether the WiFi access point is automatically activated when the system starts. 0 = do not activate automatically 1 = activate automatically Standard: 0
Allowed Connections	Defines how many concurrent client connections are allowed. Maximum: 5 Standard: 1
Authentication	Specifies the encryption method. WPA2 and WPA2_CCMP are supported. Standard: WPA2
Password	WiFi password (ASCII characters, no special characters). Default value: berlin2000
Hostname	Host name via which the device can be reached (alternative to the IP address). Default: see SSID
	WiFi IP address of the FP S-Compact: 192.168.100.1

6.2 Automatic connection via WPS (WiFi Protected Setup)

The WiFi Protected Setup (WPS) option is supported in Access Point Mode.
WPS allows automatic connection to an access point without entering a password.
To switch to WPS mode, the access point mode must already be active.

The buttons to turn on the WPS mode are only accessible with the housing open.

Turning on WPS mode

▶ Unscrew the housing cover (see page 19).

▶ Keep the housing cover and the four screws in a safe place.

▶ Make sure that the Access Point is active:
The 'WiFi' LED flashes briefly every second.

Switching to WPS mode

WiFi stick (plugged into the USB port)

'WiFi / Unmount' button

'WiFi' LED
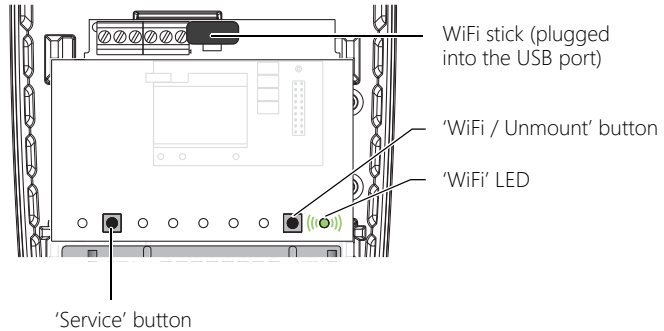
'Service' button

▶ Press the 'WiFi/Unmount' button for about 1 second.

▶ Hold down the 'WiFi/Unmount' button and then press the 'Service' button at the same time.

The 'WiFi' LED flashes rapidly. WPS mode is active.

You can now use your end device (laptop, smartphone) to establish a connection with the FP S-Compact. Many end devices detect the WPS mode automatically (e.g. Windows 10) and can connect directly to the device.

WPS mode is active for about 2 minutes. The FP S-Compact then switches back to the normal 'Access point' mode. WPS mode can be reactivated at any time.

Close the housing
Once you have finished working in WPS mode:

▶ Fasten the housing cover to the housing with the four fastening screws. Tighten the fastening screws with a torque of 0.7 Nm to 1 Nm (0.52 ft lb to 0.73 ft lb).

6.3   Using FP S-Compact as WiFi client

With a WiFi stick in mini format (available from FP InovoLabs GmbH under order number: 90.0072.8100.00) the FP S-Compact can also be used as a WiFi client. In this mode, the device connects to a WiFi router and can thus be wirelessly integrated into a network.

The 'WiFi client' mode must be configured. On delivery and after a factory reset, 'Access Point' mode is active (see chapter 6.1).
For the FP S-Compact to work as a WiFi client, the **ISP/WiFi** database must be configured before inserting the WiFi stick.

Configuring the ISP/WiFi database

Example
```
[<SetConfig _="ISP" ver="y">
<WLAN>
  <Profile_0 SSID="acer">
    <Authentication _="WPA_TKIP"/>
    <Password _="87654321"/>
    <Ethernet>
      <IP _="DHCP"/>
      <HostName _="myDeviceName"/>
    </Ethernet>
  </Profile_0>
</WLAN>
</SetConfig>]
```

SSID	Name of the access point to which the device should connect (only ASCII characters allowed).
Authentication	Specifies the encryption method. Currently only WPA_TKIP is supported.
Password	WiFi password of the router (only ASCII characters, no special characters).
IP	IP configuration. Currently only the DHCP mode is supported (automatic assignment of IP address, gateway and DNS by the router).
Hostname	Host name by which the device can be reached on the network (if supported by the router).

Inserting the WiFi stick

Prerequisite   The ISP/WiFi database is configured.

▶ Unscrew the housing cover (see page 19).

▶ Keep the housing cover and the four screws in a safe place.

FP S-Compact without cover (extract)

WiFi stick
(plugged into the USB port)
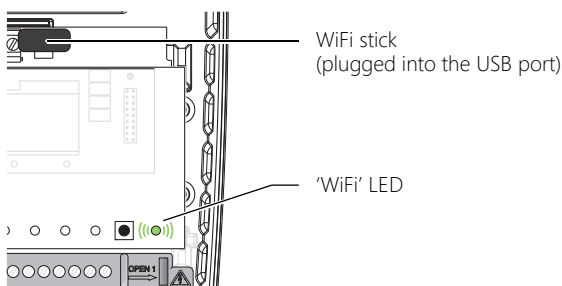
'WiFi' LED

▶ Insert the WiFi stick into the USB port.

▶ Wait a few seconds.

The 'WiFi' LED flashes briefly every second.
The FP S-Compact is now logged on to the router.

💡 If the 'WiFi' LED is not flashing, check the settings, especially the password.

💡 Simultaneous use of the LAN interface *and* 'WiFi client' mode on the same network (both wireless and LAN cable connection of the FP S-Compact to the WiFi router) is currently not supported.

Close the housing   Once you have completed setting up the FP S-Compact as a WiFi client:

▶ Fasten the housing cover to the housing with the four fastening screws. Tighten the fastening screws with a torque of 0.7 Nm to 1 Nm (0.52 ft lb to 0.73 ft lb).

6.4 Removing the WiFi stick

▶ Unscrew the housing cover (see page 19).

▶ Keep the housing cover and the four screws in a safe place.

FP S-Compact without cover (extract)

WiFi stick (plugged)
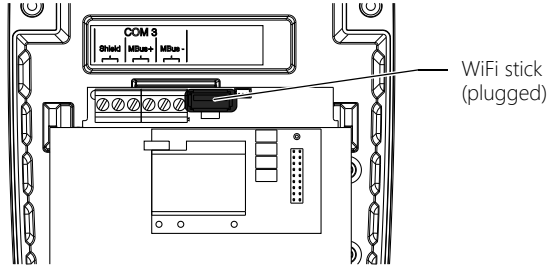
▶ Remove the WiFi stick from the USB port.

Close the housing ▶ Fasten the housing cover to the housing with the four fastening screws. Tighten the fastening screws with a torque of 0.7 Nm to 1 Nm (0.52 ft lb to 0.73 ft lb).

7   Operation with USB memory stick

A USB memory stick (max. 32 GB) can be used for the following tasks:

– Importing a configuration via 'config.txt' file
– Firmware update via a 'Tixi.Gate8_FW.tar.gz' file
– Debug recordings via a 'debtrace.txt' file
– Archiving of log data via the 'WriteFile' command.

The USB stick should be formatted with the FAT32 file system. Only one partition is permitted on the USB stick. Use a USB stick with a short overall length, which has sufficient space in the FP S-Compact.

Inserting the USB memory stick

▶ Disconnect FP S-Compact from the power supply.
  The 'Power' LED is OFF.

▶ Unscrew the housing cover (see page 19).

▶ Keep the housing cover and the four screws in a safe place.

▶ Insert the USB memory stick formatted to FAT32 (max. 32 GB) into the USB port.

▶ Fasten the housing cover to the housing with the four fastening screws. Tighten the fastening screws with a torque of 0.7 Nm to 1 Nm (0.52 ft lb to 0.73 ft lb).

▶ Re-establish the power supply.

After restarting the device, the USB memory stick is automatically detected.

The 'WiFi' LED illuminates steadily green if the USB memory stick is mounted.

You can also insert USB memory sticks with a live power supply.

Removing the USB memory stick

ATTENTION

Possible damage to USB memory sticks and data loss through improper handling!

▶ Log off the USB memory stick by briefly pressing the 'WiFi / Unmount' button.

▶ Wait until the 'WiFi' LED goes out. The memory stick is then correctly logged off.

To remove the USB memory stick:

▶ Unscrew the housing cover (see page 19).

▶ Keep the housing cover and the four screws in a safe place.

Logging off the USB memory stick

Logging off USB memory

Press the 'WiFi / Unmount' button briefly
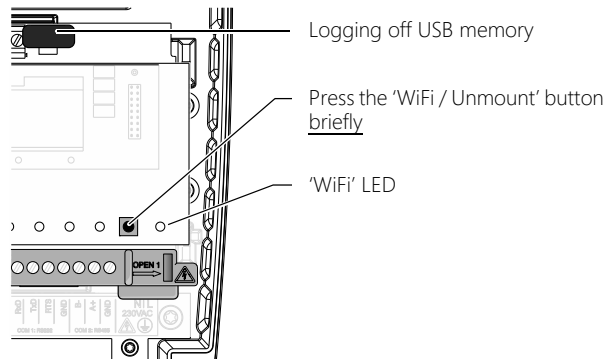
'WiFi' LED

▶ Press the 'WiFi/Unmount' button briefly (max. 1 second).

▶ Wait until the 'WiFi' LED goes out. This can take up to 4 seconds.

▶ Remove the USB memory stick from the USB port.

Close the housing

▶ Fasten the housing cover to the housing with the four fastening screws. Tighten the fastening screws with a torque of 0.7 Nm to 1 Nm (0.52 ft lb to 0.73 ft lb).

8 Reset to factory defaults (Factory Reset)

The FP S-Compact can be reset to factory defaults via the 'Service' button (only accessible when the housing is open). <u>The SIM PIN is retained</u>.

▶ Disconnect FP S-Compact from the power supply.

▶ Unscrew the housing cover (see page 19).

▶ Keep the housing cover and the four screws in a safe place.

FP S-Compact without cover (extract)

'Service' button
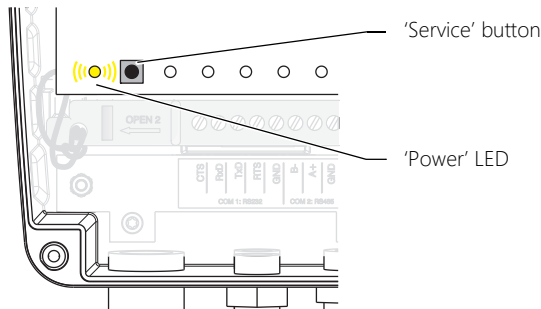
'Power' LED

▶ Press the 'Service' button <u>and keep it pressed</u>.

▶ Re-establish the power supply.

▶ Wait until the 'Power' LED (yellow) flashes.

▶ Release the 'Service' button <u>briefly</u>.

▶ Press the 'Service' button again. Keep it pressed until the 'Power' LED flashes rapidly.

▶ Release the 'Service' button. The device restarts.

All settings in the device (with the exception of the SIM PIN) have now been successfully reset to factory defaults.

▶ Fasten the housing cover to the housing with the four fastening screws. Tighten the fastening screws with a torque of 0.7 Nm to 1 Nm (0.52 ft lb to 0.73 ft lb).

9 Example output upon <Get/> command

The following example applies for model FP S-Compact BB, 50.0058.1330.00.

```xml
<Get>
<SYSTEM>
 <Hardware>
     <Modules>
        <RTC _="RTC8564" />
        <Modem0 _="C851 BB-M10" />
        <GsmModule _="Huawei ME909s-120" />
        <ModuleVer _="11.617.09.00.00" />
        <IMEI _="123…………..." />
        <IMSI _="123……………." />
        <FlashOnboard _="128MB" />
        <COM1 _="RS232" />
        <COM2 _="RS485" />
        <COM3 _="MBus" />
        <ETH1 _="ETH1" />
        <C14e _="S1-MB10" />
     </Modules>
     <RAM>
        <Size _="125128704" />
        <Attributes _="0" />
     </RAM>
     <ROM>
        <Size _="134217728" />
        <Attributes _="0" />
     </ROM>
     <FileSystem>
        <Size _="85377024" />
        <Type _="3" />
        <Attributes _="0" />
     </FileSystem>
 </Hardware>
 <Firmware>
     <Version _="6.0.0.190" />
     <Date _="2020-09-01 17:22:34" />
 </Firmware>
```

```xml
<Linux>
    <SystemInfo _="Linux buildroot 4.13.16-b22b9b1b3 #1
        PREEMPT Fri Aug 7 19:16:36 CEST 2020 armv7l GNU/
        Linux" />
    <Uboot _="2017.03-linux4sam_5.7 Tixi 1.2 (Aug 09 2018 -
        17:02:55 +0200)" />
</Linux>
<LicenseRef>
    <HW_Rev _="58.0058.0533.00_02-58.0058.0531.00_07-
        580070300200_12" />
    <Oem _="Tixi.Com" />
    <OName _="C851 BB-M10" />
    <PClass _="FP S-Compact BB + RS232 + RS485 + USB + S1" />
    <ProdName _="C851 BB-M10" />
    <LicenseID _="000100" />
    <ProductID _="3030" />
    <UDID _="Tixi.com GM20-S1F2K-120 70426-04905322" />
</LicenseRef>
<EEProm>
    <LED0 _="9" />
</EEProm>
<Process>
    <VPN>
      <ConnectionState _="0" />
    </VPN>
    <HTTPConn />
    <CloudConn>
      <ConnectionType _="mqtt+ssl:mqtt.cumulocity.com:8883" />
      <ConnectionState _="1" />
      <ConnectionStateMsg _="connected" />
      <LastTimeStamp _="2020-09-16T13:41:52+00:00" />
      <ChangeToggle _="0" />
    </CloudConn>
    <CloudConn2 />
    <CloudConn3 />
    <IBMConn />
    <PV>
      <FirstCyclePV _="0" />
      <FirstCycleDelayed _="0" />
      <Seconds _="51" />
      <IsOnline _="1" />
      <Quality _="-0.65" />
```

```xml
      <QualityOK _="1" />
      <CPULoad _="92" />
      <GprsConnected _="1" />
    </PV>
    <Program>
      <Mode _="Run" />
    </Program>
    <MB>
      <IO />
      <FirstCycle _="0" />
      <PollButton _="0" />
      <ModemOffHook _="0" />
      <MaxCycleTime _="171" />
      <CycleTime _="1" />
      <SignalLED _="9" />
      <Mount _="0" />
      <CPULoad _="92" />
      <TixmlQueue _="1" />
    </MB>
    <COM1PollActive _="0" />
    <COM2PollActive _="0" />
    <COM3PollActive _="0" />
    <COM4PollActive _="0" />
    <ETHPollActive _="0" />
</Process>
<LogCounter>
    <JobReport _="3" />
    <Event _="3" />
    <Login _="3" />
    <IncomingMessage _="0" />
    <FailedIncomingCall _="0" />
    <SupportLog _="60" />
    <FatalSystemError _="9" />
</LogCounter>
<GSM>
    <SM />
    <FD />
    <State _="GPRS connected" />
    <Capabilities _="LTE" />
    <Reg _="5" />
    <Reg_Text _="registered, roaming" />
    <Operator _="Telekom.de" />
```

```xml
    <Quality _="24" />
    <BitErrorRate _="99" />
</GSM>
<GNSS />
<SigFox />
<TIMES>
    <TIME _="13:41:51" />
    <DATE _="2020/09/16" />
    <RFC822DATE _="Wed, 16 Sep 20 13:41:51 +0000" />
    <ISO8601DATE _="2020-09-16T13:41:51Z" />
    <PowerOffTime _="2020/09/13,09:30:00" />
    <PowerOnTime _="2020/09/13,09:32:33" />
    <DAYOFWEEK _="Wed" />
    <DAYOFWEEKNO _="3" />
    <YYYY_MM_DD _="2020_09_16" />
    <HH_MM_SS _="13_41_51" />
    <HEXDATE _="5F62161F" />
    <UNIXTIME _="1600263711" />
    <YYMM _="2009" />
</TIMES>
<Ethernet>
    <Link _="not connected" />
    <LinkState _="0" />
    <MAC _="00:11:E8:8A:24:24" />
</Ethernet>
<Ethernet2 />
<WLAN>
    <Rate _="5.5" />
    <AssignedIP _="192.168.100.1" />
    <SubnetMask _="255.255.255.0" />
    <Gateway _="192.168.100.1" />
    <DNS_1 _="192.168.100.1" />
    <MAC _="7c:dd:90:a0:c1:ae" />
    <SSID _="Tixi-C851 BB-M10-04905322" />
    <SNR _="-55" />
    <RSN _="1" />
    <HostName _="mytixi" />
    <Role _="Access Point" />
    <Channel _="1" />
</WLAN>
<LocalIPAddr _="100.116.172.13" />
<RemoteIPAddr _="10.64.64.64" />
```

```xml
<GPRSLinkState _="1" />
<GPRSPingResult _="100" />
<FreeFileSize _="81948672" />
<FreeRAMSize _="21577728" />
<PNP_String _="FP S-Compact BB + RS232 + RS485 + USB + S1" />
<FeatureList _="Debug, Default, TSAdapter, POP3 Client, Time
    Client, URL Send, FTP Send, Secure FTP Send, Narrow Band
    Send, SMTP Client, CGI DoOn, HTTP Server In, HTTP Server
    Out, Script Send, Express E-mail Send, Express E-mail
    Recv, Incoming Call, Auto Transmode, Job Result Processor,
    Remote ModemMode" />
<SerialNo _="12345678" />
<HardwareID _="GM20-S1F2K-120" />
<Components _="RTC=RTC8564;Modem0=C852 BB-
    M10;GsmModule=Huawei ME909s-
    120;ModuleVer=11.617.09.00.00;IMEI=867377022383057;IMSI=
    901405100487064;FlashOnboard=128MB;COM1=RS232;COM2=RS485;
    COM3=MBus;ETH1=ETH1;C14e=S1-MB10" />
</SYSTEM>
</Get>
```

10 Glossary

Access Point   Device that establishes its own WiFi and that is linked to the router via LAN. Serves as interface for wireless communication.

BB   Broadband (LTE).

DHCP   Dynamic Host Configuration Protocol. Communication protocol that enables the automatic incorporation into the network.

Gateway   Component for establishing a connection between two systems.

LAN   Local Area Network. This is the hard-wired connection to the local network here.

LTE   Long Term Evolution. A mobile communications standard.

SMA   SubMiniature Version A (high-frequency plug connection). Antenna connection.

SSID   Service Set Identifier. Name of a local radio network (WiFi network name).

TICO   Application software for configuring the FP Gateway. TiXML console for developers and experienced technicians.

TILA   Application software for configuring the FP Gateway for developers and experienced technicians.

WiFi   Certified radio network (IEEE-802.11 standard).

WLAN   Wireless Local Area Network. A wireless local network (radio network).

WPA2   WiFi Protected Access 2nd security standard for radio networks.

11 Technical data

The detailed technical specifications can be found on the datasheet.
Download at:
https://www.inovolabs.com/infobereich/downloads/handbucher-datenblatter.

11.1 Selected technical data at a glance

(Subject to technical changes at short notice.)

Dimensions (Width × Height × Depth)	127.9 mm × 162.5 mm × 65 mm (5.04" × 6.40" × 2.56") Including cable glands: 127.9 mm × 210.5 mm × 65 mm (5.04" × 8.29" × 2.56")
Weight	Approx. 540 g (1 lb 3 oz)
Power supply	100 - 240 V AC / 50 - 60 Hz / max. 0.25 A 2 screw terminals (L,N), conductor cross-section max. 2.5 mm^2 (AWG 14) Internal protection with a fuse
Power supply conductors	Max. conductor cross-section size: 2.5 mm^2 (AWG 14) Use copper (CU) conductors only!
Typical power consumption	12.5 W
Prescribed disconnection	All-pole (L, N) disconnecting device with a minimum contact distance of 3 mm (0.12") in the electrical system of the building Disconnecting device must be easy to access
Backup battery	CR2032 for RTC (real time clock), service life ≥ 10 years, Replacement by the user not possible
Protection class	IP65
Operating conditions	Ambient temperature: -25°C to +65°C (-13°F to 149°F) Storage: -25°C to +85°C (-13°F to 185°F) Relative humidity: 5% to 95%, non-condensing Operate only in closed rooms Do not expose to direct sunlight Do not expose to mechanical shaking

CPU	492 MHz, ARM Cortex-A5, ATMEL SAMA5D27
RAM	128 MB DDR2-RAM
FLASH Memory	128 MB on-board

Interfaces

COM1 (RS232)	5-pole screw connection, max 921 600 bps, not galvanically isolated
	ITU-T V.24, V.28, hardware handshake
	Signals: RTS, CTS, GND, RxD, TxD
	Maximum transmission distance: 12 m (39 ft)
COM2 (RS485)	3-pole screw connection, DTE in accordance with EIA/TIA-485, max 1 Mbit/s, not galvanically isolated
	No internal termination
	Maximum transmission distance: 1 200 m *(4 000 ft), Depending on the transmission rate, bus and cable type*
M-Bus (via pre-installed expansion module S1-MB10)	M-Bus master for up to 10 M-Bus loads
	Short-circuit proof, not galvanically isolated
	M-Bus voltage: 36 V Maximum bus length: 50 m (164 ft)
	3 screw terminals (grid dimension 5.08 mm / 0.2"), Cross-section max. 2.5 mm^2 (AWG 14)
	Conformity: DIN EN 13757-2, DIN EN 13757-3
	Data rate: 300 Baud – 19 200 Baud Data formats: 8 data bits, 1 start bit, 1 stop bit and 1 parity bit (even parity)
USB	USB 2.0 Host interface (e.g. for WiFi stick)
Ethernet / LAN	10/100 Base-T IEEE 802.3, RJ45 connector (8P8C with 1 LED), shielded
	Auto negotiation, Auto MDI-X (crossover cable not required)
	Galvanic isolation: 1 500 V (V_{rms} min.)

Mobile modem *(only model FP S-Compact BB, 50.0058.1330.00)*

LTE (4G)

Antenna connection	SMA socket (female), coaxial, impedance 50 Ω	
Frequencies	8-Band LTE	(B1, B2, B3, B4, B5, B7, B8, B20; all bands with diversity)
	Quad Band 3G	(850, 900, 1 800, 1 900 MHz)
	Quad Band 2G	(850, 900, 1 800, 1 900 MHz)

Data transmission	WCDMA CS:	Downlink 64 kbps	Uplink 64 kbps
	GPRS:	Downlink 85.6 kbps	Uplink 85.6 kbps
	EDGE:	Downlink 236.8 kbps	Uplink 236.8 kbps
	WCDMA PS:	Downlink 384 kbps	Uplink 384 kbps
	HSPA+:	Downlink 21.6 Mbps	Uplink 5.76 Mbps
	DC-HSPA+:	Downlink 43.2 Mbps	Uplink 5.76 Mbps
	LTE FDD:	Downlink 150 Mbps	Uplink 50 Mbps at 20M BW cat4

Transmission power:

2 W GSM-GPRS at 850 / 900 MHz
1 W GSM-GPRS at 1 800 / 1 900 MHz

0.5 W EGPRS at 850 / 900 MHz
0.4 W EGPRS at 800 / 1 900 MHz

0.25 W UMTS at 850 / 900 / 1 900 / 1 950 MHz

11.2 Licenses

This product contains copyrighted software components that are available under various open source licenses. You will find detailed information on the enclosed data carrier (USB stick).
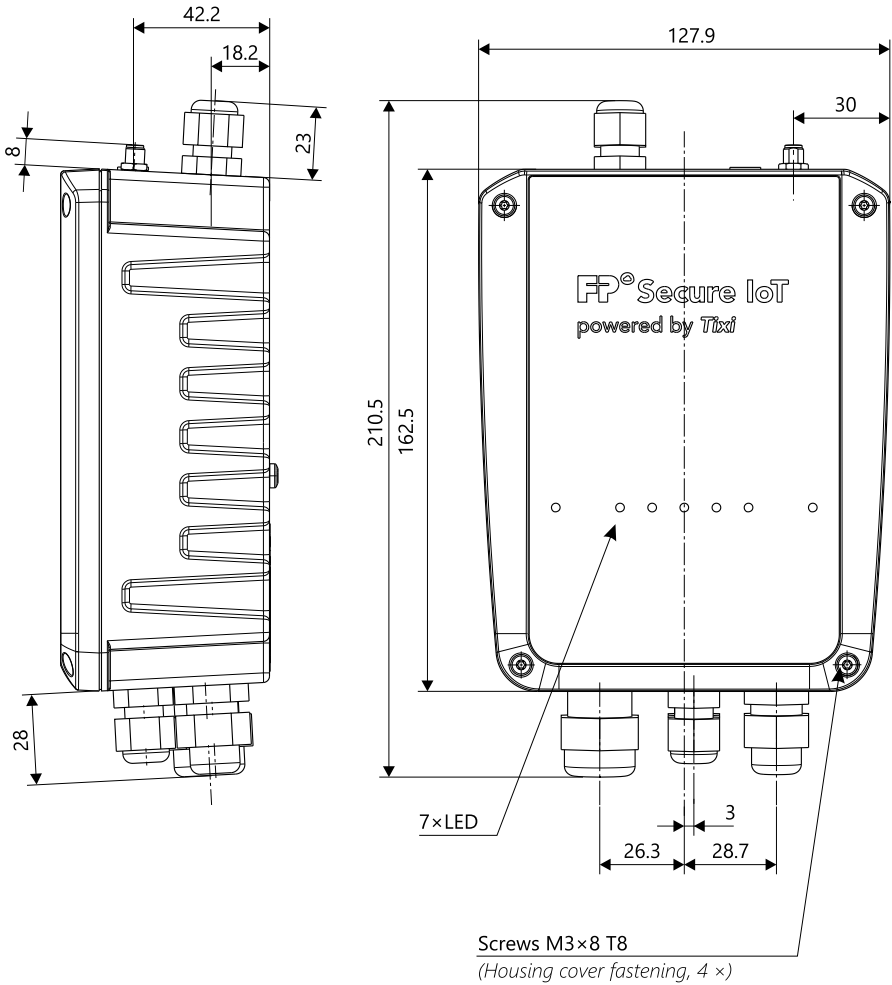
11.3 Access data via LAN

IP address   DHCP

                               In a network without DHCP server, the
                               IP address 192.168.0.1.

Host name   Tixicom device type SN

                               Device type = C851-BB-M10 for model FP S-Compact BB
                                             C851-LAN-M10 for model FP S-Compact LAN

                               SN = 8-digit serial number of the device *(see serial number plate)*

                               Example: Tixicom-C851-BB-M10-12345678
                               (Host name for the device 'FP S-Compact BB' with the serial number '12345678')

11.4 Access data via WiFi
(only with optionally available WiFi stick)

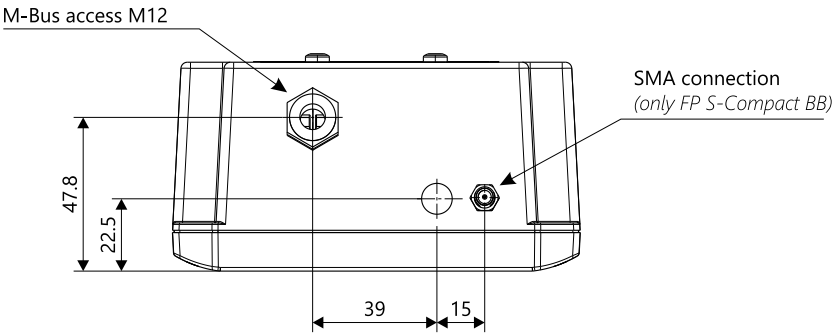**SSID**   Tixi device type SN

                               Device type = C851-BB-M10 for model FP S-Compact BB
                                             C851-LAN-M10 for model FP S-Compact LAN

                               SN = 8-digit serial number of the device *(see serial number plate)*

                               Example: Tixi-C851-BB-M10-12345678 *(for the device 'FP S-Compact BB' with the serial number '12345678'.*

IP address   192.168.100.1

WPA2 password   berlin2000

                               (Can be changed via suitable TiXML configuration.)
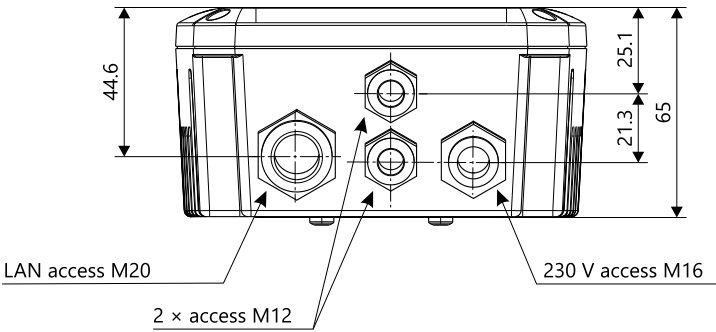
11.5 General view / dimensions

7×LED

Screws M3×8 T8
(Housing cover fastening, 4 ×)

Dimensions in mm.

View from above

M-Bus access M12

SMA connection
(only FP S-Compact BB)

47.8

22.5

39   15

View from below

44.6

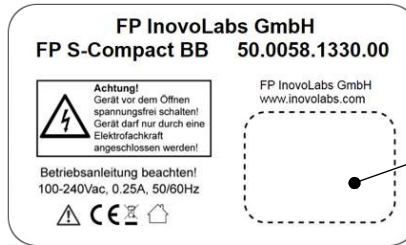25.1

21.3

65

LAN access M20

2 × access M12
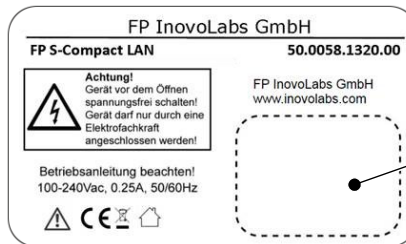
230 V access M16

Dimensions in mm.

11.6 Serial number plates

FP S-Compact BB

Space for label with important device data (e.g. device type, serial number)

FP S-Compact LAN

Space for label with important device data (e.g. device type, serial number)