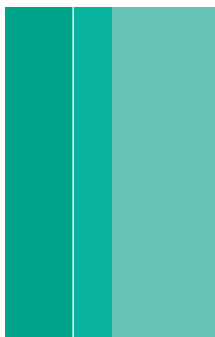


Battery Pack SP with WiFi

Infusomat® Space / Perfusor® Space



Instructions for Use

Rx only

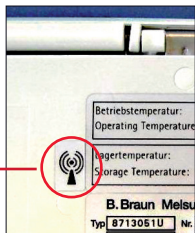
US

Valid for software 028U, 054U

B | BRAUN

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⚠ Caution: The sticker with the wireless symbol is to be placed on pumps operating with Battery Pack SP with WiFi as pictured.



Valid for Infusomat® Space / Perfusor® Space

The wireless option is supported with pump software version U and later. To upgrade the pump with the latest software please contact your local B. Braun service representative.

Handling the Battery Pack SP with WiFi:

The Battery Pack SP can be exchanged by any user.

No special qualification is required. Replace Battery Pack SP (model 8713182U) with the corresponding model only. For the Space pumps, use ONLY battery packs released by B. Braun. Other batteries may cause injury, fire or explosion.

⚠ Caution: The pump must be switched off before opening the battery compartment.


Open the cover of the battery compartment, unlock the battery by lifting the green hook and pull out the battery using the metal handle.

Replace the Battery Pack SP in the battery compartment, lock it with the green hook and test proper placement by pulling the metal handle. Close the battery compartment.

Note: In case of Electrostatic Discharge, Pump may need to be plugged into wall outlet to restart the battery.


⚠ Caution: The battery compartment cover must be in place before the pump is used for infusions.

The battery is charged by the pump during connection to A/C power. When disconnected from A/C or in case of power failure, the pump automatically switches to battery power.

Charging is displayed by the symbol  on the display of the pump during an infusion.



Operating Temperature of the Battery Pack SP is 5°C - 40°C.

 **Attention:** If the battery module is stored for long periods of time outside the pump, it is recommended to fully charge it upfront and store it at room temperature.

 **Attention**


The Li-Ion battery module (8713182U) is not compatible with devices having a serial number below the following:

- Infusomat® Space #11922
- Perfusor® Space #8496


The battery module incorporates a fixation pin for proper installation in newer pumps. For older pumps, it will be necessary to remove the fixation pin from the battery pack for proper installation into the pump. Check the proper fixation of the battery module in the pump afterwards.


INTENDED USE


The battery module of Space provides operation independent from A/C power when transporting patients within the facility. The wireless battery module contains a wireless transceiver module to allow data transmission of a single pump when connected to a WiFi network.


 **Attention:** The recommendations of the IEC 80001 should be observed.

Operators, technicians or nurses, do not need special skills but must be or become familiar with the product and read the instructions for use before operating the device.

 **Attention:** Therapeutic or diagnostic conclusions must not be based on values delivered by SpaceCom and their display in other web applications. In particular, remote viewing of alarms does not release the operator from responding to alarms at the pumps.

 **Attention:** The WiFi (2.4 / 5 GHz, 100mW) can cause interference with devices in the vicinity. Please observe the necessary minimum distance requirements. When using WLAN, the encryption and authentication should be activated in order to protect the data connection. It provides WEP, WPA, WPA2 (personal and enterprise) with TKIP and AES encryption and authentication.


 **WARNING:** WEP and WPA encryptions are vulnerable and should not be used. Older encryption methods should be upgraded to the most secure wireless encryption available (i.e. WPA2 or better).


 **Attention:** Although the listed wireless encryption standards are supported and available for use, B. Braun recommends use of WPA2 or better encryption.

GENERAL

The wireless option of the Space pump is only available when a battery module with a wireless transceiver (8713182U) is integrated and the wireless function is activated via the service program (HiBaSeD) or within the Options menu of the pump. In addition, the pump software must be version U or later. There are two versions of the Wifi battery which are both covered by this document and can be distinguished by the MAC ID (see chapter 6). The wireless operation mode supports 802.11 a/b/g/n (type 2 also 802.11 ac) with static IP-address setting or DHCP. For more details of type 1 and type 2 see chapter 7 (Technical Data).





When adding a wireless battery module to a pump, the wireless module starts within 2 minutes. If you remove the battery from the pump or switch off the pump when operated in battery mode, the wireless module is switched off. If the pump is switched off while connected to A/C power, the wireless module remains active.

 **Caution:** RF Exposure considerations require that a 20 cm (8 inch) separation distance between users and the installed antenna location shall be maintained at all times when the module is energized. OEM installers must consider suitable module and antenna installation locations in order to assure this 20 cm (8 inch) separation, and end-users should also be advised of the requirement.

 **Caution:** The wireless battery module may be interfered with by other equipment, even if that other equipment complies with CISPR emission requirements.

SAFETY INSTRUCTIONS

Safety Instruction for B. Braun Battery-Pack SP (Li-Ion)

-  Battery pack is suitable only for use with B. Braun Space Infusion devices.
-  Please follow local ordinance and/or regulations for disposal.
-  Fire or chemical burn hazard possible if mishandled. To avoid possible injury follow all safety instructions.
 - Do not open or expose to heat above 80°C (176°F).
 - Do not use damaged Battery-Packs.
 - Do not attempt to disable it.
 - Do not short circuit it.
 - Do not expose it to water or rain.
-  **WARNING:** If this equipment is modified, appropriate inspection and testing must be conducted to ensure continued safe use of the equipment.











This device/firmware contains components that are licensed under the GNU General Public License version 2 (see chapter 8). To receive the source code of these components as required by that license, please get in contact with your local distributor.

INTENDED USE / GENERAL / SAFETY INSTRUCTIONS

Chapter 1/2/3

The following table describes symbols in general but does not replace the technical specification of the described product.

Symbols on product

Symbol	Explanation
	Mandatory action: see instructions for use
	Consult Instructions for Use
	Defibrillation-proof type CF applied part
	Class II equipment
	Symbol indicating separate collection for electrical and electronic equipment 2002/96/EC)
	Temperature Limitation
	Humidity Limitation
	Limitation of the atmospheric pressure
	Non-ionizing electromagnetic radiation
	General warning sign (e.g. Caution)

WIFI INDICATORS ON PUMP RUN SCREEN

The status of the wireless connection is displayed on the run screen.

If the wireless transmitter is switched off, this is shown in the status of the run screen.



If the wireless is activated, the status of the connection is shown:

- Wireless operation mode is switched on but no connection is established.



Note: If the connection is lost without apparent reason (no configuration change, WiFi network in reach) contact your biomedical engineering or IT department to determine cause and reboot the battery.

Note: If the battery is of type 1, it could be in fallback mode as well (see operation manual for details).

- Wireless operation mode is switched on and connection to the network is established.



STATUS MENU

Further information regarding the status of the wireless connection can be found in the Status menu.

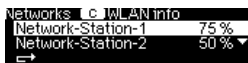


SSID: The Service Set Identifier, or SSID, is a name that identifies a particular 802.11 wireless LAN. The SSID can be up to 32 characters long and can only be set with the service tool HiBaSeD.



IP-Address shows the IP address assigned to this infusion pump.

Signal strength: The signal strength shows the quality of the connection.



Baud rate is the maximum communication speed in mega bits per second (Mbps). The maximum baud rate strongly depends on the wireless standard (802.11 a/b/g/n/ac) used.

Status code provides detailed information on the status of the wireless connection through the following codes:

- 10 to 12: internal malfunction
- 13: wireless interface can not find any network
- 14: wireless interface is trying to connect to a network
- 15: the interface is being configured
- 16: the interface is waiting for authentication
- 17: DHCP request is sent out
- 19: internal failure

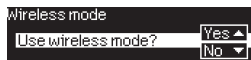
Available Networks opens a sub menu showing the available wireless networks (SSID) and their signal strength. It is not possible to change to another network. The battery automatically connects to a WiFi network based on the network configuration which can be done via the pump service tool HiBaSeD or the battery's web UI (see operation manual for details).

OPTIONS MENU

Within the Options menu the wireless mode can be switched on or off.



The ability to turn wireless on and off in options menu is configurable in the service tool.



CONFIGURING PUMP WIFI

If a wireless pump is connected to a SpaceStation, the wireless transceiver is automatically switched off. When removed from the Space Station, the wireless mode is automatically switched on again and operates with the previous settings.

For the network configuration of the wireless transceiver and detailed technical data please refer to the operation manual of the Battery Pack SP with WiFi.

Note: There are two types of the Battery pack SP with WiFi. They can be distinguished by the first 3 segments of the MAC ID, which is printed on the label: For type 2 batteries the ID begins with CO-EE-40, otherwise the battery is type 1. For more details on the differences between type 1 and type 2 see chapter 7 (Technical Data).

TECHNICAL DATA



The technical data of the pump is valid if there are no differences described in this section.

Technical data battery module:



General

Storage time:	full charge at < 25 °C (77 °F) 3.5 months inside the pump 1 year outside the pump
Charging time:	up to 6 hours
Charging conditions:	Recharging of WiFi battery while connected to A/C power and active WiFi is ensured as long as environmental temperature outside Infusion pump is ≤ 35 °C (95°F)
Operating time:	wireless active: Perfusor® at 25mL/h 2.5 hours Infusomat® at 1200mL/h 2.5 hours wireless inactive: Perfusor® at 25mL/h 10 hours Infusomat® at 1200mL/h 5 hours
Weight:	approximately 142 g. (0.3 lb)
Dimensions:	104 mm (4.1 in) x 40 mm (1.57 in) x 30 mm (1.18 in) (WxHxD)
Type of battery pack:	Li-Ion
Capacity:	Nominal 1620mAh, 1400mAh used to extend battery life time
Battery voltage:	6 to 8.2V

Wireless module (Battery Type 1)

Operating System:	Linux 2.6.34. Kernel
Processor:	ARM9-based
Memory:	32MB Flash, 64MB RAM
Radio Module:	IEEE 802.11a/b/g/n (IEEE 802.11a/n channel 36, 40, 44, 48-140) (IEEE 802.11g/n/b channel 1-13)
Transmit power:	100mW
Required Quality of Service:	max 60 kbit per second
Supported Modes:	Ad-Hoc, Infrastructure
Frequency Bands:	2.4GHz and 5GHz
Antenna Type:	combined 2.4/5GHz on-board chip antenna
Wireless Security:	AES, TKIP, WEP, WPA, WPA2
	 WARNING: WEP and WPA encryptions are vulnerable and should not be used. Older encryption methods should be upgraded to the most secure wireless encryption available (i.e. WPA2 or better).
	 Attention: Although the listed wireless encryption standards are supported and available for use, B. Braun recommends use of WPA2 or better encryption.
EAP-Methods:	PEAPv0-MSCHAPv2, FAST, LEAP, TLS, TTLS
Certification:	CE (Europe) FCC: 2AFOL-8713182 (USA) IC: 20538-8713182 (Canada)
Power consumption:	1W average, 2W peak

Wireless module (Battery Type 2)

Operating System:	Linux 4.1 Kernel
Processor:	ARM9-based
Memory:	256MB Flash, 128MB RAM
Radio Module:	IEEE 802.11a/b/g/n/ac Channels depending on regulatory domain, for details refer to the operation manual of the Battery Pack SP with WiFi.
Transmit power:	<70mW, depending on channel and domain. For details refer to the operation manual of the Battery Pack SP with WiFi.
Required Quality of Service:	max 60 kbit per second
Supported Modes:	Infrastructure
Frequency Bands:	2.4GHz and 5GHz
Antenna Type:	combined 2.4/5GHz on-board chip antenna
Wireless Security:	AES, TKIP, WEP, WPA, WPA2
	 WARNING: WEP and WPA encryptions are vulnerable and should not be used. Older encryption methods should be upgraded to the most secure wireless encryption available (i.e. WPA2 or better).
	 Attention: Although the listed wireless encryption standards are supported and available for use, B. Braun recommends use of WPA2 or better encryption.
EAP-Methods:	PEAPv0-MSCHAPv2, TLS, TTLS
Certification:	CE (Europe) FCC: SQG-60SIPT (USA) IC: 3147A-60SIPT (Canada)
Power consumption:	1W average, 2W peak

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Version 2, June 1991

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