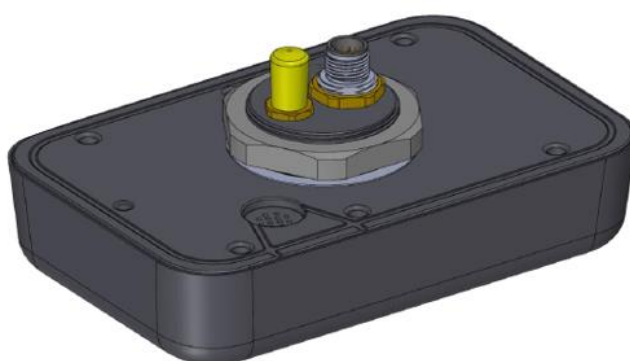


SBP

User guide



1 SBP brief description

SBP is a network element to be mounted on a compressor machine and connected to its controller via Ethernet 10/100BT, CAN, or RS485. SBP reads the machine data from the controller at regular intervals and uploads it to the Cloud Fleet management platform.

The cellular technology is LTE Cat 1 readily deployed worldwide providing sufficient bandwidth (10Mb/s DL, 5Mb/s UL). The cellular module also includes a GNSS receiver.

The cellular communication uses an eUICC SIM card being pre-installed in a slot behind a non-removable cover which can be opened with two non-detachable screws for replacing the SIM.

Behind the same cover, next to SIM slot, a push button has two functions, for a hardware reset and secondly for a return to the factory setting when pushed for more than three seconds.

For commissioning purposes, Wifi/BT is used. The same technology can be used to enable communication between SBPs located close to each other (<20 meter).

The SBP collects data from surrounding sensors using the ISM bands at 868MHz, 915MHz and 434MHz. The proper band is selected based on the region where the SBP is installed. Only 915 MHz band will be activated in North America region.

The SBP has no connectors for external antennas. All the antennas are custom made, except for the Wifi/NT antenna, and all are located inside the housing.

The device is powered from 24Vac or 24Vdc and SBP monitors this supply voltage.

The SBP has one general purpose pin which can be used to place it in low power mode.

All the electrical signals are mapped on an M12 connector on the bottom of the SBP. The 24V power signals are also separately available on a second M8 connector.

SBP device state is shown on a green and orange led. The green led is linked with the wireless interface state, the orange led is linked with the wired interface state.

The SBP is mounted on the compressor using one M40 sized nut screwed from the inside towards the compressor metal sheet.

The SBP contains no batteries. When power is switched off, all radio interfaces will turn off automatically.

1.1 SBP Product specifications

- Operating temperature: -20°C - +65°C
- Storage temperature: -30°C - +80°C
- Operating & storage humidity: 85% at 40°C.
- Maximum humidity: 90% RH no condensation
- Operating voltage: 24Vdc +/-10%, or 24Vac +25%, -30%, frequency of 50-60 Hz

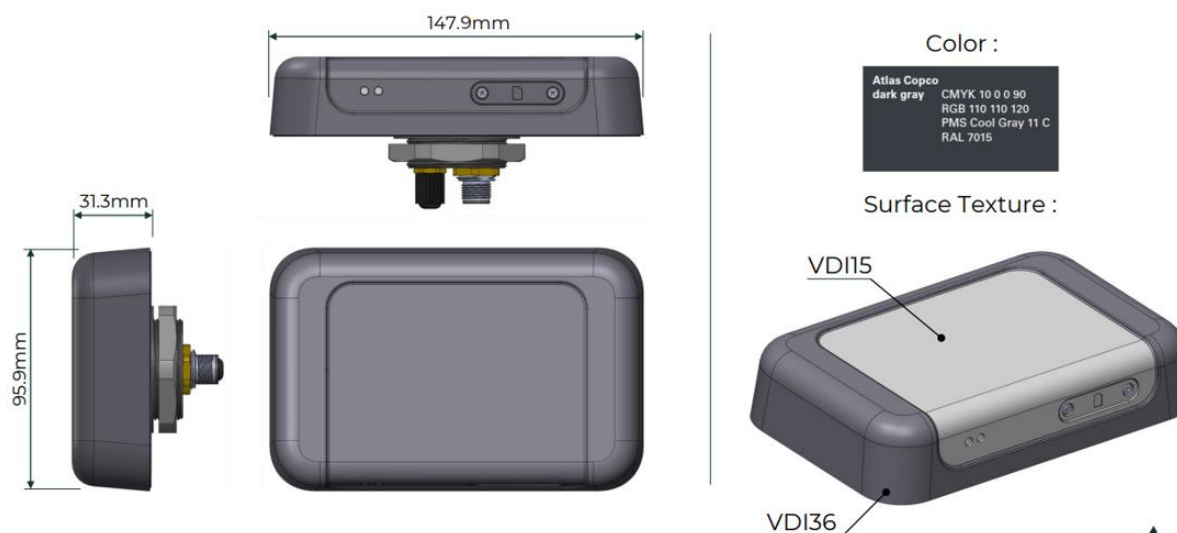
- Maximum power consumption: 6 W
- IP rating grade: IP54
- UV resistant plastic housing. Optionally, a specific cover may be needed to protect from sun heating.

1.2 Label

Part serial number, IMEI, CE/FCC, UKCA marks and QR code are provided on the bottom and the front. These pictures are for reference only.



1.3 Dimensions



1.4 Declaration of Conformity

Wuxi Origin Industrial Service CO., LTD declares that this product is in compliance with:

- Directive 2014/30/EU and 2011/65/EU
- EU Radio Equipment Directive (RED 2014/53/EU.
- Emission/immunity: CE, ACMA RCM, FCC, Industry Canada, UKCA
- Safety: CSA/UL, cULus
- Environmental: RoHS 2011/65/EU (RoHS 2), WEEE, REACH
- Mobile: R&TTE (EU), FCC (US), IC (Canada), RTA, CCC, GCF, PTCRB
- China NAL/STRRC/CCC + Japan + KC Korea + Australia + Brazil + Russia + ...
- EMC, ESD (CE requirements)
- Noise emission: EN 55022 class B 1998, EN 50081-2 1993
- Noise immunity: EN 50082-2 1995 , EN 61000-6-2 1999
- Cyber security Certificates IEC 62443-4-2 and UL

Contact Wuxi Origin Industrial Service CO., LTD to get a DoC copy.

1.5 Variants

There are 3 defined variants, equipped with different SIM cards in the same Hardware:

- SBP Global KORE eUICC 1830 1052 70
- SBP China SIM 1830 1052 71
- SBP Turkey SIM 1830 1052 72

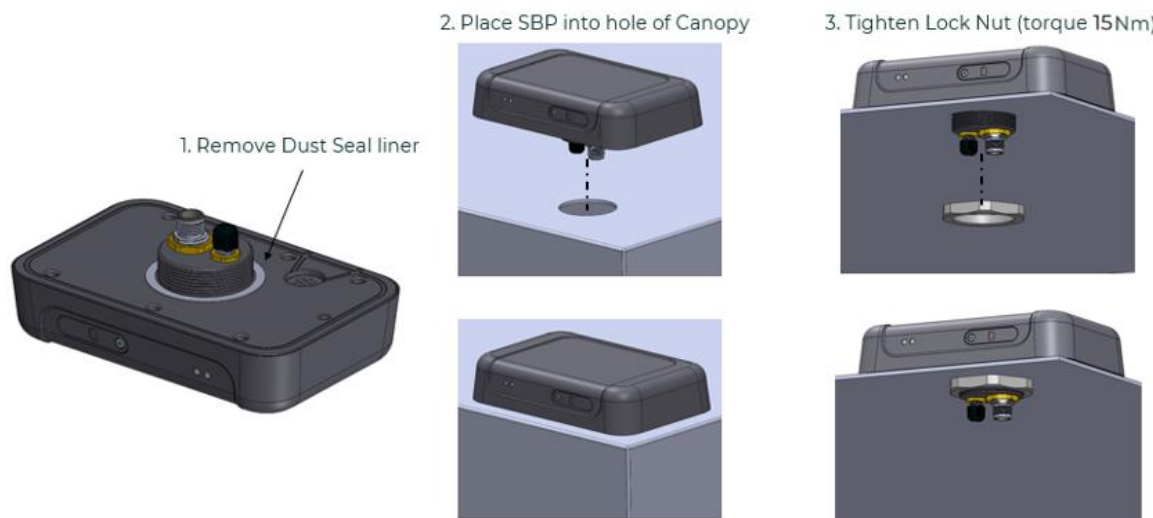
2 Safety precautions

Always consult the manual of the machine for safety instructions before installing the SBP.

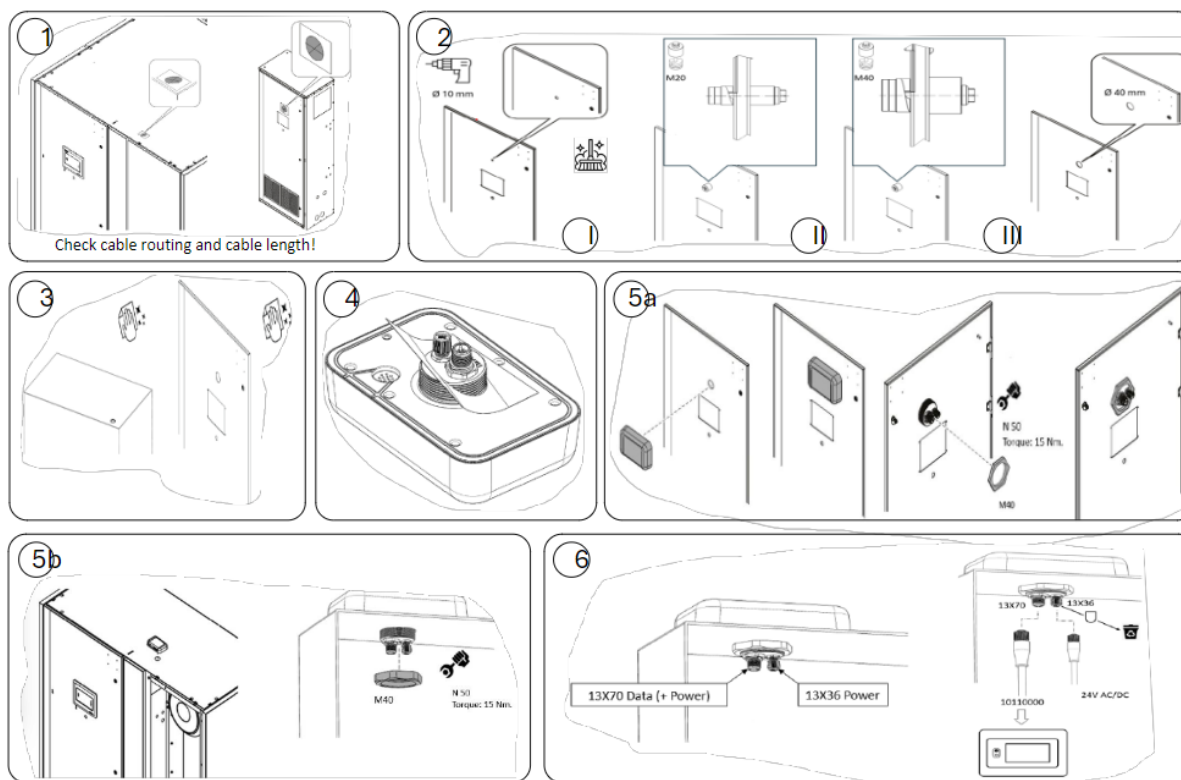
3 Service and Installation

The SBP shall be installed exclusively by qualified personnel.

The SBP shall be installed on the canopy on the outside of a compressor, preferable on the roof with maximum cellular coverage. It can also be standalone, used as a wireless gateway without a connection to a controller.



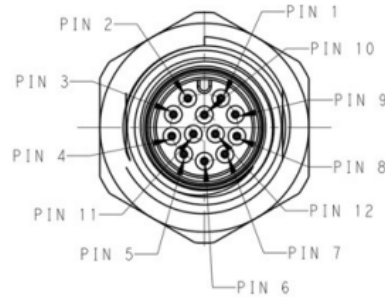
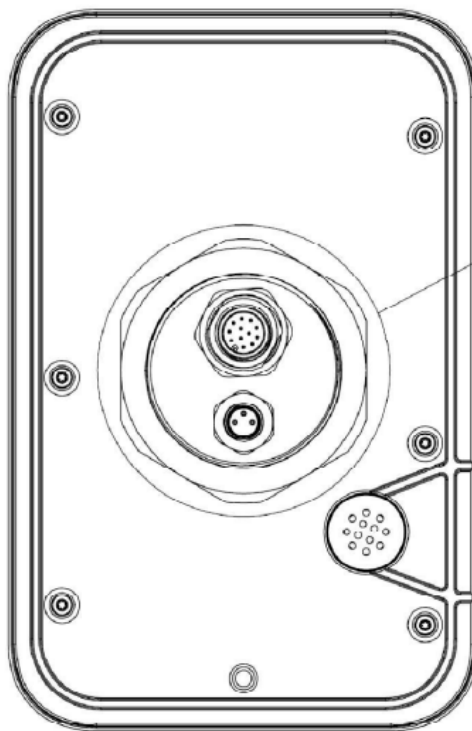
SBP Quick Installation Guide



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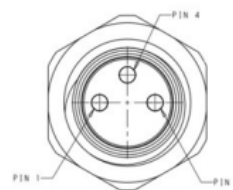
According to the installation and cabling instructions, the SBP shall be powered from the cubicle. The cubicle is an integral part of the machine and all devices contained in the machine are powered from this cubicle with the appropriately sized fuses and power supplies in line with the device specification.

3.1 Connection diagram



M12-12 pinout

1	GND
2	GND
3	CAN_H
4	CAN_L
5	ETH_CON_TX1_P
6	ETH_CON_TX1_N
7	ETH_CON_RX1_P
8	ETH_CON_RX1_N
9	RS485_B
10	RS485_A
11	24V-AC
12	24V-AC



M8-3 Pinout

1	GND
3	24V-AC
4	24V-Ac

4 Recycling



Check the local regulations for proper disposal of electronic products. The Directive on Waste Electrical and Electronic Equipment (WEEE), which entered into force as European law on 13th February 2003, resulted in a major change in the treatment of electrical equipment at end-of-life.

This symbol on the product(s) and / or accompanying documents means that used electrical and electronic equipment (WEEE) should not be mixed with general household waste. For proper treatment, recovery and recycling, please take this product(s) to designated collection points where it will be accepted free of charge.

Product introduction: 30 June 2024.

5 FCC requirements for operation in the United States

5.1 FCC Information for the User

This product does not contain any user serviceable components and is to be used with approved, internal antennas only.

Any product changes or modifications will invalidate all applicable regulatory certifications and approvals.

5.2 FCC Guidelines for human exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

5.3 Federal Communications Commission Statement

This device complies with Part 15 Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

5.4 FCC Radio Frequency Interference Warnings & Instructions

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following methods:

- Increase the separation between the equipment and the receiver.
- Connect the equipment to an electrical outlet on a circuit different from that which the radio receiver is connected
- Consult the dealer or and experienced radio/TV technician for help

5.5 FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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.

5.6 Industry Canada

This device complies with RSS-247 of the Innovation, Science and Economic Development Canada (ISED) 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.

Ce dispositif est conforme à la norme RSS-247 d'Innovation, Sciences et Développement économique Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

5.7 Radiation Exposure Statement

This device complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

NOTE IMPORTANTE: Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et votre corps.