

Data Sheet

RFID Reader/Writer SMSE013

Version: V2.20240306_rev.1

3059790004-02-EN-900

Read and follow this data sheet. Keep it for future use.
Subject to technical modifications.

Company details

Document	Data Sheet
	Product: RFID Reader/Writer SMSE013
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1 For your safety



Please read the following instructions carefully before using the product for the first time:

- The approved antenna must be professionally installed by Amwac or an Amwac approved installer to comply with §15.203 of the FCC rules.
- The approved antenna must be professionally serviced by Amwac or an Amwac approved installer to comply with §15.203 of the FCC rules.
- The SIMPAS RFID Reader/Writer may only be used with the approved antenna (No.: SMSE015) and not with any other antenna (each antenna connection may only be connected to an identical approved antenna).
- Use of the device with any other antenna will invalidate the FCC certification.
- Unused antenna connectors must be deactivated by the software and covered with a dust cap.
- This device is only approved for installation on agricultural machines. The power supply from an AC source is not permitted. The system is designed to be operated only with 5 VDC. The FCC certification is invalidated if an AC main power supply is used.

2 Description

The RFID Reader/Writer serves as a reading and writing device for RFID tags attached to containers of the SIMPAS application system. It is a transceiver that operates in the 902-928 MHz range. It reads and writes RFID tags that comply with the ISO1800-6C standard. The device is powered by 5 V and is usually installed on agricultural machinery. It is controlled via RS-232 interface. The device transmits data and is controlled via RS-232. The antennas have a gain of -18 dBi.

When the system is powered up and initialized, a SIMPAS Meter ECU triggers read operations on each antenna every 100 ms via the RS-232 interface. When the machine is running, the SIMPAS Meter ECU triggers write operations every 30 seconds to update the values on the RFID tags. Only one antenna can be active at a time. The SIMPAS RFID Reader/Writer does not read or write independently. An external device is required to trigger read/write operations via RS-232.



RFID Reader/Writer with connected antenna (No. :SMSE015)

3 Compliance

Changes or modifications not expressly approved by Trimble could void the user's authority to operate the equipment.

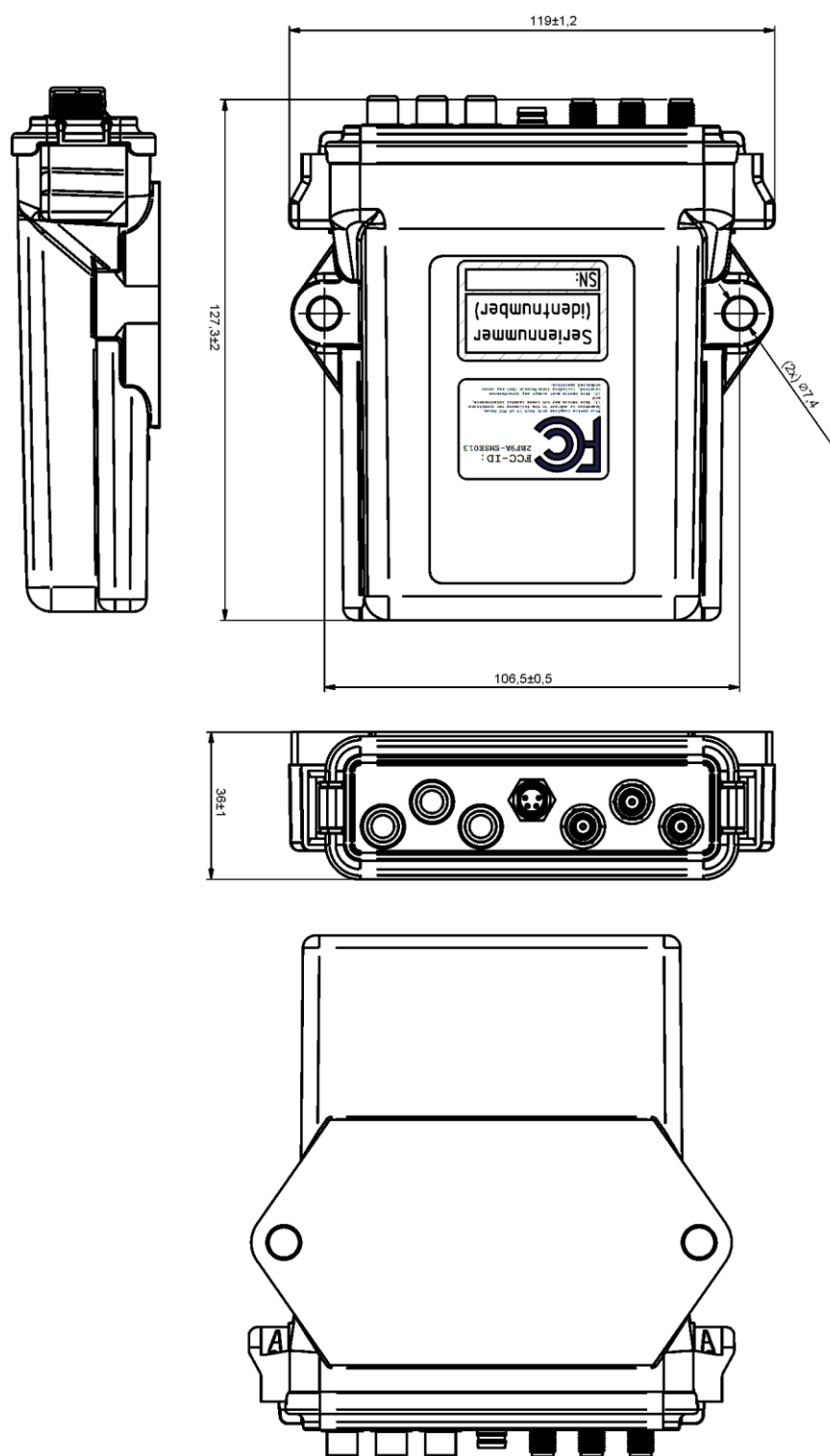
This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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 a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

4 Technical specifications

Operating voltage	4.5 V...5.45 V
Max. current consumption	0.5 A
Operating temperature	-20 °C...+70 °C (-4°C...+158°F)
Dimensions	118 mm x 128 mm x 34 mm (4.65 in x 5.04 in x 1.34 in)
Certification	FCC according to FCC standard 15.247
Transmitting frequency	902 MHz (nominal) The transmit frequency is controlled by a 20 MHz crystal oscillator. The RF transmitter IC (ST25RU3993) has a built-in phase locked loop circuit.
Modulation	ASK (Amplitude Shift Keying)
RF output power	100 mW (20 dBm)

5 Dimensions



6 Block diagram

