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SE3403 High Power Asset Transmitter

Product Specification

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DS Model Number	SE3403
Product Type	Wireless Asset Transmitter.
Vendor / Manufacturer	Detection Systems, Inc..
Compatible Products	All DS and Radionics 304.00MHz, 5Kbps Receiver and Repeater Products.

1. Overview:

SE3403 is a small mounted sensor to detect and report the status of the monitored asset to receiver(s). The sensor has a built in RF transmitter. The sensor also reports supervisory signal to the receiver(s) once per seven minutes to confirm the integrity of the RF link and the battery status. The SE3403 is a modified RF3401 transmitter that only utilizes the supervisory, tamper and low battery portion of the RF3401 transmitter.

2. Features:

SAW based RF oscillator.
Powered by one 123A Lithium 3v battery with 1400mAH capacity (User replaceable).
Factory programmed ID with serialization.
Low battery detection.
Built in reed switch.
One external reed switch input supervised terminal strip to monitor external loop.
Status supervisory with report rate: Once per 7 minutes.
Battery life: **5 years** minimum.
Cover tamper switch.

3. Functions:

Transmits multiple data bursts under the following conditions and all transmissions include battery status:
8 packets transmitted with full power whenever status of tamper switch changes.
8 packets transmitted with full power whenever status of the terminal changes.
2 packet supervisory signals with full power once per 7 minutes, if no other transmissions.

4. Specifications:

4.1. RF

Carrier Frequency	304.00 MHz.
20 dB Bandwidth	750 kHz max (per FCC Part 15.231).
Peak status change Signal Strength	95 dBuv/m ± 3dB (at 3m distance).

4.2. Data

Format	Comply with **RF_5Kbps_Protocol**.

Distance Between Packets	No less than 90 ms psuedorandom timing interval between two packets.

4.3. Compatibility

RF Link	**RF_5Kbps_Protocol** .
Reception Devices	All DS and Radionics 304.00MHz, 5Kbps Receiver Devices.

4.4. Electrical

Operating Voltage	3.3 to 2.4 Vdc within spec, with target to operate 2.0 Vdc.
Maximum Burst Current	20 mA.
Operating Temperature Range	0° to 50°C with target -20 to +65°C.

4.5. Mechanical

Housing dimensions	Refer to DS P/N: 34654B, 34655B, 34656B, 34656B, 34657B, 34658B and 35725B.
Housing Material:	ABS grade T.
Housing Color	White.

4.6. Markings:

Internal product identification label showing model number, manufacturer, date of manufacture.
Internal label showing the ID number of each individual transmitter.
FCC label appears on the outside of the enclosure. Foreign approval labels may be used in place of the FCC label for export equipment.

4.7. Cost:

Target cost is $xx.xx /quantity 10,000 units for materials.

4.8. Approvals:

The following approvals should be secured prior to sale:

FCC part 15 certification, required for sale in the USA.
IC Approval, required for sale in Canada.
Must meet the Australian specs of ACA (Australian Communications Authority).
UL Approval needed for residential and commercial listings.

5. Detail Specifications

5.1. Reed switch – non functioning-optional

5.1.1. Timing

The reed input uses the ZONON ASIC. The ASIC pulses the reed switch about every 200mSec for a pulse width of about 200uSec. During this pulse, the input is checked for reed to be open or closed.

5.1.2. Voltage

The ASIC pulses the reed switch with a weak current source and internally compares the input voltage of the drive pin. The ASIC senses the trip point between open and short at about 0.5 volts.

5.2. Tamper Switch

5.2.1. Timing

The tamper input uses the ZONON ASIC. The ASIC pulses the tamper switch about every 200mSec for a pulse width of about 200uSec. During this pulse, the input is checked for switch to be open or closed.

5.2.2. Voltage

The ASIC pulses the tamper switch with a weak current source and internally compares the input voltage of the drive pin. The ASIC senses the trip point between open and short at about 0.5 volts.

5.3. External zone contacts – non functioning-optional

5.3.1. Timing

The external zone input uses the ZONON ASIC. The ASIC pulses the output using a high drive pin that is intended to drive a resistor to the zone input pin which connects to the external zone contacts. The pulse occurs about every 200mSec for a pulse width of about 200uSec. During this pulse, the zone input pin is checked for external zone to be open, supervised (using a matching resistor to the pull-up resistor), or closed.

5.3.2. Voltage

The ASIC pulses the zone output with a strong current source and internally compares the voltage of the zone input pin. The ASIC determines one of three states of the input: open is higher than 2/3 supply voltage, supervised is between 2/3 and 1/3 of the supply voltage, and short is less than 1/3 supply voltage.

5.4. Supervisory

The supervisory timer is also in the ASIC. The ASIC uses an internal long timer based upon its clock source. The unit is designed to transmit for about every 7 minutes.

5.5. Transmissions

Transmissions will be sent upon any change of input states or from the supervisory time period, if there have not been any state changes. During any transmissions, the microcontroller must still monitor the inputs for further changes. If there are state changes during a transmission message, the message will complete and have a 500mSec silent period prior to sending the latest status updates.