



**Caterpillar Inc.**  
100 NE Adams Street,  
Peoria, IL 61629 USA  
[www.cat.com](http://www.cat.com)  
UENR8482



# Operational Document

## Supplemental Information

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### **Regulatory Compliance Information For Machine Security System MSS3s (A5:S3)**

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**Name of product:** Cat® Machine Security System (MSS3s)

**Make:** Cat® Brand

**Model:** MSS3s (A5:S3)

**Part Number:** 432-8664

**Type:** Wireless Device (To provide Security for machines with or without electronic controls via RFID Communication)

**SMCS Code:** 7631

The A5:S3 part number 467-9245 is the buy-level part that includes a radio equipment and a software tied to the machine integration. The radio equipment contained in the A5:S3 is 432-8664.

Such radio equipment complies with the applicable regional product compliance requirements as demonstrated with the attached DoC. The software included in the buy-level part does not impact regulatory performance parameters.





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**Name of product:** Cat® Key FOB

**Make:** Cat® Brand

**Model:** Key FOB

**Part Number:** 285-3231

**Type:** Wireless Device (Chip-key for operator identification with RFID®)

**SMCS Code:** 7631





## Properties (Main parameters affecting safety i.e voltage rating, radio frequency range, current, temperature)

### MSS3s Safety Parameters

Input Voltage	
Operating Voltage Range	9VDC to 32VDC
Protection	Reverse Polarity
RFID Communication	
Transmit Frequency	134.2KHz
Transmit Signal Level	12dBμA/m @ 10m 23dBμA/m @ 3m
Current Consumption (max)	
Max operational current draw	1.5A @ 24V
Environment	
Operating Temperature	-40° C (-40° F) to 85° C (185° F)
Storage Temperature	-50° C (-58° F) to 85° C (185° F)
ESD Protection (ISO 10605)	+/-8kV direct, +/- 15kV air



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## EU Declaration of Conformity

The Declaration of Conformity is issued under the sole responsibility of the manufacturer.

The undersigned, representing the manufacturer

### **Caterpillar Inc.**

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USA

hereby declares that the product, object of this description: **Machine Security System ECM**

**Brand: Caterpillar**

**Model: MSS3s (A5S3)**

**Part #: 432-8664**

**Antenna Part #: Internal**

Is in conformity with the relevant Union harmonization legislation:

Directive 2014/30/EU

Directive 2014/53/EU

Directive 2011/65/EU

Conformity is shown by compliance with the applicable requirement of the following documents:

Assessment Procedure: √ Annex II,     Annex III,     Annex IV

2014/30/EU

EMCD

EN 13309:2010

2014/53/EU:

RED

LVD (Sec 3.1a):

EN 60950-1:2006/A2:2013

EN 62311:2008

EMC (Sec 3.1b):

EN 301 489-1 V2.2.0

EN 301 489-3 V2.1.1

EN 301 489-17 V3.2.0

RF (Sec 3.2)

EN 300 330 V2.1.1

2011/65/EU

RoHS

EN 50581

Signature: \_\_\_\_\_

*Michael Caruthers*

Name: Michael Caruthers

Place: Mossville, IL

Title: Engineering Manager

Date: 05oct2018



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## **Conditions for Assembly, Storage, Transfer and Disposal**

All Cat MSS3s locations use isolation mounts regardless of location. The isolation mounts cannot be removed to allow only the use of the M6 bolt for hard-mounting.

### **Mounting Locations**

Ensure that the following guidelines are met when mounting the MSS3s Machine Security System.

- Mount the MSS3s inside the cab if used for operator ID applications.
- Ensure that the radio frequency propagation is not inhibited. Do not fully enclose the transceiver in metal. The transceiver may be mounted to a metal plate inside a panel or compartment as long as most of the panel material is non-metallic.

### **Term and Conditions of Storage and Transportation**

The product is packed in consumer packaging of manufacturer. The product should be stored in the factory packing and storage conditions for climatic factors of Group 4 in accordance with GOST 15150-69. When loading and transportation requirements on warning labels on the boxes must be followed, shocks and bumps that can affect the appearance and performance of the device should not be allowed. Transportation can be done by all kinds of covered transport vehicles. When transporting by air, ensure that the device is transported in a sealed compartment.

### **Transfer and Disposal**

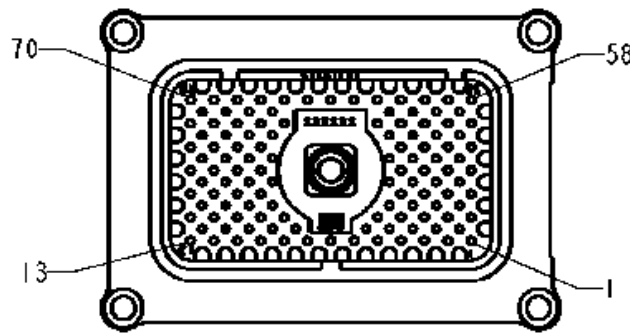
Contact an authorized dealer to determine the disposal and transfer conditions.



## Electrical Connection

### MSS3s:

Pinout of 70-pin Amp connector



Pin #	Description
1	CAT DATA LINK +
3	CAT DATA LINK -
5	20 mA SWITCH TO +BATTERY OUTPUT
7	LED DRIVER OUTPUT 1
9	LED DRIVER OUTPUT 2
11	KEY READER SIGNAL
13	KEY READER RETURN
18	SWITCH TO GROUND INPUT 2
19	LED DRIVER RETURN
24	+BATTERY
26	-BATTERY
29	CAN HI
31	CAN LO
40	2A NEUTRAL START OUTPUT
42	2A SOURCING OUTPUT RETURN
45	ON/OFF INPUT
47	CRANK POSITION INPUT
52	SWITCH TO GROUND INPUT 1
53	300mA SOURCING OUTPUT RETURN
58	2A SOURCING OUTPUT
60	NEUTRAL START INPUT
62	300mA SOURCING OUTPUT 1
64	300mA SOURCING OUTPUT 2
66	300mA SOURCING OUTPUT 3
68	300mA SOURCING OUTPUT 4
70	KEY SWITCH INPUT

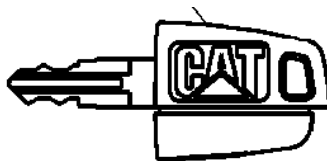
Pin #	Description
5	20 mA SWITCH TO +BATTERY OUTPUT
40	2A NEUTRAL START OUTPUT
58	2A SOURCING OUTPUT
42	2A SOURCING OUTPUT RETURN
62	300mA SOURCING OUTPUT 1
64	300mA SOURCING OUTPUT 2
66	300mA SOURCING OUTPUT 3
68	300mA SOURCING OUTPUT 4
53	300mA SOURCING OUTPUT RETURN
24	+BATTERY
26	-BATTERY
29	CAN HI
31	CAN LO
3	CAT DATA LINK -
1	CAT DATA LINK +
47	CRANK POSITION INPUT
13	KEY READER RETURN
11	KEY READER SIGNAL
70	KEY SWITCH INPUT
7	LED DRIVER OUTPUT 1
9	LED DRIVER OUTPUT 2
19	LED DRIVER RETURN
60	NEUTRAL START INPUT
45	ON/OFF INPUT
52	SWITCH TO GROUND INPUT 1
18	SWITCH TO GROUND INPUT 2





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## **KeyFOB:**



## **Preventative Maintenance**

No preventative maintenance is required for these devices.

## **Safe Operation**

To Ensure the safe operation of this device proper wire harness must be connected to the device as well as it must be mounted as per the instructions.

## **Information about the faults and corrective actions**

Before calling to the dealer for repair, check the integrity of the electric wires, and cycle the battery power to the device. Cycling battery power can be accomplished by:

- Turning the machines master disconnect off and then back on.
- Unplugging the harness from the device and then plugging the harness back in.
- Disconnecting the negative cable from the negative battery terminal and then reconnect the cable. If these solutions do not help, call the local dealer for service.

## **Date of Manufacture**

Contact an authorized dealer to determine the date of manufacture using the serial number.