

1 **TYPE EXAMINATION CERTIFICATE**

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres
Directive 2014/34/EU**

3 Type Examination Certificate Number: **Baseefa18ATEX0146**

4 Product: **Machine Sentry MSF-1**

5 Manufacturer: **AVT Reliability Limited**

6 Address: **Unit 2, Easter Court, Europa Boulevard, Warrington, Cheshire, WA5 7ZB**

7 This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 SGS Baseefa certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014.

The examination and test results are recorded in confidential Report No. **GB/BAS/ExTR18.0185/00**

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0: 2018 EN 60079-11: 2012

except in respect of those requirements listed at item 18 of the Schedule.

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

11 This TYPE EXAMINATION CERTIFICATE relates only to the design of the specified equipment and not to specific items of equipment subsequently manufactured.

12 The marking of the product shall include the following :

Ex II 3G Ex ic IIC T4 Gc (-20°C ≤ T_a ≤ +60°C)

SGS Baseefa Customer Reference No. **7718**

Project File No. **18/0303**

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D BREARLEY
Certification
Manager

R S SINCLAIR
TECHNICAL MANAGER
On behalf of SGS Baseefa Limited

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Schedule

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Certificate Number Baseefa18ATEX0146

15 Description of Product

The Machine Sentry MSF-1 is a battery powered measurement device designed to measure the vibration of equipment located in the hazardous area. The equipment uses accelerometers to measure the vibrations in 3-axis of measurement.

The equipment can be either permanently attached to the equipment it is measuring using adhesive or mounting stud, or can be temporarily attached using a permanent magnet. The measurement information is then transmitted using Bluetooth communications to suitably certified data acquisition equipment.

The equipment comprise a single printed circuit board that is fully encapsulated in a plastic sub-assembly which also holds the battery. The assembly is fitted inside a cylindrical stainless steel enclosure with a polycarbonate cap fitted on the top to permit Bluetooth communications. The bottom of the enclosure is fitted with a threaded lid allowing access for the battery to be replaced.

The Machine Sentry MSF-1 is designed to be powered by an EVE ER26500 C Size 3.6V Lithium-thionyl Chloride (Li-SOCl₂) Battery.

16 Report Number

GB/BAS/ExTR18.0185/00

17 Specific Conditions of Use

None

18 Essential Health and Safety Requirements

In addition to the Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9, the following are considered relevant to this product, and conformity is demonstrated in the report:

Clause	Subject
1.2.7	LVD type requirements
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
MSF-SCHEMATICS	1 of 7	B	30/1/2019	Circuit Board Design - Machine Sentry v3 Board Schematic
MSF-SCHEMATICS	2 of 7	B	30/1/2019	Circuit Board Design - Machine Sentry v3 Board Schematic
MSF-SCHEMATICS	3 of 7	B	30/1/2019	Circuit Board Design - Machine Sentry v3 Board Schematic
MSF-SCHEMATICS	4 of 7	B	30/1/2019	Circuit Board Design - Machine Sentry v3 Board Schematic
MSF-SCHEMATICS	5 of 7	B	30/1/2019	Circuit Board Design - Machine Sentry v3 Gerber Layouts
MSF-SCHEMATICS	6 of 7	B	30/1/2019	Circuit Board Design - Machine Sentry v3 Component Layout
MSF-SCHEMATICS	7 of 7	B	30/1/2019	Circuit Board Design - Machine Sentry v3 Bill of Materials

Number	Sheet	Issue	Date	Description
MSF-ASSEMBLY	1 of 4	A	15/11/2018	Sensor Assembly: Stages 1 – 4 Machine Sentry v3
MSF-ASSEMBLY	2 of 4	A	15/11/2018	Sensor Assembly – Stage 5: Potting Machine Sentry v3
MSF-ASSEMBLY	3 of 4	A	15/11/2018	Sensor Assembly: Stages 6 - 8 Machine Sentry v3
MSF-ASSEMBLY	4 of 4	A	15/11/2018	Sensor Assembly: Parts List: Machine Sentry v3
MSF-BASE	1 of 1	F	7/11/2018	Sensor Base – Machine Sentry v3
MSF-BTBH	1 of 1	H	3/12/2018	Battery Holder – Machine Sentry v3
MSF-BTC	1 of 1	G	7/11/2018	Sensor Bluetooth Cap – Machine Sentry Fixed
MSF-CASE	1 of 1	H	7/11/2018	Sensor Main Body – Machine Sentry v3
MSF-BATTERY-LABEL	1 of 1	A	14/11/2018	Battery Holder Label – Machine Sentry v3
MSF-CASE-LABEL	1 of 1	B	05/03/2019	Case Label – Machine Sentry v3

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 18.0087 Iss. 0, and also associated with ATEX Certificate No. Baseefa18ATEX0145.