

1 **EU - TYPE EXAMINATION CERTIFICATE**

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

3 EU - Type Examination Certificate Number: **Baseefa17ATEX0066X – Issue 2**

4 Product: **Machine Sentry Mobile Ex**

5 Manufacturer: **AVT Reliability Ltd**

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

7 This re-issued certificate extends EU Type Examination Certificate No. Baseefa17ATEX0066X to apply to product designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

8 SGS Fimko Oy, Notified Body number 0598, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 the Directive.

8.1 The original certificate was issued by SGS Baseefa Ltd (UK Notified Body 1180). It, and any supplements previously issued by SGS Baseefa Ltd have been transferred to the supervision of SGS Fimko Oy (EU Notified Body 0598). The original certificate number is retained.

The examination and test results are recorded in confidential Report No. **See Certificate History**

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

EN 60079-0: 2012 + A11: 2013 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 EU - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following :

 **II 2 G Ex ib IIB T4 Gb**

SGS Fimko Oy Customer Reference No. **7718**

Project File No. **20/0414**

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Schedule

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Certificate Number Baseefa17ATEX0066X – Issue 2

15 Description of Product

The Machine Sentry Mobile Ex is a portable battery powered measurement device designed to measure the vibration of equipment located in the hazardous area.

The equipment uses a permanent magnet to attach to the equipment and using accelerometers measure the vibrations in 3-axis of measurement. The measurement information is then transmitted using Bluetooth communications to suitably certified data acquisition equipment. The equipment also contains a built-in infra-red thermometer to provide temperature information on the equipment to which it is connected.

The Machine Sentry Mobile Ex can also to be connected to a suitably certified external Accelerometer device via the supplied co-axial cable adapter which plugs into the external connection plug on top of the equipment. The equipment provides power to the connected accelerometer and allows measurements to be communicated via the Bluetooth communication link alongside its own measurements.

The equipment comprises four printed circuit boards (PCB) which are encapsulated and sealed within a cast aluminium enclosure with a polycarbonate window on the top of the device to permit Bluetooth communications. The equipment is powered from a lithium-ion rechargeable cell mounted inside the equipment which is designed to only be charged in the non-hazardous area via the external connector on top of the equipment.

The Machine Sentry Mobile Ex has the following input / output parameters: -

Charger Input – External Connector Pins 2 w.r.t 1 (Safe Area Connection only)

$$U_m = 253V \text{ r.m.s}$$

The charger is designed to be connected to a suitable mains supplied charger with a d.c. voltage of up to 12V.

External Accelerometer Connection – External Connector Pins 4 w.r.t. 3 (with adapter cable fitted)

$U_o = 24V$	$C_i = 0$	$C_o = 0.23\mu F$
$I_o = 25mA$	$L_i = 0$	$L_o = 65.5mH$
$P_o = 150mW$		$L_o/R_o = 533\mu H/\Omega$

16 Report Number

See Certificate History

17 Specific Conditions of Use

1. The equipment must only be charged in the non-hazardous area.
2. The equipment is not capable of passing the 500Vr.m.s dielectric strength test. This must be taken into account during installation and use.

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
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

New drawings submitted for this issue of certificate:

Number	Sheet	Issue	Date	Description
AVT-8685-D020-EX	1 of 1	C	11.08.20	MSM ATEX & IECEx Label
AVT-8685-D021-EX	1 & 2	B	11.08.20	MSM Bottom Housing Assy
AVT-8685-D023-EX	1 to 7	B	11.08.20	MSM Electronics Assy
AVT-8685-D024-EX	1 & 2	B	11.08.20	Machine Sentry Mobile Sensor v2.1 Ex.
V307-A1-Ex	1 of 2	B	15/10/2020	MSM Battery Case
V307-A1-Ex	2 of 2	B	15/10/2020	MSM Battery Assembly
V307-B1-Ex	1 of 1	B	11 Aug 2020	Bill of Materials

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 17.0052X Iss.2, and are also associated with ATEX Certificate No. Baseefa17ATEX0067X Iss. 2

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
AVT-8685-D006-EX	1 of 1	A	25.05.17	MSM Bluetooth Window
AVT-8685-D022-EX	1 & 2	A	25.05.17	MSM Top Housing Assy
AVT-8685-D026-EX	1 & 2	A	25.05.17	MSM Lemo-BNC Adapter
AVT-8685-D027-EX	1 of 1	A	25.05.17	MSM Bottom Casting
AVT-8685-D028-EX	1 of 1	A	25.05.17	MSM Top Casting
V307-A2-Ex	1 of 3	A	25 May 2017	Temperature Sensor Lead Assembly Schematic Exploded View
V307-A2-Ex	2 of 3	A	25 May 2017	Temperature Sensor Lead Assembly Schematic Final View
V307-A2-Ex	3 of 3	A	25 May 2017	Temperature Sensor Lead Assembly Pinouts
V307-A3-Ex	1 of 3	A	25 May 2017	External Connector Lead Assembly Schematic Exploded View
V307-A3-Ex	2 of 3	A	25 May 2017	External Connector Lead Assembly Schematic Exploded View
V307-A3-Ex	3 of 3	A	25 May 2017	External Connector Lead Assembly Pinouts
V307-G1-Ex	1 of 7	A	08 June 2017	Machine Sentry Mobile V307 – Top Components Ident
V307-G1-Ex	2 of 7	A	08 June 2017	Machine Sentry Mobile V307 – Bottom Components Ident
V307-G1-Ex	3 of 7	A	08 June 2017	Machine Sentry Mobile V307 – Top Copper Gerber
V307-G1-Ex	4 of 7	A	08 June 2017	Machine Sentry Mobile V307 – Ground Plane Layer
V307-G1-Ex	5 of 7	A	08 June 2017	Machine Sentry Mobile V307 – Plane Inner Layer
V307-G1-Ex	6 of 7	A	08 June 2017	Machine Sentry Mobile V307 – Bottom Layer Copper
V307-G1-Ex	7 of 7	A	08 June 2017	Machine Sentry Mobile V307 – Layer Stack-up
V307-S1-Ex	1 to 8	A	07 June 17	Machine Sentry Mobile V307 (Schematic)

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 17.0052X, and are also associated with ATEX Certificate No. Baseefa17ATEX0067X

20 Certificate History

Certificate No.	Date	Comments
Baseefa17ATEX0066X	6 July 2017	The release of the prime certificate. The associated test and assessment against the requirements of EN 60079-0: 2012 + A11: 2013 and EN 60079-11: 2012 is documented in Certification Report No. GB/BAS/ExTR17.0127/00 (Held with IECEx Certificate No. IECEx BAS 17.0052X), Project No. 16/0405.
Baseefa17ATEX0066X Issue 1	16 October 2018	This issue of the certificate permits the manufacturer name to be changed from 'AVT Technology Ltd T/A AVT Reliability' to AVT Reliability Ltd'. As a result of this the certification marking label was revised to update the manufacturer name marked on the equipment. No other changes were made to the equipment. The assessment is documented in Certification Report No. GB/BAS/ExTR18.0227/00 (Held with IECEx Certificate No. IECEx BAS 17.0052X Iss.1), Project No. 18/0517.
Baseefa17ATEX0066X Issue 2	18 November 2020	This issue of the certificate permits the fitting of alternative battery, inductor and Bluetooth module in the equipment and minor mechanical and drawing changes not affecting the previous test and assessment. The test and assessment is documented in Certification Report No. GB/BAS/ExTR20.0134/00 (Held with IECEx Certificate No. IECEx BAS 17.0052X Iss.2), Project No. 20/0414.
For drawings applicable to each issue, see original of that issue.		