1 # EC-TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3 EC-Type Examination Certificate Number : **BAS02ATEX1057**

4 Equipment or Protective System: **MTN/1100I ACCELEROMETER**

5 Manufacturer: **MONITRAN LIMITED**

6 Address: **Penn, Bucks, HP10 8AD**

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 The Electrical Equipment Certification Service, notified body number 600 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report N°

**01(C)0494 dated 30 September 2002**

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

**EN 50014: 1997 + Amds 1 & 2** **EN 50020: 1994** **EN 50284: 1999**

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 equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment or protective system.

12 The marking of the equipment or protective system shall include the following:-

**⟨Ex⟩ II 1 G** **EEx ia IIC T6**
**EEx ia IIB T4 (Variation 0.2)**

This certificate may only be reproduced in its entirety and without any change, schedule included.

File No: EECS 2973/02/003

This certificate is granted subject to the general conditions of the Electrical Equipment Certification Service. It does not necessarily indicate that the apparatus may be used in particular industries or circumstances.

**Electrical Equipment Certification Service**
**Health and Safety Executive**
**Harpur Hill, Buxton, Derbyshire, SK17 9JN, United Kingdom**
**Tel: +44(0)1298 28000 Fax: +44(0)1298 28244**
**internet: www.baseefa.com e-mail: baseefa.info.eecs@hsl.gov.uk**

I M CLEARE
DIRECTOR
30 September 2002

13 **Schedule**

14 **EC-TYPE EXAMINATION CERTIFICATE N° BAS02ATEX1057**

15 **Description of Equipment or Protective System**

The **MTN/1100I Accelerometer** is designed to produce an electrical output signal proportional to an applied acceleration. The accelerometer comprises a piezoelectric crystal, a zener diode assembly and an encapsulated electronic circuit, all housed in a welded hermetically sealed stainless steel enclosure. Electrical connection is by either a two-pin connector or a two-core integral cable of maximum length 100m. EI/1100I, TX5632 and VIB-1100I are alternative type designations for the MTN/1100I.

$U_i$ = 28V
$I_i$ = 93mA
$P_i$ = 0.65W

| | Length of Integral Cable | | |
|---|---|---|---|
| | ≤10m | > 10m and ≤ 50m | > 50m and ≤ 100m |
| $C_i$ | 1.55nF | 7.75nF | 15.5nF |
| $L_i$ | 4.9µH | 24.5µH | 49.0µH |

**VARIATION 0.1**

The **MTN/1900 Accelerometer** is as the MTN/1100I with a different zener diode assembly, housing, electronic circuit and printed circuit board. Electrical connection is by a three-pin connector.

$U_i$ = 15V
$I_i$ = 150mA
$P_i$ = 0.56W
$C_i$ = 0
$L_i$ = 0

**VARIATION 0.2**

The **MTN/1107I Accelerometer** is as the MTN/1100I with a different zener diode assembly, electronic circuit and printed circuit board. Electrical connection is by a two-core integral cable of maximum length 100m. EI/1107I is an alternative type designation for the MTN/1107I.

The revised code for this variation is **EEx ia IIB T4**

$U_i$ = 28V
$I_i$ = 300mA
$P_i$ = 1.3W

| | Length of Integral Cable | | |
|---|---|---|---|
| | ≤10m | > 10m and ≤ 50m | > 50m and ≤ 100m |
| $C_i$ | 1.55nF | 7.75nF | 15.5nF |
| $L_i$ | 4.9µH | 24.5µH | 49.0µH |

13 **Schedule**

14 **EC-TYPE EXAMINATION CERTIFICATE N° BAS02ATEX1057**

**VARIATION 0.3**

The **MTN/1185I / MTN/1187I Accelerometer** is as the MTN/1100I with a different zener diode assembly, electronic circuit arranged on two printed circuit boards and a slightly larger housing. Electrical connection is by a two-core integral cable of maximum length 100m. EI/1185I / EI/1187I, TX5637 / TX5634 and VIB-1185I / VIB-1187I are alternative type designations for the MTN1185I / MTN/1187I.

$U_i$ = 28V
$I_i$ = 93mA
$P_i$ = 0.65W

| **No fault** | **Length of Integral Cable** | | |
|---|---|---|---|
| | **≤10m** | **> 10m and ≤ 50m** | **> 50m and ≤ 100m** |
| $C_i$ | 1.55nF | 7.75nF | 15.5nF |
| $L_i$ | 4.9µH | 24.5µH | 49.0µH |

| **One fault** | **Length of Integral Cable** | | |
|---|---|---|---|
| | **≤10m** | **> 10m and ≤ 50m** | **> 50m and ≤ 100m** |
| $C_i$ | 24.55nF | 30.75nF | 38.50nF |
| $L_i$ | 4.9µH | 24.5µH | 49.0µH |

| **Two faults** | **Length of Integral Cable** | | |
|---|---|---|---|
| | **≤10m** | **> 10m and ≤ 50m** | **> 50m and ≤ 100m** |
| $C_i$ | 134.55nF | 140.75nF | 148.50nF |
| $L_i$ | 4.9µH | 24.5µH | 49.0µH |

**VARIATION 0.4**

The **MTN/1511 Accelerometer** is the electronic circuit, printed circuit board and zener diode assembly used in the MTN/1107I (Variation 0.2) in a housing with the same basic construction as the MTN/1900 (Variation 0.1). Electrical connection is by a three-core integral cable of maximum length 100m. EI/1511 is an alternative type designation for the MTN/1511.

$U_i$ = 28V
$I_i$ = 96mA
$P_i$ = 0.66W

| | **Length of Integral Cable** | | |
|---|---|---|---|
| | **≤10m** | **> 10m and ≤ 50m** | **> 50m and ≤ 100m** |
| $C_i$ | 1.55nF | 7.75nF | 15.5nF |
| $L_i$ | 4.9µH | 24.5µH | 49.0µH |

13 **Schedule**

14 **EC-TYPE EXAMINATION CERTIFICATE N° BAS02ATEX1057**

16 **Report No.**

01(C)0494

17 **Special Conditions For Safe Use**

None.

18 **Essential Health and Safety Requirements**

| Essential Health & Safety Requirements not covered by Standards listed at (9) | | |
|---|---|---|
| **Clause** | **Subject** | **Compliance** |
| 1.1.3 | Changes in characteristics of materials and combinations thereof | See Report 01(C)0494 |
| 1.2.2 | Components for incorporation or replacement | See Report 01(C)0494 |
| 1.2.5 | Additional means of protection | See Report 01(C)0494 |
| 1.2.7 | Protection against other hazards | See Report 01(C)0494 |
| 1.4.2 | Withstanding attack by aggressive substances | See Report 01(C)0494 |

19 **DRAWINGS**

Drawings associated with the MTN/1100I Accelerometer.

| **Number** | **Sheet** | **Issue** | **Date** | **Description** |
|---|---|---|---|---|
| ATX006 | 1 | 2 | 12/08/02 | MTN/1100I - General Arrangement |
| ATX006 | 2 | 2 | 12/08/02 | MTN/1100I - Markings |
| ATX006 | 3 | 2 | 12/08/02 | MTN/1100I - Markings |
| PA133 - | | B | 28/05/92 | MTN/1100I - Circuit |
| SA034 - | | A | 21/12/98 | MTN/1100I - Zener Assembly |
| PC133 - | | C | 07/06/95 | MTN/1100I - Printed Circuit Board |

Drawings associated with the MTN/1900 accelerometer (Variation 0.1)

| **Number** | **Sheet** | **Issue** | **Date** | **Description** |
|---|---|---|---|---|
| ATX005 | 1 | 2 | 18/08/02 | MTN/1900 - General Arrangement |
| ATX005 | 2 | 2 | 18/08/02 | MTN/1900 - Markings |
| PC166 | - | C | 13/05/97 | MTN/1900 - Circuit |
| SA038 | - | A | 13/05/94 | MTN/1900 - Zener Assembly |
| PI166 | - | A | 13/05/94 | MTN/1900 - Printed Circuit Board |
| PB166 | - | A | 13/05/94 | MTN/1900 - Printed Circuit Board |

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Drawings associated with the MTN/1107I accelerometer (Variation 0.2)

| Number | Sheet | Issue | Date | Description |
|---|---|---|---|---|
| ATX001 | 1 | 2 | 12/08/02 | MTN/1107I - General Arrangement |
| ATX001 | 2 | 2 | 12/08/02 | MTN/1107I - Markings |
| PC201 | - | 1 | 08/03/01 | MTN/1107I - Circuit |
| SA006 | - | A | 26/10/94 | MTN/1107I - Zener Assembly |
| PI201 | - | B | 24/11/94 | MTN/1107I - Printed Circuit Board |
| PB201 | - | B | 23/11/94 | MTN/1107I - Printed Circuit Board |

Drawings associated with the MTN/1185I / MTN/1187I accelerometer (Variation 0.3)

| Number | Sheet | Issue | Date | Description |
|---|---|---|---|---|
| ATX003 | 1 | 2 | 12/08/02 | MTN/1185I / MTN/1187I - General Arrangement |
| ATX003 | 2 | 2 | 12/08/02 | MTN/1185I / MTN/1187I - Markings |
| ATX003 | 3 | 2 | 12/08/02 | MTN/1185I / MTN/1187I - Markings |
| PC302 | - | 4 | 22/02/01 | MTN/1185I / MTN/1187I - Circuit |
| SA020 | - | A | 28/04/97 | MTN/1185I / MTN/1187I - Zener Assembly |
| PB302A | - | A | 19/06/97 | MTN/1185I / MTN/1187I - Circuit Board A |
| PB302B | - | A | 25/06/97 | MTN/1185I / MTN/1187I - Circuit Board B |
| PI302A | - | A | 27/06/97 | MTN/1185I / MTN/1187I - Circuit Board A |
| PI302B | - | A | 27/06/97 | MTN/1185I / MTN/1187I - Circuit Board B |
| SA039 | - | A | 07/05/97 | MTN/1185I / MTN/1187I - Circuit Board Assembly |

Drawings associated with the MTN/1511 accelerometer (Variation 0.4)

| Number | Sheet | Issue | Date | Description |
|---|---|---|---|---|
| ATX007 | 1 | 2 | 12/08/02 | MTN/1511 - General Arrangement |
| ATX007 | 2 | 2 | 12/08/02 | MTN/1511 - Markings |

Drawings PC201, PI201, PB201 and SA006 listed under the drawings for the MTN/1107I accelerometer (Variation 0.2) are also associated with this variation.



**BASEEFA** List Keywords
2ACCELER