

1 **UK-TYPE EXAMINATION CERTIFICATE**

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres**  
**UKSI 2016:1107 (as amended) – Schedule 3A, Part 1**

3 UK-Type Examination Certificate Number: **BAS21UKEX0532X**

4 Product: **Advent Hand Tachometer Type A2109**

5 Manufacturer: **Compact Instruments Limited**

6 Address: **61-65 Lever Street, Bolton, Lancashire, BL3 2AB**

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, Approved Body number 1180, in accordance with Regulation 43 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), 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 Schedule 1 of the Regulations.

The examination and test results are recorded in confidential Report No. **21(C)0354**

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

**EN IEC 60079-0: 2018      EN 60079-11: 2012      EN 60079-28: 2015**

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 UK-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations 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 ia op is IIC T4 Gb**

SGS Baseefa Customer Reference No. **4099**

Project File No. **21/0354**

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**R S SINCLAIR**  
**TECHNICAL MANAGER**  
On behalf of SGS Baseefa Limited

13

## Schedule

14

**Certificate Number BAS21UKEX0532X**

### 15 Description of Product

The Advent Hand Tachometer Type A2109 is a hand held instrument designed to measure the speed of rotating shafts. It produces either an optical beam using photo diodes or a laser beam using laser diodes. The reflection of the beam from a reflective surface on a rotating shaft is detected by a sensor in the Tachometer. The Tachometer may be used with a contact adapter fitted to the front which is held against a rotating shaft. The contact adapter has a permanent magnet that rotates to produce a rotating field which is sensed by the instrument.

The Tachometer contains electronic components and an LCD display mounted on a printed circuit board (PCB). The instrument is internally powered using 4 x Duracell size AAA alkaline cells. The electrical components are enclosed in a chrome plated plastic housing with separate compartments for the PCB and the battery. The instrument has a transparent window for the display and the battery compartment is fitted with a cover which is secured using fixing. The Tachometer has an optional Rear Plug to which external diagnostic instruments may be connected.

The Type number may be suffixed with various characters to signify the following variants:-

A2109/LSR/\*\*\* Laser output

A2019/LED/\*\*\* LED output

\*\*\* is replaced by 002 when Tachometer fitted with a 5-pin rear plug

\*\*\* is left blank when Tachometer not fitted with a rear plug

### Input Parameters

At the Rear Plug: Pin 4 w.r.t. Pin 3:

$U_i = 10.1V$

### Output Parameters

At the Rear Plug: Pin 4 w.r.t. Pin 3:

$U_o = 6.6 V$

$I_o = 0.3 mA$

$P_o = 0.43 mW$

$L_o = 700 mH$

$C_o = 22 \mu F$

$L_o/R_o = 68mH/\Omega$

$L_i = 0$

$C_i = 0$

At the Rear Plug: Pin 1 w.r.t. Pin 2:

$U_o = 6.6 V$

$I_o = 463 mA$

$P_o = 0.63 mW$

$L_o = 0.17 mH$

$C_o = 22 \mu F$

$L_o/R_o = 49mH/\Omega$

$L_i = 0$

$C_i = 2.245\mu F$

**16 Report Number**

21(C)0354

**17 Specific Conditions of Use**

1. The Tachometer fitted with a contact adapter presents a potential risk of frictional ignition and must not be used continuously for more than 10 seconds.

**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
13	LVD type requirements
14	Overloading of equipment (protection relays, etc.)
21 (1)	External effects
21 (2)	Aggressive substances, etc.

**19 Drawings and Documents**

Number	Sheet	Issue	Date	Description
001284	1 of 1	1.5	28-09-21	A2109 Label Details
P0478	1 of 1	1.5	28-09-21	A2109 Case Label Details

For all other drawings, see BAS01ATEX2301X Issue 4

These drawings are common to and held with ATEX certificate BAS01ATEX2301X.