

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: **Baseefa14ATEX0015X**

4 Equipment or Protective System: **Range of Motion Sensors and Switches**

5 Manufacturer: **Don Electronics Limited**

6 Address: **Westfield Industrial Estate, Kirk Lane, Leeds, LS19 7LX**

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 Baseefa, Notified Body number 1180, 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 No. **GB/BAS/ExTR13.0248/00**

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0: 2012 IEC 60079-31: 2013

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. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

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

⊕ II 2D Ex tb IIIC T80°C Db IP66 Tamb -20°C to +40°C

Baseefa Customer Reference No. **4340**

Project File No. **07/0322**

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SGS Baseefa Limited

Rockhead Business Park, Staden Lane,
Buxton, Derbyshire SK17 9RZ

Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601

e-mail info@baseefa.com web site www.baseefa.com

Registered in England No. 4305578.

Registered address: Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN



R S SINCLAIR
GENERAL MANAGER

On behalf of SGS Baseefa Limited

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Schedule

14

Certificate Number Baseefa14ATEX0015X

15 Description of Equipment or Protective System

The range of sensors and switches consist of:

Tap Switch: Types TP11AI, TP11TAI, TP12AI, TP12TAI, TP21AI, TP21TAI, TP22AI and TP22TAI

BAP Motion Alignment Sensors: Types BAP21V34** and BAP22V34**

TS Touch Switches: Types TS1V3**, TS1V4**, TS2V3** and TSV4**

The TAP switch consists of a metal enclosure complete with a simple Normally Open/ Normally Closed switch.

The BAP sensor consists of a metal enclosure complete with inductive sensor and control circuit, LED and Potentiometer

The TS Touch Switch sensors consist of a metal enclosure complete with switch circuit with an internal cavity with a strain gauge located in the centre of the enclosure, and a relay that allows the switch to operate an external circuit, and an LED and Potentiometer.

The TAP, BAP and TS circuits are mounted inside a 2mm thick painted steel enclosure. The enclosure is in the form of a small cylinder, approximately 52mm diameter by 33mm deep, open at one end. The open end has an 86mm diameter external flange with four equally spaced 6.5mm holes on a 73.54mm PCD to allow the enclosure to be fastened in position.

The open end of the enclosure is sealed with a cover as follows:

TAP Switch: The cover is a flexible stainless steel diaphragm that is 0.15mm thick and incorporates a centrally located 50mm diameter by 20mm stainless steel switch button. The button is sealed and secured to the diaphragm cover by silicone sealant over the button interface and then three sealed type rivets. The cover is sealed to the enclosure flange by silicone sealant and then secured by a circular collar and four rivets.

BAP Sensor: The cover is a $\varnothing 86\text{mm} \times 2\text{mm}$ thick stainless steel plate with fixing holes aligned with the enclosure flange, that is secured to the enclosure flange using rivets. The cover is sealed to the enclosure flange with silicone sealant.

TS Touch Switch: The cover is a $\varnothing 86\text{mm} \times 2\text{mm}$ thick stainless steel plate with fixing holes aligned with the enclosure flange that is secured to the enclosure flange using rivets. The cover is sealed to the enclosure flange with silicone sealant. The cover also includes a $\varnothing 50\text{mm} \times 19\text{mm}$ thick stainless steel button.

Cable entry point into the enclosure:

Electrical connection to the TAP, BAP and TS is via an integral cable/flying lead which enters the enclosure through a hole in the side fitted with a rubber gland or alternatively the enclosure can be supplied with an integral $\frac{1}{2}$ "NPT threaded conduit entry connection so that the flying leads can be mechanically protected using suitable conduit.

Circuits & earth connections:

The circuits in the BAP and TS are protected by a fuse, 2 parallel zener diodes and a 73DegC $\pm 8\%$ thermal fuse that is located no more than 24mm away from any of the circuit components.

An external earth facility is provided via one of the M5 or M6 flange mounting screws and suitable ring crimp lug and accessories.

The Tap Switch is designed for connection to a maximum supply 250V AC 4A

The BAP Sensor and TS Touch Switch are designed for connection to a maximum supply voltage of 12 or 24V DC.

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17 Specific Conditions of Use

1. Do not allow dust layers to build up on this product.
2. The Sensors/switches shall be connected to a suitable external earth via the mounting arrangement or via the flange mounting screws and a suitable ring crimp lug and accessories.
3. The integral cable shall be terminated in a suitably certified enclosure or in the safe area.

18 Essential Health and Safety Requirements

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
WE2000640	1 of 6	6	21/11/13	BAP2 sensor drilling/punching details
WE2000640-2	---	8	20/11/13	BAP2 sensor assembly detail for conduit entry
WE2000640-3	---	8	20/11/13	BAP2 sensor assembly detail for cable gland entry
WE2000640	4 of 6	4	20/11/13	Cat 2D/Zone21 BAP2 sensor design schematic
WE2000640-6 BAP21 ATEX	---	12	20/11/13	Cat 2D/Zone21 BAP2 sensor label design
WE2002698-1	---	7	20/11/13	Touchswitch/BAP common drilling/punching details
WE2002698-2	---	5	20/11/13	Touchswitch assembly detail for conduit entry
WE2002698-3	---	3	20/11/13	Touchswitch assembly detail for cable entry
WE2002698-4	---	3	21/11/13	Cat 2D/Zone21 Touchswitch design schematic
WE2002698-5	---	11	20/11/13	Cat 2D/Zone21 Touch & TAP switch label design
WE2002698-5TS2-CAI	---	10	21/11/13	Cat 2D/Zone21 Touchswitch sensor label design
WE2002698-10	---	17	02/12/13	Touchswitch components
WE2002698-11	---	6	02/12/13	Touchswitch components 689A
WE2002698-17	---	2	31/03/14	BAP and TS potentiometer seal arrangement
WE2002698-17 A	---	1	31/03/14	BAP and TS alternative potentiometer seal arrangement
WE2005873-6	---	2	16/01/13	TAP switch assembly cover ring
WE2005873-8	---	5	05/12/13	TAP switch assembly pressed diaphragm spring
WE2005873-13	---	7	05/12/13	TAP switch assembly large button
WE2005873-20	---	4	20/11/13	TAP switch cable assembly for TP1 type – 6 core
WE2005873-23	---	4	20/11/13	TAP switch drilling/punching details
WE2005873-24	---	4	05/12/13	TAP switch assembly with cable and encapsulation

All drawings are common to and held on IECEx BAS 13.0116X