

EU - TYPE EXAMINATION CERTIFICATE

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

- 3 EU - Type Examination Certificate Number: **Baseefa17ATEX0047X**
- 4 Product: **Range of TS Touch Switches**
- 5 Manufacturer: **Don Electronics Limited**
- 6 Address: **Westfield Industrial estate, Kirk Lane, Yeadon, Leeds, LS19 7LX**
- 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, Notified Body number 1180, 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.
- The examination and test results are recorded in confidential Report No. **GB/BAS/ExTR17.0077/00**
- 9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0: 2012 + A11:2013 EN 60079-31: 2014
- 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 1D Ex ta IIC T(see schedule)°C Da

SGS Baseefa Customer Reference No. **4340**

Project File No. **16/0401**

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Re-issued 1 February 2018 to replace original

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On behalf of SGS Baseefa Limited

13

Schedule

14

Certificate Number Baseefa17ATEX0047X

15 Description of Product

The Don Electronics Limited range of TS Touch Switches consist of types:

TS1V34***, TS2V34***, TS1V34***-HT and TS2V34***-HT

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 solid state relay that allows the switch to operate an external circuit, an LED and internal potentiometer.

The 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 (approx) holes on a 73.54mm PCD to allow the enclosure to be mounted in position.

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

TS cover is a $\varnothing 86\text{mm}$ x 2mm 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 $\varnothing 50\text{mm}$ x 19mm thick stainless steel button that is secured to the cover by a circlip and sealed by an internal $\varnothing 34\text{mm}$ va38 viton or NBR 'v' seal.

Cable entry point into the enclosure:

Electrical connection to the 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. The integral cable passes through either a tapered rubber bung seal that is moulded on to the cable or through a grommet style rubber bung seal. The bung is pressed in to the hole and further sealed with silicone sealant. The plain hole entry is $\varnothing 11.5\text{mm}$ for the tapered bung seal or $\varnothing 8\text{mm}$ for the grommet seal. The bung is secured in place to prevent cable movement by the epoxy resin used to seal other holes in the enclosure. The optional conduit entry is press fitted to the outside of the enclosure wall without affecting the sealing method.

The holes in the closed end of the enclosure are sealed as follows:

The closed end of the TS enclosure has two small holes to allow access to a sealed potentiometer for the adjustment of the sensitivity of the device and a sealed LED which indicates pressure detection on the button. The base of the enclosure is filled with epoxy resin to seal around the label fixing and LED. The enclosure also has a small hole that the button fixing shaft passes through via a tube and this shaft is secured by a stainless steel knob and silicone grease.

Circuits & earth connections:

The circuits in the TS are protected two Zener diodes, fuse and 76°C or 102°C thermal fuse protection in the main circuit, and the circuit input is via a self-resetting 150mA trip and a varister device.

An internal earth connection is via one of the conductors in the integral cable, and the conductor is soldered to one of the PCB's fixing screws. An external earth facility is provided via one of the M5 or M6 flange mounting screws and suitable ring crimp lug and accessories.

The TS Touch Switches are designed for connection to a maximum supply voltage of 12 or 24V DC.
The Ambient Range is T_{amb} -20°C to +40°C

Marking:

Touch Switch Sensors type TS1V34*** and TS2V34*** (fitted with 76°C Thermal fuse):
Ex ta IIIC T₂₀₀125°C Da IP66

Touch Switch Sensors type TS1V34***-HT and TS2V34***-HT (fitted with 102°C Thermal fuse):
Ex ta IIIC T₂₀₀155°C Da IP66

16 Report Number

GB/BAS/ExTR17.0077/00

17 Specific Conditions of Use

1. The supply circuit of the system where the equipment is connected shall be protected by a suitably rated fuse capable of interrupting a prospective short circuit current of 10 kA.
2. The Touch Switch shall be connected to a suitable external earth via the mounting arrangement or via the flange mounting screws and a suitable ring crimp and accessories.
3. The integral flying lead/cable shall be terminated in a suitably certified enclosure or in a safe area.

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

Number	Sheet	Issue	Date	Description
New Drawings:				
~ DE8062-1-006-S	1 of 1	1	20/02/17	TS Zone 20 cable held by potting concept
~ DE8062-1-007-S	1 of 1	5	25/10/17	TS Zone 20 drilling/punching details
~ DE8062-1-009-S	1 of 1	0	22/02/17	TS Zone 20 cable held by potting concept conduit entry
~ DE8062-1-011-S	1 of 1	0	16/06/17	Touch Switch housing drilling/punching detail configuration options
~ DE8062-2-001-S	1 of 1	4	19/10/17	TS Zone 20 pcb ~ circuit (schematic)
~ DE8062-4-001-S	1 of 1	2	26/01/18	Cat 1D/Zone 20 Touch Switch sensor label
~ 8062-4-002-S	1 of 1	2	26/01/18	Cat 1D/Zone 20 Touch Switch sensor label with additional marking area

Existing Drawings, that have not been changed, but are also used on existing Cat2D(Db) TS/TAP/BAP version:

* WE2002698-1	---	8	26/10/17	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

Number	Sheet	Issue	Date	Description
* WE2002698-10	---	18	10/02/16	Touchswitch components
* WE2002698-11	---	6	02/12/13	Touchswitch components 698A

All listed drawings are common to Category 1D EPL Da TS Touch Switch, to:

IECEX BAS 17.0032X and common to Baseefa17ATEX0047X.

~ Drawings are held on IECEX BAS17.0032X.

* Drawings are also common to and held on existing Cat2D EPL Db switch/sensors to IECEX BAS 13.0116X.