



1. TYPE EXAMINATION CERTIFICATE

2. Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU

3. Type Examination Certificate No: FM23ATEX0032X

4. Equipment or protective system: TTD300 and TTD300-N
(Type Reference and Name)

5. Name of Applicant: ABB AG

6. Address of Applicant Schillerstraße 72, Minden 32425, Germany

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

8. FM Approvals Europe Ltd, certifies that this component has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

PR464960 dated 01 April 2024

9. Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN IEC 60079-0:2018, EN IEC 60079-7:2015+A1:2018, EN 60079-31:2014,
EN 60529:1991+A1:2000+A2:2013

10. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.

11. This Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 2014/34/EU. 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:



II 3 G Ex ec IIC T6...T4 Gc
II 3 D Ex tc IIIC T85°C...T100°C Dc
-50°C ≤ Ta ≤ 85°C

Certificate issued by:

Digitally signed
by Richard
Zammit
Location: Ireland
Foxit PDF Editor
Version: 13.0.1

Certification Manager, FM Approvals Europe Ltd.

Date 04 April 2024

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

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13. Description of Equipment or Protective System:

The TTD300 and TTD300-N transmitter consists of an aluminium alloy or stainless steel housing with an internal partition which separates the enclosure into a terminal compartment and an electronics compartment. RF feedthroughs are fitted in the partition wall. The terminal compartment is fitted with a flat threaded cover and the electronics compartment is fitted with a window cover having a cemented-in flat glass window.

The enclosure is rated IP66 and IP67.

The TTD300 and TTD300-N are transmitters which in combination with temperature sensors or detecting elements the temperature measuring transducers are used for the detection, amplification and transmission of measurands. The acquisition of measured values is carried out alternatively by means of RTD's, thermocouples or sensors with defined resistance or direct voltage quantities. The output signal which corresponds to the measured input quantity can be provided as a 4mA ... 20mA-signal and as a HART-protocol-signal.

Electrical parameters

The TTD300 has the following electrical ratings:

Supply circuit

$U_s \leq 30\text{Vdc}$; $I_s = 32\text{mA}$

Measuring circuit

$U_o = 6.5\text{ V}$; $I_o = 17.8\text{ mA}$; $P_o = 29\text{ mW}$

TTD300aE5cdHfghijklmnopqrstu

- a = Blank or -N
- c = Housing/Display: M, S, N or R
- d = Cable entry: 1 or 2
- k = Mounting bracket: K3 or K4
- l = Display options: D4 or D6
- n = Surge/Transient Protector: Blank or P1
- o = Extended ambient temperature range: Blank or SE
- q = Identification plate
- s = Customer specific versions

Model codes option variables "f" through "j" and "m", "p", "r", "t" and "u" do not affect product safety

14. Specific Conditions of Use:

1. The service temperature inside the enclosure of the TTD300 and TTD300-N temperature transmitter represents the specified permissible ambient temperature. With the installation it shall be ensured that this service temperature cannot be exceeded.
2. Refer to the instruction/installation manual for guidance on the selection of cables or conductors when the temperature of cable entry point and branching point of the TTD300 and TTD300-N temperature transmitter exceed 70°C and 80°C respectively.
3. For the operation as category-3 equipment Type of Protection Increased Safety "ec" or Protection by enclosure "tc" a fuse according to IEC 60127 having a rated fuse current of 32 mA shall be connected in series to the TTD300 and TTD300-N. The fuse may be accommodated in the associated supply unit or shall be connected in series separately. The rated fuse voltage shall be equal to or higher than 30 V. The

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breaking capacity of the fuse link shall be equal to or higher than the maximum short-circuit current to be assumed at the place of installation (usually 1500 A).

4. The specified operating voltage $U_S = 30$ V represents the maximum permissible value of the supplying source according to EN IEC 60079-0:2017, clause 3.93. This voltage shall not be exceeded for the operation as category-3 equipment Type of Protection Increased Safety "ec" and Protection by enclosure "tc".
5. When the manufacturer of the equipment has not identified the type of protection on the label, the user shall, on installation, mark the label with the type of protection used. Once the type of protection has been marked it shall not be changed.

15. Essential Health and Safety Requirements:

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

16. Test and Assessment Procedure and Conditions:

This Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Europe Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Europe Ltd's ATEX Certification Scheme.

17. Schedule Drawings

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by FM Approvals Europe Ltd.

18. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
04 April 2024	Original Issue.

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Blueprint Report

ABB AG (1000007035)

Class No 3610

Original Project I.D. 464960

Certificate I.D. FM23ATEX0032X

<u>Drawing No.</u>	<u>Revision Level</u>	<u>Drawing Title</u>	<u>Last Report</u>
3KQZ207173U0322	VB	Connection Board Schematic	PR464960
3KQZ207173U0722	VB	Terminal Board Schematic	PR464960
3KXT065000G0009	00	TTD300/TTD300-N Temperature Transmitter	PR464960
3KXT065000G0023	00	TTD300/TTD300-N HART I.S. Temperature Transmitter Control Drawing	PR464960
3KXT065002G0009	02	TTD300/TTD300-N Safety Plates	PR464960
3KXT065008U0109	00	TERMINAL PCBA DRAWING FOR CERTIFICATION, 8 TERMINALS, TTD300/TTD300-N	PR464960
3KXT065008U0121	00	BOM of TTD300/TTD300-N Terminal Board With Surge	PR464960
3KXT065008U0122	00	Terminal Board With Surge	PR464960
3KXT065009U0109	00	Terminal Board PCB	PR464960
3KXT065011U0121	00	BOM of TTD300/TTD300-N Terminal Board No Surge	PR464960
3KXT065011U0122	00	Terminal Board no surge	PR464960
3KXT065013U0109	00	COMMUNICATION PCBA DRAWING FOR CERTIFICATION, TTD300/TTD300-N	PR464960
3KXT065013U0121	00	BOM for TTD300/TTD300-N connection board	PR464960
3KXT065013U0122	00	Connection Board Schematic	PR464960
3KXT065014U0109	00	Connection Board PCB	PR464960
IECEX_FME_13.0001U	004	FME certificate for 2-Wire Common Top Works (2WCTW)	PR464960
IECEX_FMG_20.0028U	001	FMG certificate for Smart HMI Type B	PR464960
IECEX_FMG_23.0002U	000	FMG certificate for 2WCTW-APL	PR464960
IECEX_PTB_12_0028X	0	PTB Certificate for LCD-display HMI-Ex , type A, AS, B as well as BS	PR464960
IECEX_PTB_20.0035	000	PTB certificate for temperature measuring transducer	PR464960
PTB05ATEX2079X	2	PTB Certificate for HMI	PR464960
TTD300 - Product Coding	-	Product Coding	PR464960