



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX CML 16.0039X** Page 1 of 4 Certificate history:
Status: **Current** Issue No: 2 [Issue 1 \(2017-11-10\)](#)
[Issue 0 \(2016-06-09\)](#)
Date of Issue: 2021-11-15
Applicant: **Temposonics GmbH & Co. KG**
Auf Dem Schüffel 9
Lüdenscheid D-58513
Germany
Equipment: **Linear Position Sensor Temposonics® T-Series TH**
Optional accessory:
Type of Protection: **Flameproof "db", Increased Safety "eb", Dust Ignition "tb"**
Marking: Ex db IIC T4 Ga/Gb
Ex db eb IIC T4 Ga/Gb
Ex tb IIIC T130°C Ga/Db
Ta = -40°C to +90°C

Approved for issue on behalf of the IECEx
Certification Body:

R C Marshall

Position:

Operations Manager

Signature:
(for printed version)

Date:
(for printed version)

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Certificate issued by:

Eurofins E&E CML Limited
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United Kingdom





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Manufacturer: **Temposonics GmbH & Co. KG**
Auf Dem Schüffel 9
Lüdenscheid D-58513
Germany

Manufacturing locations: **Temposonics LLC**
3001 Sheldon Drive
Cary NC 27513
United States of America

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEX Quality system requirements. This certificate is granted subject to the conditions as set out in IECEX Scheme Rules, IECEX 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-1:2014-06](#) Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

[IEC 60079-26:2014-10](#) Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga
Edition:3.0

[IEC 60079-31:2013](#) Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

[IEC 60079-7:2015](#) Explosive atmospheres – Part 7: Equipment protection by increased safety "e"
Edition:5.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

[GB/CML/ExTR16.0064/00](#)

[GB/CML/ExTR17.0200/00](#)

[GB/CML/ExTR21.0159/00](#)

Quality Assessment Reports:

[GB/CML/QAR16.0004/06](#)

[GB/FME/QAR14.0005/07](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The Linear Position Sensor Temposonics® T-Series TH is a magnetostrictive linear position sensor comprising a stainless steel hexagonal cross-sectional enclosure and cylindrical measuring element.

The enclosure comprises two compartments; one containing the electronics and the other containing termination facilities for the connection to external circuits. The compartments are separated by a spigoted bushing with the terminal compartment cover being secured by five M4 socket-head cap screws grade A4-70. The rear of the electronics contains a threaded boss through which passes the measuring element.

Cable entry is made via either an M16 threaded boss to the side of the terminal compartment, which may optionally be fitted with an M20 or ½" NPT thread adapter, or an M20 or ½" NPT entry in the cover.

A facility for an external earthing or equi-potential bonding conductor is provided on both the terminal and electronics compartment comprising: a ground block; an M4 Screw; an M5 screw; a spring washer; a clamping tab.

Refer to Annex for full description and conditions of manufacture.

SPECIFIC CONDITIONS OF USE: YES as shown below:

Refer to Annex for specific conditions of use.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1

This issue introduced the following changes:

1. To update the certificate description to reference an updated product configurator.
2. To update the label drawing to reflect above changes.
3. To correct typographic errors.

Issue 2

This issue introduced the following changes:

1. Change of applicant's and manufacturer's name.
2. Update of IEC 60079-0:2011 Ed. 6 to IEC 60079-0:2017 Ed. 7.
3. Update of IEC 60079-7:2015 Ed. 5 to IEC 60079-7:2017 Ed. 5.1.

Annex:

[IECEX CML 16.0039X Iss. 2 Certificate Annex.pdf](#)

Annexe to: IECEx CML 16.0039X Issue 2
Applicant: Temposonics GmbH & Co. KG
Apparatus: Linear Position Sensor Temposonics® T-Series TH



Description

The Linear Position Sensor Temposonics® T-Series TH is a magnetostrictive linear position sensor comprising a stainless steel hexagonal cross-sectional enclosure and cylindrical measuring element. The enclosure comprises two compartments: one containing the electronics and the other containing termination facilities for the connection to external circuits. The compartments are separated by a spigoted bushing with the terminal compartment cover being secured by five M4 socket-head cap screws grade A4-70.

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Configurator for T-Series / Rod Style, TH Model:

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
T H -

NUMERAL 1: SERIES

T = T Series

NUMERAL 2: TYPE OF HOUSING (ROD AND COMPLETE ASSEMBLY)

H = (Housing 1.4305) Hydraulic rod style, material 1.4306/7 / AISI304L

NUMERAL 3: TYPE OF FLANGE:

- S = English threads, flat faced
- M = Metric threads, flat faced
- T = English threads, raised faced
- N = Metric threads, raised face
- W = Metric threads, flat face - Housing 1.4404; Rod material 1.4404 / AISI316L
- F = English threads, flat face - Housing 1.4404; Rod material 1.4404 / AISI316L
- G = English threads, raised face - Housing 1.4404; Rod material 1.4404 / AISI316L

NUMERAL 4, 5, 6 & 7: STROKE LENGTH:

- _____ = For mm (25 mm to 7,700 mm) (SIL rated - 25 mm to 1500 mm)
- _____ ' _____ = For inches (1" to 300") (SIL rated - 2" to 60")

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NUMERAL 8: UNIT OF MEASURE:

- M = Mm
- U = Inches

NUMERAL 9, 10 & 11: CONNECTION TYPE:

- M01 = Side entry - M16 x 1.5 (Type E & N Only: w/ internal terminals 1.5 mm²)
- M10 = Top entry - M16 x 1.5 (Type E & N Only: w/ internal terminals 1.5mm²)
- N01 = Side entry - M20 x 1.5 (Type D/G: w/ internal terminals 2.5 mm²; Type E & N: w/ internal terminals 1.5 mm²)
- N10 = Top entry - M20 x 1.5 (Type D/G: w/ internal terminals 2.5 mm², Type E & N: w/ internal terminals 1.5 mm²)
- NF1 = Side entry - M20 x 1.5 w/ internal terminals 2.5 mm² (Type E & N only; Only valid for NUMERAL 14: FUNCTIONAL SAFETY = N)
- C01 = Side entry - 1/2" NPT (for conduit pipes) (Type D/G: w/ internal terminals 2.5 mm²; Type E & N: w/ internal terminals 1.5 mm²)
- C10 = Top entry - 1/2" NPT (for conduit pipes) (Type D/G: w/ internal terminals 2.5 mm²; Type E & N: w/ internal terminals 1.5 mm²)
- C02 = Side entry 2 x Thread 1/2" NPT (for conduit pipes) internal terminals 2.5 mm² (Type D & G & N Only)
- M02 = Side entry 2 x Thread M16 X 1.5 (Type E & N only)

NUMERAL 12: INPUT VOLTAGE

- 1 = + 24 V DC
- A = HVR Option
- 2 = +9 Vdc to +28.8 Vdc
- B = for future use

NUMERAL 13: HAZARDOUS AREA APPROVAL

- D = Ex db for zone 0 / 1, Ex tb for Zone 21
- E = Ex db eb for Zone 0 / 1, Ex tb – Flame Proof and Increased Safety

For NUMERAL 14 Functional safety = S (SIL 2) only:

NEC 500: NI - Class I/II/III Div. 2 Groups A,B,C,D,E,F,G; -40°C ≤ Ta ≤ 80°C

NEC 505/506: Class I Zone 2, Ex nA; Zone 22, Ex tc -40°C ≤ Ta ≤ 80°C



- G = Ex db for zone 0 / 1, Ex tb for Zone 21;
NEC 500: XP - Class I/II/III Div. 1 Groups A, B, C, D, E, F, G; (Group A is only approved for US)
NEC 505/506: - Class I Zone 0/1, Ex d/; Zone 21- Ex tb
- N = Not approved for hazardous area/location use

NUMERAL 14: FUNCTIONAL SAFETY

- N = Not approved
- S = SIL2 (w/ certificate and manual)

NUMERAL 15: ADDITIONAL OPTIONS

- N = None

NUMERAL 16, 17, 18: (19-25 FOR DIGITAL) OUTPUT:

- Axx/Vxx = Analogue (selection 16-18)
- R02 = Digital start-stop (selection 16-18)
- Pxxxxx = Profibus (selection 16-22)
- Cxxxxxxxx = CAN bus (selection 16-25)
- Sxxxxxx = SSI (selection 16-22)
- Cxxxxxxxx = DeviceNet (selection 16-25)

Conditions of manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- i. When the Linear Position Sensor Temposonics® T-Series TH utilises increased safety explosion protection, each unit shall be subjected to a dielectric strength test in accordance with IEC 60079-7 clause 6.1.



Specific Conditions of Use

The following conditions relate to safe installation and/or use of the equipment.

- i. For repair of the flameproof joints, contact the manufacturer for information on their dimensions. Repairs must not be made on the basis of the values specified in Table 3 of IEC 60079-1.
- ii. When installing the Linear Position Sensor Temposonics® T-Series TH in the boundary of a zone 0 hazardous area, the corresponding requirements of IEC 60079-26 and IEC 60079-10-1 must be complied with. At this, the interface must be sufficiently tight (IP66 or IP67) or form a flameproof joint according to IEC 60079-1 (joints specified for a volume $\leq 100 \text{ cm}^3$) between the Zone 0 and the less hazardous area. In addition, the Linear Position Sensor Temposonics® T-Series TH must be protected against overheating by means of an upstream fuse of 125 mA.
- iii. The sensor tube must be protected from mechanical damage.