



EU Type Examination Certificate CML 16ATEX1090X Issue 2

1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

2 Equipment **Linear Position Sensor Temposonics® T-Series TH**

3 Manufacturer **Temposonics GmbH & Co. KG** **Temposonics LLC**

4 Address **Auf dem Schüffel 9, 58513, Lüdenscheid, Germany** **3001 Sheldon Drive, Cary, NC 27513, USA**

5 The equipment is specified in the description of this certificate and the documents to which it refers.

6 CML B.V., Chamber of Commerce No 6738671, Koopvaardijweg 32, 4906CV Oosterhout The Netherlands, Notified Body Number 2776, 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 equipment 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 the confidential reports listed in Section 12.


7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.

8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018 EN 60079-1:2014 EN IEC 60079-7:2015+A1:2018
EN 60079-26:2015 EN 60079-31:2014

10 The equipment shall be marked with the following:

 II 1/2 G D

Ex db IIC T4 Ga/Gb or Ex db eb IIC T4 Ga/Gb or Ex tb IIIC T130°C Ga/Db
Ta = -40°C to +90°C Ta = -40°C to +90°C Ta = -40°C to +90°C



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11 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. 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 1/2" NPT thread adapter, or an M20 or 1/2" 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.

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

Model Nomenclature:

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 - ½" 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 - ½" 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 ½" 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



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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)

Variation 1

This variation introduces the following modifications:

- i. To update the certificate description to reference an updated product configurator.
- ii. To update the label drawing to reflect above changes.
- iii. To correct typographic errors.

Variation 2

This variation introduces the following modifications:

- i. Change of applicant's and manufacturer's name.
- ii. Update of EN 60079-0:2012 to EN IEC 60079-0:2018.
- iii. Update of EN 60079-7:2015 to EN IEC 60079-7:2015+A1:2018.

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	26 May 2016	R1188A/00	Issue of Prime Certificate
1	10 Nov 2017	R11419A/00	Introduction of Variation 1
2	15 Nov 2021	R14460A/00	Introduction of Variation 2

Note: Drawings that describe the equipment or component are listed in the Annex.



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13 Conditions of Manufacture

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

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

14 Specific Conditions of Use (Special Conditions)

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 EN 60079-1.
- ii. When installing the Position Sensor Temposonics® T-Series TH in the boundary of a zone 0 hazardous area, the corresponding requirements of EN 60079-26 and EN 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 EN 60079-1 (joints specified for a volume $\leq 100 \text{ cm}^3$) between the zone 0 and the less hazardous area. In addition, the 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.