



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.: IECEx BKI 11.0003

Issue No: 1

Certificate history:

Issue No. 1 (2018-06-13)

Issue No. 0 (2011-07-04)

Status: Current

Page 1 of 4

Date of Issue: 2018-06-13

Applicant: **Magnetrol International N.V.**
Heikensstraat 6
B-9240 Zele
Belgium
Belgium

Equipment: **Thermal dispersion level/flow switch**

Optional accessory: *Thermatel Model TD1/TD2*

Type of Protection: **General requirements, Flameproof enclosures, Intrinsic safety**

Marking:

Ex d [ib] / d + ib IIC T5/T4 Gb/Ga or
Ex d IIC T5/T4 Gb/Ga or
Ex d IIC T5/T4 Gb
-40 °C ≤ Tamb ≤ +70 °C


Approved for issue on behalf of the IECEx
Certification Body:

Edit Molnár

Position:

Head of the Certification Body

Signature:
(for printed version)


2018-06-13

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

Testing Station for Explosion Proof Equipment
H 1037 BUDAPEST
MIKOVINY S.u. 2-4
Hungary





IECEX Certificate of Conformity

Certificate No: IECEx BKI 11.0003 Issue No: 1
Date of Issue: 2018-06-13 Page 2 of 4
Manufacturer: Magnetrol International Inc.
705 Enterprise Street, Aurora, IL 60504
United States of America

Additional Manufacturing location(s):

Magnetrol International N.V.
Heikensstraat 6, B-9240 Zele
Belgium

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 apparatus 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 : 2007-10 Edition:5	Explosive atmospheres - Part 0:Equipment - General requirements
IEC 60079-1 : 2007-04 Edition:6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2006 Edition:5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2006 Edition:2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga

This Certificate does not indicate compliance with electrical 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 Report:

[HU/BKI/ExTR11.0003/00](#)

Quality Assessment Report:

[CA/CSA/QAR06.0004/11](#)

[NL/DEK/QAR11.0031/04](#)



IECEX Certificate of Conformity

Certificate No: IECEx BKI 11.0003

Issue No: 1

Date of Issue: 2018-06-13

Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Thermate® TD1/TD2 can easily be adjusted to detect flow (gases and liquids), level or liquid-liquid inter-face. The TD1 is a 24 V DC line powered unit with integral electronics and a built-in DPDT relay. The TD2 is either V DC or V AC line powered, has integral or remote electronics and offers additionally LED indication, time delay and mA output for diagnostics and trending.

See details in addendum IECEx CoC BKI 11.0003.

SPECIFIC CONDITIONS OF USE: NO



IECEX Certificate of Conformity

Certificate No: IECEX BKI 11.0003

Issue No: 1

Date of Issue: 2018-06-13

Page 4 of 4

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Issue 1

Change the address of the manufacturer, Magnetrol International Inc.

The new address: 705 Enterprise Street, Aurora, IL60504, United States of America

The IECEX QAR of the manufacturer: CA/CSA/QAR06.0004/11

+

Additional manufacturing location is added:

Magnetrol International N.V.

The address of the additional manufacturing location: Heikensstraat 6, B-9240 Zele, Belgium

The IECEX QAR of the additional manufacturing location: NL/DEK/QAR11.0031/04

Annex:

[Addendum to IECEX CoC BKI 11.0003.pdf](#)

1. Description

Thermatel® TD1/TD2 can easily be adjusted to detect flow (gases and liquids), level or liquid-liquid inter-face. The TD1 is a 24 V DC line powered unit with integral electronics and a built-in DPDT relay. The TD2 is either V DC or V AC line powered, has integral or remote electronics and offers additionally LED indication, time delay and mA output for diagnostics and trending.

The sensor consists of two RTD (Resistance Temperature Detector) elements. One is the reference and the second is heated to a temperature above the process temperature. The electronics detect the temperature difference between the two elements. The temperature difference is greatest in air, then decreases when cooling occurs due to a change in media. An increase in the flow rate further decreases the temperature difference. The set point is adjusted for the switch to alarm at the desired temperature difference. Once the set point is reached, the relay will change state.

The product is made in three subtype according to applied protection method:

1) Ex d [ib] / d + ib IIC T5/T4 Gb/Ga

The control electronics are mounted in a flameproof enclosure and includes intrinsically safe signal circuits for probe. It's EPL is Gb and protection type: Ex d [ib]

In this case the probe use two independent types of protection: flameproof enclosure + intrinsic safety protection type "ib" in order to achieve EPL Ga. It's protection type is Ex d + ib

2) Ex d IIC T5/T4 Gb/Ga

The control electronics are mounted in a flameproof enclosure with EPL Gb and protection type: Ex d

In this case the probe contains mechanical separation element as part of the equipment to seal off the electrical circuits of the equipment from the zone 0 area in order to achieve EPL Ga. It's protection type is Ex d

3) Ex d IIC T5/T4 Gb

The control electronics are mounted in a flameproof enclosure (Ex d) with EPL Gb

The third probe version use only the protection method flameproof enclosure (Ex d), so it's EPL is Gb.

The probe can be fixed directly on the bushing or via an extension tube. The heat extension tube of the probe reduces the temperature of the process towards the electronics to max 5°C increase. The device can be made with integrated electronics or remote electronic (TD2 only). In the case of remote version two flameproof enclosure are used, one of them contains the control electronic the another one contains only a terminal block and it is connected to the probe.

2. Type assortment

T D 1	Thermatel TD1 Electronics
T D 2	Thermatel TD1 Electronics with continuous LED indication and mA output

POWER	
2	24 V DC – TD1
7	240 V AC (100-264 V AC) - TD2
8	24 V DC (±20 %) - TD2
OUTPUT	
D 0	8 A DPDT relay
H 0	1 A Hermetically sealed DPDT relay [Ⓞ] – TD2
<small>Ⓞ requires for Zone 0 application a TMC/TMD/TMH sensor with 1 mm wall thickness</small>	
ACCESSORIES	
0	Blind housing cover
1	Housing cover with glass window (for aluminium housing only) – TD2
MOUNTING CONFIGURATION	
0	Integral electronics
1	Remote electronics – TD2
APPROVALS	
3	General purpose / FM-CSA explosion proof
C	ATEX explosion proof – zone 0 for TD2 / zone 0 and 1 for TD1 IECEX explosion proof – zone 0 for TD2 / zone 0 and 1 for TD1
G	ATEX explosion proof – zone 1 for TD2 IECEX explosion proof – zone 1 for TD2
HOUSING - INDUSTRIAL	
0	IP 66, Cast Aluminium housing, 3/4" NPT cable entries (2 entries – one plugged)
1	IP 66, Cast Aluminium housing, M20x1,5 cable entries (2 entries – one plugged)
2	IP 66, Cast 316 SST housing, 3/4" NPT cable entries (2 entries – one plugged)
3	IP 66, Cast 316 SST housing, M20x1,5 cable entries (2 entries – one plugged)
HOUSING - HYGENIC	
4	IP 67, 304 SST housing, 3/4" NPT cable entries (2 entries – one plugged)
4	IP 67, 304 SST housing, M20x1,5 cable entries (2 entries – one plugged)

T D 1 0 complete code for Thermatel® TD1/TD2 electronics



3 Electrical data

Power: TD1: 19,2 – 28,8 VDC, 3,5 W;
TD2: 19,2 – 28,8 VDC, 4 W, 100 – 264 V AC, 50-60 Hz, 5 W

Signal output: TD1: 8 A DPDT relay @ 30 V DC
TD2: 8 A DPDT relay @ 30 V DC / 250 V AC or
1 A DPDT relay @ 28 V DC and
4 – 20 mA (not for all models)

4 Ambient temperature range

Ambient temperature range: -40°C ... +70°C.

The temperature class is T5 when the apparatus is used in the ambient temperature range -40°C up to +40°C.

The temperature class is T4 when the apparatus is used in the ambient temperature range -40°C up to +70°C

5 Ingress protection

The enclosure provides a degree of protection IP 66 as per IEC 60529.

Special conditions for safe use

-

Drawings

Title:	Drawing No.:	Rev. Level:	Date:
Technical drawings			
Transformer	009-6268	rev B	2010.07.
Sensor drawing	099-7019	rev H	2004.07.
Model TD1/TD2	099-7215	rev A	2011.01.
Base + Cover	099-7216	rev A	2005.12.
Parts lists			
Logic board	030-3581	rev A	2008.01.
Power board	030-3596	rev B	2010.01.
Power board TD1	030-3583	rev A	2006.09.
Logic board TD1	030-3584	rev A	2007.01.
Circuit Diagrams			
Schematic power board	094-5055	rev A	2006.07.
Schematic logic board	094-5039	rev A	2005.10.
Schematic power board TD1	094-5040	rev A	2005.10.
Schematic logic board TD1	094-5041	rev A	2005.10.