

TYPE EXAMINATION CERTIFICATE



- [2] **Equipment or Protective System intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**
- [3] Type Examination Certificate Number: **DEMKO 10 ATEX 150376X**
- [4] Equipment: **Two wire bus-transmitter, TT 60 C**
- [5] Manufacturer: **KROHNE Messtechnik GmbH**
- [6] Address: **Ludwig-Krohne-Strasse 5, Duisburg, D-47508, Germany**
- [7] This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.
- [8] UL International Demko A/S certifies that this equipment has been found to comply with the Essential Health and Safety Requirements that relate to the design of **Category 3** equipment, which is intended for use in potentially explosive atmospheres. These Essential Health and Safety Requirements are given in Annex II to the European Union Directive 94/9/EC of 23 March 1994.
- The examination and test results are recorded in confidential report no. **150376**
- [9] Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to Standards: **EN 60079-0:2006** **EN 60079-15:2005**
- [10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.
- [11] This Type examination certificate relates only to the design of the specified equipment, and not to specific items of equipment subsequently manufactured.
- [12] The marking of the equipment or protective system shall include the following:

II 3 G Ex nL IIC T4-T6

Certification Manager

Jan-Erik Storgaard

This certificate may only be reproduced in its entirety and without any change, schedule included

Date of issue: 2010-12-21

Certification Body

UL International Demko A/S, Lyskaer 8, P.O. Box 514, DK-2730 Herlev, Denmark, Tel. +45 44 85 65 65, info.dk@dk.ul.com
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Schedule
TYPE EXAMINATION CERTIFICATE No.
DEMKO 10 ATEX 150376X
Report: 150376-01/08CA62405

[15]

Description of Equipment:

TT 60 C is a two-wire bus-transmitter intended for temperature measurement in process industry. The input signal is either of resistance or voltage type, and the input can handle two input sensors (not covered by this certificate, normally simple apparatus). The output signal is standard Profibus PA digital signal, bit-synchronous, 31.25kbit/s, Manchester encoded, voltage mode. The transmitter is made for mounting in DIN standard head or similar with an IP rating of minimum IP20. The transmitter is calibrated and configured (only in an area known to be safe) with a PC, which can be connected to the transmitter via a separate communication outlet or via the Bus-line.

Temperature range

The relation between ambient temperature and the assigned temperature class, for model TT 60 C, is as follows:

Ambient temperature range	Temperature class
-40 °C to +75 °C	T6
-40 °C to +85 °C	T5
-40 °C to +85 °C	T4

Electrical data

Electrical ratings of energy limited model TT 60 for connections to a non-incendive fieldbus or a certified non-incendive FNICO fieldbus system, in accordance with IEC TS 60079-27 (applies only for the bus/supply port):

Bus/ supply port (terminal 6,7):	Sensor port (terminals 1,2,3,4,5):	Communication Port:
Ui: 30 V	Uo: 3,3 V	Ui: 8,0 V
Li: 10 µH	Io: 0,4 mA	li: 450 mA
Ci: 1 nF	Po: 6,5 mW	Pi: 0,8 W
	Lo: 375 mH	Li: 1 µH
	Co: 500 µF	Ci: 10 nF

Installation instructions

For an ambient temperature ≥ 70°C, heat resistant cables shall be used with a rating of at least 10K above the ambient temperature. For ambient temperatures below –10 °C use field wiring suitable for the minimum ambient temperature.

It is verified through testing that the sensor circuit is electrically isolated from the fieldbus input circuit. The isolation between the circuits is capable of withstanding a test voltage of 500 Vac during 1 minute.

Routine tests

Routine dielectric strength test at 500 Vrms (or 710Vdc) during 1 minute, are required in accordance with EN 60079-15 clause 34.2.

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Descriptive Documents

Project Report No.: 150376-01/08CA62405 (Hazardous Location Testing)

Drawings:

The Schedule documents are listed in the document S-9622-B, dated 2010-11-15, titled "List of scheduled and related drawings".

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Special conditions for safe use:

The TT 60 C shall be used in an enclosure that complies with the relevant enclosure requirements of EN 60079-0 and EN 60079-15 regarding impact and IP degree (rated at least IP54).

The transmitter is calibrated and configured with a certified PC Cable, DEMKO 06 ATEX 141337X, which can be connected to the transmitter via an outlet. The transmitter must not be calibrated / configured, via this outlet, after mounting unless the area is known to be non-hazardous.

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Essential Health and Safety Requirements

Met by compliance with the standards EN 60079-0:2006 and EN 60079-15:2005