

CERTIFICATE

(1) EC-Type Examination

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 03ATEX1448 X** Issue Number: **7**

(4) Equipment: **Converter, Temperature and Water Level Transmitter Prothermo Type NMT 539-B and Average Temperature Transmitter Prothermo Type NMT 532-B**

(5) Manufacturer: **Endress+Hauser Yamanashi Co., Ltd.**

(6) Address: **862-1 Mitsukunugi Sakaigawa-cho, Fuefuki-shi Yamanashi Pref. 406-0846, Japan**

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

(8) DEKRA Certification B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the directive.

The examination and test results are recorded in confidential test report number NL/KEM/ExTR10.0061/02

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2012 + A11

EN 60079-11 : 2012

EN 60079-26 : 2007

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:



**II 1/2 G Ex ia IIB T6 ... T2 Ga/Gb or
II 2 G Ex ia IIB T6 ... T2 Gb**

This certificate is issued on 29 July 2015 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

DEKRA Certification B.V.

R. Schuller
Certification Manager

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 03ATEX1448 X**

Issue No. 7

(15) **Description**

Prothermo NMT 539-B Series Converters, Temperature and Water Level Detectors and Prothermo NMT 532-B Series Average Temperature Transmitters are used either for average temperature measurement, using a separate or an integral temperature probe, or for the measurement of the water interface level at the bottom of a tank, or for combinations of these measurements.

The maximum lengths of measurement probes are 99999 mm for NMT 539-B series, and 40000 mm for NMT 532-B series, respectively.

The output signal is a 4 - 20 mA current with digital communication (HART).

Ambient temperature range -40 °C to +85 °C.

The relation between the ambient temperature, the process temperature and the temperature class is shown in the following table:

Temperature class	Ambient temperature	Process temperature (sensor)	
		Temperature measurement only	Temperature measurement and water level or water level only
T6	≤ 60 °C	≤ 60 °C	≤ 60 °C
T5	≤ 85 °C	≤ 80 °C	≤ 80 °C
T4	≤ 85 °C	≤ 100 °C	≤ 100 °C
T3*	≤ 85 °C	≤ 175 °C	≤ 125 °C
T2*	≤ 85 °C	≤ 235 °C	---

Note: * is applicable to Prothermo NMT 539 only.

Electrical data

All versions:

Supply and output circuit (terminals H1+ and H1-):

in type of protection intrinsic safety Ex ia IIB, only for connection to a certified intrinsically safe circuit, with the following maximum values:

$U_i = 30 \text{ V}$; $I_i = 120 \text{ mA}$; $P_i = 1 \text{ W}$; $C_i = 7,9 \text{ nF}$; $L_i = 48 \text{ }\mu\text{H}$.

Converter only:

Temperature sensor circuit (connectors CN4 and CN5, module 3):

in type of protection intrinsic safety Ex ia IIB, for connection to an external temperature probe, with following maximum values (trapezoidal characteristic):

$U_o = 8,6 \text{ V}$; $I_o = 71 \text{ mA}$; $P_o = 153 \text{ mW}$; $C_o = 9,5 \text{ }\mu\text{F}$; $L_o = 7,5 \text{ mH}$.

The level sensor circuit is connected to ground and is infallibly galvanically isolated from the supply and output circuit and from the temperature measurement circuit.

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 03ATEX1448 X**

Issue No. 7

Installation instructions

The instructions provided with the equipment shall be followed in detail to assure safe operation.

(16) **Test Report**

No. NL/KEM/ExTR10.0061/02.

(17) **Special conditions for safe use**

When the enclosure of the Transmitter Model Prothermo is made of aluminium, if it is mounted in an area where the use of EPL Ga equipment is required, it must be installed such, that, even in the event of rare incidents, ignition sources due to impact and friction sparks are excluded the temperature sensor tube shall not be subject to environmental stress, such as impact from moving parts, and the bottom part shall be secured.

Precautions shall be taken to minimize the risk from electrostatic discharge of painted parts.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. NL/KEM/ExTR10.0061/02.

Annex 1 to Certificate of Conformity IECEx KEM 10.0058X, Iss 3
Annex 1 to IECEx TEST REPORT NL/KEM/ExTR10.0061/02

Description

Prothermo NMT 539-F Series Converters, Temperature and Water Level Detectors and Prothermo NMT 532-F Series Average Temperature Transmitters are used either for average temperature measurement, using a separate or an integral temperature probe, or for the measurement of the water interface level at the bottom of a tank, or for combinations of these measurements.

The maximum lengths of measurement probes are 99999 mm for NMT 539-F series, and 40000 mm for NMT 532-F series, respectively.

The output signal is a 4 - 20 mA current with digital communication (HART).

Ambient temperature range -40 °C to +85 °C.

The relation between the ambient temperature, the process temperature and the temperature class is shown in the following table:

Temperature class	Ambient temperature	Process temperature (sensor)	
		Temperature measurement only	Temperature measurement and water level or water level only
T6	≤ 60 °C	≤ 60 °C	≤ 60 °C
T5	≤ 85 °C	≤ 80 °C	≤ 80 °C
T4	≤ 85 °C	≤ 100 °C	≤ 100 °C
T3*	≤ 85 °C	≤ 175 °C	≤ 125 °C
T2*	≤ 85 °C	≤ 235 °C	---

Note: * is applicable to Prothermo NMT 539 only.

Electrical Data

All versions:

Supply and output circuit (terminals H1+ and H1-):

in type of protection intrinsic safety Ex ia IIB, only for connection to a certified intrinsically safe circuit, with the following maximum values:

$U_i = 30 \text{ V}$; $I_i = 120 \text{ mA}$; $P_i = 1 \text{ W}$; $C_i = 7.9 \text{ nF}$; $L_i = 48 \text{ }\mu\text{H}$.

Converter only:

Temperature sensor circuit (connectors CN4 and CN5, module 3):

in type of protection intrinsic safety Ex ia IIB, for connection to an external temperature probe, with following maximum values (trapezoidal characteristic):

$U_o = 8.6 \text{ V}$; $I_o = 71 \text{ mA}$; $P_o = 153 \text{ mW}$; $C_o = 9.5 \text{ }\mu\text{F}$; $L_o = 7.5 \text{ mH}$.

The level sensor circuit is connected to ground and is infallibly galvanically isolated from the supply and output circuit and from the temperature measurement circuit.