Safety Instruction
Prothermo NMT539
Average Temperature

KEMA 03 ATEX 1448 X

Safety Instructions for Electrical Apparatus Certified for Use in Explosion-hazardous Areas

Designation according to Directive 94/9/EC

Converter with sensor

II 1/2 G

- Equipment Group
- Equipment Category: Sensor Category 1/Housing Category 2
- For Explosive Mixture Composed of Gases, Mist or Vapors

Converter only

II 2 G

- Equipment Group
- Equipment Category: Sensor Category 1/Housing Category 2
- For Explosive Mixture Composed of Gases, Mist or Vapors

Hazardous Zone at Mounting Point		Catagory to Directive 94/9/EC	Ignition Protection Provided		
			Ga	Gb	Gc
Hazard due to explosive gas-air mixture	Zone 0	1G	○	×	×
Hazard due to explosive gas-air mixture	Zone 1	2G	○	○	×
Hazard due to explosive gas-air mixture	Zone 2	3G	○	○	○

○ : Applicable ×: Not Applicable

Designation of Explosion Protection

Converter with sensor

Converter only

Ex ia IIB T2...T6 Ga/Gb

EX ia IIB T2...T6 Gb

- Electrical Apparatus with Explosion Protection to European Standard
- Type of Protection
- Apparatus Group
- Temperature Class
- Equipment Protection Level

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NMT539 Product Type and Installation

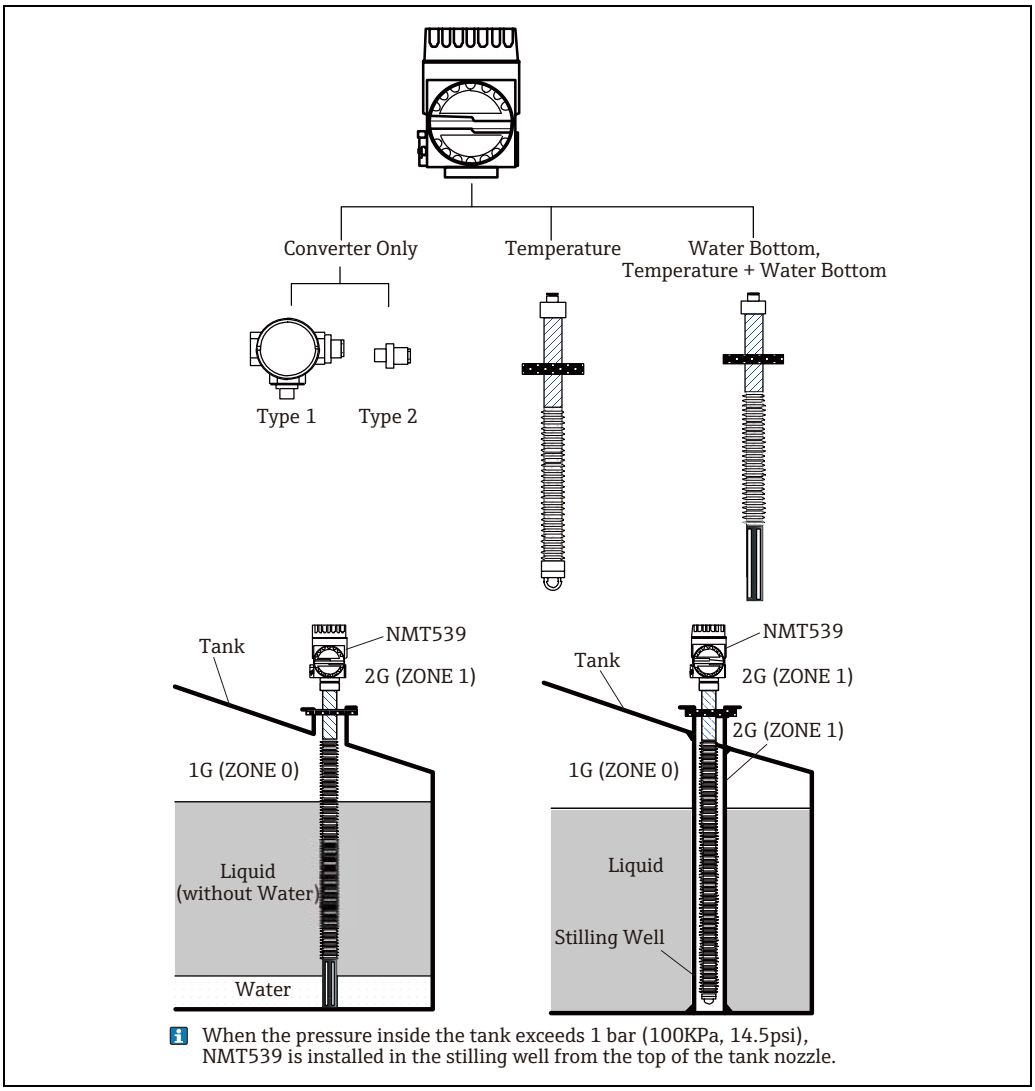

Figure 1: Product Type and Installation

NMT539 Terminal Board Layout

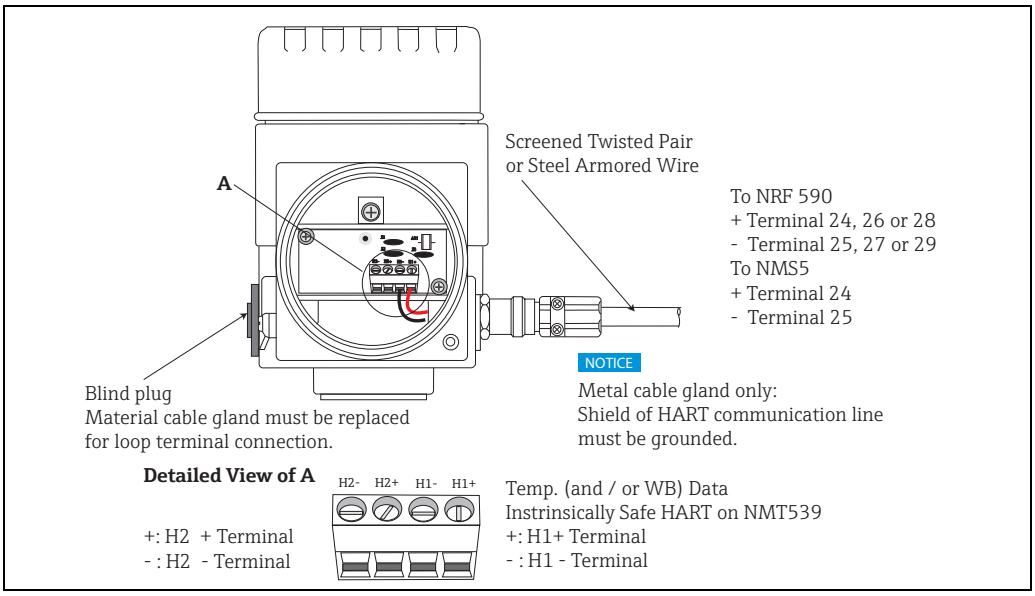

Figure 2: Description of Terminal Board

1 Safety Notes for Installation in Hazardous Areas

- Install NMT539 according to the manufacturer's instructions and any other valid standards and guidelines.
- Avoid electrostatic charge at the surface when NMT539 is equipped with WB sensor (capacitance sensor for water I/F detection).

2 Guideline for Safety Use

2.1 Electrical Data

2.1.1 Supply and Output Circuit; All Versions (Terminals H1+ and H1-)

This is only for connection to a certified intrinsically safe circuit with the following maximum values.

Ui = 30 V Ii = 120 mA Pi = 1 W	Internal capacitance Ci = 7.9 nF Internal inductance Li = 48 µH

2.1.2 Converter Only

For connection to an external temperature probe, with following maximum values (trapezoidal characteristic)

Uo = 8.6 V Io = 71 mA Po = 153 mW	External capacitance Co = 9.5 µF External inductance Lo = 7.5 mH

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

2.2 Ambient Temperature and Medium Temperature

The ambient temperature for the transmitter is minimum −40°C.
The relation between the ambient temperature, the process temperature and the temperature class is shown in the following table.

Temperature class	Ambient temperature	Medium temperature of 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	---

2.3 Temperature Sensor Tube Installation

- All metal parts of the sensor and transmitter shall electrically conductive and securely be connected to the potential equalization system within the hazardous area.
- In order to exclude ignition sources due to impact and friction sparks, even in the event of rare incidents, the temperature sensor tube shall not be subject to environmental stress, such as impact from moving parts, and the bottom parts shall be secured.

1. Continuous duty temperature of the cable ≧ Tamb + 5 K
2. When taking out and winding the flexible tube, keep the length a minimum of 1 meter in diameter. When attaching and bending the flexible tube, the radius of curvature must be 500mm or more (19.69") at any bend portion.

2.4 Mounted in Area Ga

When the enclosure of the Transmitter Model Prothermo is made of aluminum, 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.

2.5 Withstanding Voltage

Circuit is not capable of withstanding 500 V, between signal and ground, according to clause 6.3.13 of IEC60079-11, this is limited to a maximum voltage of 250 V.

3 Safety Notes for Zone 0

Potentially explosive vapor/air mixtures may arise under atmospheric conditions only:

- -20°C ≦ T ≦ +60°C
- 0.8 bar ≦ P ≦ 1.1 bar

Associated apparatus with galvanic isolation between the intrinsically safe and non-intrinsically safe circuits are preferred.

4 Applied Standards

The following standards are effective for NMT539.

- EN 60079 - 0: 2012
- EN 60079 -11: 2012
- EN 60079 - 26: 2007

Declaration of Conformity

With this Declaration of Conformity, Endress+Hauser Japan ensures that the product conforms to the regulations of the European EMC Directive 89/336/ECC and Directive 94/9/EC. Proof of conformity is given by the standards listed in the Declaration of Conformity.

Endress+Hauser
People for Process Automation

14001

Declaration of Conformity

Endress+Hauser Yamanshi Co., Ltd.
862-1 Mitsukunugi, Sakaigawa-cho, Fuefuki-shi,
Yamanashi Prefecture, 406-0846 Japan

Assume sole responsibility standing that the product

Converter, Temperature and Water level Transmitter "Prothermo"

NMT539-B....

Explosion Proof Certification Number:
KEMA 03 ATEX 1448 X

Applied European Directives:
EMC-Directive 2004/108/EC
Ex-Directive 94/9/EC

To which this declaration relates is in conformity with the following standards.

IEC61326	[2002]	EN60079-0	(2012)
		EN60079-11	(2012)
		EN60079-26	(2007)

Quality System was inspected by
TÜV NORD CERT GmbH Notify Body Number: 0044

First period for CE marking 2003

Yamanashi, 1 December 2014
(Place and Date)

(General Manager)

Figure 3: Declaration of Conformity

Associated Documentation

- BA01025G/08/EN
- BA01026G/08/EN
- TI00042G/08/EN

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