CERTIFICATE OF CONFORMITY

1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
2. **Certificate No:** **FM20US0005X**
3. **Equipment:** **T13,T14, T15, T53, T54, T55, TU211 and TU221**
   (Type Reference and Name) **Temperature Sensor**
4. **Name of Listing Company:** **Endress+Hauser Wetzer GmbH+Co.KG**
5. **Address of Listing Company:** **Obere Wank 1**
   Nesselwang
   D-87484
   Germany
6. The examination and test results are recorded in confidential report number:

   3026252 dated 30th August 2011
7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

   FM Class 3600:2018, FM Class 3615:2018, FM Class 3611:2004, FM Class 3810:2005, ANSI/ISA 61010-1:2004
8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.
10. Equipment Ratings:

    Explosionproof for Class I, Division 1, Groups A, B, C and D; Dust-ignitionproof for Class II, Division 1, Groups E, F and G; Class III, Division 1; and Non-incendive for Class I, Division 2, Groups A, B, C, D hazardous (classified) locations, with an ambient temperature rating of -40°C to +100°C.

Certificate issued by:

J. E. Marquedant
VP, Manager - Electrical Systems

24 November 2020
Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

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11. The marking of the equipment shall include:
Class I Division 1, Groups A, B, C, D; T*, Ta**;

Class II/III Division 1, Groups E, F, G; T*, Ta** ;

Class I, Division 2 Groups A,B,C,D; T*, Ta** ; -16100114

Class I, Division 2 Groups A,B,C,D; T*, Ta** ; -16100120

Temperature Class*	Ambient Temperature Range**		
	Flying Leads or With Head Transmitter TMT8X, TMT18X	Without Electronic or with Terminal Block	With Assembled Field Transmitter, TMT142, TMT162
T6/T85°C	-40°C to 70°C	-50°C to 80°C	-40°C to 55°C
T5/T100°C	-40°C to 80°C	-50°C to 95°C	-40°C to 70°C
T4/T135°C	-40°C to 85°C	-50°C to 100°C	-40°C to 85°C

12. **Description of Equipment:**

General - General: The Endress & Hauser Wetzer GmbH Temperature Sensor Assemblies Models T13, T14, T15, T53, T54, T55, TU211 and TU221 are assembled with instrumentation enclosures and component options. (Refer to drawing Nos. 160100113, 160100114, 160100119, and 160100120 for details).

Construction - Models TU211 and TU221 as shown in manufacturer's drawings Nos.10000001834 is the same but without a connection head. There are 2 different groups of instrumentation enclosures used:

The Enclosures Series TMT142 and TMT 162 are FM Approved under report No. 3016218 (FM17US0288X) for Class I, Groups A, B, C and D; Class II, Groups E, F and G; Class III hazardous (classified) locations. They are made of die casting aluminum ALSI10 Mg (Mg portion <6%) or stainless steel 316L and have an internal free volume lower than 500 cm^3 manufactured by Endress & Hauser Wetzer GmbH. Ta= -40C to 85°C

The Enclosures Series TA30H are FM Approved under report No. 3036354 (FM19US0022) for Class I, Groups A, B, C and D; Class II, Groups E, F and G; Class III hazardous (classified) locations. They are made of die casting aluminum ALSI12(Fe) or ALSI10 Mg (Fe) (Mg portion <7.5%) or stainless steel 316L and have an internal free volume lower up to 250 cm^3 manufactured by Endress & Hauser Wetzer GmbH. Ta=-50°C to 130°C

RTD Sensors (Dwg. No H0318-01, H0318-03) are in welded or seamless tubing, 0.115 to 0.515 inch sheath diameter and filled with packed ceramic powder for protecting against vibration. The external wires for connection to transmitter or terminal block are 3 inches or more in length. The high temperature sensor option is additionally sealed with an epoxy or ceramic seal and crimped, welded or brazed to the tubing.

TC Sensors (Dwg. No. H0318-02, H0318-04) are welded or seamless tubing, 0.115 to 0.515 inch sheath diameter and filled with packed ceramic powder for protecting against vibration or with sleeves on the wires. The external wires are supplied for connection to transmitter or terminal block.

Fittings: Hex Nipple Mounting, Cat No. H0316-03, made of 316 stainless steel, 12L14 carbon steel, Monel 400, Hastelloy B, Hastelloy C, 316 low carbon Steel, carpenter 20. There are several NPT sizes for the process connection and ½-14 NPT for the connection head/ field housing thread.

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Conduit Union, Cat No. H0316-04, model series 6FU-C-X, made of zinc plated steel, ½ in or ¾ in NPT conduit entry sizes, CSA certified for Class I, Division I, Groups A, B, C and D; Class II, Division 1, Groups E, F and G, manufactured by Appleton Electric or other CSA certified conduit unions, which meet the requirements for hazardous (classified) locations.

Nipple: Cat No. H0316-01, model series PN-C-L, made of carbon, galvanized steel or stainless steel, ½ in or ¾ in NPT conduit entry sizes, 2 to 18 inches in length.

Reducer Bushing: Cat No. H0310-01, model series 6EB-DC, ½ in or ¾ in NPT conduit entry, CSA certified for Class I, Div. I, Groups A, B, C and D; Class II, Division 1, Groups E, F and G, manufactured by Killark or other CSA certified conduit unions, which meet the requirements for hazardous (classified) locations.

Ratings - The transmitter series type TMT84, TMT85, TMT82, TMT180, TMT181, TMT182, TMT162, Input:8-42V dc; Output: 4-20mA; Current consumption: 23mA

Model Code

T13-abcdefghijkl. Temperature Sensor.
a = Certification D, E, J or K.
b = Shape of thermowell 1, 2 or 3.
c = Process connection/TW material A1, A2, A3, A4, B1, B2, C1 or C2.
d = Immersion length 1, 2, 3, 4, 5, 6, 7, or 8 (8 = specified length 0.5"-22").
e = Lag of TW A, E or X (X = 0.5"-10").
f = Extension 1, 2, 3, 4, 5 or 6.
g = Class & Type of Sensor A, B, C, D, E, F, G, H, J, K, L, M, S, T, U or V .
h = Enclosure: G, H, I, J, K, L, M, N, 3, 4, 5, 6, 7, or 8
i = Electrical connection A, B, C, D, E, F, G, H, I, J, K, M, N, Q, R, 2 or 3.
j = Version: Blank
k = Additional Option 1: No safety relevant aspects can be selected
l = Additional Option 2: No safety relevant aspects can be selected

T14-abcdefghijklm. Temperature Sensor.
a = Certification D, E, J or K.
b = Shape of thermowell 1, 2, 3 or 4.
c = Flange size/TW material A, B or C.
d = Rating/Type 1, 2, 3 or 4.
e = Immersion length 1, 2, 3, 4, 5, 6, 7 or 8 (8 = specified length 0.5"-22").
f = Lag of TW A or X (X = 0.5"-10").
g = Extension 1, 2, 3, 4, 5 or 6.
h = Class & Type of sensor A, B, C, D, E, F, G, H, J, K, L, M, S, T, U or V.
i = Enclosure G, H, I, J, K, L, M, N, 3, 4, 5, 6, 7 or 8.
j = Electrical connection A, B, C, D, E, F, G, H, I, J, K, M, N, Q, R, 2 or 3.
k = Version: Blank
l = Additional Option 1:No safety relevant aspects can be selected
m = Additional Option 2: No safety relevant aspects can be selected

T15-abcdefghij. Temperature Sensor.
a = Certification D, E, J or K.
b = Immersion length 1, 2, 3, 4, 5 or 8 (8 = specified length 0.5"-100").

c = Sheath diameter A or C.
d = Extension 5, 6 or 7.
e = Class & Type of Sensor A, B, C, D, E, F, G, H, J, K, L, M, S, T, U or V.
f = Enclosure: G, H, I, J, K, L, M, N, 3, 4, 5, 6, 7, or 8.
g = Electrical connection A, B, C, D, E, F, G, H, I, J, K, M, N, Q, R, 2 or 3.
h = Version: Blank
i = Additional Option 1: No safety relevant aspects can be selected
j = Additional Option 2: No safety relevant aspects can be selected

T53-abcdefghijkl. Temperature Sensor.
a = Certification D, E, J or K.
b = Shape of thermowell: 1, 2 or 3.
c = Process connection/TW material A1, A2, A3, A4, B1, B2, C1 or C2.
d = Immersion length 1, 2, 3, 4, 5, 6, 7 or 8 (8 = specified length 0.5"-22")..
e = Lag of TW A, E or X (X = 0.5"-10").
f = Extension 1, 2, 3, 4, 5 or 6.
g = Class & Type of Sensor A, B, C, D, E, F, G, H, J, K, L, M, N, O, P, Q, R, S, T, or U.
h = Enclosure: G, H, I, J, K, L, M, N, 3, 4, 5, 6, 7, or 8.
i = Electrical connection B, C, D, E, F, G, H, I, J, K, M, N, Q, R, 2 or 3.
j = Version: Blank
k = Additional Option 1: No safety relevant aspects can be selected
l = Additional Option 2: No safety relevant aspects can be selected

T54-abcdefghijklm. Temperature Sensor.
a = Certification: D, E, J or K.
b = Shape of thermowell: 1, 2, 3 or 4.
c = Flange size/TW material: A, B or C.
d = Rating/Type: 1, 2 or 3.
e = Immersion length: 1, 2, 3, 4, 5, 6, 7 or 8 (e= specified length 0.5"-22").
f = Lag of TW: A or X (X = 0.5"-10").
g = Extension: 1, 2, 3, 4, 5 or 6.
h = Class & Type of sensor: A, B, C, D, E, F, G, H, J, K, L, M, N, O, P, Q, R, S, T, or U.
i = Enclosure: G, H, I, J, K, L, M, N, 3, 4, 5, 6, 7 or 8.
j = Electrical connection: B, C, D, E, F, G, H, I, J, K, M, N, Q, R, 2 or 3.
k = Version: Blank
l = Additional Option 1: No safety relevant aspects can be selected
m = Additional Option 2: No safety relevant aspects can be selected

T55-abcdefghijk. Temperature Sensor.
a = Certification: D, E, J or K.
b = Immersion length: 1, 2, 3, 4 or 8 (8 = specified length 0.5"-100").
c = Sheath diameter: A or C.
d = Extension: 5, 6 or 7.
e = Class & Type of Sensor: A, B, C, D, E, F, G, H, J, K, L, M, N, O, P, Q, R, S, T, or U.
f = Junction Type: 2.
g = Enclosure: G, H, I, J, K, L, M, N, 3, 4, 5, 6, 7 or 8.
h = Electrical connection: A, B, C, D, E, F, G, H, I, J, K, M, N, Q, R, 2 or 3.
i = Version: Blank
j = Additional Option 1: No safety relevant aspects can be selected
k = Additional Option 2: No safety relevant aspects can be selected

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TU211-abcdefghi. Temperature Sensor.
a = Certification: D, E, J or K.
b = Immersion length: 1, 2, 3, 4, A, 5, B, 6, 7, C or 8 (8 = specified length 4"-100").
c = Sheath diameter: A or C.
d = Extension: 5, 6 or 7.
e = Class & Type of Sensor: A, B, C, D, E, F, G, H, J, K, L, or M.
f = Device connection: 1 or 2.
g = Version: Blank
h = Additional Option 1: No safety relevant aspects can be selected
i = Additional Option 2: No safety relevant aspects can be selected

TU221-abcdefghij. Temperature Sensor.
a = Certification: D, E, J or K.
b = Immersion length: 1, 2, 3, 4, 5, 6, 7, A, B, C or 8 (8 = specified length 4"-100").
c = Sheath diameter: A or C.
d = Extension: 5, 6 or 7.
e = Class & Type of Sensor: A, B, C, D, E, F, G, H, J, K, L, M, N, O, P, Q, R, S, T or U.
f = Junction style & purity: 2.
g = Device connection 1 or 2.
h = Version: Blank
i = Additional Option 1: No safety relevant aspects can be selected
j = Additional Option 2: No safety relevant aspects can be selected

13. **Specific Conditions of Use:**

For T13, T14, T15, T54 & T5

Temperature Class*	Ambient Temperature Range**		
	Flying Leads or With Head Transmitter TMT7X, TMT8X, TMT18X	Without Electronics or with Terminal Block	With Assembled Field Transmitter, TMT142, TMT162
T6	-40°C to 70°C	-50°C to 80°C	-40°C to 55°C
T5	-40°C to 80°C	-50°C to 95°C	-40°C to 70°C
T4	-40°C to 85°C	-50°C to 100°C	-40°C to 85°C

For TU211 & TU221
Use Only Suitably FM Approved Enclosures that are rated for area classification may be used.

14. **Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

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15. **Schedule Drawings**

A copy of the technical documentation has been kept by FM Approvals.

16. **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
30 August 2011	Original Issue.
24th November 2020	Supplement 4: Report Reference: – PR456222 dated 24th November 2020. Description of the Change: Update model code structure and certificate to latest format.