# CERTIFICATE OF CONFORMITY

1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
2. **Certificate No:** **FM16US0157X**
3. **Equipment:** **STT750 and STT850 Temperature Transmitters**
   **(Type Reference and Name)** **Temperature Transmitters**
4. **Name of Listing Company:** **Honeywell International - Honeywell Field Solutions**
5. **Address of Listing Company:** **512 Virgina Drive**
   **Fort Washington, PA 19034**
   **USA**
6. The examination and test results are recorded in confidential report number:

   3051269 dated 13th May 2014

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 3610:2010, FM Class 3611:2004, FM Class 3615:2018, FM Class 3616:2011, FM Class 3810:2018, ANSI/ISA 60079-0:2013, ANSI/UL 60079-1:2015, ANSI/UL 60079-11:2014, ANSI/ISA 60079-15:2012, ANSI/UL 60079-31:2015, ANSI/NEMA 250:2003, ANSI/IEC 60529:2004

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.

**Certificate issued by:**

J.E. Marquedant
VP, Manager, Electrical Systems

20 December 2018
Date

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

# SCHEDULE

US Certificate Of Conformity No: FM16US0157X

10. Equipment Ratings:

STT750 and STT850:
Intrinsically Safe (Entity) (FISCO - STT850 only ) for use in Class I, II and III, Division 1, Groups A, B, C, D, E, F and G. Temperature Class T4 Ta = -50ºC to +70ºC, in accordance with Control Drawing 50091227;
Intrinsically Safe (Entity) (FISCO - STT850 only ) for use in Class I, Zone 0, AEx ia IIC, Temperature Class T4 Ta = -50ºC to +70ºC, in accordance with Control Drawing 50091227;

Explosionproof for Class I, Division 1, Groups A, B, C and D, Temperature Class T5/T6 Ta = -50ºC to +85ºC /+65ºC; Dust-ignitionproof for Class II/III, Division 1, Groups E, F and G, temperature Class T4 Ta = -50ºC to +85ºC; Flameproof for Class I, Zone 1 AEx db IIC, Temperature Class T5/T6 Ta = -50ºC to +85ºC /+65ºC; Zone 21 AEx tb IIIC T95ºC, Db Ta = -50ºC to +85ºC;

Nonincendive for use in Class I, Division 2, Groups A, B, C and D, Temperature Class T4 Ta = -50ºC to +85ºC; For use in Class I, Zone 2, AEx nA IIC, Temperature Class T4 Ta = -50ºC to +85ºC;

For use indoor and outdoor, Type 4X, IP66/67 hazardous (Classified) locations.

11. The marking of the equipment shall include:

Class I, II, III, Division 1, Groups A, B, C, D, E, F, G; T4 Ta = -50°C to +70°C; Control Drawing 50091227; Entity; FISCO;
Class I, Zone 0, AEx ia IIC T4 Ga Ta = -50°C to +70°C, Control Drawing 50091227; Entity; FISCO;
Class I, Division 1, Groups A, B, C, D; T5/T6 Ta = -50ºC to +85ºC /+65ºC;
Class II,III, Division 1, Groups E, F, G; T4 Ta = -50ºC to +85ºC;
Class I, Zone 1, AEx db IIC T5/T6 Gb Ta = -50ºC to +85ºC /+65ºC;
Zone 21, AEx tb IIIC T95°C Db Ta = -50°C to +85°C;
Class I, Division 2, Groups A, B, C, D; T4 Ta = -50ºC to +85ºC;
Class I, Zone 2, AEx nA IIC T4 Ta = -50°C to +85°C;
Type 4X, IP66/67

12. **Description of Equipment:**

**General** – The STT750 and STT850 Temperature Transmitters works by converting the signal from a RTD or Thermal Couple combined with electronics in the Temperature Assembly to provide a digital output signal proportional to the measured value. The digital is fed into a communications board. Depending on the communication protocal, HART/DE changes the signal to a proportional 4-20mA signal. The signal can also have the Honeywell Protocol, DE or HART. The Foundation Fieldbus/ Profibus Protocol convert the signal into a digital signal. Additionally a local display can be configured to display the output and diagnostics.

**Construction** - The STT750 and STT850 Temperature Transmitters enclosure is a dual compartment construction made from either a low copper alumumin alloy (ASTM B85 A03600) with epoxy-polyester powder coated paint or 316 stainless steel. One complartment contains the electronics and ises an End cap (Cover) with a window to permit viewing th LCD display. The other compartment contains the field wirining terminations and encapsulated terminal block board. The enclosure is comprised of a Main Housing and two End caps. The main housing is acylindrical “T” shape with the cylindrical part of the main housing being approximately 60mm in diameter by 80mm in length. The approxiamate overall dimensions are 133mm (across the covers) by 110mm (across the entries) by 124mm high. The main housing is provided with both an internal and an external ground screw.

# SCHEDULE

US Certificate Of Conformity No: FM16US0157X

End Caps are fitted to the Main Housing using an M70 thread. The End Cap with a window adds approximately 32 mm to the end of the housing and the solid End Cap adds approximately 16 mm. Each End Cap is provided with a set screw to prevent removal without the use of a tool. The window is sealed to the End Cap using RTV cement, Dow Corning 734.

The free internal volume of the Main Housing with two solid End Caps is approximately 280 cm3. When one solid End Cap and one windowed End Caps are installed, the free internal volume is approximately 288 $cm^3$.

The conduit entries are machined into the Main Housing with either a ½" NPT or M20 thread. The enclosure can alternatively be provided with a ¾" NPT by the use of a ½" NPT to ¾" NPT stainless steel adapter. Unused openings are filled with a plug.

The entrance of dust and water is prevented by silicone o-rings. Each End Cap uses an o-ring with a 66.4mm inside diameter. The Adapter opening uses an o-ring with a 40.94 mm inside diameter.

The non-metallic parts of the enclosure include the o-rings and a fully tempered, 10mm thick clear glass window that is 60mm in diameter.

**Ratings -** The STT750 and STT850 Temperature Transmitters for DE and Hart Protocols operate at 11-42 Vdc. Fieldbus Foundation Comm. Protocols operate at 9-30 Vdc. See Equipment rating for Operating Temperature and Temperature Class.

**STT850-a-b-A-cde-fgh-ijk-l-mn. Temperature Transmitter.**
Entity Parameters:
Input Terminal 1 and 2 (d = H or D): Ui = 30V, Ii = 225mA, Pi = 0.9W, Ci = 4nF, Li = 0
Input Terminal 1 and 2 (d = F or P): Ui = 30V, Ii = 225mA, Pi = 1W, Ci = 0, Li = 0
Input Terminal 4 and 9 (b = 1 and d = H or D): Ui = 27V, Ii = 30mA, Pi = 0.5W, Ci = 85nF, Li = 24µH
Output Terminals 5, 6, 7, 8 and 9: Co = 39µF, Lo = 4.99H
FISCO Parameters (d = F or P):
Input Terminal 1 and 2: Ui = 17.5V, Ii = 380mA, Pi = 5.32W, Ci = 0, Li = 0
Output Terminals 5, 6, 7, 8 and 9: Co = 39µF, Lo = 4.99H
a = Input details: S or T.
b = Digital Output: 0 or 1.
c = Electronic Housing Material and Entry Type: A, B, C, D, E, F, G or H.
d = Output/Protocol: D, F, H or P.
e = Customer Interface Selection: 0, A, B, C, D, E, H or J.
f = Application Software: 1 or 2.
g = Output Limit, Failsafe & Write Protect Setting: 1, 2, 3, 4, 5 or 6.
h = General Configuration: S or C.
i = Calibration and Accuracy Selection: A, B, C, D, E, F, G or H.
j = Mounting Bracket: 0, 1, 2, 3, 4, 5, 6 or 7.
k = Customer Tag: 0, 1 or 2.
l = Conduit Plug & Adapter: A0, A2, A6 and A7.
m = Option codes and other certifications: MT, F3, F1, F5, FE, 01, 02, 03, 04 or 15.
n = Factory Identification: Four Digital alphanumeric code for internal factory use.

# SCHEDULE

US Certificate Of Conformity No: FM16US0157X

**STT750-S-0-A-aHb-1cd-e-fgh-i-j. Temperature Transmitter.**
Entity Parameters:
Input Terminal 1 and 2: Ui = 30V, Ii = 225mA, Pi = 0.9W, Ci = 4nF, Li = 0
Output Terminals 5, 6, 7, 8 and 9: Co = 39µF, Lo = 4.99H
a = Electronic Housing Material and Entry Type: A, B, C, D, E, F, G or H.
b = Customer Interface Selection: 0, A, B or C.
c = Output Limit, Failsafe & Write Protect Setting: 1, 2, 3 or 4.
d = General Configuration: S or C.
e = Calibration and Accuracy Selection: A or B.
f = Mounting Bracket: 0, 1, 2, 3, 4, 5 or 6.
g = Customer Tag: 0, 1, 2 or 3.
h = Conduit Plug & Adapter: A0, A2, A6, A7, A8 or A9.
i = Certification and Warranty: 00, F3, F1, F5, FE, 01, 02 or 03.
j = Factory Identification: Four Digital alphanumeric code for internal factory use.

13. **Specific Conditions of Use:**

1. Painted surface of the STT750 or STT850 may store electrostatic charge and become a source of ignition in applications with a low relative humidity less than approximately30% relative humidity where the painted surface is relatively free of surface contamination such as dirt,dust or oil. Cleaning of the painted surface should only be done with a damp cloth.
2. The enclosure is manufactured from low copper aluminum alloy. In rare cases, ignitionsources due to impact and friction sparks could occur. This shall be considered during Installation, particularly if equipment is installed a Zone 0 location.
3. The installer shall provide transient over-voltage protection external to the equipment such that the voltage at the supply terminal of the equipment does not exceed 140% of the voltage rating of the equipment.
4. Consult the manufacturer for dimensional information on the flameproof joints for repair.

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

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

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 |
|---|---|
| 13th May 2014 | Original Issue. |

# SCHEDULE

US Certificate Of Conformity No: FM16US0157X

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|---|---|
| 13th July 2016 | Supplement 4:<br>Report Reference: – RR204634 dated 13th July 2013<br>Description of the Change: Previous revision history recorded on Certificate 3051269. Revised Certificate to new format. Updated Temperature Class and Ambient operation Temperature of Explosionproof and Flameproof Ratings |
| 27th July 2016 | Supplement 5:<br>Report Reference: 3056238 dated 27th July 2016<br>Description of Changes: Addition of Digital Output (DO) Option. |
| 28th June 2017 | Supplement 6:<br>Report Reference: 3058767 dated 28th June 2017<br>Description of Changes: Updated to latest standards, as well as evaluation of alternative O-rings. |
| 20th December 2018 | Supplement 7:<br>Report Reference: RR216573 dated 20th December 2018<br>Description of Changes: Updated FM Approvals standards to later editions, which did not require testing. Update made to certificate Model code structure, update made to blanking plugs and thread adapters drawings. |