CERTIFICATE OF CONFORMITY

1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
2. **Certificate No:** **FM18US0070X**
3. **Equipment:** **261 Series Pressure Transmitters, HMI-EX Type A HMI Display**
   (Type Reference and Name)
4. **Name of Listing Company:** **ABB S.p.A.**
5. **Address of Listing Company:** **Via Luigi Vaccani 4**
   22016 Tremezzina Ossuccio
   Como, Italy
6. The examination and test results are recorded in confidential report number:

   3025554 dated 28th September 2006

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

   FM Class 3600:2011, FM Class 3610:2010, FM 3611:2004, FM Class 3810:2005, ANSI/ISA-60079-0:2013, ANSI/ISA 60079-11:2014, NEMA 250:1991

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

25 January 2019
Date

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

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SCHEDULE

US Certificate Of Conformity No: FM18US0070X

10. Equipment Ratings:

261 Series: Intrinsically Safe for Class I, II, III, Division 1, Groups A, B, C, D, E, F and G, AEx ia for Class I, Zone 0, Group IIC, Nonincendive with nonincendive field wiring for Class I, Division 2, Groups A, B, C and D, Suitable for Class II and III, Division 2, Groups E, F and G, per Control Drawing #A06M503V, T* per section 13, Type 4X, IP67.

HMI-Ex Type A: Intrinsically Safe for Class I, Division 1, per Control Drawing #T*-SAP_214748, Groups A, B, C, D, AEx ia for Class I, Zone 0, Group IIC, per Control Drawing #T*-SAP_214751, Nonincendive with nonincendive field wiring for Class I, Division 2, Groups A, B, C and D, per Control Drawing #T*-SAP_214751,

11. The marking of the equipment shall include:

261 Series
IS/I,II,III/1/ABCDEFG/ T* — A06M503V; Entity
I/0/AEx ia IIC; T*-A06M503V; Entity
NI/I/2/ABCD/ T*;-A06M503V; NIFW
S/II,III/2/EFG T*-A06M503V
Type 4X; IP67
Entity Parameters:
Vmax=30v, Imax= 130mA, Pmax= 0.8W Ci=10nF, Li=500µH
Output Terminals (JP1)
Voc=6.2v, Isc= 65.2mA, Po= 101mW Ca=1.4µF, La=5mH
Field Wiring Parameters:
Vmax=30v, Imax= 130mA, Pmax= 0.8W Ci=10nF, Li=500µH

T* Refer to section 13.

HMI-EX Type A
IS/I/1/ABCD; T*-SAP_214748; ENTITY; I/0/AEx ia IIC; T* SAP_214748-Entity
NI/I/2/ABCD T*SAP_214751; NIFW
I/2/AEx nL IIC T*SAP_214751
Entity Parameters;
Voc=9v, Isc= 65.2mA, Po= 101mW Ca=0.4µF, La=0mH
Field Wiring Parameters;
Voc=9v, Isc= 65.2mA, Po= 101mW Ca=0.4µF, La=0mH

T* Refer to section 13.

12. **Description of Equipment:**

General – The 261 Series models are two-wire devices which convert physical overpressure and absolute pressure readings into an analogue electrical standard 4-20 mA output signal. They consist of a transmitted assembly, comprised of one Transmitter printed circuit board, mounted and encapsulated inside a polycarbonate cup-formed housing. S(The encapsulant is manufactured by WEVO, P/N PU 403 S, with a softening temperature of 150°C.) A separate Connection board mounts on top of the Transmitter assembly, and a separate Indicator (display) plugs into the Transmitter assembly. In addition, a Characterization Board mounts underneath the Transmitter Board, and interfaces with the Pressure Sensor.

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- The LCD-display HMI-Ex, type A is used for the visualisation of current process values. The LCD- display HMI-Ex type A is connected to the 261 Series pressure transducer by a 6-pole ribbon cable with a plug-in connector.

Construction

- The pressure sensor, the electronics and the optional LCD display unit are contained in a stainless Steel housing. The cap with or without a glass window is also made of stainless steel and seals the inside area with an O-ring. A pressure balance element in a threaded borehole provides for relative ventilation of the measurement cell for the low pressure range.

- The housing of the LCD-display is made out of Polycarbonate and has the type of protection IP 20.
Apart from the 6-digit display, the Indicator also has four keys with which a manual operation and parameterization of the transmitter on-site can be undertaken. The communications are via a serial, asynchronous (UART-) interface.

Model 261AN-abcdefgEAx, 261 Absolute Pressure Transmitter.
a = Sensor Span Limits; L, D, U, R
b = Diaphragm Material / Fill Fluid; R, 2, 6
c = Process Connection; 1, 2
d = Diaphragm Material (Process Connection); S
e = Fill Fluid; S, N, W, L, Y
f = Housing Material / Electrical Connection; 2, S, T, Z
g = Output / Options: H, 1
x = Other 2 digit option codes not affecting safety

Model 261GN-abcdefgEAx, 261 Absolute Pressure Transmitter.
a = Sensor Span Limits; L, D, U, R, V
b = Diaphragm Material / Fill Fluid; R, 2, 6
c = Process Connection; 1, 2
d = Diaphragm Material (Process Connection); S
e = Fill Fluid; S, N, W, L, Y
f = Housing Material / Electrical Connection; 2, S, T, Z
g = Output / Options; H, 1
x = Other 2 digit option codes not affecting safety

Model 261AR-abcdEAx, 261 Absolute Pressure Transmitter.
a = Sensor Span Limits; C, F, L, D, U, R
b = Diaphragm Material / Fill Fluid; R, 2, 6
c = Housing Material / Electrical Connection; 2, S, T, Z
d = Output / Options; H, 1
x = Other 2 digit option codes not affecting safety

Model 261GR-abcdEAx, 261 Gauge Pressure Transmitter.
a = Sensor Span Limits; C, F, L, D, U, R, V(max. 400bar)
b = Diaphragm Material / Fill Fluid; R, 2, 6
c = Housing Material / Electrical Connection; 2, S, T, Z
d = Output / Options; H, 1
x = Other 2 digit option codes not affecting safety

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SCHEDULE

US Certificate Of Conformity No: FM18US0070X

Model 261AS-abcdefEAx, 261Absolute Pressure Transmitter.
a = Sensor Span Limits; C, F, L, D, U, R
b = Diaphragm Material / Fill Fluid; K, G, S, F, E, A, Z, N
c = Process Connection Material / Process Conn.; B, P, S, T, U, V
d = Gasket; N
e = Housing Material / Electrical Connection; 2, S, T, Z
f = Output / Options; H, 1
x = Other 2 digit option codes not affecting safety

Model 261GS-abcdefEAx, 261 Gauge Pressure Transmitter.
a = Sensor Span Limits; C, F, L, D, U, R, V
b = Diaphragm Material / Fill Fluid; K, G, S, F, E, A, Z, N
c = Process Connection Material / Process Conn.; B, P, S, T, U, V
d = Gasket; N
e = Housing Material / Electrical Connection; 2, S, T, Z
f = Output / Options; H, 1
x = Other 2 digit option codes not affecting safety

Model 261AC-abcdefghiEAx, 261 Absolute Pressure Transmitter.
a = Sensor Span Limits; F, L, D, U, R
b = Diaphragm Material / Fill Fluid; R, 2, 6
c = Size / Mounting Flange Rating; 3, 4, A, D, G, B, E, H, 2, M, P, R, L, Q, S
d = Mounting Flange / Seat Form; E, S, 4, M, N
e = Extension Length and Material; F, 1, 2, 3, 4, 5, 6
f = Diaphragm Material (Process Connection); S, H, T, 1, 2
g = Fill Fluid; S, N, W, L, Y
h = Housing Material / Electrical Connection; 2, S, T, Z
i = Output / Options; H, 1
x = Other 2 digit option codes not affecting safety

Model 261GC-abcdefghiEAx, 261 Gauge Pressure Transmitter.
a = Sensor Span Limits; C, F, L, D, U, R
b = Diaphragm Material / Fill Fluid; R, 2, 6
c = Size / Mounting Flange Rating; 3, 4, A, D, G, B, E, H, 2, M, P, R, L, Q, S
d = Mounting Flange / Seat Form; E, S, 4, M, N
e = Extension Length and Material; F, 1, 2, 3, 4, 5, 6
f = Diaphragm Material (Process Connection); S, H, T, 1, 2
g = Fill Fluid; S, N, W, L, Y
h = Housing Material / Electrical Connection; 2, S, T, Z
i = Output / Options; H, 1
x = Other 2 digit option codes not affecting safety

Model 261AG-abcdefghEAx, 261 Absolute Pressure Transmitter.
a = Sensor Span Limits; F, L, D, 1
b = Diaphragm Material / Fill Fluid; 0

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c = Connection; B, C, D, F, G, J, K, M, N, P, R, S, T, U, Y
d = Diaphragm Material (Process Connection); S
e = Fill Fluid;S, N, W, L, Y
f = Sealing (O-ring); 1, 4, 2, 3
g = Housing Material / Electrical Connection; 2, S, T, Z
h= Output / Options; H, 1
x = Other 2 digit option codes not affecting safety

Model 261GG-abcdefghEAx*, *261 Gauge Pressure Transmitter.
a = Sensor Span Limits; F, L, D, 1
b = Diaphragm Material / Fill Fluid; 0
c = Connection; B, C, D, F, G, J, K, M, N, P, R, S, T, U, Y
d = Diaphragm Material (Process Connection); S
e = Fill Fluid; S, N, W, L, Y
f = Sealing (O-ring); 1, 4, 2, 3
g = Housing Material / Electrical Connection; 2, S, T, Z
h= Output / Options; H, 1
x = Other 2 digit option codes not affecting safety

Model 261AJ-abcdefgEAx, 261 Absolute Pressure Transmitter.
a = Sensor Span Limits; F, L, D, U, R
b = Diaphragm Material / Fill Fluid (Sensor); R, 2, 6
c = Connection; E, F, G, H, J, K, A, B, C, D
d = Diaphragm Material (Seal); R
e = Fill Fluid; S, N, W, L, Y
f = Housing Material / Electrical Connection; 2, S, T, Z
g= Output / Options; H, 1
x = Other 2 digit option codes not affecting safety

Model 261GJ-abcdefgEAx,* 261 *Gauge Pressure Transmitter.
a = Sensor Span Limits; F, L, D, U, R, V
b = Diaphragm Material / Fill Fluid (Sensor); R, 2, 6
c = Connection; E, F, G, H, J, K, A, B, C, D
d = Diaphragm Material (Seal); R
e = Fill Fluid; S, N, W, L, Y
f = Housing Material / Electrical Connection; 2, S, T, Z
g= Output / Options; H, 1
x = Other 2 digit option codes not affecting safety

Model 261AM-abcdefghEAx, 261 Absolute Pressure Transmitter.
a = Sensor Span Limits; F, L, D, U, R, V
b = Diaphragm Material / Fill Fluid (Sensor); R
c = Size / Mounting Flange Rating; A, C, E, K, H, L, T, V
d = Mounting Flange Material / Seat Form; E, 4, N
e = Diaphragm Material (Wetted Parts); S
f = Fill Fluid; S, L

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g = Housing Material / Electrical Connection; 2, S, T, Z
h= Output / Options; H, 1
x = Other 2 digit option codes not affecting safety

***Model 261GM-abcdefghEAx*, 261 Gauge Pressure Transmitter.**
a = Sensor Span Limits; F, L, D, U, R, V
b = Diaphragm Material / Fill Fluid (Sensor); R
c = Size / Mounting Flange Rating; A, C, E, K, H, L, T, V
d = Mounting Flange Material / Seat Form; E, 4, N
e = Diaphragm Material (Wetted Parts); S
f = Fill Fluid; S, L
g = Housing Material / Electrical Connection; 2, S, T, Z
h= Output / Options; H, 1
x = Other 2 digit option codes not affecting safety

HMI-EX Type A, HMI Display.

13. **Specific Conditions of Use:**

261 Series
For Intrinsic Safety and Non Incendive Approvals the Temperature code and Ambient temperatures are as follows:
T*=Temperature Code T6 for a Maximum Ambient Temperature of 56˚C.
T*=Temperature Code T5 for a Maximum Ambient Temperature of 71˚C
T*=Temperature Code T4 for a Maximum Ambient Temperature of 85˚C.

HMI-EX Type A
1. *For Intrinsic Safety Approvals the Temperature code and Ambient temperatures are as follows:*
   T=Temperature Code T6 for a Maximum Ambient Temperature of 56˚C.*
   T=Temperature Code T5 for a Maximum Ambient Temperature of 71˚C*
   T=Temperature Code T4 for a Maximum Ambient Temperature of 85˚C.*
2. *For and Non Incendive Approvals the Temperature code and Ambient temperatures are as follows:*
   T=Temperature Code T6 for a Maximum Ambient Temperature of 60˚C.*
   T=Temperature Code T4 for a Maximum Ambient Temperature of 85˚C.*
3. *For all FM Approvals the display is to be used with a suitable enclosure capable of providing protection to a rating of IP54.*

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**

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SCHEDULE

US Certificate Of Conformity No: FM18US0070X

Details of the supplements to this certificate are described below:

Date	Description
28th September 2006	Original Issue.
9th March 2018	Supplement 6: Report Reference: – RR213062 dated 9th March 2018. Description of the Change: Removed a variant from a number of models. The original certificate #3025554 is reissued in the new format.
25th Janaury 2019	Supplement 7: Report Reference: - RR216925 dated 25th January 2019 Description of the Change: Transfer of Approval from ABB Automation Products GmbH Minden, Germany to ABB S.p.A. Como, Italy.

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