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Member of the FM Global Group

CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

FEP315abcdefghijk0P1opqrst ProcessMaster Electromagnetic Flowmeter – Integral version
NI/ I, II / 2 / ABCDFG / T* Ta = -40°C to + 60°C; Type 4X; IP65; IP67
S / III / T* Ta = -40°C to +60°C; Type 4X; IP65; IP67
DIP / II, III / 1 / EFG / T* Ta = -40°C to + 60°C; Type 4X; IP65; IP67
I / 2/ AEx / nA nC / IIC / T* Ta = -40°C to +60°C; Type 4X; IP65; IP67
21 / AEx / tD / 21 / T*; Type 4X; IP65; IP67

a = 3 digit number representing the bore diameter; 003, 004, 006, 008, 010, 015, 020, 025, 032, 040, 050, 065, 080, 100, 125, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 760, 800, 900, 001, 201, 401, 601, 801, or 002.
b = Liner material; A, E, F, H, P, S, or U.
c = Electrode design; 1, 2, 5, or 6.
d = Measuring electrode material; A, D, E, F, G, H, J, K, N, S, or W.
e = Grounding accessories; 1, 2, 3, or 4.
f = Process connection type; D0, D1, D2, D3, D4, D5, D6, A1, A3, A6, A7, A8, A9, J1, J2, J3, E1 or E2.
g = Process connection material; B, C, or D.
h = Usage certifications; 0, 1, 2, 3, 4, 5, 6, or 7.
i = Calibration type; A, B, K, L, M, or T
j = Temperature range of sensor/Ambient temperature range; 1, 2, 3, or 4.
k = Name plate language and type; A, B, or C
o = Cable Conduits; A, B, or C.
p = Power supply; 1, 2, 3, or 4.
q = Input and output signal type; A, B, C, or D.
r = Configuration type/Diagnostics; 1, 2, 3 or 4.
s = Accessories; AY or blank
t = Laid length; J1, J3, JA, JC or blank
*see Manufacturer's Instruction manual

Special Condition of Use
1. Sensors having exposed electrodes in the process shall be used in a non-flammable liquid process only.

FEP325abcdefghijklPno0Y0st - ProcessMaster Electromagnetic Flowmeter – Remote version

NI/ I, II / 2 / ABCDFG / T* Ta = -40°C to + 60°C; Type 4X; IP65; IP67; IP68
S / III / T* Ta = -40°C to +60°C; Type 4X; IP65; IP67; IP68
DIP / II, III / 1 / EFG / T* Ta = -40°C to + 60°C; Type 4X; IP65; IP67; IP68
I / 2/ AEx / nA / IIC / T* Ta = -40°C to +60°C; Type 4X; IP65; IP67: IP68
21 / AEx / tD / 21 / T*; Type 4X; IP65; IP67; IP68

a = 3 digit number representing the bore diameter; 003, 004, 006, 008, 010, 015, 020, 025, 032, 040, 050, 065, 080, 100, 125, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 760, 800, 900, 001, 201, 401, 601, 801, or 002.
b = Liner material; A, E, F, H, P, S, or U.
c = Electrode design; 1, 2, 5, or 6.
d = Measuring electrode material; A, D, E, F, G, H, J, K, N, S, or W.
e = Grounding accessories; 1, 2, 3, or 4.
f = Process connection type; D0, D1, D2, D3, D4, D5, D6, A1, A3, A6, A7, A8, A9, J1, J2, J3, E1 or E2.
g = Process connection material; B, C, or D.
h = Usage certifications; 0, 1, 2, 3, 4, 5, 6, or 7.
i = Calibration type; A, B, K, L, M, or T
j = Temperature range of sensor/Ambient temperature range; 1, 2, 3, or 4.
k = Name plate language and type; A, B, or C
l = Signal Cable length and type 0, 1, 2, 3, 4, 5, 6, 7, or 8.
n= Protection class: 1, 2 or 3
o = Cable Conduits; A, B, or C.
p = Power supply; 1, 2, 3, or 4.
q = Input and output signal type; A, B, C, or D.
s = Accessories; AY or AP
t = Laid length; J1, J3, JA, JC or blank
* see Manufacturer´s Instruction manual

Special Condition of Use
1. Sensors having exposed electrodes in the process shall be used in a non-flammable liquid process only.

FEH315abcdefghijk0P1opqrst HygienicMaster Electromagnetic Flowmeter – Integral version

NI/ I, II / 2 / ABCDFG / T* Ta = -40°C to + 60°C; Type 4X; IP65; IP67
S / III / T* Ta = -40°C to +60°C; Type 4X; IP65; IP67
DIP / II, III / 1 / EFG / T* Ta = -40°C to + 60°C; Type 4X; IP65 ; IP67
I / 2/ AEx / nA nC / IIC / T* Ta = -40°C to +60°C; Type 4X; IP65; IP67
21 / AEx / tD / 21 /T*; Type 4X; IP65; IP67

a = 3 digit number representing the bore diameter; 003, 004, 006, 008, 010, 015, 020, 025, 032, 040, 050, 065, 080, or 100.
b = Liner material; A, or P.
c = Electrode design; 1, 2, 5, or 6.
d = Measuring electrode material; A, D, E, F, G, H, J, K, N, S, or W.
e = Grounding accessories; 1, or 2.
f = Process connection type; D2, D4, D5, D6, A1, A3, J1, J2, J3, M1, F1, R1, R2, R3, R4, R5, R6, T1, T2, T3, W1, or Y0.
g = Process connection material; C, D, E, F, G, H, W, or Y.
h = Usage certifications; 0, 1, 2, 3, 4, 5, 6, or 7.
i = Calibration type; A, B, K, L, M, or T
j = Temperature range of sensor/Ambient temperature range; 1, 2, 3, or 4.
k = Name plate language and type; A, B, or C.
o = Cable Conduits; A, B, or C.

p = Power supply; 1, 2, 3, or 4.
q = Input and output signal type; A, B, C, or D.
r = Configuration type/Diagnostics; 1, 2, 3 or 4.
s = Accessories; AY or blank
t = Laid length; J1, J3, JA, JC or blank
* see Manufacturer's Instruction manual

Special Condition of Use
1. Sensors having exposed electrodes in the process shall be used in a non-flammable liquid process only.

FEH325abcdefghijklPno0Y0st HygienicMaster Electromagnetic Flowmeter – Remote version
NI/ I, II / 2 / ABCDFG / T* Ta = -40°C to +60°C; Type 4X; IP65; IP67; IP68
S / III / T* Ta = -40°C to +60°C; Type 4X; IP65; IP67; IP68
DIP / II, III / 1 / EFG / T* Ta = -40°C to +60°C; Type 4X; IP65; IP67; IP68
I / 2/ AEx / nA / IIC / T* Ta = -40°C to +60°C; Type 4X; IP65; IP67; IP68
21 / AEx / tD / 21 /T*; Type 4X; IP65; IP67: IP68

a = 3 digit number representing the bore diameter; 003, 004, 006, 008, 010, 015, 020, 025, 032, 040, 050, 065, 080, or 100.
b = Liner material; A, or P.
c = Electrode design; 1, 2, 5, or 6.
d = Measuring electrode material; A, D, E, F, G, H, J, K, N, S, or W.
e = Grounding accessories; 1, or 2.
f = Process connection type; D2, D4, D5, D6, A1, A3, J1, J2, J3, M1, F1, R1, R2, R3, R4, R5, R6, T1, T2, T3, W1, or Y0.
g = Process connection material; C, D, E, F, G, H, W, or Y.
h = Usage certifications; 0, 1, 2, 3, 4, 5, 6, or 7.
i = Calibration type; A, B, K, L, M, or T
j = Temperature range of sensor/Ambient temperature range; 1, 2, 3, or 4.
k = Name plate language and type; A, B, or C
l = Signal Cable length and type; 0, 1, 2, 3, 4, 5, 6, 7, or 8
n= Protection class: 1, 2 or 3
o = Cable Conduits; A, B, or C.
s = Accessories; ~~AP or blank~~ AY or AP
t = Laid length; J1, J3, JA, JC or blank
* see Manufacturer's Instruction manual

Special Condition of Use
1. Sensors having exposed electrodes in the process shall be used in a non-flammable liquid process only.

FET325jk0P1opqr Field Mount Transmitter only
NI/ I, II / 2 / ABCDFG / T4 Ta = -40°C to +60°C; Type 4X; IP65; IP67
S / III / T4 Ta = -40°C to +60°C; Type 4X; IP65; IP67
DIP / II, III / 1 / EFG / T4 Ta = -40°C to +60°C; Type 4X; IP65; IP67
I / 2/ AEx / nA nC / IIC / T4 Ta = -40°C to +60°C; Type 4X; IP65; IP67
21 / AEx / tD / 21 / T70°C; Type 4X; IP65; IP67

j = Temperature range of sensor/Ambient temperature range; 1, 2, 3, or 4.
k = Name plate language and type; A, B, or C
o = Cable Conduits; A, B, or C.
p = Power supply; 1, 2, 3, or 4.
q = Input and output signal type; A, B, C, or D.
r = Configuration type/Diagnostics; 0, 1, 2, 3 or 4.

FEH315abcdefghijk0R1opqr ProcessMaster Electromagnetic Flowmeter – Integral version

S-XP-IS / I / 1 / ABCD /T* Ta = -40°C to +60°C;Type 4X, IP65, IP67
I / 1 / AEx d e ia ma IIC/T* Ta = -40°C to +60°C; Type 4X, IP65, IP67
21 / AEx tD iaD / T* Ta = -40°C to +60°C; Type 4X, IP65, IP67
DIP / II, III / 1 / EFG / T* Ta = -40°C to + 60°C; Type 4X; IP65; IP67

a = 3 digit number representing the bore diameter; 003, 004, 006, 008, 010, 015, 020, 025, 032, 040, 050, 065, 080, or 100.
b = liner material; A, E, F, H, P, S, or U.
c = Electrode design; 1, 2, 5, or 6.
d = Measuring electrode material; A, D, E, F, G, H, J, K, N, S, or W.
e = Grounding accessories; 1, 2, 3, or 4.
f = Process connection type; D0, D1, D2, D3, D4, D5, D6, A1, A3, A6, A7, A8, A9, J1, J2, J3, E1 E2, M1,F1,R1,R2,R3,R4,R5,R6,T1,T2,T3,W1 or Y0.
g = Process connection material; B, C,-D, E, F, G, H, W, or Y
h = Usage certifications; 0, 1, 2, 3, 4, 5, 6, or 7.
i = Calibration type; A, B, K, L, M, or T
j = Temperature range of sensor/Ambient temperature range; 1, 2, 3, or 4.
k = Name plate language and type; A, B, or C
o = Cable Conduits; A, B, or C.
p = Power supply; 1, 2, 3, or 4.
q = Input and output signal type; A, B, C, or D.
r = Configuration type/Diagnostics; 1, 2, 3 or 4.
s = Accessories; AY or blank
t = Laid length; J1, J3, JA, JC or blank
* See Manufacturer's Instruction manual

FEP315abcdefghijk0R1opqr ProcessMaster Electromagnetic Flowmeter – Integral version

S-XP-IS / I / 1 / ABCD /T* Ta = -40°C to +60°C; Type 4X, IP65, IP67
I / 1 / AEx d e ia ma-IIC/T* Ta = -40°C to +60°C; Type 4X, IP65, IP67
21 / AEx tD iaD/ T* Ta = -40°C to +60°C; Type 4X, IP65, IP67
DIP / II, III / 1 / EFG / T* Ta = -40°C to + 60°C; Type 4X; IP65; IP67

a = 3 digit number representing the bore diameter; 003, 004, 006, 008, 010, 015, 020, 025, 032, 040, 050, 065, 080, 100, 125, 150, 200, 250, or 300,
b = liner material; A, E, F, H, P, S, or U.
c = Electrode design; 1, 2, 5, or 6.
d = Measuring electrode material; A, D, E, F, G, H, J, K, N, S, or W.
e = Grounding accessories; 1, 2, 3, or 4.
f = Process connection type; D0, D1, D2, D3, D4, D5, D6, A1, A3, A6, A7, A8, A9, J1, J2, J3, E1 or E2.
g = Process connection material; B, C, or D.
h = Usage certifications; 0, 1, 2, 3, 4, 5, 6, or 7.
i = Calibration type; A, B, K, L, M, or T
j = Temperature range of sensor/Ambient temperature range; 1, 2, 3, or 4.
k = Name plate language and type; A, B, or C
o = Cable Conduits; A, B, or C.
p = Power supply; 1, 2, 3, or 4.
q = Input and output signal type; A, B, C, or D.
r = Configuration type/Diagnostics; 1, 2, 3 or 4.
s = Accessories; AY or blank
t = Laid length; J1, J3, JA, JC or blank
* See Manufacturer's Instruction manual

FEP315abcdefghijk0R1opqr ProcessMaster Electromagnetic Flowmeter – Integral version

S-XP-IS / I / 1 / ABCD /T* Ta = -40°C to +60°C; Type 4X, IP65, IP67
I / 1 / AEx d e ia IIC/T* Ta = -40°C to +60°C; Type 4X, IP65, IP67
21 / AEx tD iaD / T* Ta = -40°C to +60°C; Type 4X, IP65, IP67
DIP / II, III / 1 / EFG / T* Ta = -40°C to + 60°C; Type 4X; IP65; IP67

a = 3 digit number representing the bore diameter; 350, 400, 450, 500, 600, 700, 760, 800, 900, 001, 201, 401, 601, 801, or 002.
b = liner material; A, E, F, H, P, S, or U.
c = Electrode design; 1, 2, 5, or 6.
d = Measuring electrode material; A, D, E, F, G, H, J, K, N, S, or W.
e = Grounding accessories; 1, 2, 3, or 4.
f = Process connection type; D0, D1, D2, D3, D4, D5, D6, A1, A3, A6, A7, A8, A9, J1, J2, J3, E1 or E2.
g = Process connection material; B, C, or D.
h = Usage certifications; 0, 1, 2, 3, 4, 5, 6, or 7.
i = Calibration type; A, B, K, L, M, or T
j = Temperature range of sensor/Ambient temperature range; 1, 2, 3, or 4.
k = Name plate language and type; A, B, or C
o = Cable Conduits; A, B, or C.
p = Power supply; 1, 2, 3, or 4.
q = Input and output signal type; A, B, C, or D.
r = Configuration type/Diagnostics; 1, 2, 3 or 4.
s = Accessories; AY or blank
t = Laid length; J1, J3, JA, JC or blank
* See Manufacturer's Instruction manual

FEP325abcdefghijklRno0Y0s - ProcessMaster Electromagnetic Flowmeter – Remote version

S-XP-IS / I / 1 / ABCD /T* Ta = -40°C to +60°C; Type 4X, IP65, IP67, IP68
I / 1 / AEx d e ia IIC/T* Ta = -40°C to +60°C; Type 4X, IP65, IP67, IP68
21 / AEx tD iaD / T* Ta = -40°C to +60°C; Type 4X, IP65, IP67, IP68
DIP / II, III / 1 / EFG / T* Ta = -40°C to + 60°C; Type 4X; IP65; IP67; IP68

a = 3 digit number representing the bore diameter; 350, 400, 450, 500, 600, 700, 760, 800, 900, 001, 201, 401, 601, 801, or 002.
b = liner material; A, E, F, H, P, S, or U.
c = Electrode design; 1, 2, 5, or 6.
d = Measuring electrode material; A, D, E, F, G, H, J, K, N, S, or W.
e = Grounding accessories; 1, 2, 3, or 4.
f = Process connection type; D0, D1, D2, D3, D4, D5, D6, A1, A3, A6, A7, A8, A9, J1, J2, J3, E1 or E2.
g = Process connection material; B, C, or D.
h = Usage certifications; 0, 1, 2, 3, 4, 5, 6, or 7.
i = Calibration type; A, B, K, L, M, or T
j = Temperature range of sensor/Ambient temperature range; 1, 2, 3, or 4.
k = Name plate language and type; A, B, or C
l = Signal Cable length and type 0, 1, 2, 3, 4, 5, 6, 7, or 8.
n = Protection class: 1, 2 or 3
o = Cable Conduits; A, B, or C.
p = Power supply; 1, 2, 3, or 4.
q = Input and output signal type; A, B, C, or D.
s = Accessories; AY or AP
t = Laid length; J1, J3, JA, JC or blank

* See Manufacturer's Instruction manual

FEP325abcdefghijklRno0Y0s - ProcessMaster Electromagnetic Flowmeter – Remote version

S-XP-IS / I / 1 / ABCD /T* Ta = -40°C to +60°C; Type 4X, IP65, IP67, IP68
I / 1 / AEx d e ia ma IIC/T* Ta = -40°C to +60°C; Type 4X, IP65, IP67, IP68
21 / AEx tD iaD / T* Ta = -40°C to +60°C; Type 4X, IP65, IP67, IP68
DIP / II, III / 1 / EFG / T* Ta = -40°C to + 60°C; Type 4X; IP65; IP67; IP68

a = 3 digit number representing the bore diameter; 003, 004, 006, 008, 010, 015, 020, 025, 032, 040, 050, 065, 080, 100, 125, 150, 200, 250, or 300.
b = liner material; A, E, F, H, P, S, or U.
c = Electrode design; 1, 2, 5, or 6.
d = Measuring electrode material; A, D, E, F, G, H, J, K, N, S, or W.
e = Grounding accessories; 1, 2, 3, or 4.
f = Process connection type; D0, D1, D2, D3, D4, D5, D6, A1, A3, A6, A7, A8, A9, J1, J2, J3, E1 or E2.
g = Process connection material; B, C, or D.
h = Usage certifications; 0, 1, 2, 3, 4, 5, 6, or 7.
i = Calibration type; A, B, K, L, M, or T
j = Temperature range of sensor/Ambient temperature range; 1, 2, 3, or 4.
k = Name plate language and type; A, B, or C
l = Signal Cable length and type 0, 1, 2, 3, 4, 5, 6, 7, or 8.
n = Protection class: 1, 2 or 3
o = Cable Conduits; A, B, or C.
p = Power supply; 1, 2, 3, or 4.
q = Input and output signal type; A, B, C, or D.
s = Accessories; AY or AP
t = Laid length; J1, J3, JA, JC or blank
* See Manufacturer's Instruction manual

FET325jklR1opqr Field Mount Transmitter only

S-XP-IS / I / 1 / ABCD /T6 Ta = -40°C to +60°C; Type 4X, IP65, IP67
I / 1 / AEx d e [ia] IIC/T6 Ta = -40°C to +60°C; Type 4X, IP65, IP67
21 / AEx tD [iaD] / T70°C Ta = -40°C to +60°C; Type 4X, IP65, IP67
DIP / II, III / 1 / EFG / T* Ta = -40°C to + 60°C; Type 4X; IP65; IP67

j = Temperature range of sensor/Ambient temperature range; 1, 2, 3, or 4.
k = Name plate language and type; A, B, or C
l = Cable length; 0, 1 or 2
o = Cable Conduits; A, B, or C.
p = Power supply; 1, 2, 3, or 4.
q = Input and output signal type; A, B, C, or D.
r = Configuration type/Diagnostics; 0, 1, 2, 3 or 4.

Equipment Ratings:

Nonincendive for Class I, Division 2, Groups A, B, C and D; Suitable for Class II, Division 2 Groups F and G; Suitable for Class III, Divisions 1 and 2; Dust ignition Protected for Class II and III, Division 1, Groups E, F and G. Type of Protection "n" for Class I, Zone 2, Groups IIC*; Protected by Enclosure "tD" for Zone 21. Temperature Class dependent on Ambient and Process Temperature For temperature class see Manufacturers Instructions.; Ambient Temperature -40°C to +60°C; Indoor and outdoor locations.

Explosionproof with intrinsic safety for Class I, Division 1, Groups A, B, C and D; Flameproof with intrinsic safety, increased safety and encapsulation for Class I, Zone 1, Group IIC; Protected by Enclosure and intrinsically safe for Zone 21; Indoor and Outdoor Hazardous (Classified) locations. For temperature class see Manufacturers Instructions. Ambient Temperature -40°C to +60°C; Indoor and outdoor locations.

FM Approved for:

ABB Automation Products GmbH
D-37079 Göttingen GERMANY

FM Approvals®

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This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

Class 3600	1998
Class 3610	2007
Class 3611	2004
Class 3615	2006
Class 3810	2005
ANSI/ISA 60079-0	2005
ANSI/ISA 60079-1	2005
ANSI/ISA 60079-7	2002
ANSI/ISA 60079-11	2002
ISA 60079-15	2003
Class 3810	2005
NEMA 250	2003
ANSI/IEC 60520	2004
ISA 61241-0	2006
ISA 61241-1	2006

Original Project ID: 3034391 Approval Granted: October 1, 2008

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
3030760	December 17, 2008		
3032562	July 23, 2009		
090730	August 13, 2009		
3037527	Sept. 4, 2009		

FM Approvals LLC

Robert L. Martell, Jr.
Assistant Vice President

September 4, 2009
Date