



Member of the FM Global Group

FM Approvals
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CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

pH 2100 PA, pH 2100e FF. pH Transmitter.

IS / I / 1 / ABCD / T4 Ta = 55°C – 194.170-180; Entity; FISCO
I / 1 [0] / AEx ib [ia] IIC T4 T a= 55°C – 194.170-180: Entity; FISCO
NI / I / 2 / ABCD / T4 Ta = 55°C – 194.170-180: NIFW

Entity and Nonincendive Field Wiring parameters [Terminals 11/14 and 10/15]

Vmax = 24V Imax = 200mA Pi = 1.2W Ci = 1.2nF Li = 7μH

FISCO parameters [Terminals 11/14 and 10/15]

Vmax = 17.5V Imax = 280mA Pi = 4.9W Ci = 1.2nF Li = 7μH

pH measuring loop [Terminals 1/2, 4, 5 and 6]

Voc = 12V Isc = 12mA Po = 18mW Ca = 1.41μF La = 240mH

Temperature measuring loop [Terminals 7 and 8]

Voc = 6V Isc = 3.1mA Po = 4.6mW Ca = 40μF La = 1H

Sensor Supply [Terminals 17, 18 and 19]

Voc = 12V Isc = 34mA Po = 51mW Ca = 1.41μF La = 34mH

Cond 7100 PA, Cond 7100e FF. Conductivity Transmitter.

IS / I / 1 / ABCD / T4 Ta = 55°C – 194.270-110; Entity; FISCO
I / 1 [0] / AEx ib [ia] IIC T4 T a= 55°C – 194.270-110: Entity; FISCO
NI / I / 2 / ABCD / T4 Ta = 55°C – 194.270-110: NIFW

Entity and Nonincendive Field Wiring parameters [Terminals 11 and 10]

Vmax = 24V Imax = 200mA Pi = 1.2W Ci = 1.2nF Li = 7μH

FISCO parameters [Terminals 11 and 10]

Vmax = 17.5V Imax = 280mA Pi = 4.9W Ci = 1.2nF Li = 7μH

Conductivity measuring loop [Terminals 1, 2, 3, 4, 5 and 6]

Voc = 12V Isc = 147mA Po = 172mW Ca = 1.41μF La = 1.3mH

Temperature measuring loop [Terminals 7 and 8]

Voc = 6V Isc = 3.71mA Po = 5.5mW Ca = 40μF La = 1H

Cond Ind 7100 PA, Cond Ind 7100e FF. Conductivity Transmitter.

IS / I / 1 / ABCD / T4 Ta = 55°C – 194.370-110; Entity; FISCO
I / 1 [0] / AEx ib [ia] IIC T4 Ta = 55°C – 194.370-110: Entity; FISCO
NI / I / 2 / ABCD / T4 Ta = 55°C – 194.370-110: NIFW

Entity and Nonincendive Field Wiring parameters [Terminals 10 and 11]
Vmax = 24V I_{max} = 200mA P_i = 1.2W C_i = 1.2nF L_i = 7μH

FISCO parameters [Terminals 10 and 11]
Vmax = 17.5V I_{max} = 280mA P_i = 4.9W C_i = 1.2nF L_i = 7μH

Conductivity measuring loop [Terminals 1, 2, 3, 4, 5 and 6]
Non-linear output
V_{oc} = 6.9V I_{sc} = 98.5mA P_o = 73mW C_a = 500nF L_a = 2mH
Temperature measuring loop [Terminals 7 and 8]
V_{oc} = 6V I_{sc} = 3.71mA P_o = 5.5mW C_a = 40μF L_a = 1H

O2 4100 PA, O2 4100e FF. Dissolved Oxygen Transmitter.

IS / I / 1 / ABCD / T4 Ta = 55°C – 194.470-130; Entity; FISCO
I / 1 [0] / AEx ib [ia] IIC T4 Ta = 55°C – 194.470-130: Entity; FISCO
NI / I / 2 / ABCD / T4 Ta = 55°C – 194.470-130: NIFW

Entity and Nonincendive Field Wiring parameters [Terminals 10 and 11]
Vmax = 24V I_{max} = 200mA P_i = 1.2W C_i = 1.2nF L_i = 7μH

FISCO parameters [Terminals 10 and 11]
Vmax = 17.5V I_{max} = 280mA P_i = 4.9W C_i = 1.2nF L_i = 7μH

Oxygen measuring loop [Terminals 1, 2, 4 and 5]
V_{oc} = 10V I_{sc} = 11mA P_o = 14mW C_a = 925nF L_a = 1mH
Temperature measuring loop [Terminals 7 and 8]
V_{oc} = 5V I_{sc} = 1mA P_o = 2mW C_a = 4μF L_a = 1H

Equipment Ratings:

Intrinsically Safe Class I, Division 1, Groups A, B, C, & D; Class I, Zone 1 Group IIC with connections to Class I Zone 0 Group IIC; when installed in accordance with the appropriate control drawing for Entity and FISCO and Nonincendive Class I, Division 2, Groups A, B, C, & D with nonincendive field wiring when installed in accordance with the appropriate control drawing. Temperature class T4 at an ambient of 55°C.

Approved for:

Mettler Toledo GmbH
Im Hackacker 15
CH-8902 Urdorf, Switzerland



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

Class 3600	1998
Class 3610	1999
Class 3611	1999
Class 3810	1989
inc supplement 1	1995

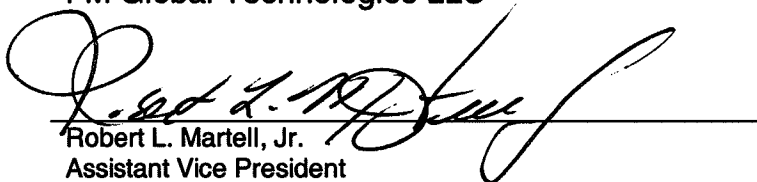
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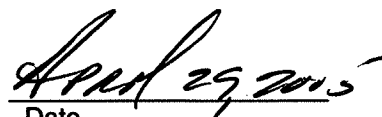
FM Approval Granted: April 18, 2005

Subsequent Revision Reports / Date FM Approval Amended

Report Number	Date	Report Number	Date
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FM Global Technologies LLC


Robert L. Martell, Jr.
Assistant Vice President
FM Approvals


Date