



Member of the FM Global Group

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CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

3730-23-abcdef. e/p-Positioner.

IS / I,II,III / 1 / ABCDEFG / T6 Ta = 60°C - Addendum to EB 8384-2EN, pages 7 - 11; Entity; Type 4X
I / 0 / AEx ia / IIC / T6 Ta = 60°C - Addendum to EB 8384-2EN, pages 7 - 11; Entity; Type 4X
NI / I / 2 / ABCD / T6 Ta = 60°C; S / II,III / 2 / FG / T6 Ta = 60°C; Type 4X

Entity Parameters:

Signal Circuit:

$V_{\max}(U_i) = 28 \text{ V}$, $I_{\max}(I_i) = 115 \text{ mA}$, $P_{\max}(P_i) = 1 \text{ W}$, $C_i = 5.3 \text{ nF}$, $L_i = 0$.

Position Indicator:

$V_{\max}(U_i) = 28 \text{ V}$, $I_{\max}(I_i) = 115 \text{ mA}$, $P_{\max}(P_i) = 1 \text{ W}$, $C_i = 5.3 \text{ nF}$, $L_i = 0$.

Software Limit Switches:

$V_{\max}(U_i) = 20 \text{ V}$, $I_{\max}(I_i) = 60 \text{ mA}$, $P_{\max}(P_i) = 250 \text{ mW}$, $C_i = 5.3 \text{ nF}$, $L_i = 0$.

Inductive Limit Switch:

$V_{\max}(U_i) = 16 \text{ V}$, $I_{\max}(I_i) = 25 \text{ mA}$, $P_{\max}(P_i) = 64 \text{ mW}$, $C_i = 60 \text{ nF}$, $L_i = 200 \mu\text{H}$,

$V_{\max}(U_i) = 16 \text{ V}$, $I_{\max}(I_i) = 52 \text{ mA}$, $P_{\max}(P_i) = 169 \text{ mW}$, $C_i = 60 \text{ nF}$, $L_i = 200 \mu\text{H}$.

Forced Venting Function (Solenoid Valve):

$V_{\max}(U_i) = 28 \text{ V}$, $I_{\max}(I_i) = 115 \text{ mA}$, $P_{\max}(P_i) = 500 \text{ mW}$, $C_i = 5.3 \text{ nF}$, $L_i = 0$.

Fault Alarm Output:

$V_{\max}(U_i) = 20 \text{ V}$, $I_{\max}(I_i) = 60 \text{ mA}$, $P_{\max}(P_i) = 250 \text{ mW}$, $C_i = 5.3 \text{ nF}$, $L_i = 0$.

Programming Jack BU:

$V_{\max}(U_i) = 20 \text{ V}$, $I_{\max}(I_i) = 60 \text{ mA}$, $P_{\max}(P_i) = 250 \text{ mW}$, $C_i = 0$, $L_i = 0$,

$V_{\text{oc}}(U_o) = 6.51 \text{ V}$, $I_{\text{sc}}(I_o) = 57.5 \text{ mA}$, $C_a(C_o) = 22 \mu\text{F}$, $L_a(L_o) = 10 \text{ mH}$.

External Position Sensor:

$V_{\text{oc}}(U_o) = 6.51 \text{ V}$, $I_{\text{sc}}(I_o) = 56 \text{ mA}$, $C_a(C_o) = 11.2 \mu\text{F}$, $L_a(L_o) = 11.6 \text{ mH}$.

Leakage Detection:

$V_{\max}(U_i) = 28 \text{ V}$, $I_{\max}(I_i) = 100 \text{ mA}$, $P_{\max}(P_i) = 0.7 \text{ W}$, $C_i = 5.3 \text{ nF}$, $L_i = 0$.

Binary Input:

$V_{\max}(U_i) = 28 \text{ V}$, $I_{\max}(I_i) = 100 \text{ mA}$, $P_{\max}(P_i) = 0.7 \text{ W}$, $C_i = 56.3 \text{ nF}$, $L_i = 0$.

- a = Limit Switches 0 (not provided), or 1 (provided).
- b = Solenoid valve 0 (not provided), or 4 (provided).
- c = Positioner indicator 0 (not provided), or 1 (provided).
- d = External position sensor 0 (not provided), or 1 (provided).
- e = Leakage Detection: 0 (not provided), or 1 (provided).

f = Binary Input: 0 (not provided), or 2 (provided).

3730-33-abcdef. Hart Capable Positioner.

IS / I,II,III / 1 / ABCDEFG / T6 Ta = 60°C - Addendum to EB 8384-3EN, pages 7 - 11; Entity; Type 4X

I / 0 / AEx ia / IIC / T6 Ta = 60°C - Addendum to EB 8384-3EN, pages 7 - 11; Entity; Type 4X

NI / I / 2 / ABCD / T6 Ta = 60°C; S / II / 2 / FG / T6 Ta = 60°C; Type 4X

Entity Parameters:

Signal Circuit:

$V_{\max}(U_i) = 28\text{ V}$, $I_{\max}(I_i) = 115\text{ mA}$, $P_{\max}(P_i) = 1\text{ W}$, $C_i = 35\text{ nF}$, $L_i = 0$.

Position Indicator:

$V_{\max}(U_i) = 28\text{ V}$, $I_{\max}(I_i) = 115\text{ mA}$, $P_{\max}(P_i) = 1\text{ W}$, $C_i = 5.3\text{ nF}$, $L_i = 0$.

Software Limit Switch:

$V_{\max}(U_i) = 20\text{ V}$, $I_{\max}(I_i) = 60\text{ mA}$, $P_{\max}(P_i) = 250\text{ mW}$, $C_i = 13.4\text{ nF}$, $L_i = 0$.

Inductive Limit Switch:

$V_{\max}(U_i) = 16\text{ V}$, $I_{\max}(I_i) = 25\text{ mA}$, $P_{\max}(P_i) = 64\text{ mW}$, $C_i = 60\text{ nF}$, $L_i = 100\text{ }\mu\text{H}$,

$V_{\max}(U_i) = 16\text{ V}$, $I_{\max}(I_i) = 52\text{ mA}$, $P_{\max}(P_i) = 169\text{ mW}$, $C_i = 60\text{ nF}$, $L_i = 100\text{ }\mu\text{H}$.

Forced Venting Function:

$V_{\max}(U_i) = 28\text{ V}$, $I_{\max}(I_i) = 115\text{ mA}$, $P_{\max}(P_i) = 0.5\text{ W}$, $C_i = 5.3\text{ nF}$, $L_i = 0$.

Fault Signal:

$V_{\max}(U_i) = 20\text{ V}$, $I_{\max}(I_i) = 60\text{ mA}$, $P_{\max}(P_i) = 250\text{ mW}$, $C_i = 13.4\text{ nF}$, $L_i = 0$.

Serial Interface Bill:

$V_{\max}(U_i) = 16\text{ V}$, $I_{\max}(I_i) = 25\text{ mA}$, $P_{\max}(P_i) = 250\text{ mW}$, $C_i = 0$, $L_i = 0$,

$V_{\text{oc}}(U_o) = 7.88\text{ V}$, $I_{\text{sc}}(I_o) = 61.8\text{ mA}$, $P_{\max}(P_o) = 120\text{ mW}$, $C_a(C_o) = 0.65\text{ }\mu\text{F}$, $L_a(L_o) = 10\text{ mH}$.

External Position Sensor:

$V_{\text{oc}}(U_o) = 7.88\text{ V}$, $I_{\text{sc}}(I_o) = 61\text{ mA}$, $P_{\max}(P_o) = 120\text{ mW}$, $C_a(C_o) = 0.66\text{ }\mu\text{F}$, $L_a(L_o) = 10\text{ mH}$, or $C_i = 730\text{ nF}$, $L_i = 370\text{ }\mu\text{H}$.

Leakage Detection:

$V_{\max}(U_i) = 28\text{ V}$, $I_{\max}(I_i) = 100\text{ mA}$, $P_{\max}(P_i) = 0.7\text{ W}$, $C_i = 5.3\text{ nF}$, $L_i = 0$.

Binary Input:

$V_{\max}(U_i) = 28\text{ V}$, $I_{\max}(I_i) = 100\text{ mA}$, $P_{\max}(P_i) = 0.7\text{ W}$, $C_i = 56.3\text{ nF}$, $L_i = 0$.

a = Proximity Switches 0 (not provided), or 1 (provided).

b = Force venting Function 0 (not provided), or 4 (24 Vdc provided).

c = Position indicator 0 (not provided), or 1 (provided).

d = External position sensor 0 (not provided), or 1 (provided).

e = Leakage Detection: 0 (not provided), or 1 (provided).

f = Binary Input: 0 (not provided), or 2 (provided).

3730-6-130abcd0ef00g. Digital Hart Positioner.

IS / I,II,III / 1 / ABCDEFG / T6 Ta = 60°C - Addendum to EB 8384-6 EN, pages 7 - 12; Entity; Type 4X

I / 0 / AEx ia / IIC / T6 Ta = 60°C - Addendum to EB 8384-6 EN, pages 7 - 12; Entity; Type 4X

NI / I / 2 / ABCD / T6 Ta = 60°C - Addendum to EB 8384-6 EN, pages 7 - 12; NIFW; Type 4X

S / II, III / 2 / EFG / T6 Ta = 60°C - Addendum to EB 8384-6 EN, pages 7 - 12; NIFW; Type 4X

Entity Parameters:

Signal Circuit:

$V_{\max}(U_i) = 28\text{ V}$, $I_{\max}(I_i) = 115\text{ mA}$, $P_{\max}(P_i) = 1\text{ W}$, $C_i = 5.3\text{ nF}$, $L_i = 0$.

$V_{\max}(U_i) = 32\text{ V}$, $I_{\max}(I_i) = 87.5\text{ mA}$, $P_{\max}(P_i) = 1\text{ W}$, $C_i = 5.3\text{ nF}$, $L_i = 0$.

Position Indicator:

$V_{\max}(U_i) = 28\text{ V}$, $I_{\max}(I_i) = 115\text{ mA}$, $P_{\max}(P_i) = 1\text{ W}$, $C_i = 5.3\text{ nF}$, $L_i = 0$.

$V_{\max}(U_i) = 32 \text{ V}$, $I_{\max}(I_i) = 87.5 \text{ mA}$, $P_{\max}(P_i) = 1 \text{ W}$, $C_i = 5.3 \text{ nF}$, $L_i = 0$.

Software Limit Switch:

$V_{\max}(U_i) = 20 \text{ V}$, $I_{\max}(I_i) = 60 \text{ mA}$, $P_{\max}(P_i) = 250 \text{ mW}$, $C_i = 5.3 \text{ nF}$, $L_i = 0$.

Inductive Limit Switch:

$V_{\max}(U_i) = 16 \text{ V}$, $I_{\max}(I_i) = 25 \text{ mA}$, $P_{\max}(P_i) = 64 \text{ mW}$, $C_i = 30 \text{ nF}$, $L_i = 100 \mu\text{H}$.

$V_{\max}(U_i) = 16 \text{ V}$, $I_{\max}(I_i) = 52 \text{ mA}$, $P_{\max}(P_i) = 169 \text{ mW}$, $C_i = 30 \text{ nF}$, $L_i = 100 \mu\text{H}$.

Forced Venting Function:

$V_{\max}(U_i) = 28 \text{ V}$, $I_{\max}(I_i) = 115 \text{ mA}$, $P_{\max}(P_i) = 1 \text{ W}$, $C_i = 5.3 \text{ nF}$, $L_i = 0$.

$V_{\max}(U_i) = 32 \text{ V}$, $I_{\max}(I_i) = 87.5 \text{ mA}$, $P_{\max}(P_i) = 1 \text{ W}$, $C_i = 5.3 \text{ nF}$, $L_i = 0$.

Fault Signal:

$V_{\max}(U_i) = 20 \text{ V}$, $I_{\max}(I_i) = 60 \text{ mA}$, $P_{\max}(P_i) = 250 \text{ mW}$, $C_i = 5.3 \text{ nF}$, $L_i = 0$.

Serial Interface Bill:

$V_{\max}(U_i) = 20 \text{ V}$, $I_{\max}(I_i) = 60 \text{ mA}$, $P_{\max}(P_i) = 200 \text{ mW}$, $C_i = 0$, $L_i = 0$,

$V_{oc}(U_o) = 7.88 \text{ V}$, $I_{sc}(I_o) = 69.2 \text{ mA}$, $P_{\max}(P_o) = 137 \text{ mW}$, $C_a(C_o) = 650 \text{ nF}$, $L_a(L_o) = 10 \text{ mH}$.

External Position Sensor:

$V_{oc}(U_o) = 7.88 \text{ V}$, $I_{sc}(I_o) = 13.2 \text{ mA}$, $P_{\max}(P_o) = 27 \text{ mW}$, $C_a(C_o) = 1 \mu\text{F}$, $L_a(L_o) = 10 \text{ mH}$, or $C_i = 66 \text{ nF}$, $L_i = 370 \mu\text{H}$.

Leakage Detection:

$C_i = 5.3 \text{ nF}$, $C_o = 1.4 \text{ nF}$.

Binary Input:

$V_{\max}(U_i) = 30 \text{ V}$, $I_{\max}(I_i) = 100 \text{ mA}$, $C_i = 56.3 \text{ nF}$, $L_i = 0$.

Non-Incendive Field Wiring Parameters:

Signal Circuit:

$V_{\max}(U_i) = 32 \text{ V}$, $C_i = 5.3 \text{ nF}$, $L_i = 0$.

Position Indicator:

$V_{\max}(U_i) = 32 \text{ V}$, $C_i = 5.3 \text{ nF}$, $L_i = 0$.

Software Limit Switch:

$V_{\max}(U_i) = 20 \text{ V}$, $C_i = 5.3 \text{ nF}$, $L_i = 0$.

Inductive Limit Switch:

$V_{\max}(U_i) = 16 \text{ V}$, $C_i = 30 \text{ nF}$, $L_i = 100 \mu\text{H}$.

Forced Venting Function:

$V_{\max}(U_i) = 32 \text{ V}$, $C_i = 5.3 \text{ nF}$, $L_i = 0$.

Fault Signal:

$V_{\max}(U_i) = 20 \text{ V}$, $C_i = 5.3 \text{ nF}$, $L_i = 0$.

Serial Interface Bill:

$V_{\max}(U_i) = 20 \text{ V}$, $C_i = 0$, $L_i = 0$,

$V_{oc}(U_o) = 7.88 \text{ V}$, $C_a(C_o) = 650 \text{ nF}$, $L_a(L_o) = 10 \text{ mH}$.

External Position Sensor:

$V_{oc}(U_o) = 7.88 \text{ V}$, $C_a(C_o) = 1 \mu\text{F}$, $L_a(L_o) = 10 \text{ mH}$, or $C_i = 66 \text{ nF}$, $L_i = 370 \mu\text{H}$.

Leakage Detection:

$C_i = 5.3 \text{ nF}$, $C_o = 1.4 \text{ nF}$.

Binary Input:

$V_{\max}(U_i) = 30 \text{ V}$, $C_i = 56.3 \text{ nF}$, $L_i = 0$.

a = Proximity Switches 0 (not provided), or 1 (provided).

b = Venting Function 0 (not provided), or 1 (Solenoid valve 24 V DC) or 2 (Forced venting 24 V DC).

c = Position indicator 0 (not provided), or 1 (Position transmitter), or 2 (Leakage Detection), or 3 (Binary Input).

d = External position sensor 0 (not provided), or 1 (provided).

e = Emergency shutdown 0 (3.8 mA), or 1 (4.4 mA).

f = Body Material 0 (Die-cast aluminum), or 1 (Stainless Steel).

g = Housing cover 00 (Cover standard version), or 02 (Cover without window).

Equipment Ratings:

Intrinsically safe for use in Class I, II, III, Division 1, Groups A, B, C, D, E, F and G; Class I, Zone 0, IIC in accordance with control drawing nos. Addendum to EB 8384-2EN, pages 7 – 11, Addendum to EB 8384-3EN, pages 7 – 11 and Addendum to EB 8384-6EN, pages 7 – 12. Nonincendive with Nonincendive Field Wiring for Class I, Division 2, Groups A, B, C and D; Suitable for Class II, III, Division 2, Groups F and G or E, F and G indoor/outdoor Type 4X hazardous (Classified) Locations.

FM Approved for:
Samson AG
D-60314 Frankfurt, Germany



Member of the FM Global Group

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

Class 3600	2011
Class 3610	2010
Class 3611	2004
Class 3810	2005
NEMA-250	2003
ANSI/ISA-60079-0	2009
ANSI/ISA-60079-11	2009

Original Project ID: 3012394

Approval Granted: December 4, 2002

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
3018702	02/02/2004		
3034227	11/03/2008		
3042057	06/06/2011		
Reissued	August 11, 2011		
3044364	November 5, 2014		

FM Approvals LLC

A handwritten signature in black ink, appearing to read "J.E. Marquedant".

J.E. Marquedant
Group Manager, Electrical

5 November 2014

Date