FM Approvals
1151 Boston Providence Turnpike
P.O. Box 9102 Norwood, MA 02062 USA
T: **781 762 4300** F: 781-762-9375 www.fmapprovals.com

CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

Model 4763-3abc. I/P Positioner Single-Acting
IS / I,II,III / 1 / ABCDEFG / T6 Ta = 60°C - Addendum to EB 8359-2 EN, pages 3 & 4; Entity; Type 3R
I / 0 / AEx ia IIC / T6 Ta = 60°C - Addendum to EB 8359-2 EN, pages 6, 7, 8, 9 & 10; Entity; Type 3R
NI / I / 2 / ABCD / T6 Ta = 60°C; S / II,III / 2 / FG / T6 Ta = 60°C; Type 3R

Entity Parameters:
Vmax (Ui) = 28V, Imax (Ii) = 115mA, Pmax (Pi) = 0.7W, Ci = 0, Li = 0

a = Electrical connections: 1 (cable gland M 20 x 1.5 metal or plastic), 3 (HARTING-connector) or 4 (round connector).
b = i/p-Baustein: 1 (Model 6109 I/P Module) or 2 (Model 6112 I/P Module).
c = Input signal (signal circuit): 1 (0-20mA), 2 (4-20mA) or 3 (1-5mA).

Model 6116-4abcd. I/P Converter
IS / I,II,III / 1 / ABCDEFG / T6 Ta = 60°C - Addendum to EB 6116 EN, pages 3 & 4; Entity; Type 4X
I / 0 / AEx ia IIC / T6 Ta = 60°C - Addendum to EB 6116 EN, pages 3 & 4; Entity; Type 4X
NI / I / 2 / ABCD / T6 Ta = 60°C; S / II,III / 2 / FG / T6 Ta = 60°C; Type 4X

Entity Parameters:
Vmax (Ui) = 28V, Imax (Ii) = 115mA, Pmax (Pi) = 0.7W, Ci = 0, Li = 0

a = input and output variables not relating to explosion protection
b = Type of protection 0 (no protection) or 2 (Ex version to input circuit category ia).
c = Style 1 module for controllers or further devices.
d = Input and output signals not related to explosion protection.

Model 3963-3abcd. Solenoid Valve with Model 1079-27 e/p Binary Converter Coil
IS / I,II,III / 1 / ABCDEFG / T6 Ta = 60°C - Addendum to EB 3963 EN, pages 4, 5 & 6; Entity; Type 4X
I / 0 / AEx ia IIC / T4 Ta = 80°C - Addendum to EB 3963 EN, pages 4, 5 & 6; Entity; Type 4X
NI / I / 2 / ABCD / T4 Ta = 80°C; S / II,III / 2 / FG / T4 Ta = 80°C; Type 4X

Entity Parameters:
Vmax (Ui) = 28V, Imax (Ii) = 115mA, Pmax (Pi) = 0.25W, Ci = 0, Li = 0
Solenoid Valve (nominal signal) 6VDC version Pmax (Pi)=250mW
Solenoid valve (nominal signal) 12VDC and 24VDC version Pmax (Pi) not limited

a = Nominal signal: 1 (6 volts), 2 (12 volts) or 3 (24 volts).
b = Pneumatic switching functions: attachment with or without functional test.
c = Ambient temperatures: 0 (= -20°C +80°C) or 1 (= - 45°C +80°C).
d = Electrical Connection: Connection thread type of protection or manual operation.

Model 3760-31abc. i/p Positioner Single-Acting
IS / I,II,III / 1 / ABCDEFG / T6 Ta = 60°C - Addendum to EB 1-8385 EN, pages 5, 6, 7 & 8; Entity; Type 3R
I / 0 / AEx ia IIC / T6 Ta = 60°C - Addendum to EB 1-8385 EN, pages 5, 6, 7 & 8; Entity; Type 3R
NI / I / 2 / ABCD / T6 Ta = 60°C; S / II,III / 2 / FG / T6 Ta = 60°C; Type 3R

Entity Parameters:
Vmax (Ui) = 28V, Imax (Ii) = 115mA, Pmax (Pi) = 0.7W, Ci = 0, Li = 0

Limit Switches (Inductive):
Vmax (Ui) = 16V, Imax (Ii) = 25mA, Pmax (Pi) = 64mW, Ci = 30nF, Li = 100µH Vmax (Ui) = 16V, Imax (Ii) = 52mA, Pmax (Pi) = 169mW, Ci = 30nF, Li = 100µH

a = Electrical connections: 1 (plastic cable gland M 20 x1.5), 2 (metal cable gland M 20 x 1.5) or 3 (plug connector).
b = I/P Module: 1 (Model 6109) or 2 (Model 6112).
c = Input signal: 1 (4 to 20mA), 2 (0 to 20mA) or 3 (1 to 5mA).

Model 3766-3abc. Pneumatic Positioner Single-Acting with Model 1070-9 Position Indicator Module, Model 1079-27 e/p Binary Converter Coil or Model 1079-29 Solenoid Valve
IS / I,II,III / 1 / ABCDEFG / T6 Ta = 60°C - Addendum to EB 1-8355 EN, pages 6, 7, 8 & 9; Entity; Type 4X
I / 0 / AEx ia IIC / T6 Ta = 60°C - Addendum to EB 1-8355 EN, pages 6, 7, 8 & 9; Entity; Type 4X
NI / I / 2 / ABCD / T6 Ta = 60°C; S / II,III / 2 / FG / T6 Ta = 60°C; Type 4X

Entity Parameters: Position

Indicator:
Vmax (Ui) = 28V, Imax (Ii) = 115mA, Pmax (Pi) = 1W, Ci = 5.3nF, Li = 0

Limit Switches (Inductive):
Vmax (Ui) = 16V, Imax (Ii) = 25mA, Pmax (Pi) = 64mW, Ci = 30nF, Li = 100µH Vmax (Ui) = 16V, Imax (Ii) = 52mA, Pmax (Pi) = 169mW, Ci = 30nF, Li = 100µH

Solenoid Valve:
Vmax (Ui) = 28V, Imax (Ii) = 115mA, Pmax (Pi) = 0.25W, Ci = 0, Li = 0
Solenoid valve (nominal signal) 6VDC version Pmax (Pi)=250mW
Solenoid valve (nominal signal) 12VDC and 24VDC version Pmax (Pi) not limited

a = Inductive limit switch: 00 (none) or 6 (with position indicator).
b = Solenoid valve with solenoid valve without limit switches: 00 (none), 2 (nominal signal 6V), 3 (nominal 12V) or 4 (nominal 24V).
c = Electrical connections: 1 (cable gland M 20 x 1.5 optionally metal or plastic), 3 (HARTING-connector) or 4 (round connector).

Model 3767-3abcd. i/p Positioner Single -acting* with *Model 1070-9 Position Indicator Module, Model 1079-27 e/p Binary Converter Coil or Model 1079-29 Solenoid Valve
IS / I,II,III / 1 / ABCDEFG / T6 Ta = 60°C - Addendum to EB 2-8355-EN, pages 6, 7, 8, 9 &10; Entity; Type 4X
I / 0 / AEx ia IIC / T6 Ta = 60°C - Addendum to EB 2-8355-EN, pages 6, 7, 8, 9 & 10; Entity; Type 4X
NI / I / 2 / ABCD / T6 Ta = 60°C; S / II,III / 2 / FG / T6 Ta = 60°C; Type 4X

Entity Parameters: Position

Indicator:
Vmax (Ui) = 28V, Imax (Ii) = 115mA, Pmax (Pi) = 1W, Ci = 5.3nF, Li = 0

Limit Switches (Inductive):
Vmax (Ui) = 16V, Imax (Ii) = 25mA, Pmax (Pi) = 64mW, Ci = 30nF, Li = 100µH Vmax (Ui) = 16V, Imax (Ii) = 52mA, Pmax (Pi) = 169mW, Ci = 30nF, Li = 100µH

Solenoid Valve:
Vmax (Ui) = 28V, Imax (Ii) = 115mA, Pmax (Pi) = 0.25W, Ci = 0, Li = 0
Solenoid valve (nominal signal) 6VDC version Pmax (Pi)=250mW
Solenoid valve (nominal signal) 12VDC and 24VDC version Pmax (Pi) no limited

a = Inductive limit switch: 00 (none) or 6 (with position indicator).
b = Solenoid valve with solenoid valve without limit switches: 00 (none), 2 (nominal signal 6V), 3 (nominal 12V) or 4 (nominal 24V).
c = Electrical connections: 1 (cable gland M 20 x 1.5 optionally metal or plastic), 3 (HARTING-connector) or 4 (round connector).
d = Data not relating to explosion protection such as input signal: 1 (4 to 20mA), 2 (4 to 20mA) or 3 (1 to 5mA).

Model 3768-3abc. Limit Switch
IS / I,II,III / 1 / ABCDEFG / T6 Ta = 60°C - Addendum to EB 1-8356 EN, pages 6, 7, 8 & 9; Entity; Type 4X
I / 0 / AEx ia IIC / T6 Ta = 60°C - Addendum to EB 1-8356 EN, pages 6, 7, 8 & 9; Entity; Type 4X
NI / I / 2 / ABCD / T6 Ta = 60°C; S / II,III / 2 / FG / T6 Ta = 60°C; Type 4X

Entity Parameters:

Limit Switches (Inductive):
Vmax (Ui) = 16V, Imax (Ii) = 25mA, Pmax (Pi) = 64mW, Ci = 30nF, Li = 100µH Vmax (Ui) = 16V, Imax (Ii) = 52mA, Pmax (Pi) = 169mW, Ci = 30nF, Li = 100µH

Solenoid Valve:
Vmax (Ui) = 28V, Imax (Ii) = 115mA, Pmax (Pi) = 0.25W, Ci = 0, Li = 0
Solenoid valve (nominal signal) 6VDC version Pmax (Pi)=250mW
Solenoid valve (nominal signal) 12VDC and 24VDC version Pmax (Pi) not limited

a = Proximity switches; 1 = one proximity switch SJ-2 SN or 2 = two proximity switches SJ-2 SN
b = Solenoid valve 0 = none, 2 = nominal signal 6Vdc, 3 = nominal signal 12Vdc or 4 = nominal signal 24Vdc.
c = Electrical connections according to section 5 of the annex: air connections attachment, special versions.

Model 3701-3abcd. Solenoid Valve
IS / I,II,III / 1 / ABCDEFG / T6 Ta = 60°C - Addendum to EB 8375 EN, pages 4, 5 & 6; Entity; Type 3R
I / 0 / AEx ia IIC / T6 Ta = 60°C - Addendum to EB 8375 EN, pages 4, 5 & 6; Entity; Type 3R
NI / I / 2 / ABCD / T6 Ta = 60°C; S / II,III / 2 / FG / T6 Ta = 60°C; Type 3R

Entity Parameters:
Vmax (Ui) = 28V, Imax (Ii) = 115mA, Pmax (Pi) = 0.25W, Ci = 0, Li = 0
Solenoid valve (nominal signal) 6VDC version Pmax (Pi)=250mW
Solenoid valve (nominal signal) 12VDC and 24VDC version Pmax (Pi) not limited

a = Nominal signal: 1 = 6V, 2 = 12V or 3 = 24V. b
= Function test 0 = none or 1= TUV.
c = Switching function: 1=1, 2=2, 3=3 or 4=4.
d = Connecting Thread: attachment and connection facilities controls or pneumatic switching functions.

Model 3964-3. Pilot Valve with Model 1070-9 Position Indicator Module, Model 1079-27 e/p Binary Converter Coil or Model 1079-29 Solenoid Valve
IS / I / 1 / ABCD / T6 Ta = 60°C - Addendum to EB 3964 EN, pages 3 & 4; Entity; Type 3R
I / 0 / AEx ia IIC / T6 Ta = 60°C - Addendum to EB 3964 EN, pages 3 & 4; Entity; Type 3R
NI / I / 2 / ABCD / T6 Ta = 60°C; Type 3R

Entity Parameters:
Vmax (Ui) = 28V, Imax (Ii) = 115mA, Pmax (Pi) = 0.25W, Ci = 0, Li = 0
Solenoid valve (nominal signal) 6VDC version Pmax (Pi)=250mW
Solenoid valve (nominal signal) 12VDC and 24VDC version Pmax (Pi) not limited.

Model 4746-3abc. Limit Switch
IS / I,II,III / 1 / ABCDEFG / T6 Ta = 60°C - Addendum to EB 8365 EN, pages 5, 6, 7 & 8; Entity; Type 3R
I / 0 / AEx ia IIC / T6 Ta = 60°C - Addendum to EB 8365 EN, pages 5, 6, 7 & 8; Entity; Type 3R
NI / I / 2 / ABCD / T6 Ta = 60°C; S / II,III / 2 / FG / T6 Ta = 60°C; Type 3R

Entity Parameters:

Limit Switches (Inductive):
Terminals 41/42 & 51/52 GP ABCDEFG and GP IIC:
Vmax (Ui) = 16V, Imax (Ii) = 25mA, Pmax (Pi) = 34mW, Ci = 150nF, Li = 150µH
Vmax (Ui) = 16V, Imax (Ii) = 25mA, Pmax (Pi) = 64mW, Ci = 60nF, Li = 250µH
Vmax (Ui) = 16V, Imax (Ii) = 52mA, Pmax (Pi) = 169mW, Ci = 50nF, Li = 250µH

Limit Switches (Electrical):
Vmax (Ui) = 45V, Imax (Ii) = 115mA, Pmax (Pi) = 2W, Ci = 0, Li = 0

a = Proximity switches;
- 2 = with inductive proximity switches
- 3 = with electrical proximity switches.

b = Contact Types;
- 00 = type SC3,5 inductive contact
- 10 = type SJ3,5-SN inductive contact
- 11 = type SJ3,5-S1N inductive contact
- 20 = type XGK 3 electrical contact (silver)
- 21 = type XGK 3-81 electrical contact (gold)

c = Switching elements;
- 1 = one contact
- 2 = two contacts

Equipment Ratings:

The apparatus was evaluated as intrinsically safe electrical apparatus with Entity requirements for use in Class I, II, III, Division 1, Groups A, B, C, D, F and G and alternatively for Class I, Zone 0, AEx ia IIC in accordance with manufacturing installation manuals; non incendive for Class I, Division 2, Groups A, B, C and D; suitable for Class II, Division 2, Groups F and G indoor/outdoor Type 3R hazardous (classified) Locations.

FM Approved for:

Samson AG
Frankfurt, Germany

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	1991
ANSI/ISA 60079-0	2009
ANSI/ISA 60079-11	2009

Original Project ID: 3020228 Approval Granted: February 28, 2005

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
3042057	June 6, 2011		
RR202569	October 12, 2015		

FM Approvals LLC

J.E. Marquedant
Manager of Electrical Systems

12 October 2015
Date