CERTIFICATE OF CONFORMITY

1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
2. **Certificate No:** **FM16US0468X**
3. **Equipment:** **Model Axiom AN Series Valve Position Monitors**
   (Type Reference and Name)
4. **Name of Listing Company:** **StoneL**
5. **Address of Listing Company:** **26271 US Hwy 59**
   Fergus Falls MN 56537
   United States
6. The examination and test results are recorded in confidential report number:

   3058464 dated 2nd March 2017

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 Class 3611:2016, FM Class 3810:2005
   ANSI/ISA 60079-0:2013, ANSI/ISA 60079-11:2014, UL 50:2015, UL 50E:2015

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.

10. Equipment Ratings:

Code Options	Rating
AN45S9 With conduit	Intrinsically Safe for use in Class I, II, and III Division 1, Groups A, B, C, D, E, F, and G; hazardous (classifed) locations in accordance with installation drawing 105412, Intrinsically Safe for Class I, Zone 0, Group IIC hazardous (classified) locations; and

Certificate issued by:

J. E. Marquedant
Manager, Electrical Systems

2 March 2017
Date

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

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

	Nonincendive Electrical Apparatus suitable for use in Class I, II and III, Division 2 Groups A, B, C, D E, F, and G; Class I Zone 2 Group IIC hazardous (classified) locations (Type 4, 4X & 6) T-Class is T5 when the maximum ambient is 80°C.
AN35, AN92, AN97 With conduit	Nonincendive Electrical Apparatus suitable for use in Class I, II and III, Division 2 Groups A, B, C, D E, F, and G; Class I Zone 2 Group IIC hazardous (classified) locations (Type 4, 4X & 6) T-Class is T5 when the maximum ambient is 80°C.
AN45S9 With connector	Intrinsically Safe for use in Class I, Division 1, Groups A, B, C, & D; hazardous (classifed) locations in accordance with installation drawing 105412, Intrinsically Safe for Class I, Zone 0, Group IIC hazardous (classified) locations; and Nonincendive Electrical Apparatus suitable for use in Class I, Division 2 Groups A, B, C, & D; Class I Zone 2 Group IIC hazardous (classified) locations T-Class is T5 when the maximum ambient is 80°C.
AN35, AN92, AN97 With connector	Nonincendive Electrical Apparatus suitable for use in Class I, Division 2 Groups A, B, C, & D; Class I Zone 2 Group IIC hazardous (classified) locations T-Class is T5 when the maximum ambient is 80°C.

11. The marking of the equipment shall include:

Class I Division 1, Groups A, B, C, D, E, F & G; T5 Ta = -40°C to +80°C; Type 4, 4X, 6

Class I, Zone 0, AEx ia IIC; T5 Ta = -40°C to +80°C, Type 4, 4X,6

Class I Division 2, Groups A, B, C, D, E, F & G; T5 Ta = -40°C to +80°C; Type 4, 4X, 6

Class I, Zone 2, IIC Ta = -40°C to +80°C, Type 4, 4X,6

Class I Division 1, Groups A, B, C, & D, T5 Ta = -40°C to +80°C

Class I, Zone 0, IIC; T5 Ta = -40°C to +80°C,

Class I Division 2, Groups A, B, C, & D; T5 Ta = -40°C to +80°C

Class I, Zone 2, IIC T5 Ta = -40°C to +80°C

12. **Description of Equipment:**

General - The Axiom AN Series Valve Position Monitor is designed to be attached directly to various valve/actuator assemblies and to communicate and control its position. The apparatus consists of internally mounted sensing and communication modules, internally mounted pilot valves for pneumatic control, connection options to plant electrical, pneumatic and communication systems with external visual indication to the fluid being processed. Electronic components inside the apparatus are encapsulated and enclosed within an aluminium housing with polycarbonate cover. The Axiom AN 45 Series relies on Intrinsic Safety and the Axiom AN 35, 92 and 97 Series rely on Division 2 Nonincendive protection concepts for installation in hazardous locations.

Construction - The aluminium enclosure with polycarbonate cover provided an environmental rating of Type 4, 4X and 6 when the conduit options are selected. The enclosure is provided with two (2) ½" NPT, ¾" NPT, M20, or M25 openings which may be fitted for a conduit connection or fitted with a optional circular pin type connectors. The value positon monitor may also be fitted with an optional aluminum cover, which does not

have an environmental rating and is for use in gas environments only.

Ratings - The line of Axiom AN Series Valve Position Monitors consist of four different versions. The Axiom AN 45 Series is intended for use with intrinsic safety barriers, while the Axiom AN 35, 92 and 97 Series are operate from 8 to 250 V depending on the model. The monitors are rated for use in an ambient temperature range of -40°C to +80°C. The process temperature range is also -40°C to +80°C.

Intrinsically Safe Entity parameters: (Models AN45)
Sensor Closed Ui = 22 Vdc, Ii = 120 mA, Pi = 0.4W, Ci = 3nF, Li = 0
Sensor Open Ui = 22 Vdc, Ii = 120 mA, Pi = 0.4W, Ci = 3nF, Li = 0
Solenoid Junction Terminals Ui = 28 Vdc, Ii = 120 mA, Ci = 0, Li = 0

Division 2 and Zone II (Models AN35)
Sensor: 0.1A, 8-250 VDC; 0.1A, 20-250 VAC
Solenoid: 20mA, 20-55 VDC; 12mA, 20-250 VAC

Division 2 and Zone II (Models AN92)
Sensor: 35mA, 25 VDC max; Output 150mA max
Solenoid: 24 VDC; 0.5W

Division 2 and Zone II (Models AN97)
Sensor: 35mA, 31.6 VDC max, Output 100mA max
Solenoid: 24 VDC; 0.5W

AN45S9cdefg-h. Valve Position Monitor
c = Override X, N, M, L, E, Y or G
d = Enclosure C
e = Conduit Entries 02, 05, 08, 09,
f = Visual Indication X, G, R, 1 or 2
g = Branding A or M
h = Options 'Special Unit Digits'

ANabcdefg-h. Valve Position Monitor
a = Function 35S, 92S, 92W, 97S, or 97W
b = Solenoid 9, 1 or 2
c = Override X, N, M, L, E, Y or G
d = Enclosure C
e = Conduit Entries 02, 05, 08, 09,
f = Visual Indication X, G, R, 1 or 2
g = Branding A or M
h = Options 'Special Unit Digits'

AN45S9cdefg-h. Valve Position Monitor
c = Override X, N, M, L, E, Y or G
d = Enclosure A, C
e = Connector, 10, 11, 13, 15, 19, 20, 21 or 22
f = Visual Indication X, G, R, 1 or 2
g = Branding A or M
h = Options 'Special Unit Digits'

SCHEDULE

US Certificate Of Conformity No: FM16US0468X

ANabcdefg-h. Valve Position Monitor
a = Function 35S, 92S, 92W, 97S, or 97W
b = Solenoid 9, 1 or 2
c = Override X, N, M, L, E, Y or G
d = Enclosure A, C
e = Connector, 10, 11, 13, 15, 19, 20, 21 or 22
f = Visual Indication X, G, R, 1 or 2
g = Branding A or M
h = Options 'Special Unit Digits'

AN45S9cdefg-h. Valve Position Monitor
c = Override X, N, M, L, E, Y or G
d = Enclosure A
e = Conduit Entries 02, 05, 08, 09
f = Visual Indication X, G, R, 1 or 2
g = Branding A or M
h = Options 'Special Unit Digits'

ANabcdefg-h. Valve Position Monitor
a = Function 35S, 92S, 92W, 97S, or 97W
b = Solenoid 9, 1 or 2
c = Override X, N, M, L, E, Y or G
d = Enclosure A
e = Conduit Entries 02, 05, 08, 09
f = Visual Indication X, G, R, 1 or 2
g = Branding A or M
h = Options 'Special Unit Digits'

13. **Specific Conditions of Use:**

AN45S9cdefg-h. Valve Position Monitor
1. Part of the enclosure is constructed from plastic. To prevent the risk of electrostatic sparking the plastic surface should only be cleaned only with a damp cloth.
2. The apparatus enclosure may contain aluminum which is considered to constitute a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact or friction.
3. For Division 2 installation the Turck minifast® and eurofast® make receptacles shall be mated with a Turck minifast or eurofast female cordset and the use of a tool secured Turck lokfast® guard is required.

ANabcdefg-h. Valve Position Monitor
When e = Connector, 10, 11, 13, 15, 19, 20, 21 or 22
The Turck minifast® and eurofast® male receptacles shall be mated with a Turck minifast or eurofast female cordset and the use of a tool secured Turck lokfast® guard is required.

14. **Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

SCHEDULE

US Certificate Of Conformity No: FM16US0468X

15. **Schedule Drawings**

A copy of the technical documentation has been kept by FM Approvals.

16. **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
2nd March 2017	Original Issue.