

# 1 TYPE EXAMINATION CERTIFICATE



2 Equipment or Protective systems intended for use in Potentially  
Explosive Atmospheres - Directive 2014/34/EU

3 Type Examination Certificate No: FM08ATEX0040X

4 Equipment or protective system: Axiom AMI Series Valve Position Monitor  
(Type Reference and Name)

5 Name of Applicant: StoneL

6 Address of Applicant: 26271 US Hwy 59  
Fergus Falls, MN 56537  
USA

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Ltd. certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3031430EC dated 30<sup>th</sup> July 2008

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN60079-0:2012+A11:2013, EN60079-15:2010, EN60079-18:2009 and EN60529:1991+A1:2000

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:



II 3 G Ex nA mc IIC T5 Gc Ta = -18°C to 50°C; IP67

II 3 G Ex nA mc IIC T5 Gc Ta = -10°C to 60°C; IP67

II 3 G Ex nA mc IIC T5 Gc Ta = -40°C to 70°C; IP67



cn=Mick Gower, o=FM Approvals,  
ou,  
email=mick.gower@fmaprovals.  
com, c=GB  
2016.09.15 14:59:53 +01'00'

**Mick Gower**  
Certification Manager, FM Approvals Ltd.

Issue date: 15<sup>th</sup> September 2016

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

FM Approvals Ltd. 1 Windsor Dials, Windsor, Berkshire, UK. SL4 1RS  
T: +44 (0) 1753 750 000 F: +44 (0) 1753 868 700 E-mail: [atex@fmaprovals.com](mailto:atex@fmaprovals.com) [www.fmaprovals.com](http://www.fmaprovals.com)

# SCHEDULE

to Type Examination Certificate No. FM08ATEX0040X

## 13 Description of Equipment or Protective System:

The Axiom Series AMI Valve Position Monitor is designed to monitor and control the position of a valve. The apparatus consists of a sensing and communication module, an optional solenoid or solenoids for pneumatic control, connection options to plant electrical and communication systems and a visual indicator to the fluid being processed.

All of the electronic components in the apparatus are encapsulated using type Conathane EN-14 Black urethane encapsulant manufactured by Cytec Industries.

The apparatus is enclosed in an aluminum housing with a SABIC/GE Lexan 143R-1111 polycarbonate cover and is intended to be attached directly to various actuators/valves.

The Apparatus has the following maximum voltage ratings:

Type AMI33: V = 75Vdc

Type AMI44: V = 24Vdc

Type AMI92: V = 24Vdc

Type AMI93: V = 32Vdc

Type AMI94: V = 32Vdc

Type AMI95: V = 24Vdc

Type AMI96: V = 31.6Vdc

Type AMI97: V = 31.6Vdc

AMlabVcSde-f. Valve Position Monitor.

II 3 G Ex nA mc IIC T5 Gc Ta = -18°C to 50°C; IP67

a = Function: 33, 44, 92, 93, 94, 95, 96, or 97

b = Solenoid: 1B, 2B, 3B, 4B, 5B, 6B, 1D, 2D, 3D, 4D, 5D, 6D, 1E, 2E, 3E, 4E, 5E, 6E, 1H, 2H, 3H, 4H, 5H or 6H

c = Junction: 02, 05, 10, 11, 13, 15, 17, 18, 19, 20 or 21

d = Visual Indication: X, G, R, 1 or 2

e = Branding: A or M

f = Options: 1 – 5 alpha or numeric digits excluding “T” for special and marketing identification.

AMlabVcSde-f. Valve Position Monitor.

II 3 G Ex nA mc IIC T5 Gc Ta = -10°C to 60°C; IP67

a = Function: 33, 44, 92, 93, 94, 95, 96, or 97

b = Solenoid: 1A, 2A, 3A, 4A, 5A or 6A

c = Junction: 02, 05, 10, 11, 13, 15, 17, 18, 19, 20 or 21

d = Visual Indication: X, G, R, 1 or 2

e = Branding: A or M

f = Options: 1 – 5 alpha or numeric digits excluding “T” for special and marketing identification

AMIA11VcSde-f. Valve Position Monitor.

II 3 G Ex nA mc IIC T5 Gc Ta = -40°C to 70°C; IP67

a = Function: 33, 44, 92, 93, 94, 95, 96, or 97

c = Junction: 02, 05, 10, 11, 13, 15, 17, 18, 19, 20 or 21

d = Visual Indication: X, G, R, 1 or 2

e = Branding: A or M

f = Options: 1 – 5 alpha or numeric digits excluding “T” for special and marketing identification.

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# SCHEDULE

to Type Examination Certificate No. FM08ATEX0040X

AMlabVcSde-T. Valve Position Monitor.  
II 3 G Ex nA mc IIC T5 Gc Ta = -40°C to 70°C; IP67

a = Function: 33, 44, 92, 93, 94, 95, 96, or 97  
b = Solenoid: 11, 1A, 2A, 3A, 4A, 5A, 6A, 1B, 2B, 3B, 4B, 5B, 6B, 1D, 2D, 3D, 4D, 5D, 6D, 1E, 2E, 3E, 4E, 5E, 6E, 1H, 2H, 3H, 4H, 5H or 6H  
c = Junction: 02, 05, 10, 11, 13, 15, 17, 18, 19, 20 or 21  
d = Visual Indication: X, G, R, 1 or 2  
e = Branding: A or M  
f = Options: 1 – 5 alpha or numeric digits including “T” for special and marketing identification.

## 14 **Special Conditions for Safe Use:**

1. On installation the AMI Series Valve Position Monitor shall be provided with supply transient protection external to the apparatus such that the voltage at the supply terminals of the AMI Series Valve Position Monitor does not exceed 140% of the voltage rating of the equipment.
2. The plastic cover of the apparatus may constitute an electrostatic hazard. Clean only with a damp cloth.

## 15 **Essential Health and Safety Requirements:**

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

## 16 **Test and Assessment Procedure and Conditions:**

This Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Ltd's ATEX Certification Scheme.

## 17 **Schedule Drawings**

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by FM Approvals Ltd.

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# SCHEDULE



to Type Examination Certificate No. FM08ATEX0040X

## 18 Certificate History

Details of the supplements to this certificate are described below:

Date	Description
30 <sup>th</sup> July 2008	Original Issue.
23 <sup>rd</sup> January 2013	<u>Supplement 1:</u> Report Reference: 3031430rev120426 dated 15 <sup>th</sup> January 2013. Description of the Change: The company name has changed to StoneL. The company address has changed to: 26271 US Hwy 59, Fergus Falls, MN 56537, USA. Removed branding options N and L from all listings. Reviewed drawings for updating the PCB layouts and component changes for AMI92, AMI93, AMI94, AMI95, AMI96 and AMI97 modules. All drawings are accepted. Report Reference: 3031430rev120709 dated 15 <sup>th</sup> January 2013. Description of the Change: ASi C-Module component change and associated PCB change. All drawings are accepted. Report Reference: 3031430rev120831 dated 15 <sup>th</sup> January 2013. Description of the Change: 33 single and dual Solenoid modules; resistor value change. All drawings are accepted.
25 <sup>th</sup> September 2014	<u>Supplement 2:</u> Report Reference: 3048459 dated 19 <sup>th</sup> September 2014 Description of the Change: Updated standards to latest editions
15 <sup>th</sup> September 2016	<u>Supplement 3:</u> Report Reference: RR203250 dated 14 <sup>th</sup> September 2016 Description of the Change: Update certificate to latest directive. Updated standard EN 60079-0 to latest edition. Component and minor documentation updates.

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FM Approvals Ltd. 1 Windsor Dials, Windsor, Berkshire, UK. SL4 1RS  
T: +44 (0) 1753 750 000 F: +44 (0) 1753 868 700 E-mail: [atex@fmapprovals.com](mailto:atex@fmapprovals.com) [www.fmapprovals.com](http://www.fmapprovals.com)

# Blueprint Report

**StoneL (1000001486)**

**Class No 3611**

**Original Project I.D. 3031430**

**Certificate I.D. FM08ATEX0040X**

<u>Drawing No.</u>	<u>Revision</u>		<u>Last Report</u>	<u>Electronic Drawing</u>
	<u>Level</u>	<u>Drawing Title</u>		
000122	F	CRITICAL DOCUMENTS, AXIOM AMI	RR203250	Yes (pdf)
000139	B	MODEL DESIGNATIONS, AXIOM AMI	04/26/2012	Yes (pdf)
105155	C	INSTALLATION GUIDE, 33 MODULE	RR203250	Yes (pdf)
105157	D	INSTALLATION GUIDE, 44 MODULE	04/26/2012	Yes (pdf)
105158	C	INSTALLATION GUIDE, 92 MODULE	RR203250	Yes (pdf)
105159	C	INSTALLATION GUIDE, 93 MODULE	04/26/2012	Yes (pdf)
105160	C	INSTALLATION GUIDE, 94 MODULE	04/26/2012	Yes (pdf)
105161	B	INSTALLATION GUIDE, 95 MODULE	3031430	Yes (pdf)
105162	B	INSTALLATION GUIDE, 96 MODULE	3031430	Yes (pdf)
105163	C	INSTALLATION GUIDE, 97 MODULE	RR203250	Yes (pdf)
105169	E	ELECTRICAL INFORMATION, AXIOM AMI	RR203250	Yes (pdf)
105170	A	ENCLOSURE INFORMATION, AXIOM AMI	3031430	Yes (pdf)
105255	C	INSTALLATION ADDENDUM	RR203250	Yes (pdf)
105257	D	PRODUCT MARKING, AXIOM AMI	RR203250	Yes (pdf)
200044	F	PCB SCHEMATIC, 93 MODULE CPU/MAU	3031430	Yes (pdf)
200049	F	PCB SCHEMATIC, 95 MODULE	04/26/2012	Yes (pdf)
200054	D	PCB SCHEMATIC, 94 MODULE MOTHER	08/17/2011	Yes (pdf)
200062	C	PCB SCHEMATIC, IS SOLENOID	3031430	Yes (pdf)
200081	C	Schematic, ASi (96)	04/26/2012	Yes (pdf)
200082	C	Schematic, FF Mother Board 93	04/26/2012	Yes (pdf)
200085	E	PCB SCHEMATIC, SENSOR	04/26/2012	Yes (pdf)
200086	H	PCB SCHEMATIC, 33 MODULE	04/26/2012	Yes (pdf)
200093	E	PCB SCHEMATIC, 44 MODULE	04/26/2012	Yes (pdf)
200100	C	PCB SCHEMATIC, 95 INTERFACE	3031430	Yes (pdf)
200103	C	PCB SCHEMATIC, 33 MODULE	04/26/2012	Yes (pdf)
200104	B	PCB SCHEMATIC, UNIVERSAL DRIVER	04/26/2012	Yes (pdf)
200186	A	Schematic, DeviceNet (92), Mother	04/26/2012	Yes (pdf)
414720	B	TERMINAL BLOCK	3031430	Yes (pdf)
414722	A	Block, Terminal, 4 pt.	04/26/2012	Yes (pdf)
414724	B	TERMINAL BLOCK	3031430	Yes (pdf)
418074	C	PCB, FF, 93 & 94 CPU/MAU, UNPOPULATED	3031430	Yes (pdf)
418075	L	PCB, FF, 93 & 94 CPU/MAU, POPULATED	RR203250	Yes (pdf)
418089	F	PCB, MODBUS UNPOPULATED	RR203250	Yes (pdf)
418090	L	Board, Modbus, populated	RR203250	Yes (pdf)
418120	F	PCB, FF, 94 UNPOPULATED	RR203250	Yes (pdf)
418121	N	Board, Foundation Fieldbus (94), populated	RR203250	Yes (pdf)
418197	D	Asi, New Unpopulated Board as of June/2001	07/09/12	Yes (pdf)
418198	E	Board, ASi, populated	RR203250	Yes (pdf)
418199	C	Foundation Fieldbus, Unpopulated Brd.	04/26/2012	Yes (pdf)
418200	I	Board, Foundation Fieldbus (93), populated	RR203250	Yes (pdf)
418206	E	PCB, SENSOR UNPOPULATED	04/26/2012	Yes (pdf)
418207	E	PCB, SENSOR POPULATED	04/26/2012	Yes (pdf)

418208	I	CB, 33 UNPOPULATED	04/26/2012	Yes (pdf)
418209	Q	PCB, 33 POPULATED	08/31/12	Yes (pdf)
418215	F	PCB, 44 UNPOPULATED	RR203250	Yes (pdf)
418216	H	PCB, 44 POPULATED	RR203250	Yes (pdf)
418219	C	PCB, BUS INTERFACE UNPOPULATED	3031430	Yes (pdf)
418220	E	PCB, BUS INTERFACE POPULATED	04/26/2012	Yes (pdf)
418223	E	PCB, SWITCH PAD	04/26/2012	Yes (pdf)
418226	D	PCB, 33, DUAL SOLENOID UNPOPULATED	04/26/2012	Yes (pdf)
418227	I	PCB, 33, DUAL SOLENOID POPULATED	RR203250	Yes (pdf)
418228	C	PCB, DUAL SOLENOID, DRIVER POPULATED	04/26/2012	Yes (pdf)
418229	F	PCB, DUAL SOLENOID, DRIVER UNPOPULATED	04/26/2012	Yes (pdf)
418264	D	Board, Membrane, Axium, Expeditor & ASi	RR203250	Yes (pdf)
418299	A	PCB, IS SOLENOID UNPOPULATED	3031430	Yes (pdf)
418300	B	PCB, IS SOLENOID POPULATED	3031430	Yes (pdf)
418378	B	Board, Mother, DeviceNet, Unpopulated	RR203250	Yes (pdf)
418379	E	Board, Devicenet, populated	RR203250	Yes (pdf)
432029	A	ENCAPSULANT	3031430	Yes (pdf)
434092	new	Isolation Inductor, ASi	04/26/2012	Yes (pdf)
434218	A	Isolation Inductor, ASi Ext Addressing	04/26/2012	Yes (pdf)
434219	A	Resistor, 9.1 Ohm, 5%, 1210	04/26/2012	Yes (pdf)
434253	A	Connector, Board Stacker 0.705", 10 pin, 0.05" pitch	04/26/2012	Yes (pdf)
434254	A	Connector, Board Stacker 0.425", 10 pin, 0.05" pitch	04/26/2012	Yes (pdf)
434272	A	Fuse, 0.032A 5x20mm	04/26/2012	Yes (pdf)
443014	B	SOLENOID	3031430	Yes (pdf)
443022	D	SOLENOID	04/26/2012	Yes (pdf)
443023	D	SOLENOID	04/26/2012	Yes (pdf)
443025	B	Solenoid Valve, I.S. MAC36, 12VDC, 1/2W, W/ (MOD 7615)	04/26/2012	Yes (pdf)
443026	D	SOLENOID	04/26/2012	Yes (pdf)
443027	D	SOLENOID	04/26/2012	Yes (pdf)
443029	B	Solenoid Valve, I.S. MAC36, 12VDC, 1/2W, MOD 7616 (Wide Temp)	04/26/2012	Yes (pdf)
443030	D	SOLENOID	04/26/2012	Yes (pdf)
443038	B	Solenoid Valve, MAC36, 24VDC, 1.8W Wide Temp (MOD. 7635)	04/26/2012	Yes (pdf)