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: (Type Reference and Name)** **Axiom AMI Series Valve Position Monitor**

5 **Name of Applicant:** **Neles USA Inc. dba StoneL**

6 **Address of Applicant:** **26271 US Hwy 59**
Fergus Falls, MN 56537
United States of America

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 Europe 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 30th 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:

EN IEC 60079-0:2018, EN 60079-15:2010, EN 60079-18:2015+A1:2017
and EN 60529:1991+A1:2000+A2:2013

10 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.

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

Damien McArdle

Damien Mc Ardle
Certification Manager, FM Approvals Europe Ltd.

Issue date: 05th January 2021

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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 AMI96: V = 31.6Vdc
Type AMI97: V = 31.6Vdc

AMIabVcSde-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, 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.

AMIabVcSde-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, 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, 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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AMIabVcSde-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, 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 **Specific Conditions of 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 Europe 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 Europe 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 Europe Ltd.

18 **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
30th July 2008	Original Issue.
23rd January 2013	Supplement 1: Report Reference: 3031430rev120426 dated 15th January 2013. Description of the Change: The company name has changed to StoneL. The

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	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 15th January 2013. Description of the Change: ASi C-Module component change and associated PCB change. All drawings are accepted. Report Reference: 3031430rev120831 dated 15th January 2013. Description of the Change: 33 single and dual Solenoid modules; resistor value change. All drawings are accepted.
25th September 2014	Supplement 2: Report Reference: 3048459 dated 19th September 2014. Description of the Change: Updated standards to latest editions
15th September 2016	Supplement 3: Report Reference: RR203250 dated 14th September 2016. Description of the Change: Update certificate to latest directive. Updated standard EN 60079-0 to latest edition. Component and minor documentation updates.
26th June 2017	Supplement 4: Report Reference: 3061079 dated 22nd June 2017. Description of the Change: Update standards used for certification. Minor documentation updates. Rationalise model options.
05th January 2021	Supplement 5: Report Reference: RR225434 dated 04th January 2021. Description of the Change: Certificate transferred from FM Approvals Ltd., notified body no. 1725, to FM Approvals Europe Ltd., notified body no. 2809. EN IEC 60079-0 updated to 2018. EN 60079-18 updated to EN 60079-18:2015 +A1:2017. Name of Applicant changed to Neles USA Inc. dba StoneL. Minor documentation updates.

Blueprint Report

Neles USA Inc. dba StoneL (1000001486)

Class No 3611

Original Project I.D. 3031430

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Drawing No.	Revision Level	Drawing Title	Last Report
000139	D	MODEL DESIGNATIONS, AXIOM AMI	RR225434
105170	B	ENCLOSURE INFORMATION, AXIOM AMI	RR225434
105257	F	PRODUCT MARKING, AXIOM AMI	RR225434
105306	B	Axiom AX-AMI Series Electrical Options	3061079
105408	B	Axiom AMI Installation Manual	RR225434
200044	F	PCB SCHEMATIC, 93 MODULE CPU/MAU	3031430
200054	D	PCB SCHEMATIC, 94 MODULE MOTHER	08/17/2011
200062	C	PCB SCHEMATIC, IS SOLENOID	3031430
200081	C	Schematic, ASi (96)	04/26/2012
200082	C	Schematic, FF Mother Board 93	04/26/2012
200085	E	PCB SCHEMATIC, SENSOR	04/26/2012
200086	H	PCB SCHEMATIC, 33 MODULE	04/26/2012
200093	E	PCB SCHEMATIC, 44 MODULE	04/26/2012
200100	C	PCB SCHEMATIC, 95 INTERFACE	3031430
200103	C	PCB SCHEMATIC, 33 MODULE	04/26/2012
200104	B	PCB SCHEMATIC, UNIVERSAL DRIVER	04/26/2012
200153	B	Schematic, Axiom Namur, Dual Coil	3061079
200236	A	SCHEMATIC, AXIOM DEVICENET	3061079
200243	A	SCHEMATIC, AXIOM 97 MOTHERBOARD	3061079
414720	B	TERMINAL BLOCK	3031430
414722	A	Block, Terminal, 4 pt.	04/26/2012
414724	B	TERMINAL BLOCK	3031430
418074	D	FF, CPU/MAU Board, Unpopulated	3061079
418075	N	FF, CPU/MAU Board, Populated	3061079
418120	G	Board, Foundation Fieldbus 94, Mother, Unpopulated	3061079
418121	O	Board, Foundation Fieldbus 94, Mother, Populated	3061079
418197	E	Board, Axiom, Asi, unpopulated	3061079
418198	G	Board, Axiom, Asi, populated	3061079
418199	D	Board, Axiom, FF 93 Motherboard, unpopulated	3061079
418200	L	Board, Axiom, FF 93 Motherboard, populated	3061079
418206	G	Board, sensor board, axoim, unpopulated	3061079
418207	G	Board, sensor board, Axoim, populated	3061079
418208	J	Board, Axiom SST, low cost, unpopulated	3061079
418209	S	Board, Axiom SST, low cost, populated	3061079
418215	F	PCB, 44 UNPOPULATED	RR203250
418216	I	Board, Axiom Namur, populated	3061079
418219	D	Board, Axiom, Bus Interface, unpopulated	3061079
418220	F	Board, Axiom, Bus Interface, populated	3061079
418223	E	PCB, SWITCH PAD	04/26/2012
418226	E	Board, Axiom dual solenoid, SST, unpopulated	3061079
418227	J	Board, Axiom dual solenoid, SST, populated	3061079
418228	D	Board, Axiom dual solenoid, solenoid driver, unpopulated	3061079
418229	H	Board, Axiom dual solenoid, solenoid driver, populated	3061079
418264	D	Board, Membrane, Axiom, Expeditor & ASi	RR203250
418299	A	PCB, IS SOLENOID UNPOPULATED	3031430
418300	B	PCB, IS SOLENOID POPULATED	3031430
418314	C	Board, Axiom, Namur, Dual Coil, Unpopulated	3061079
418315	D	Board, Axiom, Namur, Dual Coil, Populated	3061079

418422	C	BOARD ASSEMBLY, 97 C-MODULE	3061079
418445	A	PCB, AXIOM DEVICENET 92	3061079
418446	D	BOARD ASSEMBLY, AXIOM DEVICENET 92	RR225434
418454	A	PCB, AXIOM 97 MOTHERBOARD	3061079
432029	A	ENCAPSULANT	3031430
434092	new	Isolation Inductor, ASi	04/26/2012
434218	A	Isolation Inductor, ASi Ext Addressing	04/26/2012
434219	A	Resistor, 9.1 Ohm, 5%, 1210	04/26/2012
434253	A	Connector, Board Stacker 0.705", 10 pin, 0.05" pitch	04/26/2012
434254	A	Connector, Board Stacker 0.425", 10 pin, 0.05" pitch	04/26/2012
434272	A	Fuse, 0.032A 5x20mm	04/26/2012
443014	B	SOLENOID	3031430
443022	D	SOLENOID	04/26/2012
443023	D	SOLENOID	04/26/2012
443025	B	Solenoid Valve, I.S. MAC36, 12VDC, 1/2W, W/ (MOD 7615)	04/26/2012
443026	D	SOLENOID	04/26/2012
443027	D	SOLENOID	04/26/2012
443029	B	Solenoid Valve, I.S. MAC36, 12VDC, 1/2W, MOD 7616 (Wide Temp)	04/26/2012
443030	D	SOLENOID	04/26/2012
443038	B	Solenoid Valve, MAC36, 24VDC, 1.8W Wide Temp (MOD. 7635)	04/26/2012
443044	A	SOLENOID VALVE 12VDC 1/2W NO PWM WIDE TEMP MAC35 MOD 8579	3061079
443045	A	SOLENOID VALVE 24VDC 1/2W NO PWM WIDE TEMP MAC35 MOD 8580	3061079
443046	A	SOLENOID VALVE 12VDC I.S. 1/2W WIDE TEMP MAC35 MOD 8581	3061079
443047	A	SOLENOID VALVE 12VDC I.S. 1/2W STD TEMP MOD 8582	3061079
443049	A	SOLENOID VALVE 12VDC 1/2W STD TEMP MAC35 NO PWM MOD 8625	3061079
443051	A	SOLENOID VALVE 24VDC 1/2W STD TEMP MAC35 WITH PWM MOD 8634	3061079