1. EU-TYPE EXAMINATION CERTIFICATE

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

3. **EU-Type Examination Certificate No:** **FM18ATEX0063X**

4. **Equipment or protective system: (Type Reference and Name)** **Stonel Axiom AN45S and ANX45S Series Valve Position Monitors**

5. **Name of Applicant:** **Valmet Flow Control Inc. (MN)**

6. **Address of Applicant** **26271 US Highway 59, Fergus Falls, Minnesota 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, notified body number 2809 in accordance with Article 17 of Directive 2014/34/EU of 26 February 2014, 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:

   PR450375 dated 13th November 2018

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 60079-11:2012, 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 EU-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.

Certificate issued by:

Digitally signed by Richard Zammitt
Location: Ireland
Foxit PDF Editor Version: 13.1.0

Certification Manager, FM Approvals Europe Ltd.

Date 02 July 2024

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

AN45S Series:

II 1 G Ex ia IIC T5 Ga Ta = -40°C to +80°C

II 1 G Ex ia IIC T6 Ga Ta = -40°C to +65°C

ANX45S Series:

II 1 G Ex ia IIC T5 Ga Ta = -40°C to +80°C

II 1 G Ex ia IIC T6 Ga Ta = -40°C to +65°C

13. **Description of Equipment or Protective System:**

General – The Axiom AN45S and ANX45S Series Valve Position Monitors are designed to be attached directly to various valve / actuator assemblies and to communicate and control its position within hazardous locations. The apparatus consists of an enclosure with 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 media being processed.
Construction - The enclosure consists of an aluminium base with polycarbonate (AN) or aluminium cover (AN or ANX). 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 optional circular pin type connectors (AN). Electric components inside the apparatus are encapsulated and enclosed within the enclosure and accessed by a tool removeable cover.
Ratings - The Axiom AN45S and ANX45S Series Valve Position Monitors rely on Intrinsic Safety and are intended for use with intrinsic safety barriers for installation into potentially explosive atmospheres. 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.
The IP66/IP67 rating is based upon the installation of the Turck minifast® and eurofast® male receptacles being mated with a Turck minifast or eurofast female cordset and the use of a tool secured Turck lokfast® guard.
AN45Sbcdefg-h. Valve Position Monitor.
When b = 9,
Energy Limitation Parameters:
Sensor: Ui = 22 Vdc, Ii = 120 mA, Ci = 3 nF, Li = 0 H, Pi = 0.4 W
Solenoid Junction Terminals: Ui = 28 Vdc, Ii = 120 mA, Ci = 0 F, Li = 0 H
When b = 1 or 2
Energy Limitation Parameters:
Sensor: Ui = 22 Vdc, Ii = 120 mA, Ci = 3 nF, Li = 0 H, Pi = 0.4 W
Solenoid: Ui = 28 Vdc, Ii = 120 mA, Ci = 3 nF, Li = 0 H, Pi = 0.84 W
b = Solenoid 9, 1 or 2
c = Override X, N, M, L, E, Y or G
d = Enclosure D or V.
e = Conduit Entries 02, 05, 08, 09, 10, 11, 13, 15, 18, 19, 20, 21 or 22
f = Visual Indication X, G, R, 1 or 2
g = Branding A or M
h = Options 'Special Unit Digits'
Note: 'Special Unit Digits' do not affect the integrity of the housing, the electrical safety, or the title plate

ANX45Sbcdefg-h. Valve Position Monitor.
When b = 9,
Energy Limitation Parameters:
Sensor: Ui = 22 Vdc, Ii = 120 mA, Ci = 3 nF, Li = 0 H, Pi = 0.4 W
Solenoid Junction Terminals: Ui = 28 Vdc, Ii = 120 mA, Ci = 0 F, Li = 0 H
When b = 1 or 2
Energy Limitation Parameters:
Sensor: Ui = 22 Vdc, Ii = 120 mA, Ci = 3 nF, Li = 0 H, Pi = 0.4 W
Solenoid: Ui = 28 Vdc, Ii = 120 mA, Ci = 3 nF, Li = 0 H, Pi = 0.84 W
b = Solenoid 9, 1 or 2
c = Override X, N, M, L, E, Y or G
d = Enclosure V or T.
e = Conduit Entries 02, 05, 08 or 09
f = Visual Indication X, G, R, 1 or 2
g = Branding A or M
h = Options 'Special Unit Digits'
Note: 'Special Unit Digits' do not affect the integrity of the housing, the electrical safety, or the title plate

14. **Specific Conditions of Use:**

1. Part of the enclosure may be constructed from plastic. To prevent the risk of electrostatic sparking the plastic surface should be cleaned only with a damp cloth.

2. The apparatus enclosure may contain aluminium 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.

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 EU-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 the Notified Body.

18. **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
15 November 2018	Original Issue.
19 April 2021	Supplement 1: Report Reference: PR455127 dated 18th April 2021. Description of the Change: Consolidation of listings, addition of ANX Series, Update to latest standards, Certificate reissued by FM Approvals Europe Ltd., notified body no. 2809 following transfer of technical file from FM Approvals Ltd., UK. Addition one Connector 18, Addition of Model 45S2
02 July 2024	Supplement 2: Report Reference: PR466332 dated 25 June 2024. Description of the Change(s): Changed Company name (RR235206), Revised product name (added "Stonel") and removed enclosure options (B, G, N, R, F or H), added option T (Stainless Steel enclosure), minor non-safety related drawing revisions.

ANNEX

AN45S

Description of Equipment:

AN45Sbcdefg-h. Valve Position Monitor
b = Solenoid, 9, 1 or 2
c = Override X, N, M, L, E, Y or G
d = Enclosure D, V, B, G, N, R, F, R, F or H.
e = Conduit Entries 02, 05, 08, 09, 10, 11, 13, 15, 18, 19, 20, 21, 22
f = Visual Indication X, G, R, 1 or 2
g = Branding A or M
h = Options 'Special Unit Digits'
Note: 'Special Unit Digits' do not affect the integrity of the housing, the electrical safety, or the title plate
Energy Limitation Parameters when b = 9
Sensor: 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
Energy Limitation Parameters when b = 1 or 2
Sensor: Ui = 22 Vdc, Ii = 120 mA, Pi = 0.4W, Ci = 3nF, Li = 0
Solenoid: Ui = 28 Vdc, Ii = 120 mA, Pi = 0.84W, Ci = 3nF, Li = 0

Specific Conditions of Use:

1. Part of the enclosure may be constructed from plastic. To prevent the risk of electrostatic sparking the plastic surface should 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.

ANX45S

Description of Equipment:

ANX45Sbcdefg-h. Valve Position Monitor
b = Solenoid 9, 1 or 2
c = Override X, N, M, L, E, Y or G
d = Enclosure V, G, R or H.
e = Conduit Entries 02, 05, 08, or 09
f = Visual Indication X, G, R, 1 or 2
g = Branding A or M
h = Options 'Special Unit Digits'
Note: 'Special Unit Digits' do not affect the integrity of the housing, the electrical safety, or the title plate
Energy Limitation Parameters when b = 9
Sensor: 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
Energy Limitation Parameters when b = 1 or 2
Sensor: Ui = 22 Vdc, Ii = 120 mA, Pi = 0.4W, Ci = 3nF, Li = 0

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Solenoid: Ui = 28 Vdc, Ii = 120 mA, Pi = 0.84W, Ci = 3nF, Li = 0

Specific Conditions of Use:

1. Part of the enclosure may be constructed from plastic. To prevent the risk of electrostatic sparking the plastic surface should 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.

Blueprint Report

Valmet Flow Control Inc. (MN) (1000001486)

Class No **3610**

Original Project I.D. ***3058456***

Certificate I.D. ***FM18ATEX0063X***

Drawing No.	Revision Level	Drawing Title	Last Report
000198	C	Model Description, Axiom AN Series, ATEX / IECEx Ex ia	PR466332
000226	B	MODEL DESC AXIOM ANX ATEX IECEx ia	PR466332
105395	D	Enclosure Information, Axiom AN Series	PR450375
105397	D	Electrical Information, Axiom AN Series	PR455127
105410	E	Installation Manual, IMO, Axiom AN Series	PR466332
105412	F	I.S. CONTROL, AXIOM, AN/ANX SERIES	PR466332
105413	C	Product Marking, Axiom AN Series, ATEX / IECEx	PR466332
105474	B	ENCLOSURE AXIOM ANX SERIES	PR466332
105476	B	PROD MARK AXIOM ANX SERIES ATEX IECEx	PR466332
105479	B	AXIOM ANX INSTALLATION, MAINTENANCE and OPERATING INSTRUCT	PR466332
110027	A	Anodizing Specification, Quartz, Axiom, JX	PR450375
110036	B	Paint Spec, Axiom Enclosure	PR450375
200253	D	SCHEMATIC, INTRINSICALLY SAFE STONEL SOLENOID	PR450375
200254	B	SCHEMATIC, AXIOM 45, SINGLE COIL	PR450375
200306	B	SCHEMATIC, AN45 NAMUR DUAL COIL	PR455127
418455	D	PCB INTRINSICALLY SAFE STONEL SOLENOID	PR450375
418456	I	BOARD ASSEMBLY INTRINSICALLY SAFE STONEL SOLENOID	PR450375
418478	C	PCB, AXIOM 45, NAMUR SINGLE COIL	PR450375
418479	D	BOARD ASSEMBLY, AXIOM 45, NAMUR SINGLE COIL	PR450375
418527	B	PCB, AXIOM 45, DUAL COIL	PR455127
418528	B	BOARD ASSEMBLY, AXIOM 45, DUAL COIL	PR455127
432038	B	Urethane potting, Epic Resins D9970 clear, mixed	PR450375
434381	H	COIL I.S. LOW COST WOUND	PR455127
434382	C	COIL I.S. LOW COST OVERMOLDED	PR450375
434397	B	CONNECTOR, MINI 9P MaLE 1/2 NPT SS CFMUS	PR455127
434398	B	CONNECTOR, MICRO 5P MALE 1/2 NPT SS CFMUS	PR450375
434408	A	CONNECTOR, MINI 4P MALE 1/2 NPT SS CFMUS	PR450375
434409	A	CONNECTOR, MINI 5P MALE 1/2 NPT SS CFMUS	PR450375
434410	A	CONNECTOR, MINI 6P MALE 1/2 NPT SS CFMUS	PR450375
434411	A	CONNECTOR, MINI 7P MALE 1/2 NPT SS CFMUS	PR450375
434412	A	CONNECTOR, MINI 8P MALE 1/2 NPT SS CFMUS	PR450375
434431	A	CONNECTOR, MICRO 8P MALE 1/2 NPT SS CFMUS	PR455127