CERTIFICATE OF CONFORMITY

1. **HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS**

2. **Certificate No:** **FM17CA0026X**

3. **Equipment:**
   (Type Reference and Name) **Stonel Quartz QX and QC Series Valve Position Monitor**

4. **Name of Listing Company:** **Valmet Flow Control Inc. (MN)**

5. **Address of Listing Company:** **26271 US Highway 59,**
   Fergus Falls, Minnesota 56537, USA

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

   3031039 dated 24th January 2008

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

   CSA C22.2 No. 0.4:2004 (R2013), CSA C22.2 No. 0.5:2016 (R2020), CSA C22.2 No. 25:1966 (R2014), CSA C22.2 No. 30:1986 (R2016), CSA C22.2 No. 94:1991 (R2011), CSA C22.2 No. 142:1987 (R2014), CSA C22.2 No. 213:1987 (R2013), CSA C22.2 No. 60079-0:2019, CSA C22.2 No. 60079-1:2016, CSA C22.2 No. 60079-31:2015, CSA C22.2 No. 60529:2005, CSA C22.2 No. 61010-1:2004

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:

    See Annex

11. The marking of the equipment shall include:

    See Annex

12. **Description of Equipment:**

Certificate issued by:

J.E. Marquedant
VP, Manager - Electrical Systems

15 April 2024
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

FM Approvals LLC. One Technology Way, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmapprovals.com www.fmapprovals.com

The Stonel Quartz Valve Position Monitor is a Flameproof and IP rated enclosure with sensing and communication electrical options mounted within. The monitor is designed to be attached to various valve/actuator assemblies to monitor and communicate a valve's position.

The enclosure consists of an aluminum or stainless-steel enclosure base with a tool securable aluminum or stainless-steel screw on/off cover allowing access to the internally mounted sensing and communication electrical options of various designs.

Electrical options include internally mounted "Mechanical" switches, "Dual Module" sensors, "Maxx-Guard" proximity sensors, P + F Namur sensors, Transmitter options and Potentiometers options.

- Mechanical switch options consist of multiple mechanical switches which are activated by a rotating shaft with adjustable plastic cams.
- The Dual Module sensors consist of two (top & bottom) solid-state switches which are activated by a rotating shaft with adjustable targets mounted within plastic cams.
- The Maxx-Guard proximity sensors consist of multiple reed switches which are activated by a rotating shaft with adjustable targets mounted within plastic cams. The PCBA and components are encapsulated.
- The P+F sensor models consist of multiple solid-state inductive proximity sensors which are activated by a rotating shaft with adjustable targets mounted within plastic cams.
- The Transmitter option "5O" and "7O" consist of a direct drive potentiometer wired to a PCB that creates a 4-20mA signal. The transmitter option can include additional switches/sensors by replacing the second digit "O" with a sensor option digit (example "5N" or "7N", etc…). Therefore the "transmitter" parameters (for "5" and "7") are listed separately from the additional switch/sensor parameters ("N" or any other sensor option).
- The Transmitter option "TO" consists of a solid-state sensing circuit that provides a 4-20mA signal. The transmitter option can include additional switches/sensors by replacing the second digit "O" with a sensor option digit (example "TR", etc…). Therefore the "transmitter" parameters (for "T") are listed separately from the additional switch/sensor parameters ("R" or any other sensor option).
- The Potentiometer option "BO" and "CO" consist of a direct drive potentiometer that provides a variable resistance signal. The potentiometer option can include additional switches/sensors by replacing the second digit "O" with a sensor option digit (example "BN", etc…). Therefore the "potentiometer" parameters (for "B") are listed separately from the additional switch/sensor parameters ("N" or any other sensor option).

Various junction options allow field wiring connections to related electrical and communication systems which enter the enclosure through a cable entry and connect to terminals of a terminal block.

The monitor is available with varied configurations for the external mounting/rotating shaft connections and external visual indication options.

Branding option digits are applicable to the appropriate market outlet. Options digits are applied only when authorized special arrangements have been made.

See Annex for specific model information.

13. **Specific Conditions of Use:**

1. Consult the manufacturer if dimensional information on the flameproof joints is necessary.
2. To minimize the risk of electrostatic sparking, the equipment shall be cleaned with a damp cloth.

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

This Certificate has been issued in accordance with FM Approvals Canadian Certification Scheme.

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
24 January 2008	Original Issue.
26 February 2017	Supplement 05 Report Reference: 2R1A7AE - RR208397 dated 26th February 2017. Description of the Change: Introduction of alternate construction die-cast aluminum base, introduction of alternate construction die-cast aluminum short cover, consolidation of instruction sheets into a single manual, revisions to function assemblies not affecting explosionproof or dust protection.
29 November 2017	Supplement 06 Report Reference: 2R1A7AE - RR212001 dated 29th November 2017. Description of the Change: Addition of Transmitter "T__" options. Revision to "35" function assembly.
9 October 2019	Supplement 07 Report Reference: 2R1A7AE - PR452032 dated 9th October 2019 Description of the Change: Addition of “2B” function option. Revision to “96”, “97”, “86”, and “87” function options. Added “QC” section. Addition of IP66, IP67. Standards updates, Added X condition. Removed “2X”, “5X”, “7X”, “BX” and “CX” function options.
21 April 2020	Supplement 08 Report Reference: RR222856 dated 21st April 2020. Description of the Change: Company name change.
23 January 2024	Supplement 9: Report Reference: PR465197 dated 23 January 2024. Description of the Change(s): Documentation, model code updates, name change. Conducted Dust ignition protection certification, updated markings to add Dust ratings.
15 April 2024	Supplement 10: Report Reference: RR235861 dated 15 April 2024. Description of the Change(s): Corrected model code / temperature range options on Division 2 rated QX product.

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ANNEX

QCabcdefg. Valve Position Monitor.

Equipment Ratings:

Explosionproof for Class I, Division 1, Groups BCD, T5
Dust-Ignitionproof for Class II / III, Division 1, Groups EFG, T5
Flameproof for Ex db IIC T5 Gb

Markings:

Class I Division 1 Groups BCD T5 Ta = -50°C to +80°C;
Class II, III Division 1 Groups EFG T5 Ta = -50°C to +80°C;
Ex db IIC T5 Gb Ta = -50°C to +80°C;
IP66, IP67

Description of Equipment:

Model Code:
a = Function 35, 45, 2V, 4V, 2W, or 4W
b = Enclosure E, S, B, or J.
c = Junction 03.
d = Shaft output X, S, N, or H.
e = Visual Indicator R, G, C, 1, 2, 3, 4, 5, X, N, D, A, S, T, U, V, W or 0.
f = Branding A or M.
g = Options: A dash symbol (-) followed with up to 5 alpha or numeric identification digits after model number for special and marketing purposes. Option digits are not normally applied.
Note: ‘’Options’ do not affect the integrity of the housing, the electrical safety, or the title plate.
See also FM17CA0072X for series QC with type of protection “i”.

QXabcdefg. Valve Position Monitor.

Equipment Ratings:

Explosionproof for Class I, Division 1, Groups BCD, T5
Dust-Ignitionproof for Class II / III, Division 1, Groups EFG, T5
Flameproof for Ex db IIC T5 Gb
Dust-Ignition protection for Ex tb IIIC T100°C Db

Markings:

Class I Division 1 Groups BCD T5 Ta = -40°C to +80°C;
Class II, III Division 1 Groups EFG T5 Ta = -40°C to +80°C;
Ex db IIC T5 Gb Ta = -40°C to +80°C;
Ex tb IIIC T100°C Db Ta = -40°C to +80°C;
Type 4, 4X, 6, IP66, IP67

Description of Equipment:

Model Code:
a = Function 2V, 4V, 5V, 6V, 7V, BV, CV, TV, 2W, 4W, 5W, 6W, 7W, BW, CW, TW, or 14.
b = Enclosure E, S, B, or J.
c = Junction 02 or 03.
d = Shaft output X, S, N, or H.
e = Visual Indicator R, G, C, 1, 2, 3, 4, 5, X, N, D, A, S, T, U, V, W or 0.
f = Branding A or M.
g = Options: A dash symbol (-) followed with up to 5 alpha or numeric identification digits after model number for special and marketing purposes. Option digits are not normally applied.
Note: 'Options' do not affect the integrity of the housing, the electrical safety, or the title plate.

QXabcdefg. Valve Position Monitor.

Equipment Ratings:

Explosionproof for Class I, Division 1, Groups BCD, T5
Dust-Ignitionproof for Class II / III, Division 1, Groups EFG, T5
Nonincendive for Class I / II / III, Division 2, Groups ABCDEFG, T5
Flameproof for Ex db IIC T5 Gb
Dust-Ignition protection for Ex tb IIIC T100°C Db

Markings:

Class I Division 1 Groups BCD T5 Ta = -40°C to +80°C;
Class II, III Division 1 Groups EFG T5 Ta = -40°C to +80°C;
Class I, II, III Division 2 Groups ABCDEFG T5 Ta = -40°C to +80°C;
Ex db IIC T5 Gb Ta = -40°C to +80°C;
Ex tb IIIC T100°C Db Ta = -40°C to +80°C;
Type 4, 4X, 6, IP66, IP67

Description of Equipment:

*When a = 2E, 4E, 5E, 7E, BE, CE, 2F, 4F, 5F, 7F, BF, CF, or TF, Ta = -25°C to +70°C
When a = 2B, 2N, 4N, 5N, 6N, 7N, BN, CN, or TN, Ta = -25°C to +80°C
Model Code:
a = Function 2A, 4A, 5A, 7A, BA, CA, TA, 2B, 2J, 4J, 5J, 7J, BJ, CJ, 2M, 4M, 5M, 7M, BM, CM, 2N, 4N, 5N, 6N, 7N, BN, CN, TN, 2P, 4P, 5P, 7P, BP, CP, 2L, 4L, 5L, 7L, BL, CL, 2H, 4H, 5H, 7H, BH,CH, 2S, 4S, 5S, 7S, BS, CS, 2G, 4G,

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5G, 7G, BG, CG, 2E, 4E, 5E, 7E, BE, CE, TE, 2F, 4F, 5F, 7F, BF, CF, TF, 35, 5T, 7T, BT, CT, TT, 45, 5R, 7R, BR, CR, TR, 92, 93, 96, 97, 5O, 7O, TO, BO, CO, 4X or 6X.
b = Enclosure E, S, B or J.
c = Junction 02 or 03.
d = Shaft output X, S, N, or H.
e = Visual Indicator R, G, C, 1, 2, 3, 4, 5, X, N, D, A, S, T, U, V, W or 0.
f = Branding A or M.
g = Options: A dash symbol (-) followed with up to 5 alpha or numeric identification digits after model number for special and marketing purposes. Option digits are not normally applied.
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