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:** **FM08ATEX0008X**

4. **Equipment or protective system: (Type Reference and Name)** **Stonel Quartz QX and QC Series Valve Position Monitor**

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

6. **Address of Applicant** **26271 US Highway 59, Fergus Falls, Minnesota 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 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:

   3031681EC dated 8th February 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 60079-1:2014, EN 60079-31:2014, EN 60529:1991+A1:2000+A2:2013, EN ISO 80079-36:2016, EN ISO 80079-37:2016

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.

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

    Epsilon X accompanied by additional marking defined in the Annex.

Certificate issued by:

Digitally signed by Richard Zammitt
Location: Ireland
Foxit PDF Editor Version: 13.0.1

Certification Manager, FM Approvals Europe Ltd. Date 25 April 2024

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

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

14. **Specific Conditions of Use:**

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

3. Using the box provided on the nameplate, the user shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.

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. Documentation is maintained under project ID: 2R1A7.AE.

18. **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
15 February 2008	Original Issue.
23 July 2008 to 22 April 2020	Supplement 1 to 10: See certificate dated 22nd of April 2020
20 April 2022	Supplement 11: Report reference – RR231394 dated 5th April 2022. Description of the Change: Remove Quartz SQ Imtex listing, minor drawing revisions, update to last version of the certificate and a Standards Gap Analysis was performed and the following standards were updated: EN 13463-1:2009 to EN ISO 80079-36:2016+COR1:2019 and EN 13463-5:2011 to EN ISO 80079-37:2016. As part of the review the non-electrical markings were updated from "c" to "h" and moved after the db.
30 January 2024	Supplement 12: Report Reference: PR465197 dated 23rd January 2024. Description of the Change(s): Removal of obsolete option codes, Correction of typos, Documentation and model code updates, Company Name changed, added Standard EN 60079-31. Conducted Dust ignition protection certification, updated markings to add Dust ratings.

Date	Description
25 April 2024	Supplement 13: Report Reference: RR235861 dated 15 April 2024. Description of the Changes: Documentation and option code updates.

ANNEX

QXabcdefg Valve Position Monitor

Markings:

II 2 G Ex db h IIC T5 Gb Ta = -40°C to +80°C;
II 2 G Ex db h IIC T5 Gb Ta = -25°C to +80°C; (_B and_N sensors)
II 2 D Ex tb h IIIC T100°C Db Ta = -40°C to +80°C;
II 2 D Ex tb h IIIC T100°C Db Ta = -25°C to +80°C; (_B and _N sensors)
II 2 G Ex db h IIC T6 Gb Ta = -40°C to +65°C;
II 2 G Ex db h IIC T6 Gb Ta = -25°C to +70°C; (_E and _F sensors)
II 2 G Ex db h IIC T6 Gb Ta = -25°C to +65°C; (_B and_N sensors)
II 2 D Ex tb h IIIC T85°C Db Ta = -25°C to +70°C; (_E and_F sensors)

Description of Equipment:

The enclosure is rated IP66, IP67.

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, 2V, 4V, 5V, 6V, 7V, BV, CV, TV, 2W, 4W, 5W, 6W, 7W, BW, CW, TW, 14, 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, 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, 6X.
b = Enclosure K, N, R, or T.
c = Junction 02, 03, 05 or 06.
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 FM10ATEX0039X for series QX with type of protection "i".

QCabcdefg Valve Position Monitor

Markings:

II 2 G Ex db h IIC T5 Gb Ta = -55°C to +80°C;
II 2 G Ex db h IIC T6 Gb Ta = -55°C to +65°C;

Description of Equipment:

The enclosure is rated IP66.

Model Code:
a = Function 2V, 4V, 2W, 4W, 35, or 45.
b = Enclosure K, N, R, or T.
c = Junction 03 or 06.
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 FM10ATEX0039X for series QC with type of protection "i".

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Blueprint Report

Valmet Flow Control Inc. (MN) (1000001486)

Class No 3615

Original Project I.D. 2R1A7AE

Certificate I.D. FM08ATEX0008X

Drawing No.	Revision Level	Drawing Title	Last Report
000169	**I**	**Model Description, Quartz QX series, ATEX, IECEx Ex d**	**RR235861**
000220	**D**	**Model Description, Quartz QC series, ATEX, IECEx Ex d**	**RR235861**
105026	**J**	**Electrical Information, Quartz QX Series**	**RR235861**
105180	H	Enclosure Information, Quartz QX series, M20	PR465197
105221	K	Product Marking, Quartz QX series, ATEX Ex d	PR465197
105223	B	Hazardous Location Assessment, Quartz QX series	RR235861
105406	G	IOM - QUARTZ SERIES	PR465197
105478	C	Product Marking, Quartz QC Series, ATEX IECEx Ex d Ex i	PR465197
110019	**F**	**Epoxy Paint Spec, Quartz, Silver**	**RR235861**
110027	A	Anodizing Specification, Quartz QX series	3031681
200011	D	Schematic, 4-20 mA transmitter, Qtz	3031681
200022	G	Schematic, SST (33), Dual Sensor	3031681
200031	D	Schematic, SST sensor, green & red	3031681
200037	E	Schematic, Dual Sensor, Daughter	3031681
200043	E	Schematic, FF Mother Board 93	3037261
200044	F	Schematic, FF CPU/MAU Board	3031681
200047	A	Schematic, DPDT	3031681
200134	A	Schematic,Dual module,Namur, Ext. Range	3031681
200219	C	Schematic, 45 Dual Module, Namur	3055582
200220	D	Schematic, 35 Dual Module, SST	RR211999
200252	C	Schematic, 92 Dual Module, Devicenet	RR208397
200270	B	Quartz QX Series - Transmitter Schematic	RR211999
200280	A	SCHEMATIC, DUAL MODULE 96/97 ASI	PR452032
200320	**A**	**SCHEMATIC, QUARTZ, REED SWITCH DUAL MODULE**	**RR235861**
407179	**A**	**O-RING, 105MM ID X 2.5MM CS LOW TEMP**	**RR235861**
407180	**A**	**O-RING, 0.239 ID X 0.070 CS SZ010 LOW TEMP**	**RR235861**
407182	A	O-RING 0.239 ID X 0.070 CS SZ010 EX	PR465197
407189	A	O-RING 105MM ID X 2.5MM CS EX	PR465197
412001	A	Switch, Micro, V3, SPDT "V" silver Mechanical	3031681
412016	A	Switch,P&F namur,NJ2-V3-N-V5,w/solder posts,"N"	3031681
412018	A	Switch, DPDT Double Break, 88-104	3031681
412021	A	Switch,bare reed,SPST,Amperex R146IT	3031681
412041	A	Sensor,P&F namur,NBB2-V3-EO-V5,w/solder posts,"E"	3031681
412042	A	Sensor,P&F namur,NBB2-V3-E2-V5,w/solder posts,"F"	3031681
412059	**G**	**PCB Assembly, SPST "P" Maxx-Guard**	**RR235861**
412060	**E**	**Circuit Board Coplete From Suupplier For 4120**	**RR235861**
412061	**H**	**PCB Assembly, SPST "L" red Maxx-Guard**	**RR235861**
412062	**H**	**PCB Assembly, SPST "L" green Maxx-Guard**	**RR235861**
412068	**H**	**Switch,PCB assy,"H"**	**RR235861**
412069	**L**	**Switch,PCB assy,red "S"**	**RR235861**
412070	**L**	**Switch,PCB assy,grn "S"**	**RR235861**
412088	A	Switch,bare reed,SPDT,Hermetic HSR-V933	3031681
412145	B	Sensor, Namur, P&F "A" Sensor	3031681
412150	A	Switch, SPDT, Low Power, 1 Amp Max	3031681
412154	**F**	**Switch, Board Assy., "G"**	**RR235861**
412157	A	Switch, SAIA-Burgess X3M3, SPDT "W", Gold contacts	3031681
412170	**D**	**Switch,PCB assy,"M"**	**RR235861**
412177	**A**	**SENSOR B P-F BOLT PEPPERL FUCHS**	**RR235861**
412179	**B**	**Switch, SPDT, 60W, 1 Amp max**	**RR235861**
414178	C	Block, Terminal, Black, 6 & 12 Pole	3050368
414716	A	Block, Terminal, Weidmuller, 6 Point	3031681
414719	B	Block, Terminal, 12 point PCB mount, Beau	3031681
414859	**A**	**Terminal Block, PCB, Weidmuller, 12 Point**	**RR235861**
418007	G	Transmitter board 4-20 (PHOENIX) 1/7/16 XQ	RR222856
418022	**B**	**PCB, Unpopulated, Maxx-Guard switch**	**RR235861**
418025	S	Board,Dual Module,SST,Populated	PR452032

418026	R	Board,Dual Module,Namur,Populated	PR452032
418027	I	Board, Unpopulated, SST Module	RR208397
418028	I	Board, Unpopulated, Namur Module	RR208397
418033	**C**	**Board,SST sensor,unpopulated**	**RR235861**
418034-35	**M**	**Board,SST sensor,populated,green & red**	**RR235861**
418057	H	Board, Daughter, Dual Sensor, Unpopulated	RR208397
418059	O	Board, Daughter, Dual Sensor, Populated	PR452032
418064	B	Board,DPDT,unpopulated	3031681
418068	C	Board, Unpopulated, 4-20mA Transmitter	RR222856
418072	G	Foundation Fieldbus, Unpopulated Brd.	RR208397
418073	S	Foundation Fieldbus, Populated Brd.,Mother 93	RR208397
418074	D	FF, CPU/MAU Board, Unpopulated	RR208397
418075	N	FF, CPU/MAU Board, Populated	RR208397
418412	C	Board, 45 Dual Module, Unpopulated	3055582
418413	C	Board, 45 Dual Module, Populated	3055582
418415	D	Board, 35 Dual Module, Unpopulated	RR211999
418416	D	Board, 35 Dual Module, Populated	RR211999
418442	B	Quartz QX Series - Transmitter Option	RR211999
418443	C	Quartz QX Series - Transmitter Option	RR222856
418470	C	Board, 92 Dual Module, Unpopulated	RR208397
418471	**E**	**Board, 92 Dual Module, Populated**	**RR235861**
418502	A	PCB 96/97 DUAL MODULE	PR452032
418503	B	BOARD ASSEMBLY 96 DUAL MODULE	RR222856
418513	A	BOARD ASSEMBLY 97 DUAL MODULE	PR452032
418543	**A**	**PRINTED CIRCUIT BOARD, QUARTZ,REED SWITCH DUAL MODULE**	**RR235861**
418544	**A**	**BOARD ASSEMBLY, QUARTZ, G REED SWITCH DUAL MODULE**	**RR235861**
418545	**A**	**BOARD ASSEMBLY, QUARTZ, S REED SWITCH DUAL MODULE**	**RR235861**
418546	**A**	**BOARD ASSEMBLY, QUARTZ, H REED SWITCH DUAL MODULE**	**RR235861**
418547	**A**	**BOARD ASSEMBLY, QUARTZ, M REED SWITCH DUAL MODULE**	**RR235861**
422004	B	Potentiometer,Spectrol,10K,5%tol,.25%lin	RR208397
422020	A	Potentiometer,JDK,10K,10%tol,.1%lin	3031681
432022	A	Dow Corning, Sylgard, 170A/170B mixed	3031681
432029	A	Urethane potting, Conathane EN-14 black, mixed	3031681
432038	B	Urethane potting, Epic Resins D9970 clear, mixed	3055582
434365	C	Block, Terminal , Sauro, 8 Pt, Hoz	PR452032
434366	C	Block, Terminal , Sauro, 10 Pt, Hoz	PR452032