



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: FM10ATEX0039X

4. Equipment or protective system:
(Type Reference and Name) Stonel Quartz QN, QX and QC 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, 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:

3039143EC dated 17th November 2010

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.

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



See Annex

Certificate issued by:

Digitally signed
by Richard
Zammit
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 an 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 polymer or 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 "Dual Module" Namur sensors, "Maxx-Guard" proximity sensors, P + F Namur sensors, Transmitter options and Potentiometers options.

- 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 Namur "_N" proximity models consist of multiple solid-state inductive proximity sensors (P + F NJ2-V3-N-V5, PTB00ATEX2032X) which are activated by a rotating shaft with adjustable targets mounted within plastic cams.
- The Namur "_A" proximity models consist of multiple solid-state inductive proximity sensors (P + F NJ2-12GK-SN, PTB00ATEX2049X) which are activated by a rotating shaft with adjustable targets mounted within plastic cams.
- The Namur "_B" proximity models consist of multiple solid-state inductive proximity sensors (P + F NJ5-30GK-S1N, PTB00ATEX2049X) 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.

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See Annex for specific model information.

14. Specific Conditions of Use:

1. Parts of the enclosure are non-conducting and may generate an ignition-capable level of electrostatic charge under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions which might cause a build up of electrostatic charge on non-conducting surfaces. Additionally, cleaning of the equipment should be done only with a damp cloth.
2. When installed within a EPL Ga location, the aluminium alloy enclosure shall be installed in such a manner as to prevent the possibility of sparks resulting from friction or impact.
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.

18. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
25 November 2010	Original Issue.
4 June 2013	<u>Supplement 1:</u> Report Reference: Report 3039143rev130430 dated 28 th May 2013. Description of the Change: Change to model code structure adding Chinese Visual Indicator digits. Minor documentation change.

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Date	Description
11 July 2014	<p><u>Supplement 2:</u> Report Reference: Report 3048436 dated 01st July 2014. Description of the Change:</p> <ul style="list-style-type: none">• The following function options have been added: 5O,7O,5J,7J,5M,7M,5N,7N,5A,7A,54, and 74• Added function option 6N• Added enclosure options Z, T, Q, and N• Updated Temperature Class to T6• Updated entity parameters for _N and _A options to match P+F ATEX Certificates• Removed branding option "N"• Added Model "QX"• Updated editions of EN 60079-0 and EN 60529
22 February 2016	<p><u>Supplement 3:</u> Report Reference: 3055582 dated 19th February 2016. Description of the Change:</p> <ul style="list-style-type: none">• Update Standards• Various revisions to the product• Update ambient temperature ratings• Consolidate model options and add new module options.
15 May 2017	<p><u>Supplement 4:</u> Report Reference: RR208761 dated 11th May 2017. Description of the Change:</p> <ol style="list-style-type: none">1. Reorganized and clarified model code.2. Updated standards used for certification.3. Added Specific Condition of Use 3.4. Added reference to FM08ATEX0008X, covering protection concept 'd', in section 13.5. Updated certificate to EU format.
14 August 2018	<p><u>Supplement 5:</u> Report Reference: 3064023 dated 31st July 2018. Description of the Change: Added sensor module option "T_".</p>
23 October 2019	<p><u>Supplement 6:</u> Report reference - PR452032 dated 09th October 2019. Description of the Change: Addition of "2B" function option. Added "QC" section. Addition of IP66. Updated to edition EN IEC 60079-0:2018 standard. Changed Notified Body information and number, now 2809. "5_" and "7_" function option parameters changes. Updated documentation.</p>
22 April 2020	<p><u>Supplement 7:</u> Report reference – RR222856 dated 21st April 2020. Description of the Change: Company name change.</p>

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Date	Description
20 April 2022	<p><u>Supplement 8:</u> Report reference – RR231394 dated 5th April 2022. Description of the Change: Document updates and the 2nd Specific Condition of Use was update to read “EPL Ga” location instead of Zone 0 locations.</p>
25 April 2024	<p><u>Supplement 9:</u> Report Reference: RR235861 dated 15 April 2024. Description of the Change(s): Documentation and option code updates. Company name change. Revised description to align with FM08ATEX0008X. Removed redundant table in QN model.</p>

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ANNEX

QCabcdef-g.Valve Position Monitor.

Markings:



II 1 G Ex ia IIC T6...T5 Ga Ta*

Description of Equipment:

The enclosure is rated to IP66.

Model Code:

a = Function: 45

b= Enclosure: K, N, R or T

c= Junction: 03 or 06

d= Shaft Output: X, S, N or H

e= Visual Indication: X, G, R, C, 1, 2, 3, 4, 5, 0, N, D, A, S, T, U, V or W

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.

*When a = 45

For T5 Ta* = -55°C to +80°C; For T6 Ta* = -55°C to +65°C

Energy Limitation Parameters:

Sensor Module: Ui = 22V, Ii = 120 mA, Pi = 0.4W, Ci = 3 nF, Li = 0 H

Solenoid Connection Terminals: Ui = 30V, Ii = 120mA

See also FM08ATEX0008X for series QC with type of protection "d".

QNabcdef-g.Valve Position Monitor.

Markings:



II 1 G Ex ia IIC T6...T1 Ga Ta*

Description of Equipment:

The enclosure is rated to IP66 and IP67.

Model Code:

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a = Function: 2J, 4J, 5J, 7J, BJ, CJ, 2M, 4M, 5M, 7M, BM, CM, 5O, 7O, TO, BO, CO, 2N, 4N, 5N, 6N, 7N, TN, BN, CN, 2A, 4A, 5A, 7A, TA, BA, CA, 2B, 4B, 5R, 7R, TR, BR or CR

b= Enclosure: D, R, A, K, T, N, Z, or Q

c= Junction: 02, 03, 05, or 06

d= Shaft Output: X, S, N or H

e= Visual Indication: X, G, R, C, 1, 2, 3, 4, 5, 0, N, D, A, S, T, U, V or W

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.

*When a = 5O, 7O

For T4, Ta = -40°C to +80°C

Entity Limitation Parameters: Ui = 30 Vdc, Ii = 100 mA, Ci = 66 nF, Li = 0 H, Pi = 0.75 W

*When a = TO

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Transmitter: Ui = 30 Vdc, Ii = 100 mA, Ci = 3 nF, Li = 0 H, Pi = 0.75 W

Solenoid Connection Terminals: Ui = 30 Vdc, Ii = 120 mA

*When a = BO, CO

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters: Ui = 26 V, Ii = 14 mA, Pi = 50 mW, Ci = 0 nF, Li = 0 mH

*When a = 2J, 4J, 2M, 4M

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Switch/Sensor: Ui = 30 Vdc, Ii = 100 mA, Ci = 66 nF, Li = 0.8 mH, Pi = 2.0 W

*When a = 5J, 7J, 5M, 7M

For T4, Ta = -40°C to +80°C

Energy Limitation Parameters:

Switch/Sensor: Ui = 30 Vdc, Ii = 100 mA, Ci = 66 nF, Li = 0.8 mH, Pi = 2.0 W

Transmitter: Ui = 30 Vdc, Ii = 100 mA, Ci = 66 nF, Li = 0 H, Pi = 0.75 W

*When a = BJ, CJ, BM, CM

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Switch/Sensor: Ui = 30 Vdc, Ii = 100 mA, Ci = 66 nF, Li = 0.8 mH, Pi = 2.0 W

Potentiometer: Ui = 26 Vdc, Ii = 14 mA, Ci = 0 nF, Li = 0 mH, Pi = 50mW

*When a = 4B

For T5 Ta = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Sensor Module: Ui = 22V, Ii = 120 mA, Pi = 0.4W, Ci = 3 nF, Li = 0 mH

Solenoid Connection Terminals: Ui = 30V, Ii = 120mA

*When a = 5R, 7R

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For T4, Ta = -40°C to +80°C

Energy Limitation Parameters:

Sensor Module: Ui = 22V, Ii = 120 mA, Pi = 0.4W, Ci = 3 nF, Li = 0 mH

Solenoid Connection Terminals: Ui = 30V, Ii = 120mA

Transmitter: Ui = 30 Vdc, Ii = 100 mA, Ci = 66 nF, Li = 0 H, Pi = 0.75 W

*When a = TR

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Sensor Module: Ui = 22Vdc, Ii = 120 mA, Pi = 0.4W, Ci = 3 nF, Li = 0 mH

Solenoid Connection Terminals: Ui = 30V, Ii = 120 mA

Transmitter: Ui = 30 Vdc, Ii = 100 mA, Ci = 3 nF, Li = 0 H, Pi = 0.75 W

Solenoid Connection Terminals: Ui = 30V, Ii = 120 mA

*When a = BR, CR

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Sensor Module: Ui = 22V, Ii = 120 mA, Pi = 0.4W, Ci = 3 nF, Li = 0 mH

Solenoid Connection Terminals: Ui = 30V, Ii = 120mA

Transmitter: Ui = 26 Vdc, Ii = 14 mA, Ci = 0 nF, Li = 0 mH, Pi = 50mW

* When a = 2N, 4N, 6N

For T6 Ta* =	For T5, Ta* =	For T4...T1, Ta* =	Ui V	Ii mA	Pi mW	Ci nF	Li mH
-25°C to +56°C	-25°C to +68°C	-25°C to +80°C	16	25	34	40	0.05
-25°C to +49°C	-25°C to +61°C	-25°C to +80°C	16	25	64	40	0.05
-25°C to +28°C	-25°C to +40°C	-25°C to +68°C	16	52	169	40	0.05
-25°C to +13°C	-25°C to +25°C	-25°C to +53°C	16	76	242	40	0.05

* When a = 5N, 7N

Switch/Sensor

For T4...T1, Ta* =	Ui V	Ii mA	Pi mW	Ci nF	Li mH
-25°C to +80°C	16	25	34	40	0.05
-25°C to +80°C	16	25	64	40	0.05
-25°C to +68°C	16	52	169	40	0.05
-25°C to +53°C	16	76	242	40	0.05

Transmitter; Ui = 30Vdc, Ii = 100 mA, Ci = 66 nF, Li = 0 H, Pi = 0.75 W

* When a = TN

Switch/Sensor:

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For T6 Ta*= -25°C to +56°C	For T5, Ta*= -25°C to +68°C	For T4...T1, Ta*= -25°C to +80°C	Ui V 16	Ii mA 25	Pi mW 34	Ci nF 40	Li mH 0.05
-25°C to +49°C	-25°C to +61°C	-25°C to +80°C	16	25	64	40	0.05
-25°C to +28°C	-25°C to +40°C	-25°C to +68°C	16	52	169	40	0.05
-25°C to +13°C	-25°C to +25°C	-25°C to +53°C	16	76	242	40	0.05

Transmitter: $U_i = 30$ Vdc, $I_i = 100$ mA, $C_i = 3$ nF, $L_i = 0$ H, $P_i = 0.75$ W

Solenoid Connection Terminals: $U_i = 30$ Vdc, $I_i = 120$ mA

* When a = BN, CN
Switch/Sensor:

For T6 Ta*= -25°C to +56°C	For T5, Ta*= -25°C to +68°C	For T4...T1, Ta*= -25°C to +80°C	Ui V 16	Ii mA 25	Pi mW 34	Ci nF 40	Li mH 0.05
-25°C to +49°C	-25°C to +61°C	-25°C to +80°C	16	25	64	40	0.05
-25°C to +28°C	-25°C to +40°C	-25°C to +68°C	16	52	169	40	0.05
-25°C to +13°C	-25°C to +25°C	-25°C to +53°C	16	76	242	40	0.05

Potentiometer; $U_i = 26$ Vdc, $I_i = 14$ mA, $C_i = 0$ nF, $L_i = 0$ mH, $P_i = 50$ mW

* When a = 2A, 4A

For T6 Ta*= -40°C to +57°C	For T5, Ta*= -40°C to +69°C	For T4...T1, Ta*= -40°C to +80°C	Ui V 16	Ii mA 25	Pi mW 34	Ci nF 50	Li mH 0.15
-40°C to +52°C	-40°C to +64°C	-40°C to +80°C	16	25	64	50	0.15
-40°C to +34°C	-40°C to +46°C	-40°C to +74°C	16	52	169	50	0.15
-40°C to +22°C	-40°C to +34°C	-40°C to +61°C	16	76	242	50	0.15

* When a = 5A, 7A
Switch/Sensor:

For T4...T1, Ta*= -40°C to +80°C	Ui V 16	Ii mA 25	Pi mW 34	Ci nF 50	Li mH 0.15
-40°C to +80°C	16	25	64	50	0.15
-40°C to +74°C	16	52	169	50	0.15
-40°C to +61°C	16	76	242	50	0.15

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Transmitter; $U_i = 30\text{Vdc}$, $I_i = 100\text{ mA}$, $C_i = 66\text{ nF}$, $L_i = 0\text{ H}$, $P_i = 0.75\text{ W}$

* When a = TA
Switch/Sensor:

For T6 Ta*= -40°C to +57°C	For T5, Ta*= -40°C to +69°C	For T4...T1, Ta*= -40°C to +80°C	U _i V 16	I _i mA 25	P _i mW 34	C _i nF 50	L _i mH 0.15
-40°C to +52°C	-40°C to +64°C	-40°C to +80°C	16	25	64	50	0.15
-40°C to +34°C	-40°C to +46°C	-40°C to +74°C	16	52	169	50	0.15
-40°C to +22°C	-40°C to +34°C	-40°C to +61°C	16	76	242	50	0.15

Transmitter: $U_i = 30\text{ Vdc}$, $I_i = 100\text{ mA}$, $C_i = 3\text{ nF}$, $L_i = 0\text{ H}$, $P_i = 0.75\text{ W}$

Solenoid Connection Terminals: $U_i = 30\text{ Vdc}$, $I_i = 120\text{ mA}$

* When a = BA, CA
Switch/Sensor:

For T6 Ta*= -40°C to +57°C	For T5, Ta*= -40°C to +69°C	For T4...T1, Ta*= -40°C to +80°C	U _i V 16	I _i mA 25	P _i mW 34	C _i nF 50	L _i mH 0.15
-40°C to +52°C	-40°C to +64°C	-40°C to +80°C	16	25	64	50	0.15
-40°C to +34°C	-40°C to +46°C	-40°C to +74°C	16	52	169	50	0.15
-40°C to +22°C	-40°C to +34°C	-40°C to +61°C	16	76	242	50	0.15

Potentiometer; $U_i = 26\text{Vdc}$, $I_i = 14\text{ mA}$, $C_i = 0\text{ nF}$, $L_i = 0\text{ mH}$, $P_i = 50\text{mW}$

*When a = 2B

For T6 Ta*= -25°C to +57°C	For T5, Ta*= -25°C to +69°C	For T4...T1, Ta*= -25°C to +80°C	U _i V 16	I _i mA 25	P _i mW 34	C _i nF 100	L _i mH 0.2
-25°C to +52°C	-25°C to +64°C	-25°C to +80°C	16	25	64	100	0.2
-25°C to +34°C	-25°C to +46°C	-25°C to +74°C	16	52	169	100	0.2
-25°C to +22°C	-25°C to +34°C	-25°C to +61°C	16	76	242	100	0.2

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QXabcdef-g.Valve Position Monitor.

Markings:



II 1 G Ex ia IIC T6...T1 Ga Ta*

Description of Equipment:

The enclosure is rated to IP66 and IP67.

Model Code:

a = Function: 2J, 4J, 5J, 7J, BJ, CJ, 2M, 4M, 5M, 7M, BM, CM, 5O, 7O, TO, BO, CO, 2N, 4N, 5N, 6N, 7N, TN, BN, CN, 2A, 4A, 5A, 7A, TA, BA, CA, 2B, 4B, 5B, 7B, TR, BR or CR

b= Enclosure: R, T, K or N

c= Junction: 02, 03, 05, or 06

d= Shaft Output: X, S, N or H

e= Visual Indication: X, G, R, C, 1, 2, 3, 4, 5, 0, N, D, A, S, T, U, V or W

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.

*When a = 5O, 7O

For T4, Ta = -40°C to +80°C

Entity Limitation Parameters: Ui = 30 Vdc, Ii = 100 mA, Ci = 66 nF, Li = 0 H, Pi = 0.75 W

*When a = TO

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Transmitter: Ui = 30 Vdc, Ii = 100 mA, Ci = 3 nF, Li = 0 H, Pi = 0.75 W

Solenoid Connection Terminals: Ui = 30 Vdc, Ii = 120 mA

*When a = BO, CO

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters: Ui = 26 V, Ii = 14 mA, Pi = 50 mW, Ci = 0 nF, Li = 0 mH

*When a = 2J, 4J, 2M, 4M

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Switch/Sensor: Ui = 30 Vdc, Ii = 100 mA, Ci = 66 nF, Li = 0.8 mH, Pi = 2.0 W

*When a = 5J, 7J, 5M, 7M

For T4, Ta = -40°C to +80°C

Energy Limitation Parameters:

Switch/Sensor: Ui = 30 Vdc, Ii = 100 mA, Ci = 66 nF, Li = 0.8 mH, Pi = 2.0 W

Transmitter: Ui = 30 Vdc, Ii = 100 mA, Ci = 66 nF, Li = 0 H, Pi = 0.75 W

*When a = BJ, CJ, BM, CM

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For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Switch/Sensor: Ui = 30 Vdc, li = 100 mA, Ci = 66 nF, Li = 0.8 mH, Pi = 2.0 W

Potentiometer: Ui = 26 Vdc, li = 14 mA, Ci = 0 nF, Li = 0 mH, Pi = 50mW

*When a = 45

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Sensor Module: Ui = 22V, li = 120 mA, Pi = 0.4W, Ci = 3 nF, Li = 0 mH

Solenoid Connection Terminals: Ui = 30V, li = 120mA

*When a = 5R, 7R

For T4, Ta = -40°C to +80°C

Energy Limitation Parameters:

Sensor Module: Ui = 22V, li = 120 mA, Pi = 0.4W, Ci = 3 nF, Li = 0 mH

Solenoid Connection Terminals: Ui = 30V, li = 120mA

Transmitter: Ui = 30 Vdc, li = 100 mA, Ci = 66 nF, Li = 0 H, Pi = 0.75 W

*When a = TR

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Sensor Module: Ui = 22Vdc, li = 120 mA, Pi = 0.4W, Ci = 3 nF, Li = 0 mH

Solenoid Connection Terminals: Ui = 30V, li = 120 mA

Transmitter: Ui = 30 Vdc, li = 100 mA, Ci = 3 nF, Li = 0 H, Pi = 0.75 W

Solenoid Connection Terminals: Ui = 30V, li = 120 m

*When a = BR, CR

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Sensor Module: Ui = 22V, li = 120 mA, Pi = 0.4W, Ci = 3 nF, Li = 0 mH

Solenoid Connection Terminals: Ui = 30V, li = 120mA

Transmitter: Ui = 26 Vdc, li = 14 mA, Ci = 0 nF, Li = 0 mH, Pi = 50mW

* When a = 2N, 4N, 6N

For T6 Ta* =	For T5, Ta* =	For T4...T1, Ta* =	Ui V	li mA	Pi mW	Ci nF	Li mH
-25°C to +56°C	-25°C to +68°C	-25°C to +80°C	16	25	34	40	0.05
-25°C to +49°C	-25°C to +61°C	-25°C to +80°C	16	25	64	40	0.05
-25°C to +28°C	-25°C to +40°C	-25°C to +68°C	16	52	169	40	0.05
-25°C to +13°C	-25°C to +25°C	-25°C to +53°C	16	76	242	40	0.05

* When a = 5N, 7N

Switch/Sensor:

For T4...T1, Ta* =	Ui V	li mA	Pi mW	Ci nF	Li mH
-25°C to +80°C	16	25	34	40	0.05

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-25°C to +80°C	16	25	64	40	0.05
-25°C to +68°C	16	52	169	40	0.05
-25°C to +53°C	16	76	242	40	0.05

Transmitter; $U_i = 30\text{Vdc}$, $I_i = 100\text{ mA}$, $C_i = 66\text{ nF}$, $L_i = 0\text{ H}$, $P_i = 0.75\text{ W}$

* When a = TN

Switch/Sensor:

For T6 $T_{a^*} =$	For T5, $T_{a^*} =$	For T4...T1, $T_{a^*} =$	$U_i\text{ V}$	$I_i\text{ mA}$	$P_i\text{ mW}$	$C_i\text{ nF}$	$L_i\text{ mH}$
-25°C to +56°C	-25°C to +68°C	-25°C to +80°C	16	25	34	40	0.05
-25°C to +49°C	-25°C to +61°C	-25°C to +80°C	16	25	64	40	0.05
-25°C to +28°C	-25°C to +40°C	-25°C to +68°C	16	52	169	40	0.05
-25°C to +13°C	-25°C to +25°C	-25°C to +53°C	16	76	242	40	0.05

Transmitter: $U_i = 30\text{ Vdc}$, $I_i = 100\text{ mA}$, $C_i = 3\text{ nF}$, $L_i = 0\text{ H}$, $P_i = 0.75\text{ W}$

Solenoid Connection Terminals: $U_i = 30\text{ Vdc}$, $I_i = 120\text{ mA}$

* When a = BN, CN

Switch/Sensor:

For T6 $T_{a^*} =$	For T5, $T_{a^*} =$	For T4...T1, $T_{a^*} =$	$U_i\text{ V}$	$I_i\text{ mA}$	$P_i\text{ mW}$	$C_i\text{ nF}$	$L_i\text{ mH}$
-25°C to +56°C	-25°C to +68°C	-25°C to +80°C	16	25	34	40	0.05
-25°C to +49°C	-25°C to +61°C	-25°C to +80°C	16	25	64	40	0.05
-25°C to +28°C	-25°C to +40°C	-25°C to +68°C	16	52	169	40	0.05
-25°C to +13°C	-25°C to +25°C	-25°C to +53°C	16	76	242	40	0.05

Potentiometer; $U_i = 26\text{Vdc}$, $I_i = 14\text{ mA}$, $C_i = 0\text{ nF}$, $L_i = 0\text{ mH}$, $P_i = 50\text{mW}$

* When a = 2A, 4A

For T6 $T_{a^*} =$	For T5, $T_{a^*} =$	For T4...T1, $T_{a^*} =$	$U_i\text{ V}$	$I_i\text{ mA}$	$P_i\text{ mW}$	$C_i\text{ nF}$	$L_i\text{ mH}$
-40°C to +57°C	-40°C to +69°C	-40°C to +80°C	16	25	34	50	0.15
-40°C to +52°C	-40°C to +64°C	-40°C to +80°C	16	25	64	50	0.15
-40°C to +34°C	-40°C to +46°C	-40°C to +74°C	16	52	169	50	0.15
-40°C to +22°C	-40°C to +34°C	-40°C to +61°C	16	76	242	50	0.15

* When a = 5A, 7A

Switch/Sensor:

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For T4...T1, Ta*= -40°C to +80°C	Ui V 16	Ii mA 25	Pi mW 34	Ci nF 50	Li mH 0.15
-40°C to +80°C	16	25	64	50	0.15
-40°C to +74°C	16	52	169	50	0.15
-40°C to +61°C	16	76	242	50	0.15

Transmitter; Ui = 30Vdc, Ii = 100 mA, Ci = 66 nF, Li = 0 H, Pi = 0.75 W

* When a = TA
Switch/Sensor:

For T6 Ta*= -40°C to +57°C	For T5, Ta*= -40°C to +69°C	For T4...T1, Ta*= -40°C to +80°C	Ui V 16	Ii mA 25	Pi mW 34	Ci nF 50	Li mH 0.15
-40°C to +52°C	-40°C to +64°C	-40°C to +80°C	16	25	64	50	0.15
-40°C to +34°C	-40°C to +46°C	-40°C to +74°C	16	52	169	50	0.15
-40°C to +22°C	-40°C to +34°C	-40°C to +61°C	16	76	242	50	0.15

Transmitter: Ui = 30 Vdc, Ii = 100 mA, Ci = 3 nF, Li = 0 H, Pi = 0.75 W
Solenoid Connection Terminals: Ui = 30 Vdc, Ii = 120 mA

* When a = BA, CA
Switch/Sensor:

For T6 Ta*= -40°C to +57°C	For T5, Ta*= -40°C to +69°C	For T4...T1, Ta*= -40°C to +80°C	Ui V 16	Ii mA 25	Pi mW 34	Ci nF 50	Li mH 0.15
-40°C to +52°C	-40°C to +64°C	-40°C to +80°C	16	25	64	50	0.15
-40°C to +34°C	-40°C to +46°C	-40°C to +74°C	16	52	169	50	0.15
-40°C to +22°C	-40°C to +34°C	-40°C to +61°C	16	76	242	50	0.15

Potentiometer; Ui = 26Vdc, Ii = 14 mA, Ci = 0 nF, Li = 0 H, Pi = 50mW

*When a = 2B

For T6 Ta*= -25°C to +57°C	For T5, Ta*= -25°C to +69°C	For T4...T1, Ta*= -25°C to +80°C	Ui V 16	Ii mA 25	Pi mW 34	Ci nF 100	Li mH 0.2
-25°C to +52°C	-25°C to +64°C	-25°C to +80°C	16	25	64	100	0.2
-25°C to +34°C	-25°C to +46°C	-25°C to +74°C	16	52	169	100	0.2
-25°C to +22°C	-25°C to +34°C	-25°C to +61°C	16	76	242	100	0.2

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See also FM08ATEX0008X for series QX with type of protection "d".



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Blueprint Report

Valmet Flow Control Inc. (MN) (1000001486)

Class No 3610

Original Project I.D. 3039143

Certificate I.D. FM10ATEX0039X

<u>Drawing No.</u>	<u>Revision Level</u>	<u>Drawing Title</u>	<u>Last Report</u>
000149	I	Quartz QN Series ATEX Ex ia Models	RR235861
000185	G	Model Description, Quartz QX Series, ATEX Ex ia	RR235861
000225	D	Model Description, Quartz QC series, ATEX, IECEx Ex ia	RR235861
105026	J	Electrical Information, Quartz QN-QX Series	RR235861
105180	H	Enclosure Information, Quartz QX series, Ex d	RR235861
105193	G	I.S. CONTROL, QUARTZ SERIES	RR235861
105283	I	Quartz QN Ex ia Series Product Marking	RR235861
105406	G	Installation, Maintenance and Operating Instructions	RR235861
105478	C	Product Marking, Quartz QC Series, ATEX IECEx Ex d Ex i	RR235861
200011	D	Schematic, 4-20mA Transmitter	3048436
200134	A	Schematic, Dual NAMUR Sensor, Ext range	3039143
200219	C	Schematic, 45 Dual Module, Namur	3055582
200270	B	SCHEMATIC, QUARTZ TRANSMITTER	3064023
412016	A	Switch, Proximity Sensor "N", P&F	3039143
412021	A	Switch, Bare reed, SPST	3039143
412060	E	Switch, Bare reed, SPST	RR235861
412145	B	Sensor, NAMUR, P+F "A" Sensor	3039143
412150	A	Switch, SPDT. Low Power, 1 Amp Max	3039143
412170	D	Switch, BRD, ASSY., "M"	RR235861
412179	B	Switch, SPDT, 60W, 1AMP Max	RR235861
414178	C	Block, Terminal, 6 and 12 Pole	3048436
418007	G	PCB, 4-20mA Position Transmitter, Populated	RR222856
418022	B	PCB, raw, StoneL Maxx-Guard switch	RR235861
418026	R	Board, Populated, NAMUR Dual Module	PR452032
418028	I	Board, unpopulated NAMUR	RR208761
418068	C	PCB, 4-20mA Position Transmitter, Unpopulated	RR222856
418412	C	Board, 45 Dual Module, Unpopulated	3055582
418413	C	Board, 45 Dual Module, Populated	3055582
418442	B	PCB, QUARTZ TRANSMITTER	3064023
418443	C	BOARD ASSEMBLY, QUARTZ TRANSMITTER	RR222856
422004	B	Potentiometer	RR208761
422020	A	Potentiometer, High Performance 0.1% Lin.	3048436
432022	A	Potting, SYLGARD, 170A/170B	3039143
432029	A	Urethane Potting, CONATHANE EN-14, Mixed	3039143
432038	B	Urethane potting, Epic Resins D9970 clear, mixed	3055582
434365	C	Block, Terminal, Sauro, 8 Pt, Hoz	PR452032