

CERTIFICATE OF CONFORMITY

1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**

2. **Certificate No:** FM18US0170X
3. **Equipment:** Prism PI Series
(Type Reference and Name) Valve Positioners

4. **Name of Listing Company:** Neles USA Inc. dba StoneL

5. **Address of Listing Company:** 26271 US Hwy 59
Fergus Falls MN
56537
United States

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

3062876 dated 6th September 2018

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

FM Class 3600:2018, FM Class 3611:2018, FM Class 3810:2018, FM Class 3610:2018, ANSI/NEMA 250:2003, ANSI/ISA 60079-0:2013, ANIS/ISA 60079-11:2014, ANSI/ISA 12.12.01:2017, ANSI/ISA 61010-1:2012

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:

Intrinsically safe apparatus for use in Class I, II, III, Division 1 Groups A, B, C, D, E, F & G temperature class T5 in accordance with Entity requirements and Control Drawing 105432; Intrinsically safe (Entity) for use in Class I Zone 0, AEx ia IIC Ga T5, in accordance with control Drawing 105432; Non-Incendive Class I, II, III, Division 2 Groups A, B, C, D, E, F & G temperature class T*; Non-Incendive for use in Class I Zone 2, Ex ia

Certificate issued by:



J.E. Marquedant
VP, Manager - Electrical Systems

8 January 2021

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. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
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SCHEDULE

US Certificate Of Conformity No: FM18US0170X

IIC Gc T*. T* see model code; Type 4X, Type 6

11. The marking of the equipment shall include:

PI45SaSAbcdef Valve Position Monitor

IS Class I, II, III Division 1, Groups A, B, C, D, E, F and G; T5; $-20^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$; Entity, 105432

IS Class I, Zone 0 AEx ia IIC Ga, T5; $-20^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$; Entity, 105432

NI, Class I, II, III Division 2, Groups A, B, C, D, E, F and G; T*; T**;

NI, Class I, Zone 2 AEx ic IIC Gc, T*, T**.

Type 4X, Type 6

T* (T code) and T**(temperature range) See model codes

PI33SaSAbcdef Valve Position Monitor

PlabSAcdefg Valve Position Monitor

PlabSAcdefg Valve Position Monitor

NI, Class I, II, III Division 2, Groups A, B, C, D, E, F and G; T*; T**;

NI, Class I, Zone 2 AEx ic IIC Gc, T*, T**.

Type 4X, Type 6

T* (T code) and T**(temperature range) See model codes

12. **Description of Equipment:**

The Prism PI series Valve Position monitors are designed to be attached directly to various valve/actuator assemblies and to communicate and control its position. The apparatus consist of an internally mounted sensing and communication modules, internally mounted pilot valves for pneumatic control, connection options to plant electrical, pneumatic and communications systems with external visual indication to the fluid being processed. Electronic components inside the apparatus are encapsulated and enclosed with a polycarbonate cover and base.

Model code 45S is approved for intrinsic safety. All other model code options are approved for Non-incendive only.

Operation Temperature Ranges:

Models with Solenoid Option 11 or 1N: Temperature -20°C to $+60^{\circ}\text{C}$

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Models with Solenoid option 1M, 1K, and 2K. Temperature -10°C to +50°C

Electrical data:

ELECTRICAL OPTION DIGITS FOR PI MODELS PI _ _ _ _ _		LABEL INFO 1: CONTAINS ELECTRICAL RATINGS PER THE ENCLOSED ELECTRONICS ASSEMBLY	
FUNCTION	SOLENOID		
33S	11	Sensor Ratings: 0.1 A @ 20-125 VAC/VDC	
	1K	Sensor Ratings: 0.1 A @ 20-125 VAC/VDC Solenoid Ratings: 24 VDC; 0.9 W Pressure: 25 to 120 psi	
	1M	Sensor Ratings: 0.1 A @ 20-125 VAC/VDC Solenoid Ratings: 110 VAC; 0.9 W Pressure: 25 to 120 psi	
	1N	Sensor Ratings: 0.1 A @ 20-125 VAC/VDC Solenoid Ratings: 20-55 VDC @ 20 mA; 20-125 VAC @ 12 mA Pressure: 25 to 120 psi	
45S	11	Sensor Ratings: NAMUR 5-25 VDC IS: Ui = 22 V, Ii = 120 mA, Pi = 0.4 W, Ci = 3 nF, Li = 0 H Solenoid Junction Terminals: 30 VDC max IS: Ui = 28 V, Ii = 120 mA, Ci = 0 F, Li = 0 H	
	1N	Sensor Ratings: NAMUR 5-25 VDC IS: Ui = 22 V, Ii = 120 mA, Pi = 0.4 W, Ci = 3 nF, Li = 0 H Solenoid Ratings: 18-28 VDC; 0.3 W IS: Ui = 28 V, Ii = 120 mA, Pi = 0.84W, Ci = 3 nF, Li = 0 H Pressure: 25 to 120 psi	
80S 80W	2K	Intermediate Control Input: 4-20 mA, 9-30 VDC Sensor/Solenoid Input: 24 VDC @ 100 mA Pressure: 25 to 120 psi	
81S 81W	2K	Intermediate Control Input: 4-20 mA, 9-30 VDC Sensor/Solenoid Input: 24 VDC @ 100 mA Pressure: 25 to 120 psi Position Feedback Output: 4-20 mA, 9-30 VDC Discrete Feedback Outputs: 20 mA @ 5-30 VDC	
92S 92W	11	Sensor Ratings: Supply: 25 VDC max; Outputs: 167 mA max @ 24 VDC	
	1K	Sensor Ratings: Supply: 25 VDC max; Outputs: 167 mA max @ 24 VDC Solenoid Ratings: 24 VDC; 0.9 W Pressure: 25 to 120 psi	
	1N	Sensor Ratings: Supply: 25 VDC max; Outputs: 167 mA max @ 24 VDC Solenoid Ratings: 24 VDC; 0.5 W Pressure: 25 to 120 psi	
96S 96W 97S 97W	11	Sensor Ratings: Supply: 31.6 VDC max; Outputs: 167 mA max @ 24 VDC	
	1K	Sensor Ratings: Supply: 31.6 VDC max; Outputs: 167 mA max @ 24 VDC Solenoid Ratings: 24 VDC; 0.9 W Pressure: 25 to 120 psi	
	1N	Sensor Ratings: Supply: 31.6 VDC max; Outputs: 167 mA max @ 24 VDC Solenoid Ratings: 24 VDC; 0.5 W Pressure: 25 to 120 psi	

Model Codes

PI45SaSAbcdef Valve Position Monitor

a = 11 and 1N (Solenoid)

b = 01, 02, 04, 05, 10, 11, 13, 15, 19, 20 and 21 (Junction)

c = X, 0, G and R (Visual Indicator)

d = S and L (Stroke)

e = A, M, T, B, C, D and E (Branding)

f = X (Special and Marketing ID Digits not affecting the integrity of the housing, the electrical safety, or the title plate. Up to 5 Alpha and Numeric Digits after Model No.)

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Entity Parameters:

Solenoid Option a = 11

Sensors: U_i (Vmax) = 22 Vdc; I_i (Imax) = 120 mA; P_i = 0.4 W; C_i = 3 nF; L_i = 0 H

Solenoid Junction Terminals: U_i (Vmax) = 28 Vdc; I_i (Imax) = 120 mA; C_i = 0 F; L_i = 0 H

Solenoid Option a = 1N

Entity Parameters:

Sensors: U_i (Vmax) = 22 Vdc; I_i (Imax) = 120 mA; P_i = 0.4 W; C_i = 3 nF; L_i = 0 H

Solenoid: U_i (Vmax) = 28 Vdc; I_i (Imax) = 120 mA; P_i = 0.84 W; C_i = 3 nF; L_i = 0 H

PI33SaSAbcdef Valve Position Monitor

Solenoid 11 or 1N = $-20^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$

Solenoid 1M or 1K = $-10^{\circ}\text{C} \leq T_a \leq +50^{\circ}\text{C}$

a = 11, 1M, 1K and 1N (Solenoid)

b = 01, 02, 04, 05, 10, 11, 13, 15, 19, 20 and 21 (Junction)

c = X, 0, G and R (Visual Indicator)

d = S and L (Stroke)

e = A, M, T, B, C, D and E (Branding)

f = X (Special and Marketing ID Digits not affecting the integrity of the housing, the electrical safety, or the title plate. Up to 5 Alpha and Numeric Digits after Model No.)

PlabSAcdefg Valve Position Monitor

Solenoid 11 or 1N = $-20^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$

Solenoid 1K = $-10^{\circ}\text{C} \leq T_a \leq +50^{\circ}\text{C}$

a = 92S, 92W, 96S, 96W, 97S and 97W (Function)

b = 11, 1K and 1N (Solenoid)

c = 01, 02, 04, 05, 10, 11, 13, 15, 19, 20 and 21 (Junction)

d = X, 0, G and R (Visual Indicator)

e = S and L (Stroke)

f = A, M, T, B, C, D and E (Branding)

g = X (Special and Marketing ID Digits not affecting the integrity of the housing, the electrical safety, or the title plate. Up to 5 Alpha and Numeric Digits after Model No.)

PlabSAcdefg Valve Position Monitor

a = 80S, 80W, 81S and 81W (Function)

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b = 11 and 2K (Solenoid)
 c = 01, 02, 04, 05, 10, 11, 13, 15, 19, 20 and 21 (Junction)
 d = X, 0, G and R (Visual Indicator)
 e = S and L (Stroke)
 f = A, M, T, B, C, D and E (Branding)
 g = X (Special and Marketing ID Digits not affecting the integrity of the housing, the electrical safety, or the title plate. Up to 5 Alpha and Numeric Digits after Model No.)

13. Specific Conditions of Use:

1. Part of the enclosure is constructed from plastic. To prevent the risk of electrostatic sparking the plastic surface should only be cleaned with a damp cloth.
2. For Division 2 installation the Turck minifast® and eurofast® male receptacles shall be mated with a Turck minifast® and eurofast® female cordset and the use of tool secured Turck lokfast® guard is required.
3. Prism installation must be per installation instructions and must use the gaskets supplied with the Prism Mounting Kit.
4. Prism must be installed on equipment that maintains the Prism enclosure rating.

14. Test and Assessment Procedure and Conditions:

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

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
6 th September 2018	Original Issue.

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US Certificate Of Conformity No: FM18US0170X

8 th January 2021	Supplement 1: Report Reference: RR226087 dated 8 th January 2021. Description of the Change: 1. Update name change from StoneL to Neles USA Inc. dba StoneL. 2. Minor drawing updates
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