

Quality System
ISO9001 Certified

Environmental
Management System
ISO14001 Certified



See pages 2, 13 and 14
for ATEX ratings.



**Model PB^{1/4}
Type 3**

**Air-Operated
Double Diaphragm Pump**

Engineering, Performance
& Construction Data

INTAKE/DISCHARGE PIPE SIZE 1/4" NPT (internal) 1/2" NPT (external)	CAPACITY 0 to 4 gallons per minute (0 to 15 liters per minute)	AIR VALVE No-lube, no-stall design	SOLIDS-HANDLING Up to 1/32" (1mm)	HEADS UP TO 100 psi or 231 ft. of water (7 bar or 70 meters)	DISPLACEMENT/STROKE .01 US Gallons / .04 liters
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CAUTION! Operating temperature limitations are as follows:

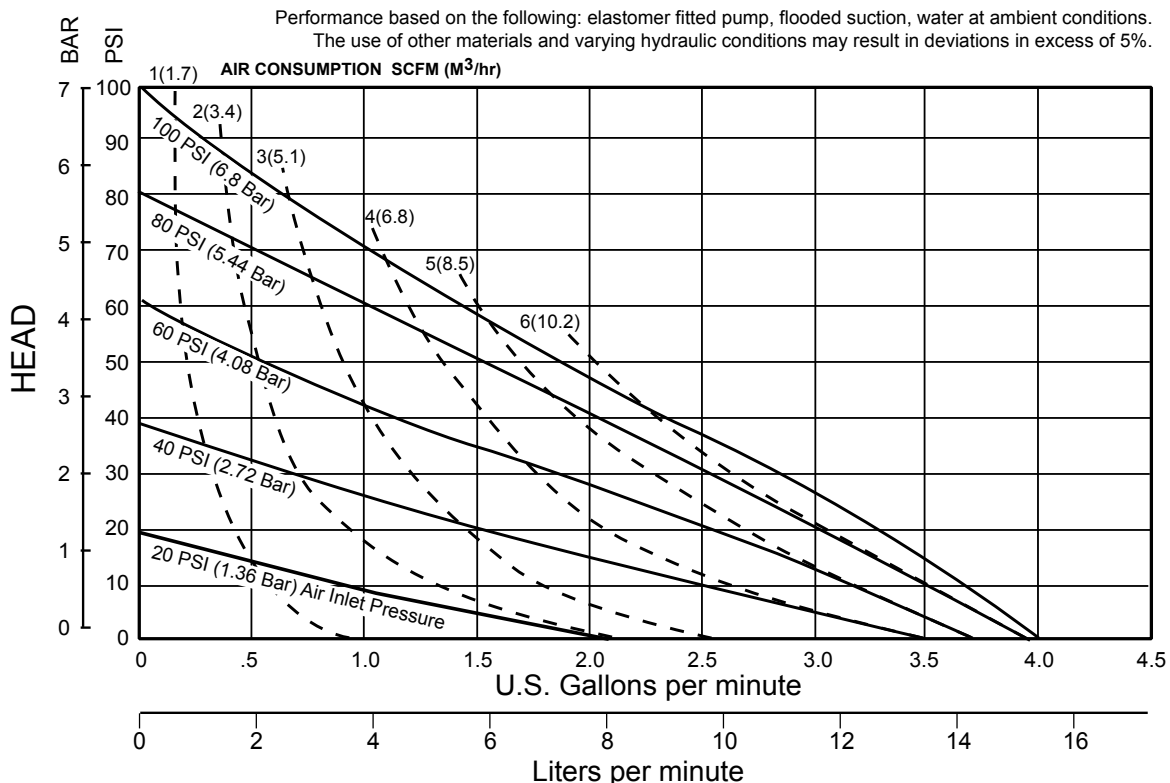
Materials

	Operating Temperatures	
	Maximum	Minimum
Santoprene® Injection molded thermoplastic elastomer with no fabric layer. Long mechanical flex life. Excellent abrasion resistance.	275°F 135°C	-40°F -40°C
Hytrel®: Good on acids, bases, amines and glycols at room temperatures only.	220°F 104°C	-20°F -29°C
Virgin PTFE Chemically inert, virtually impervious. Very few chemicals are known to react chemically with PTFE: molten alkali metals, turbulent liquid or gaseous fluorine and a few fluoro-chemicals such as chlorine trifluoride or oxygen difluoride which readily liberate free fluorine at elevated temperatures.	220°F 104°C	-35°F -37°C
PVDF	250°F 121°C	0°F -18°C
Polypropylene	180°F 82°C	32°F 0°C
Conductive Acetal	190°F 88°C	-20°F -29°C

For specific applications, always consult the Warren Rupp "Chemical Resistance Chart"

CAUTION: Nonmetallic pumps and plastic components are not UV stabilized. Ultraviolet radiation can damage these parts and negatively affect material properties. Do not expose to UV light for extended periods of time.

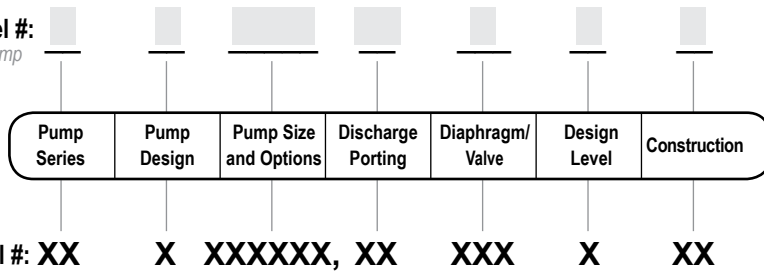
Maximum and Minimum Temperatures are the limits for which these materials can be operated. Temperatures coupled with pressure affect the longevity of diaphragm pump components. Maximum life should not be expected at the extreme limits of the temperature ranges.



(SANDPIPER® pumps are designed to be powered only by compressed air)

Explanation of Pump Nomenclature

Your Model #: _____
 (fill in from pump nameplate)



Pump Series

P Plastic

Pump Design

B Soild Ball

Pump Size and Options

1/4 1/4" NPT

P1 Intrinsically Safe ATEX Compliant Pulse Output

P0 10-30VDC Pulse Output Option

P2 110/120 or 220/240VAC Pulse Output Option

E0 Integral Solenoid 24VDC Coil

E1 Integral Solenoid 24VDC Explosion-Proof Coil

E2 Integral Solenoid 24VAC/12VDC Coil

E3 Integral Solenoid 12VDC Explosion-Proof Coil

E4 Integral Solenoid 110VAC Coil

E5 Integral Solenoid 110VAC Explosion-Proof Coil

E6 Integral Solenoid 220VAC Coil

E7 Integral Solenoid 220VAC Explosion-Proof Coil

E8 Integral Solenoid 115VAC, 50Hz Explosion-Proof Coil

E9 Integral Solenoid 230VAC, 50Hz, Explosion-Proof Coil

Discharge Porting Position

T Top

H Horizontal Suction and Discharge

V Vertical Discharge

VV Vertical Suction and Discharge

Diaphragm Check Valve Materials

S Santoprene

T Virgin PTFE

U Santoprene Diaphragms/PTF E Ball

Design Level

3

Construction



P Polypropylene Wet End and Center

K PVDF Wet End and Polypropylene Center

△ CA Conductive Acetal Wet End and Center

Your Serial #: (fill in from pump nameplate) _____


ATEX Detail

(1)  II 1G c T5
 II 3/1 G c T5
 II 1D c T100°C
 I M1 c
 I M2 c

Conductive Acetal models ONLY with Metal External Muffler.

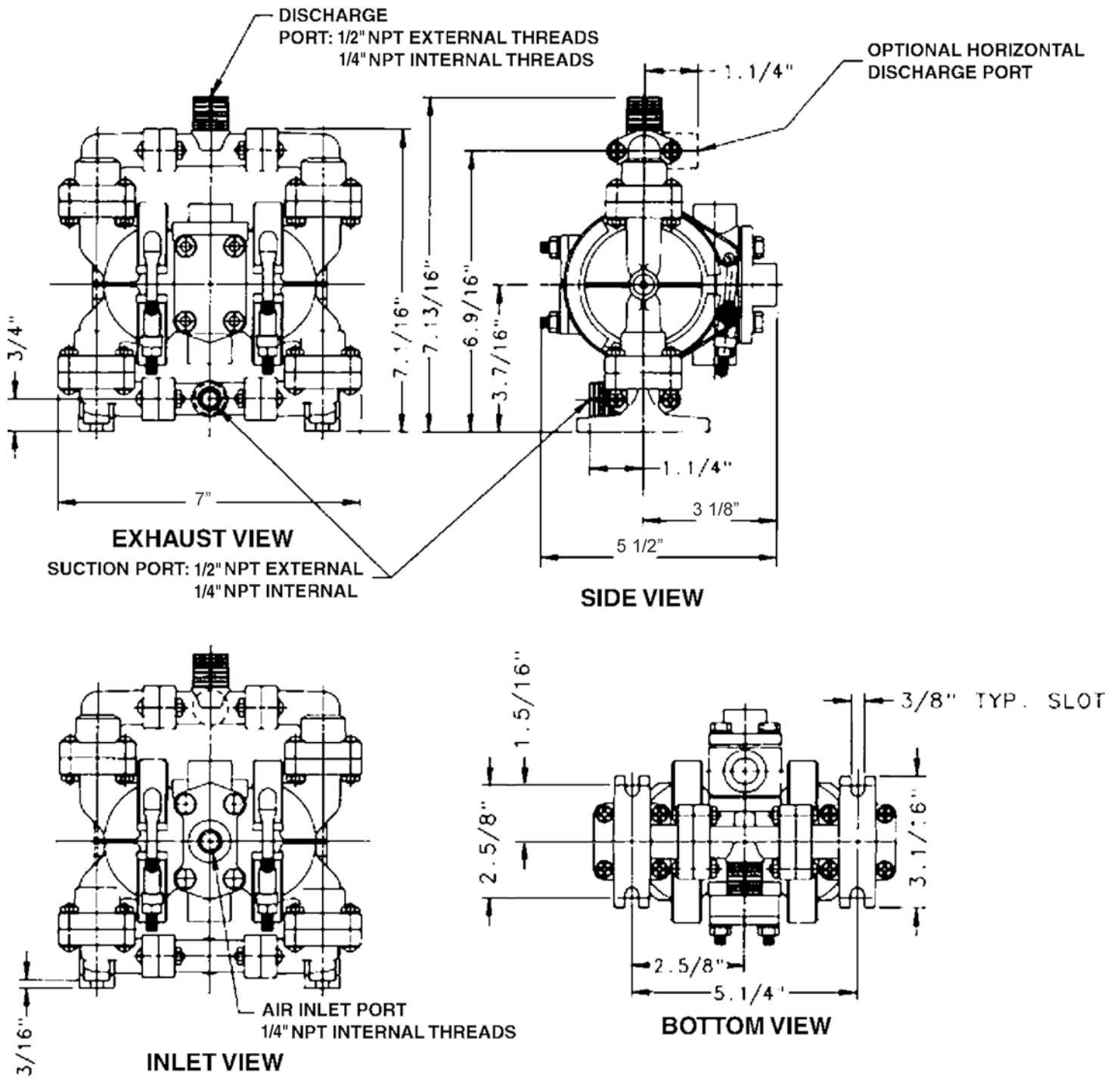
(2)  II 2G Ex ia c IIC T5
 II 3/2 G Ex ia c IIC T5
 II 2D Ex c ia 20 IP67
 T100°C

Note: Pumps ordered with the options listed in (1) to the left are ATEX compliant when ordered with kit option P1.

 II 2G c T5
 II 3/2 G c T5
 II 2D c T100°C

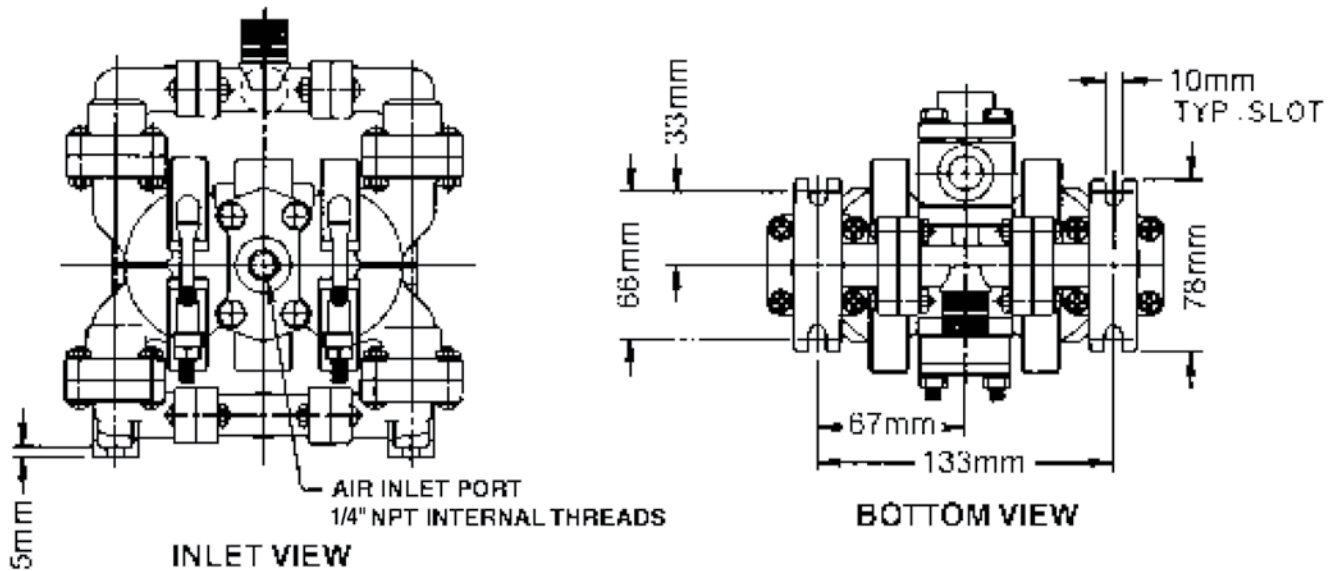
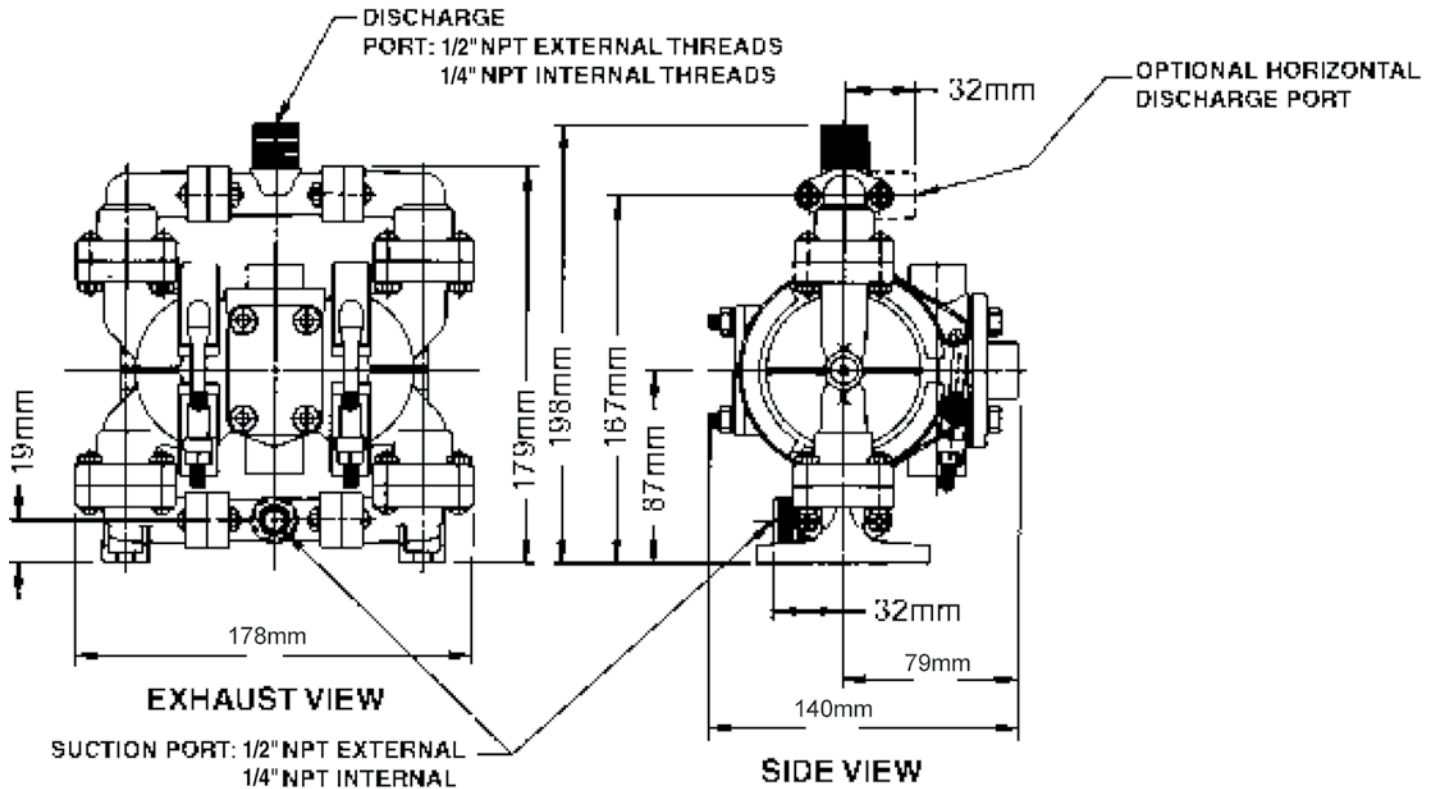
Conductive Acetal models ONLY with Integral Muffler.

Dimensions: PB^{1/4} Non-Metallic



Dimension	A	B	C
Standard	7"	3 1/8"	5 1/2"
Pulse Output Kit	7"	3 1/8"	5 1/2"

Metric Dimensions: PB¹/₄ Non-Metallic



Dimension	A	B	C
Standard	178	79	140
Pulse Output Kit	178	79	140

WARREN RUPP, INC.®

Declaration of Conformity

Manufacturer:
Warren Rupp, Inc.®, 800 N. Main Street
Mansfield, Ohio, 44902 USA

certifies that Air-Operated Double Diaphragm Pump Series: HDB, HDF, M Non-Metallic, S Non-Metallic, M Metallic, S Metallic, T Series, G Series, RS Series U Series, EH and SH High Pressure, W Series, SMA and SPA Submersibles, and Tranquilizer Surge Suppressors comply with the European Community Directive 2006/42/EC on Machinery, according to Annex VIII. This product has used Harmonized Standard EN809:1998+A1:2009, Pumps and Pump Units for Liquids - Common Safety Requirements, to verify conformance.

David Roseberry
Signature of authorized person

October 20, 2005
Date of issue

David Roseberry
Printed name of authorized person

Engineering Manager
Title

Revision Level: F

April 19, 2012
Date of revision



WARREN RUPP, INC.

EC Declaration of Conformity

In accordance with ATEX Directive 94/9/EC,
Equipment intended for use in potentially explosive environments.

Manufacturer:

Warren Rupp, Inc.®
A Unit of IDEX Corporation
800 North Main Street
P.O. Box 1568
Mansfield, OH 44902 USA

Applicable Standard:

EN13463-1: 2009
EN13463-5: 2011



EN 60079-25: 2011

For pumps equipped with Pulse Output ATEX Option
Quality B.V. (0344)

AODD Pumps and Surge Suppressors

For Type Examination Designations, see page 2 (back)

AODD (Air-Operated Double Diaphragm) Pumps

EC Type Examination Certificate No. Pumps: KEMA 09ATEX0071 X

DEKRA Certification B.V. (0344)

Meander 1051
6825 MJ Arnhem
The Netherlands

SANDPIPER®
A WARREN RUPP, INC. BRAND

Tranquilizer®

DATE/APPROVAL/TITLE:
14 MAY 2014

David Roseberry
David Roseberry, Engineering Manager

IDEX
FLUID & METERING

WARREN RUPP, INC.

EC Declaration of Conformity

ATEX Summary of Markings

Type	Marking	Listed In	Non-Conductive Fluids	
Pump types, S1F, S15, S20, and S30 provided with the pulse output option	II 2 G Ex ia c IIC T5 II 3/2 G Ex ia c IIC T5 II 2 D Ex c iaD 20 IP67 T100°C	KEMA 09ATEX0071 X CE 0344	KEMA 09ATEX0071 X KEMA 09ATEX0071 X KEMA 09ATEX0071 X	No Yes Yes
Pump types, S1F, S15, S20, and S30 provided with the integral solenoid option	II 2 G EEx m c II T5 II 3/2 G EEx m c II T5 II 2 D c IP65 T100°C	KEMA 09ATEX0071 X CE 0344	KEMA 09ATEX0071 X KEMA 09ATEX0071 X KEMA 09ATEX0071 X	No Yes Yes
Pump types, HDB1½, HDB40, HDB2, HDB50, HDB3, HDF1, HDF25, HDF2, HDF3M, PB¼, S05, S1F, S15, S20, S30, SB1, SB25, ST1½, ST40, G15, G20, and G30, without the above listed options, no aluminum parts	II 1 G c T5 II 3/1 G c T5 II 1 D c T100°C I M1 c I M2 c	KEMA 09ATEX0071 X KEMA 09ATEX0072 X CE 0344	KEMA 09ATEX0071 X KEMA 09ATEX0071 X KEMA 09ATEX0071 X KEMA 09ATEX0071 X KEMA 09ATEX0072 X	No Yes Yes No Yes
Pump types, DMF2, DMF3, HDB1½, HDB40, HDB2, HDB50, HDB3, HDF1, HDF25, HDF2, HDF3M, PB¼, S05, S1F, S15, S20, S30, SB1, SB25, SE½, ST1, ST25, ST1½, ST40, U1F, G05, G1F, G15, G20, and G30	II 2 G c T5 II 3/2 G c T5 II 2 D c T100°C	KEMA 09ATEX0072 X CE	KEMA 09ATEX0072 X KEMA 09ATEX0072 X KEMA 09ATEX0072 X	No Yes Yes
Surge Suppressors all types	II 2 G T5 II 3/2 G T5 II 2 D T100°C	KEMA 09ATEX0073 CE	KEMA 09ATEX0073 KEMA 09ATEX0073 KEMA 09ATEX0073	No Yes Yes

EC Type Certificate No. Pumps: KEMA 09ATEX0071 X
 Type Certificate No. Pumps: KEMA 09ATEX0072 X
 Type Certificate No. Suppressors: KEMA 09ATEX0073

Pumps marked with equipment Category II 3/1 G (internal 3 G / external 1 G), 1D, M1 and M2 when used for non-conductive fluids. The pumps are Category II 2 G when used for conductive fluids.

Pumps and surge suppressors marked with equipment Category II 3/2 (internal 3 G / external 2 G), 2D when used for non-conductive fluids. The pumps are Category II 2 G when used for conductive fluids.