



(1) **Statement of Conformity**

(2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 94/9/EC**

(3) **Statement of Conformity Number: TÜV 08 ATEX 366332 X**

(4) for the equipment: Fixed Displacement-Twelve-vanes-pump type PFEA

(5) of the manufacturer: **ATOS s.p.a.**

(6) Address: Via alla Piana 57  
21018 Sesto Calende (VA)  
Italy

Order number: 8000366332

Date of issue: 2008-12-18

(7) This equipment or protective system and any acceptable variation thereto are specified in the schedule to this statement of conformity and the documents therein referred to.

(8) The TÜV NORD CERT GmbH certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in the confidential report No. 08204366332.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 13 463-1:2001**

**EN 13 463-5:2003**

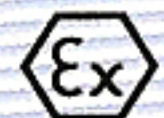
**EN 13 463-6:2005**

**EN 13 463-8:2003**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

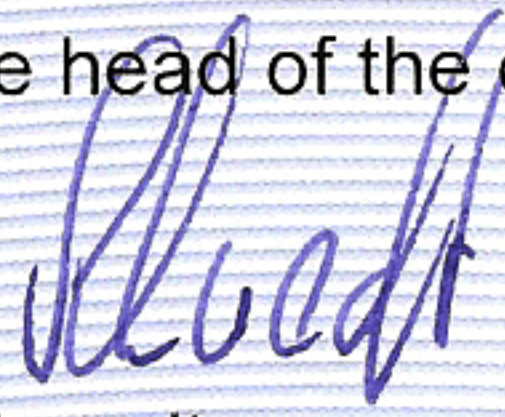
(11) This statement of conformity relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment or protective system must include the following:

 **II 2/2 GD cbk IIC TX IP66**

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, accredited by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the certification body

  
Schwedt

Hanover office, Am TÜV 1, 30519 Hanover, Fon +49 (0)511 986 1455, Fax +49 (0)511 986 1590

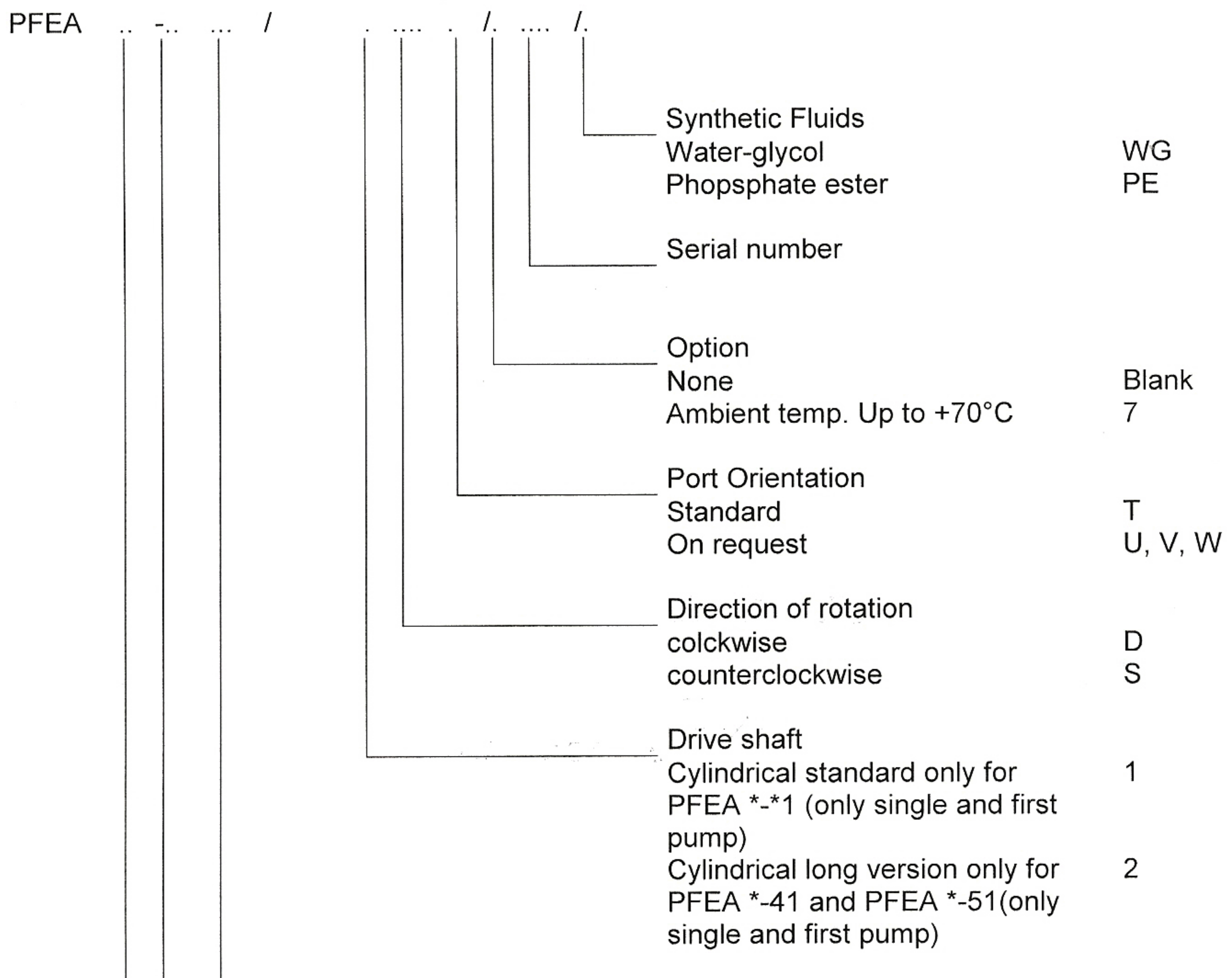
(13) **SCHEDULE**

(14) **Statement of Conformity No. TÜV 08 ATEX 366332 X**

(15) Description of equipment

The PFEA pumps are fixed displacement-twelve-vanes pumps, cartridge design with integral hydraulic balancing for high pressure operation and long service life. This type of pumps are designed to be used with hydraulic oils according to DIN 51524... 535 or synthetic fluids having similar lubricating characteristics. This pumps haven't to be use with fluid that can create potential explosive atmosphere. The equipment is designed to operate both within dust and gas explosive atmosphere.

Type Key



Schedule Statement of Conformity No. TÜV 08 ATEX 366332 X

	Cylindrical for high torque applications for all types of PFEA (only single and first pump)	3
	Splined standard for all types of PFEA (any position)	5
	Splined for high torque application for types PFEA*-31, PFEA*-32, PFEA*-41, PFEA*-42 (only single and first pumps)	6
	Displacement (cm <sup>3</sup> /rev)	
	016, 022, 028, 036, 044	PFEA 31
	029, 037, 045, 056, 070, 085	PFEA 41
	090, 110, 129, 150	PFEA 51
	022, 028, 036	PFEA 32
	045, 056, 070, 085	PFEA 42
	090, 110, 129, 150	PFEA 52
	SIZE	31
		41
		51
		32
		42
		52
	Additional suffix for pumps with through shaft	
	for coupling with PFEA-31	XA
	for coupling with PFEA-41 (only for PFEA-4* and PFEA-5*)	XB
	for coupling with PFEA-51 (only for PFEA-5*)	XC
	with through shaft, without rear flange	XO

Technical data

Main Characteristics

Installation position	Any position	
Loads on the shaft	Axial and radial loads are not allowed on the shaft. The coupling should be sized to absorb the power peaks	
Fluid	Hydraulic oil as per DIN 51524...535 or synthetic fluids having similar lubricating characteristics.	
Recommended viscosity	Max at cold start Max at full power During operation In at full power	800 mm <sup>2</sup> /s 100 mm <sup>2</sup> /s 24 mm <sup>2</sup> /s 10 mm <sup>2</sup> /s
Recommended pressure on inlet port	PFEA*-*1	From -0,15 to +1,5 bar for speed up to 1800 rpm; From 0 to +1,5 bar for speed over 1800rpm
	PFEA*-2	From 0 to +1,5 bar

Operating temperature

Pump version	Ambient Temperature	Maximum inlet fluid temperature	Temperature class
Standard (NBR seal) and /PE	-20°C<T <sub>amb</sub> <+60°C	+60°C	T6 ; T85 °C
/WG	-20°C<T <sub>amb</sub> <+60°C	+50°C	T6; T85 °C
/7 /PE	-20°C<T <sub>amb</sub> <+70°C	+80°C	T5; 100 °C

Operating characteristics

Model	Displacement cm <sup>3</sup> /rev	Max pressure <sup>(1)</sup>	Speed range <sup>(2)</sup> (rpm)
PFEA-31016	16,5	210 bar <sup>(1)</sup>	800-2800
PFEA-31022	21,6		
PFEA-31028	28,1		
PFEA-31036	35,6		
PFEA-31044	43,7		800-2500
PFEA-41029	29,3		
PFEA-41037	36,6		
PFEA-41045	45,0		
PFEA-41056	55,8		800-2000
PFEA-41070	69,9		
PFEA-41085	85,3		800-2200
PFEA-51090	90,0		
PFEA-51110	109,6		
PFEA-51129	129,2		
PFEA-51150	150,2		800-1800

(1)Max pressure is 160 bar for /PE and /WG versions

(2)Max speed is 1800 rpm for /PE; 1500rpm for /WG versions

Schedule Statement of Conformity No. TÜV 08 ATEX 366332 X

Model	Displacement cm <sup>3</sup> /rev	Max pressure <sup>(1)</sup>	Speed range (rpm) <sup>(2)</sup>
PFEA-32022	21,6	300 bar	1200-2500
PFEA-32028	28,1		
PFEA-32036	35,6		
PFEA-42045	45,0	280 bar	1000-2200
PFEA-42056	55,8		
PFEA-42070	69,9	250 bar	800-2000
PFEA-42085	85,3	210 bar	
PFEA-52090	90,0	250 bar	1000-2000
PFEA-52110	109,6		
PFEA-52129	129,2		
PFEA-52150	150,2	210 bar	800-1800

(1)Max pressure is 160 bar for /PE and /WG versions

(2)Max speed is 1800 rpm for /PE; 1500rpm for /WG versions

(16) Test documents are listed in the test report No. 08204366332.

(17) Special conditions for safe use

The presence of the fluid inside the pump must be monitored by a level indicator, the pump can't start to run if the inner of the pump is not complete full. The function of each ignition prevention system has to be tested before initial operation according to EN 13463-6, section 9.2. The ignition prevention systems must be for the ignition prevention level IPL 1 (SIL 1) according to EN 13463-6. The requirements of EN 13463-6 must also be observed.

It is responsibility of the user to verify that the maximum inlet fluid temperature doesn't exceed the value reports in the technical data.

The maximum surface temperature has been calculated without taking into account a dust layer on the equipment and a safety factor.

(18) Essential Health and Safety Requirements

no additional ones



(1) **Statement of Conformity**

(2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 94/9/EC**

(3) **Statement of Conformity Number: TÜV 10 ATEX 380747 X**

(4) for the equipment: Variable Displacement axial piston pump type PVPCA...


(5) of the manufacturer: **ATOS s.p.a.**

(6) Address: Via alla Piana 57  
21018 Sesto Calende (VA)  
Italy

Order number: 8000380747

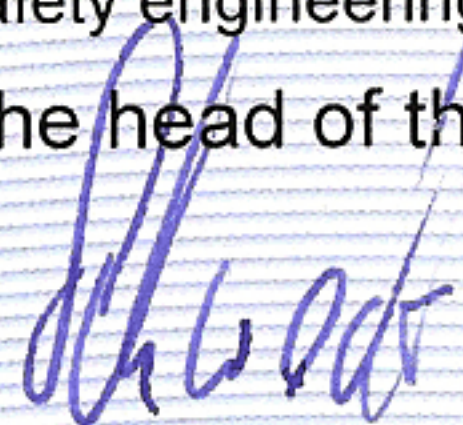
Date of issue: 2010-04-08

- (7) This equipment or protective system and any acceptable variation thereto are specified in the schedule to this statement of conformity and the documents therein referred to.
- (8) The TÜV NORD CERT GmbH certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in the confidential report No. 10204380747.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
- |                         |                         |                         |
|-------------------------|-------------------------|-------------------------|
| <b>EN 13 463-1:2001</b> | <b>EN 13 463-5:2003</b> | <b>EN 13 463-6:2005</b> |
| <b>EN 13 463-8:2003</b> |                         |                         |
- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.
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- (12) The marking of the equipment or protective system must include the following:

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The head of the certification body



Schwedt

Hanover office, Am TÜV 1, 30519 Hanover, Fon +49 (0)511 986 1455, Fax +49 (0)511 986 1590

(13) **SCHEDULE**

(14) **Statement of Conformity No. TÜV 10 ATEX 380747 X**

(15) Description of equipment

The PVPCA pumps are variable displacement axial piston pumps for high pressure operation. This type of pumps are designed to be used with hydraulic oils according to DIN 51524... 535 or synthetic fluids having similar lubricating characteristics. This pumps haven't to be use with fluid that can create potential explosive atmosphere. The equipment is designed to operate both with dust and gas explosive atmosphere.

In this certification we consider only the non electrical parts of the equipment, we consider that all the electrical equipment and the optional valves (electrical and non-electrical) will be buy just marked in compliance with the requirements of the 94/9/EC Directive.

Type Key

PVPCA .. - . / .....	Synthetic fluids Water-glycol Phosphate ester  Series number  Voltage code  Option For ambient temperature up to 70°C Horizontal cable entrance Prolonged manual override protected by metallic cap  Solenoid threaded connection (only for PA cable gland) GK-1/2" ISO/UNI 6125 (tapered) 1/2" NPT ANSI B2.1 (tapered) M20x1,5 UNI 4535 (6H/6g)  Cable gland Without cable gland With threaded cable gland already installed  Direction of rotation colckwise counterclockwise	WG PE       /7 /O /WP   GK NPT M  - PA   D S
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Schedule Statement of Conformity No. TÜV 10 ATEX 380747 X

	Shaft	
	Keyed	1
	Splined	5
	Type of PVPCA	
	Max displacement of axial piston pump	
	29 cm <sup>3</sup> /rev	029
	46 cm <sup>3</sup> /rev	046
	73 cm <sup>3</sup> /rev	073
	88 cm <sup>3</sup> /rev	090
	Size	
	For displacement 029	3
	For displacement 046	4
	For displacement 073 and 090	5
	Type of control	
	Manual pressure compensator	C
	Manual pressure compensator with venting	CH
	Remote pressure compensator	R
	Load sensing (pressure & flow)	L
	Constant power (combined pressure & flow)	LW
	Additional suffix for pumps with through shaft	
	for coupling with PFEA-3* (only for PVPCA*-3*)	XA
	for coupling one PFEA-4* (only for PVPCA*-4*)	XB
	for coupling one PFEA-5* (only for PVPCA*-5*)	XC



Schedule Statement of Conformity No. TÜV 10 ATEX 380747 X

Technical data

Main Characteristics

Installation position	Any position
Fluid	ISO 16/13 Filters at 10 µm value with $\beta_{10} \geq 75$
Recommended viscosity	1000 mm <sup>2</sup> /s 15-100 mm <sup>2</sup> /s
Max at cold start During operation	
Recommended pressure on inlet port	From -0.20 to +24 bar

Operating temperature

Pump version	Ambient Temperature	Maximum inlet fluid temperature	Temperature class TX
Standard (NBR seal) and /PE	-20 °C < T <sub>amb</sub> < +60 °C	+60 °C	T5 ; T100 °C
/WG	-20 °C < T <sub>amb</sub> < +60 °C	+50 °C	T5 ; T100 °C
/7 /PE	-20 °C < T <sub>amb</sub> < +70 °C	+80 °C	T4; T135 °C

Operating characteristics

Model	PVPCA-*-3029		PVPCA-*-4046		PVPCA-*-5073		PVPCA-*-5090	
Displacement [cm <sup>3</sup> /rev]	29		46		73		88	
Theoretical max flow at 1450 rpm [l/min]	42		66.7		105.8		127.6	
Max working pressure/ peak pressure [bar] <sup>(1)</sup>	280/350		280/350		280/350		250/315	
Max pressure on drain port [bar]	1.5		1.5		1.5		1.5	
Max torque on the first shaft [N/m]	Type 1 155	Type 5 190	Type 1 220	Type 5 330	Type 1 400	Type 5 620	Type 1 400	Type 5 620
Max permissible load on drive shaft [N]	F <sub>ax</sub>	1000		1500		2000		2000
	F <sub>rad</sub>	1500		1500		3000		3000
Speed rating [rpm] <sup>(2)</sup>	600-3000		600-2600		600-2200		600-1850	

(1) Max pressure is 160 bar for /WG version and 190 bar for /PE version.

(2) Max speed is 2000/1900/1600/1500 rpm for /PE and for /WG versions, respectively for the four sizes

(16) Test documents are listed in the test report No. 10204380747.

(17) Special conditions for safe use

The presence of the fluid inside the pump must be monitored by a level indicator, the pump can't start to run if the inner of the pump is not complete full. The function of each ignition prevention system has to be tested before initial operation according to EN 13463-6, section 9.2. The ignition prevention systems must be for the ignition prevention level IPL 1 (SIL 1) according to EN 13463-6. The requirements of EN 13463-6 must also be observed.

It is responsibility of the user to verify that the maximum inlet fluid temperature doesn't exceed the value reports in the technical data.

The maximum surface temperature has been calculated without taking into account a dust layer on the equipment and a safety factor.

(18) Essential Health and Safety Requirements

no additional ones