



DET NORSKE VERITAS

EC-TYPE EXAMINATION CERTIFICATE

- [2] **EQUIPMENT OR PROTECTED SYSTEM INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES DIRECTIVE 94/9/EC**
- [3] EC-Type Examination Certificate Number: **DNV 09 ATEX 48607X**
- [4] Equipment or Protective System: **CYCLOPS X – Purge Controllers “XP & SM Version”, TRYCLOPS X – Purge Controllers “XP & SM Version” and CYCLOPS Y – Purge Indicator**
- [5] Applicant – Manufacturer or Authorized representative: **Purge Solutions**
- [6] Address: **12450 Galveston Road, Suite C, Webster Texas 77598, USA**
- [7] This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- [8] DNV, notified body number 0575 in accordance with Article 9 of Council Directive 94/9/EC of 23 March 1994, 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 confidential report no. : **2009-3117**

- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with: **EN 60079-0: 2006, EN 60079-2:2007, EN60079-7:2007, EN60079-11:2007, EN60079-18:2004, EN61241-0:2006 and EN61241-1:2004.**
- [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 EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protected system. If applicable, further requirements of this Directive apply to the manufacturer and supply of this equipment or protective system.
- [12] The marking of the equipment or protective system shall include the following:



II 2 G Ex e mb ib [px/py] IIC T6/T4 -40°C ≤ T_{amb} ≤ +65°C
II 2 D Ex tD A21 IP66 T119°C / Ex tD A21 IP66 T79°C

Høvik, 2009-10-01
for Det Norske Veritas Certification AS


Marianne Spæren
Certification Manager




Håkon S. Håkonsen
Technical Reviewer

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 300.000. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



[13]

Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE No.: DNV 09 ATEX 48607X

Certificate History

Revision	Description	Issue date
-	Original certificate	2009-10-01

[15] Description of Equipment or Protective System

The CYCLOPS are a line of type Py purge indicator that provide evidence of pressurization for a customer supplied enclosure with either leakage compensation or continuous dilution sources of protective gas. The CYCLOPS type Py purge indicator come in one casing style, which is available in either stainless steel or anodized aluminium, machined from bar stock. The CYCLOPS type Py purge indicator product line monitors one pressure point. The CYCLOPS type Py purge indicator product line are flange mounted to the outer side wall of the enclosure it will be monitoring. All electrical and alarm connections to the CYCLOPS type Py purge indicators with terminations made inside the purged enclosure, which are connected to an IS barrier to limit ignition energy to unit.

The CYCLOPS or TRYCLOPS is a line of type Px purge controllers that provide evidence of pressurization and exhaust flow for a customer supplied enclosure with leakage compensation or continuous dilution sources of protective gas. The CYCLOPS and TRYCLOPS type Px purge controllers are available in two housing styles, round bodies with threaded covers machined from stainless steel or anodized aluminum bar stock or square fabricated from 316 stainless steel 14 ga. sheet metal. The CYCLOPS type Px purge controller product line monitors only one pressure and exhaust flow point. The TRYCLOPS type Px purge controller product line can monitor up to three pressure and exhaust flow points. Electrical and alarm entries into the CYCLOPS or TRYCLOPS type Px purge controllers are via cable entries for both the round and one of the square units. The remaining square unit has Ex e terminal blocks protruding into the purged enclosure. The only external electrical connections are unpowered dry alarm relay contacts rated at 265 V, 150 mA that is made via an Ex e termination. There are intrinsic safety circuits that leave the encapsulation for the key operated switch, the timer setting, indicator lights and pressure sensors.

Type Identification

CYCLOPS Y – Purge Indicator

Model	PSCY-1A	12VDC, 6061-T6 machined aluminium round housing
	PSCY-1S	12VDC, 316 stainless steel machined round housing
	PSCY-2A	24VDC, 6061-T6 machined aluminium round housing
	PSCY-2S	24VDC, 316 stainless steel machined round housing
Code:	II 2 G	Ex e mb ib [py] IIC T6
	II 2 D	Ex tD A21 IP66 T79°C
Input data	Power	Ui=15V, Ii=150mA, Pi=0,56W
	Alarm	Ui=10V, Ii=19mA, Pi=0,039W



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CYCLOPS X – Purge Controller, SM Version

Model:	PSCS-1	115 VAC, 25A with square 316 stainless steel sheet metal housing
	PSCS-2	230 VAC, 12.5A with square 316 stainless steel sheet metal housing
Code:	II 2 G	Ex e mb ib [px] IIC T4
	II 2 D	Ex tD A21 IP66 T119°C

CYCLOPS X – Purge Controller, XP Version

Model:	PSC1-1A	115VAC, 25A, round aluminium 6061-T6 machined housing
	PSC1-1S	115VAC, 25A, round 316 stainless steel housing
	PSC1-2A	230VAC, 12.5A, round aluminium 6061-T6 machined housing
	PSC1-2S	230VAC, 12.5A, round 316 stainless steel housing
Code:	II 2 G	Ex e mb ib [px] IIC T4
	II 2 D	Ex tD A21 IP66 T119°C

TRYCLOPS X – Purge Controller, XP Version

Model:	PST-	#	@	&	A=6061-T6 machined aluminium round housing
					S= Stainless steel machined round housing
					1 = 115VAC, 25A / 2 = 230VAC, 12.5A
					1 = one enclosure controlled
					2 = two enclosures controlled
					3 = three enclosures controlled
Code:	II 2 G	Ex e mb ib [px] IIC T4			
	II 2 D	Ex tD A21 IP66 T119°C			

TRYCLOPS X – Purge Controller, SM Version

Model:	PST-	#	@	1 = 115VAC, 25A / 2 = 230VAC, 12.5A
				1 = one enclosure controlled
				2 = two enclosures controlled
				3 = three enclosures controlled
Code:	II 2 G	Ex e mb ib [px] IIC T4		
	II 2 D	Ex tD A21 IP66 T119°C		





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Degrees of protection (IP Code): IP66

[16] **Report No.:** 2009-3117
Project No.: PRJC-48482-2008-PRC-USA

[17] **Special Conditions for Safe Use**

- The water absorption test on the casting compound has not been performed. The compound must not be subjected to moisture.
- When these purge indicators/controllers are used with a pressurised enclosure the pneumatic parameters and overall temperature class must be defined in a separate certificate.
- When the purge controllers are mounted in the enclosure wall of the pressurised enclosure, this enclosure must be at least IP54 in order to comply with the requirements to Ex-e.
- The CYCLOPS Y version must be supplied from an intrinsically safe barrier for the power input and the alarm output.

[18] **Essential Health and Safety Requirements**

See part 9 of this certificate

END OF CERTIFICATE

