

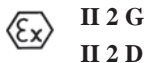


DET NORSKE VERITAS

EC-TYPE EXAMINATION CERTIFICATE

- [2] **EQUIPMENT OR PROTECTIVE SYSTEM INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES DIRECTIVE 94/9/EC**
- [3] EC-Type Examination Certificate Number: **DNV 09 ATEX 48607X** Rev. 1
- [4] Equipment or Protective System: **CYCLOPS X-Purge Controllers
TRYCLOPS X-Purge Controllers
CYCLOPS Y-Purge Indicators**
- [5] Applicant – Manufacturer or Authorized representative: **Purge Solutions, Inc.**
- [6] Address: **2201 N. Highway 35 Bypass, Suite C
Alvin, Texas, 77511, 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 reports listed in section 14.
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0:2012, EN 60079-2:2007, EN 60079-7:2007, EN 60079-11:2012, EN 60079-18:2009, EN 60079-31:2014
- [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:



See Section [15]

T_{amb} = -40°C to +65°C

Høvik, 2015-02-09
for Det Norske Veritas AS


Asle Kaastad
Certification Manager



Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The digitally signed and electronically distributed document is the original and valid certificate. Ref.: www.dnv.com/digitalsignatures

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

Rev. 1

Certificate History

Revision	Description	Report no.	Issue date
-	Original certificate	2009-3117 Rev 1	2009-10-01
1	Update to EN 60079-0:2012, EN 60079-11:2012, EN 60079-18:2009, EN 60079-31:2014	2014-3240 Rev 1	2014-02-06

[15] Description of Equipment or Protective System

The CYCLOPS and TRYCLOPS X-Purge Controllers 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 X-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 X-Purge Controller product line monitors only one pressure and exhaust flow point, while the TRYCLOPS X-Purge Controller product line can monitor up to three pressure and exhaust flow points. Electrical and alarm connections for the CYCLOPS X-Purge Controllers are made inside the purged enclosure, while connections for the TRYCLOPS X-Purge Controllers are via cable entries.

The CYCLOPS Y-Purge Indicators provide evidence of pressurization for a customer supplied enclosure with either leakage compensation or continuous dilution sources of protective gas. The unit comes in one casing style, which is available in either stainless steel or anodized aluminium, machined from bar stock. The CYCLOPS Y-Purge Indicator monitors one pressure point and is flange mounted to the outer side wall of the enclosure it will be monitoring. All electrical and alarm connections to the CYCLOPS Y-Purge Indicator are made inside the purged enclosure and are made via IS barrier to limit ignition energy to unit.

Type Identification and Electrical Data

CYCLOPS X-Purge Controllers

XP Version	PSC1-	a	b	c	
					<u>Hazardous Area Type:</u> Blank = Gas Hazardous Areas D = Dust Hazardous Areas
					<u>Enclosure Material:</u> A = 6061-T6 Aluminum S = 316 Stainless Steel
					<u>Electrical Parameters:</u> 1 = 115VAC, 25A 2 = 230VAC, 12.5A
Marking Code:			II 2 G Ex e mb ib [px] IIC T4 Gb		
			II 2 D Ex tb IIIC T119°C Db IP66		

Note: Other characters may appear after those listed above that are not relevant to this certification

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.



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

Rev. 1

CYCLOPS X-Purge Controllers

SM Version	PSCS-	a	b	
		<u>Hazardous Area Type:</u> Blank = Gas Hazardous Areas D = Dust Hazardous Areas		
		<u>Electrical Parameters:</u> 1 = 115VAC, 25A 2 = 230VAC, 12.5A		
Marking Code: II 2 G Ex e mb ib [px] IIC T4 Gb II 2 D Ex tb IIIC T119°C Db IP66				

Note: Other characters may appear after those listed above that are not relevant to this certification

TRYCLOPS X-Purge Controllers

XP Version	PST-	a	b	c	d	
		<u>Hazardous Area Type:</u> Blank = Gas Hazardous Areas D = Dust Hazardous Areas				
		<u>Enclosure Material:</u> A = 6061-T6 Aluminum S = 316 Stainless Steel				
		<u>Electrical Parameters:</u> 1 = 115VAC, 25A 2 = 230VAC, 12.5A				
		<u>Enclosures Being Monitored:</u> 1 = One enclosure 2 = Two enclosures 3 = Three enclosures				
Marking Code: II 2 G Ex e mb ib [px] IIC T4 Gb II 2 D Ex tb IIIC T119°C Db IP66						

Note: Other characters may appear after those listed above that are not relevant to this certification



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.



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



Rev. 1

TRYCLOPS X-Purge Controllers

SM Version	PSTS-	a	b	c
				<p><u>Hazardous Area Type:</u> Blank = Gas Hazardous Areas D = Dust Hazardous Areas</p> <p><u>Electrical Parameters:</u> 1 = 115VAC, 25A 2 = 230VAC, 12.5A</p> <p><u>Enclosures Being Monitored:</u> 1 = One enclosure 2 = Two enclosures 3 = Three enclosures</p>
<p>Marking Code:  II 2 G Ex e mb ib [px] IIC T4 Gb</p> <p> II 2 D Ex tb IIIC T119°C Db IP66</p>				

Note: Other characters may appear after those listed above that are not relevant to this certification

CYCLOPS Y-Purge Indicators

PSCY-	a	b	c
			<p><u>Hazardous Area Type:</u> Blank = Gas Hazardous Areas D = Dust Hazardous Areas</p> <p><u>Enclosure Material:</u> A = 6061-T6 Aluminum Machined Round Housing S = 316 Stainless Steel Machined Round Housing</p> <p><u>Electrical Parameters:</u> 1 = 12VDC 2 = 24VDC</p>
<p>Marking Code:  II 2 G Ex ib [py] IIC T4 Gb</p> <p> II 2 D Ex tb IIIC T79°C Db IP66</p> <p>Input Data: Power: $U_i = 15V$, $I_i = 150mA$, $P_i = 0.56W$ Alarm: $U_i = 10V$, $I_i = 19mA$, $P_i = 0.039W$</p>			

Note: Other characters may appear after those listed above that are not relevant to this certification

Degrees of protection (IP Code): IP66

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.



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

Rev. 1

[16] Project No.: PRJC-48482-2008-PRC-USA

Descriptive Documents

See Technical Report 2014-3240 Rev 1 for details of the descriptive documents associated with this certification.

Routine tests

A visual inspection according to EN 60079-18:2009 Clause 9.1 must be performed on each CYCLOPS and TRYCLOPS X-Purge Controller. This routine inspection is not applicable to the CYCLOPS Y-Purge Indicator.

A dielectric strength test according to EN 60079-18:2009 Clause 9.2 must be performed on each CYCLOPS and TRYCLOPS X-Purge Controller. This routine test is not applicable to the CYCLOPS Y-Purge Indicator.

[17] Special Conditions for Safe Use

All Units:

When these purge controllers/indicators are used with a pressurized enclosure, the pneumatic parameters and overall temperature class must be defined in a separate certificate.

CYCLOPS X-Purge Controllers, SM Version Only:

When the purge controllers are mounted in the enclosure wall of a pressurized enclosure, the enclosure must be at least IP54 in order to comply with the requirements of Ex-e for the controller terminals and to protect the encapsulation material from moisture.

TRYCLOPS X-Purge Controllers, SM Version for EPL Db Only:

Plain entries made by the end user shall be in compliance with Clause 5.3.1 of EN 60079-31:2014.

CYCLOPS Y-Purge Indicators Only:

The device 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

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.