



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: IECEx DNV 09.0001X Issue No: 1 Certificate history:  
Status: **Current** Page 1 of 4 [Issue No. 1 \(2015-02-09\)](#)  
Date of Issue: **2015-02-09** [Issue No. 0 \(2009-11-30\)](#)  
Applicant: **Purge Solutions, Inc.**  
2201 N. Highway 35 Bypass, Suite C  
Alvin, TX 77511  
**United States of America**  
Electrical Apparatus: **Purge Controllers and Purge Indicators**  
*Optional accessory:*  
Type of Protection: **Ex e, ib, ic, mb, nA, px, py, pz, tb, tc**  
Marking: See Annex

Approved for issue on behalf of the IECEx  
Certification Body:

Asle Kaastad

Position:

Certification Manager

Signature:  
(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](#).

Certificate issued by:

**DNV**  
**Det Norske Veritas (DNV) Certification AS**  
Veritasveien 1  
1322 Hovik  
Norway





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Manufacturer: **Purge Solutions, Inc.**  
2201 N. Highway 35 Bypass, Suite C  
Alvin, TX 77511  
**United States of America**

Additional Manufacturing  
location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

## STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

<b>IEC 60079-0 : 2011</b> Edition:6.0	Explosive atmospheres - Part 0: General requirements
<b>IEC 60079-11 : 2011</b> Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
<b>IEC 60079-15 : 2010</b> Edition:4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
<b>IEC 60079-18 : 2009</b> Edition:3	Explosive atmospheres Part 18: Equipment protection by encapsulation "m"
<b>IEC 60079-2 : 2007-02</b> Edition:5	Explosive Atmospheres - Part 2 Equipment protection by pressurized enclosure "p"
<b>IEC 60079-31 : 2008</b> Edition:1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'
<b>IEC 60079-7 : 2006-07</b> Edition:4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

## TEST & ASSESSMENT REPORTS:

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

[NO/DNV/ExTR09.0007/00](#)      [NO/DNV/ExTR09.0007/01](#)

Quality Assessment Report:

[NO/DNV/QAR09.0002/03](#)



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

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 aluminum, 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.

The CYCLOPS Z-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 aluminum, machined from bar stock. The Z-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 indicator are made inside the purged enclosure.

### CONDITIONS OF CERTIFICATION: YES as shown below:

#### 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 IEC 60079-31:2013.

#### CYCLOPS Y-Purge Indicators Only:

The device must be supplied from an intrinsically safe barrier for the power input and the alarm output.

#### Z-Purge Indicators Only:

When the purge indicators 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-nA for the indicator terminals.



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## DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

### Issue 1:

Standards have been updated to: IEC 60079-0: 2011, IEC 60079-2: 2007, IEC 60079-7:2006, IEC 60079-11: 2011, IEC 60079-15: 2010, IEC 60079-18: 2009, and IEC 60079-31: 2013.

Marking of Y-Purge Indicator changed from Ex e mb ib [px] IIC T6 Gb to Ex ib [py] IIC T4 Gb.

Marking of Z-Purge Indicator changed from Ex nA nL [pz] IIC T6 Gc to Ex nA ic [pz] IIC T6 Gc.

Dust certifications updated from Ex tD to Ex tb (EPL Db devices) or Ex tc (EPL Dc devices).

### Annex:

[Annex to IECEx DNV 09.0001X issue No. 1.pdf](#)

**Type Identification and Electrical Parameters:**

**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

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: Ex e mb ib [px] IIC T4 Gb Ex tb IIIC T119°C Db IP66		Ambient Range: -40°C to +65°C Ingress Protection Rating: 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: Ex e mb ib [px] IIC T4 Gb Ex tb IIIC T119°C Db IP66			Ambient Range: -40°C to +65°C Ingress Protection Rating: IP66		

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

**TRYCLOPS X-Purge Controllers:**

SM Version	PSTS-	a	b	c	
					<u>Hazardous Area Type:</u> Blank = Gas Hazardous Areas D = Dust Hazardous Areas
					<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: Ex e mb ib [px] IIC T4 Gb		Ambient Range: -40°C to +65°C			
Ex tb IIIC T119°C Db IP66		Ingress Protection Rating: IP66			

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

**CYCLOPS Y-Purge Indicators:**

PSCY-	a	b	c	
				<u>Hazardous Area Type:</u> Blank = Gas Hazardous Areas D = Dust Hazardous Areas
				<u>Enclosure Material:</u> A = 6061-T6 Aluminum Machined Round Housing S = 316 Stainless Steel Machined Round Housing
				<u>Electrical Parameters:</u> 1 = 12VDC 2 = 24VDC
Marking Code: Ex ib [py] IIC T4 Gb		Ambient Range: -40°C to +65°C		
Ex tb IIIC T79°C Db IP66		Ingress Protection Rating: IP66		
Input Data: Power: $U_i = 15V$ , $I_i = 150mA$ , $P_i = 0.56W$				
Alarm: $U_i = 10V$ , $I_i = 19mA$ , $P_i = 0.039W$				

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**CYCLOPS Z - Purge Indicators:**

PSCZ-	a	b	c	
				<u>Hazardous Area Type:</u> Blank = Gas Hazardous Areas D = Dust Hazardous Areas
				<u>Enclosure Material:</u> A = 6061-T6 Aluminum Machined Round Housing S = 316 Stainless Steel Machined Round Housing
				<u>Electrical Parameters:</u> 1 = 12VDC 2 = 24VDC 3 = 115VAC 4 = 230VAC
Marking Code: Ex nA ic [pz] IIC T6 Gc		Ambient Range: -40°C to +65°C		
Ex tc IIIC T79°C Dc IP66		Ingress Protection Rating: IP66		

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