



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

Certificate No.: issue No.:

Status:

Date of Issue: **2009-11-30** Page 1 of 3

Applicant: **Purge Solutions**
12450 Galveston Road, Suite C, Webster
Texas 77598, USA
United States of America

Electrical Apparatus: **Purge controllers and purge indicators**
Optional accessory:

Type of Protection: **Ex e, mb, p ib, nL, nA, tD**

Marking: **See annex**

*Approved for issue on behalf of the IECEx
Certification Body:*

Marianne Spæren

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](http://www.iecex.com).

Certificate issued by:

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





IECEX Certificate of Conformity

Certificate No.: IECEx DNV 09.0001X

Date of Issue: **2009-11-30**

Issue No.: **0**

Page 2 of 3

Manufacturer: **Purge Solutions**
12450 Galveston Road, Suite C, Webster
Texas 77598, USA
United States of America

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:

IEC 60079-0 : 2004 Edition: 4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-11 : 2006 Edition: 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-15 : 2005-03 Edition: 3	Electrical apparatus for explosive gas atmospheres Part 15: Construction, test and Marking of Type of Protection "n" electrical apparatus
IEC 60079-18 : 2004 Edition: 2.0	Electrical apparatus for explosive gas atmospheres - Part 18: Construction, test and marking of type of protection encapsulation 'm' electrical apparatus
IEC 60079-2 : 2001 Edition: 4	Electrical apparatus for explosive gas atmospheres - Part 2: Pressurized enclosures 'p'
IEC 60079-7 : 2006-07 Edition: 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
IEC 61241-0 : 2004 Edition: 1	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements
IEC 61241-1 : 2004 Edition: 1	Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures "tD"

*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](#)

Quality Assessment Report:

[NO/DNV/QAR09.0002/00](#)



IECEX Certificate of Conformity

Certificate No.: IECEx DNV 09.0001X

Date of Issue: 2009-11-30

Issue No.: 0

Page 3 of 3

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

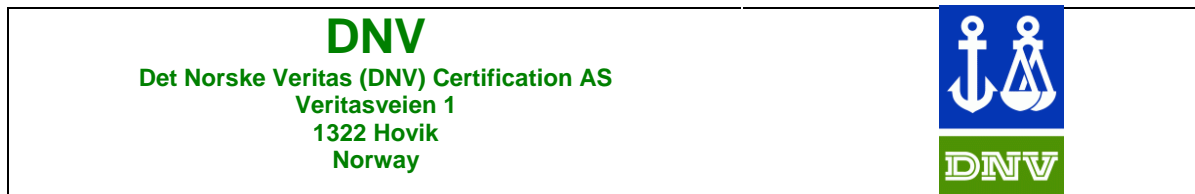
See annex

CONDITIONS OF CERTIFICATION: YES as shown below:

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.



Annex to IECEx DNV 09.0001 issue No.:0

The CYCLOPS are a line of type Pz 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 Pz purge indicator come in one casing style, which is available in either stainless steel or anodized aluminium, machined from bar stock. The CYCLOPS type Pz purge indicator product line monitors one pressure point. The CYCLOPS type Pz 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 Pz purge indicators with terminations made inside the purged enclosure. The signal to the pressure switch is energy limited.

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 Z – Purge Indicator

Model	PSCZ-1A	12VDC, 6061-T6 machined aluminium round housing
	PSCZ-1S	12VDC, 316 stainless steel machined round housing
	PSCZ-2A	24VDC, 6061-T6 machined aluminium round housing
	PSCZ-2S	24VDC, 316 stainless steel machined round housing
	PSCZ-3A	115VAC, 6061-T6 machined aluminium round housing
	PSCZ-3S	115VAC, 316 stainless steel machined round housing
	PSCZ-4A	230VAC, 6061-T6 machined aluminium round housing
	PSCZ-4S	230VAC, 316 stainless steel machined round housing
Code	Ex nA nL [pz] IIC T6 -40°C≤Tamb≤+65°C	
	Ex tD A22 IP66 T79°C -40°C≤Tamb≤+65°C	

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:	Ex e mb ib [py] IIC T6 -40°C≤Tamb≤+65°C Ex tD A21 IP66 T79°C -40°C≤Tamb≤+65°C	
Input data	Power	Ui=15V, Ii=150mA, Pi=0,56W
	Alarm	Ui=10V, Ii=19mA. Pi=0,039W

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:	Ex e mb ib [px] IIC T4 -40°C≤Tamb≤+65°C Ex tD A21 IP66 T119°C -40°C≤Tamb≤+65°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:	Ex e mb ib [px] IIC T4 -40°C≤Tamb≤+65°C Ex tD A21 IP66 T119°C -40°C≤Tamb≤+65°C	

Annex to IECEx DNV 09.0001 issue No.:0

TRYCLOPS X – Purge Controller, XP Version

Model:	PST-	#	@	&	<div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">A=6061-T6 machined aluminium round housing</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">S= Stainless steel machined round housing</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">1 = 115VAC, 25A / 2 = 230VAC, 12.5A</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">1 = one enclosure controlled</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">2 = two enclosures controlled</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">3 = three enclosures controlled</div>
Code:	Ex e mb ib [px] IIC T4 -40°C≤Tamb≤+65°C Ex tD A21 IP66 T119°C -40°C≤Tamb≤+65°C				

TRYCLOPS X – Purge Controller, SM Version

Model:	PST-	#	@	<div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">1 = 115VAC, 25A / 2 = 230VAC, 12.5A</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">1 = one enclosure controlled</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">2 = two enclosures controlled</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">3 = three enclosures controlled</div>
Code:	Ex e mb ib [px] IIC T4 -40°C≤Tamb≤+65°C Ex tD A21 IP66 T119°C -40°C≤Tamb≤+65°C			

Degrees of protection (IP Code): IP66