



# MiniPurge Type X

Control System for Continuous Flow for enclosures up to  
Size 1: 17 cu ft, 0.39 m<sup>3</sup>

Zone 1 (21) - Class I Div 1



Mini-Purge Type X CF  
Control Unit

RLV

## Operation

The MiniPurge system provides a full purge and pressurization system for applications requiring Class I Division 1 Groups A-D and/or Zone 1 (21) IIC approval. When fitted to a suitable enclosure, the system enables regular electrical equipment to be operated safely in a hazardous location.

Certified in accordance with international standards and codes, the MiniPurge system controls the purge and pressurization process. Initially, the system allows a high flow of purge gas, usually compressed air, and measures that flow at the Relief Valve exhaust. Providing that flow is sufficient, the purge timer is started. After completion of the purge time, flow of protective gas continues at the selected rate. This flow may be required to dilute an internal source of hazardous gas released. Internal pressure is thus maintained above external pressure, preventing potentially explosive gas/vapour from entering the enclosure. In this state, the system interlock allows external power to be supplied to internal equipment, either directly or via a separate interface unit.

For enclosures with an internal release of flammable gas or vapour, the Continuous Flow setting is selected to reduce the concentration to below 25% LFL (LEL), with reference to the applicable Codes and /or Standards.

## Components

The system has three components: Control Unit (CU) and Relief Valve (RLV), and Spark Arrestor Unit (SAU). The Control Unit contains the pneumatic logic to monitor and control air flow, pressure and purge timing, and provides system outputs (pneumatic or volt-free contact closures). The RLV provides the overpressure protection.

The Spark Arrestor Unit (SAU) allows the flow of purge gas and provides the flow measurement at the outlet.

## Features

- + **Simple Order Code**  
One model number defines Control Unit (CU), Spark Arrestor (SAU) and Relief Valve (RLV)
- + **Control Unit Direct Mounting on Enclosure**  
No interconnecting pipework, saving time and money
- + **Compact Size**  
Maximum usage of internal space within the enclosure
- + **Series Purge**  
Purge multiple enclosures via one system (application specific)
- + **316L Stainless Steel enclosure and Fitting**  
Excellent resistance to corrosion for harsh environments
- + **Full Compliance with standards**  
Direct purge flow measurement at Relief Valve exhaust
- + **Global Approvals / Global Supply voltage**  
Worldwide design and installation, easy stock control

## Outputs

The system incorporates external outputs for use as power interlock and for alarm indication. For Zone 1 and Div 1 applications, it is required to interrupt the power feed to regular internal equipment under loss of pressurization, and the external alarm allows remote indication (by others). The outputs can be pneumatic (option /PO), volt-free contact closures for use with intrinsically safe circuits (option /IS) or via integral Ex d switches terminated in an Ex e junction box (option /PA - IECEx or ATEX only).

## Accessories

Expo manufactures a range of interface units (MIU series) to provide electrical isolation. For example, the MIU/dA is an external enclosure (Ex d IIC T5) containing a 4-pole contactor for power and a SPCO volt-free contact for alarm, driven by the pneumatic output signals. A variety of interface options are available.

Expo also offer additional services, including full enclosure assembly and certification, operator interfaces, a wide variety of standard and custom enclosures, plus a full technical support facility.

MPXCF 04-15

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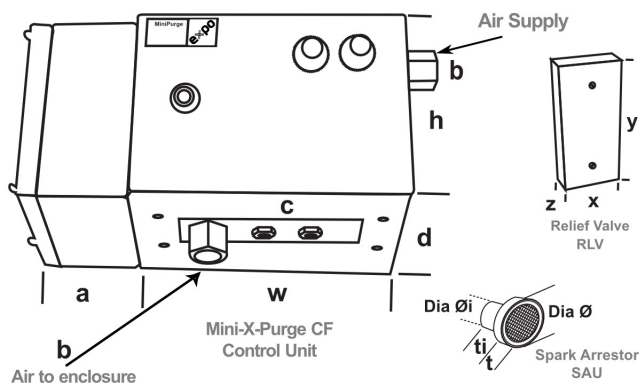
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**Purge + Pressurization + Innovation**  
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## TECHNICAL SPECIFICATION



Dimensions/Spec.		07 1XCF/ss/___	
Width	w	9.4"	240mm
Height	h	7.1"	180mm
Depth	d	6.0"	150mm
T-box(PA only)	a	4.0"	102mm
RLV Width	x	2.4"	62mm
RLV Height	y	5.2"	133mm
RLV Depth	z	1.3"	33mm
Fitting 1/2" NPT	b	1.3"	33mm
Signals 1/8" PTC	c	0.3"	8mm
SAU Ext Diam	Ø	2.2"	55mm
SAU Ext Depth	t	1"	25mm
SAU Int Dia	Øi	1.2"	32mm
SAU Int Depth	ti	1.4"	36mm
Weight		12.1lb	6.1kg

Selection of Orifice Plate				
Orifice Plate Number	Purge Flow		Enclosure Volume	
	scfm	NI/min	Ft <sup>3</sup> (4VC*)	M <sup>3</sup> (5VC*)
A	0.4	10	2.6	0.06
B	0.9	25	6.6	0.15
C	1.4	40	10.5	0.24
D	2.3	65	17.2	0.39
E	3.2	90	24	0.54
F	4.8	135	36	0.81
G	6.4	180	48	1.08
No orifice	8.0	225	60	1.35

\*VC = Volume Changes. Enclosure volume is based on 30 minutes purge time. Volume in ft<sup>3</sup> is based on 4 volume changes. Volume in m<sup>3</sup> is based on 5 volume changes

## TECHNICAL DATA

Type Number (example) 07 1 X CF/ss/PO/AO

Size  
1

Purge flow rate selectable from 10 - 225 NI/min, 0.4 - 8 scfm

Certification / Approval

X IECEx SIR 07.0027X Ex [px] Ex [p]  
Europe, ATEX Category 2 GD  
Cert no SIRA 01ATEX 1295X  
USA/Canada NFPA496 CI I Div 1  
UL E190061, FM 1X8A4.AE  
INMETRO TÜV 12.1462X Ex [px] Ex [p]

Pressurized method

CF Continuous Flow

Housing

ss Stainless Steel

Output See below

PO Pneumatic Output

IS Intrinsically Safe Output

PA Power and Alarm Output (NOT FOR USA/CANADA)

Options

AO Alarm Only on loss of pressure

WM Wall Mounting bars

**Purge Supply medium:** Instrument quality compressed air or inert gas flammable gas free

**Purge Supply pressure:** 4 - 8 bar (60 - 115 psi) at flow rate  
Minimum supply pressure to be maintained during purging

**Purge Supply Capacity:** At least 1.5 times certified flow rate.  
See product code

**Low Pressure Sensor Setting:** 250 Pa, 2.5 mbar, 1.0" wc

**Temperature:** -20°C, -4°F to 55°C, 131°F

**Materials of construction:** CU, RLV and SAU, 316L SS

**Relief Valve (RLV):** Magnetic operation (patented)

**Opening pressure:** 1kPa, 10 mbar, 4" wc

**Spark arrester:** Integral to RLV, SAU, 316 Stainless Steel mesh

**/PO "Power Output"** 2 bar (30 psi) when power enabled  
no output for trip/disconnect  
**"Alarm Output"** No output pressure = Alarm  
2 bar (30 psi) when pressure OK

**/IS** Dry contacts for switching intrinsically safe circuits "Power"  
contact closed to enable power, contact open for trip disconnect

**/PA** (NOT FOR USA/CANADA) Ex e IIC Junction Box and Integral Ex d IIC T5 Power (DPNO) and Alarm (SPCO) switches 4A 250Vac AC15.



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