



# Pre-Start Ventilation System

Product Range: 3PV: 500 to 1500 NI/min

5PV: 2000 to 6000 NI/min

7PV: 7000 to 14000 NI/min

Zone 1 Ex e ATEX & IECEx Electrical Rotating Machines  
Suitable to protect Class I, Div 2 Electrical Rotating Machines

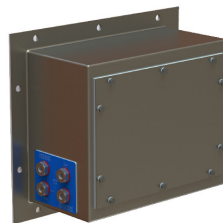
## Features

- + Three system sizes to cover wide range of flow rates and machine types.
- + Local and Remote Start options for easy incorporation in control schemes.
- + Fully third party approved for Zone 1 application IECEx / ATEX.
- + Continuous Ventilation (CV) Option to permit immediate motor re-start after start-up trip.



Control Unit

Terminal Box  
(/PA option only)



Outlet Valve

## Description

Pre-Start Ventilation (PV) is recommended for safe starting of high voltage Ex e and Ex n motors in hazardous areas, where the overall risk assessment (under 60079-7 and 60079-15 respectively) calls for "Special measures".

The Expo Pre-Start Ventilation System enables users to readily demonstrate compliance with the above equipment standards, and greatly improves safety by eliminating any potentially flammable atmosphere from the machine enclosure prior to start up.

## Components

The PV System has two components; the Control Unit (CU) and the Outlet Valve (OV). The CU controls flow into the motor enclosure, with pneumatic logic operating the OV based on flow and time. The OV has two valves; one allows normal ventilation flow and the second provides machine overpressure relief.

In operation, the system provides local indication of ventilation condition and progress, plus volt-free contacts for external indication (see Technical Specification).

## Explosion Protection

### Hazardous Area Classification

ATEX & IECEx certified for use with Electrical Rotating Machines of types:

Ex e (Zone 1) & Ex n (Zone 2)

Sira 13ATEX1083X

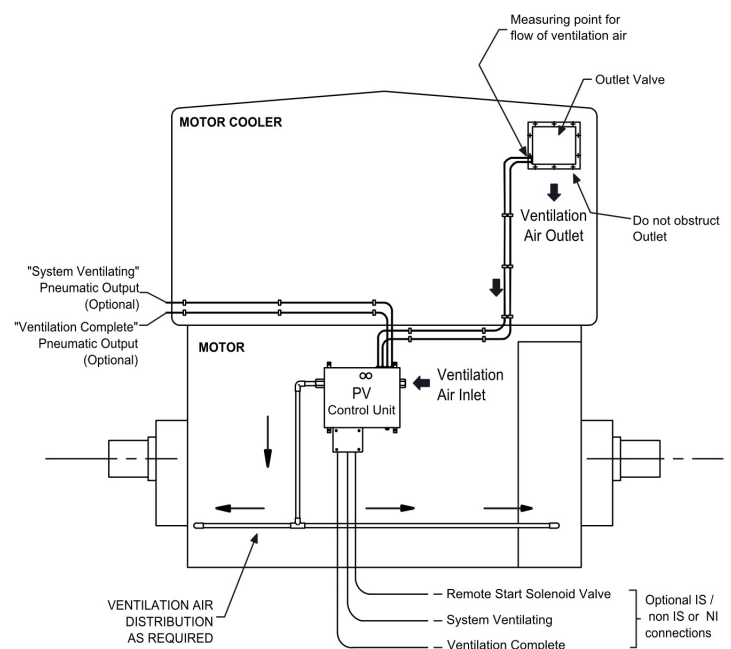
IECEx SIR13.0030X

Suitable to protect Class I Div 2 Electrical Rotating Machines

### Ambient temperature

-20°C to +60°C (-4°F to +140°F)

-50°C to +60°C (-58°F to +140°F) Low Temperature Option



PV 04-15

IEC IECEx ATEX ISO 9001

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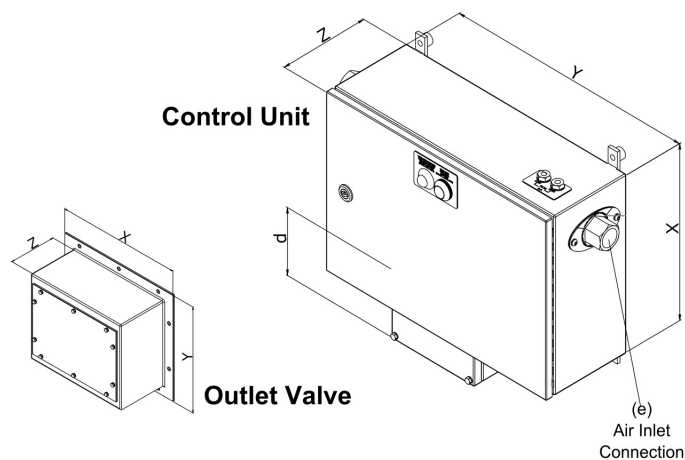


## TECHNICAL SPECIFICATIONS & OPTIONS

### LOCAL INDICATORS

'Ventilation in Progress' (Off = Black, In Progress = Flashing LEDs)

'Ventilation Complete' (Off = Red, Complete = Green)



Dimensions	3PV		5PV		7PV	
Height (X)	350mm	13.8"	360mm	14.2"	670mm	26.4"
Width (Y)	386.5mm	15.2"	500mm	19.7"	600mm	23.6"
Depth (Z)	175mm	6.9"	175mm	6.9"	270mm	10.24"
Terminal Box (d)	132mm	5.2"	132mm	5.2"	132mm	5.2"
Fitting (e)	3/4" NPT		1" NPT		2" NPT	
Outlet Valve Width (X)	200mm	7.9"	330mm	13"	540mm	21.3"
Outlet Valve Height (Y)	130mm	9.1"	280mm	11"	410mm	16.1"
Outlet Valve Depth (Z)	131mm	5.2"	136mm	5.4"	288mm	11"
Control Unit Weight	14.6kg	32.2lb	20.6kg	45.4lb	43kg	95lb
Outlet Valve Weight	4kg	9lb	7kg	15.4lb	25kg	55.1lb

### OUTPUT SIGNALS Options

/PA - Ex d switches (250Vac 4A) via  
Ex e terminals in Ex e IP66 enclosure.

/IS - Volt free contact closures, suitable  
for connection into intrinsically safe or non-incendive  
circuits (external protection by others). Blue terminals in  
IP66 junction box.

Terminals accept 0.5 to 2.5mm<sup>2</sup>.

/PO - Pneumatic Outputs, 4barg signals available via  
1/8" NPT (F) bulkhead fittings.

### OPERATION OPTION

#### CV - Continuous Ventilation

System continues ventilating after timing has elapsed,  
and permits immediate machine re-start.

## TECHNICAL DATA

### #PV / ss / RS## / N / ET / PA / Other Options

**CV** = Continuous  
Ventilation  
**OV** = Operated Valve

#### Output Signals

**IS** = Suitable for IS or  
Non -Incendive (NI)  
Circuits

**PA** = Ex e Terminal Box

**PO** = Pneumatic outputs

**ET** = Electronic Timer  
Intrinsically Safe &  
Battery Powered.  
Battery life 3 years.

#### Air Inlet connection

**N** = NPT (Alternatives Available:  
G = BSPP, A = ANSI, D = DIN)

#### Starting mode

**LS** = Local Start Only via push button

**RS** = Remote Start\*, please select

Ex m **RS01**: 24VDC **RS02**: 115VAC **RS03**: 230VAC

Ex i **RS11**: 24VDC

\*Each RS option includes a Local Start via internal push button

#### Construction material

**SS** = 316 Stainless steel

#### PV System Size - Flow Capacity

**3PV** = 500 to 1,500 NI/min

**5PV** = 2,000 to 6,000 NI/min

**7PV** = 7,000 to 14,000 NI/min

#### Air Supply Pressure:

4 to 10 barg  
(60 to 150 psig)

#### Outlet Valve Lift off Pressure:

20 to 50 mbarg  
(8" to 20.1" wg)

#### Outlet Valve Housing:

316 stainless steel



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