Motor Pressurization System

IECEx & ATEX Certified Purging and Pressurization System for Large Electrical Machines.

D779 MOTOR SYSTEMS

Control Unit

Relief Valve

Features

- **Simple Order Code**
  One model number defines Control Unit (CU) and Relief Valve (RLV)
- **User Selectable Settings(* default)**
  Pre-set selectable purge flow rates (1000 and *1500)
  1 -99* minute purge time (-0/+3 seconds tolerance)
  Suits a wide variety of machine frames sizes
- **Clear Visual Status Indication**
  Local indicators for "Alarm/Pressurized" and "Purging"
- **Continuous Operation through Closed Loop Automatic Pressurization System (CLAPS)**
  Eliminates spurious trips on start-up or load change
- **316L Stainless Steel enclosure & fittings**
  Excellent resistance to corrosion for harsh environments
- **Full Compliance with Standards**
  Direct purge flow measurement at Relief Valve exhaust orifice
- **Global Approvals**
  IECEx & ATEX certified Ex [pxb] to IEC/EN 60079-2 for gas and dust applications.
  INMETRO certified Ex [pxb] to ABNT NBR IEC 60079-2, for gas and dust applications.

Operation

The Motor Purging and Pressurization control system has been designed for use on large electrical machines located in a hazardous location.

The system delivers a high purge rate for a given duration (as defined by machine designer and Notified Body) prior to start-up, to purge any potentially explosive gases from the machine. After purge, the system automatically switches to leakage compensation mode for normal operation. The Closed Loop Automatic Pressurization System (CLAPS) automatically compensate for pressure variations in the machine during start-up or through temperature variations during operation. The system enables the machine to continuously operate at a set over-pressure, saving considerable time during test and commissioning, and simplifying normal operation.

Components

The system comprises the Control Unit (CU) and the Relief Valve (RL V). The Control Unit contains the pneumatic logic to monitor and control air flow, pressure and purge timing, and provides the system outputs. The RLV measures purge flow at the outlet and provides over-pressure protection for the machine through a patented magnetically-set exhaust valve with integrated spark arrestor.

Explosion Protection

Hazardous Area classification:

IECEx, INMETRO Zone 1, Group IIC T6 Gb
IECEx, INMETRO Zone 21, Group IIIC T95°C Db

ATEX Category 2 G, Zone 1, Group IIC T6 Gb
ATEX Category 2 D, Zone 21, Group IIIC T95°C Db

Ambient Temperature: -20°C to +55°C (4°F to 131°F)

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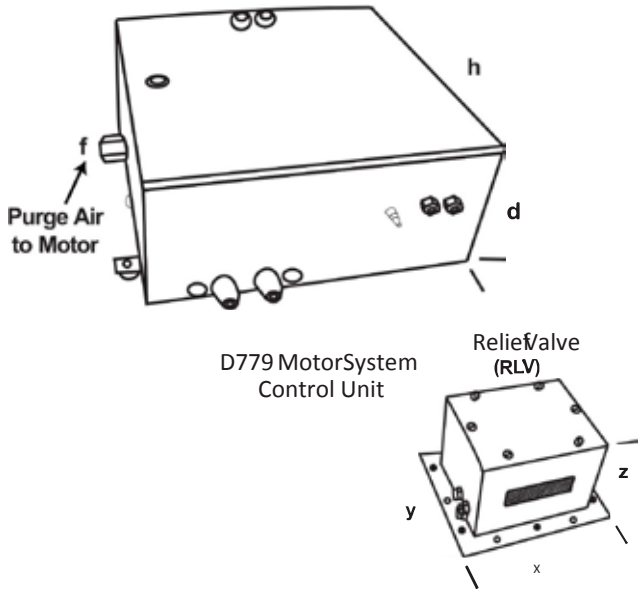

Dimensions/Spec.		D779	
Width	w	15.7"	400mm
Height	h	15.7"	400mm
Depth	d	6.9"	174mm
Fitting	f	1/2" NPT (F	
RLV Width	x	9.1"	230mm
RLV Heioht	y	7.9"	200mm
RLV Depth	z	5.1"	129mm
CU Weight		16 kg	351b
RLV Weight		4 kg	8.81b

Process Connections:
Purge Supply: 1/2" NPT (F), recommended supply pipe: 1" I.D min. Purge outlet to machine: 1" NPT (F). Reference point & signals: 1/8" NPT (F).

Compressed Air Supply: Clean Dry Air or Inert Gas. Minimum supply pressure 4 barg, Max 16 barg. Supply inlet filter 40µ and regulator fitted.

Enclosure & Mounting: Wall mounting lugs & spacer provided for fitting to machine.

TECHNICAL DATA

Order Code: D7 79MOTORSYS-E
Description: 3XLC/ss/ET/OV /PA/PC/D779

Purge flow rate, user selectable to: 1,000 and 1,500

Leakage Compensation Capacity: Up to 500 NI/min @ 4 barg inlet pressure.

Intrinsically safe Electronic Timer, range 1-99 mins. battery powered

System outputs are volt-free contact closures terminated on Ex e Junction Box, with:
Power = 250 Vac 4 Amp (AC15) DPNO Ex d IIC T6
Alarm = 250 Vac 4 Amp (AC15) SPCO Ex d IIC T6

Minimum pressure sensor default set at 1.5 mbarg
Range: 0.5 to 5 mbarg
CLAPS sensor default set at 10 mbarg
Range: 5.0 mbarg to 15 mbarg

Certification/ Approval:
IECEx Zone 1 Ex [pxb] ia IIC T6 GB
IECEx Zone 21 Ex [pxb] ia IIIC T95 °C Db
ATEX II 2(2) G Ex [pxb] ia IIC T6 Gb
ATEX II 2(2) D Ex [pxb] ia IIIC T95 °C GB
INMETRO/TUV Zone 1 Ex [pxb] ia IIC T6 Gb
INMETRO/TLJV Zone 21 Ex [pxb] ia IIIC T95 °C Db

Relief Valve Lift-Off pressure setting: default 30mbarg
Minimum: 20mbarg, Maximum: 50mbarg

OPTIONS

+ Air Inlet 1/2" Ball Valve for local isolation of the system.
Order Code: D779BALLVV.

+ Air Inlet "Ex" approved 1/2" Solenoid Valve for remote isolation of the system.
Order Code: D779SOLVV.