

SmartPurge II

IECEX, ATEX and FM Certified Intelligent Purge System for Zone 1 Applications

Purge flow rates up to 540 NI/min (19 SCFM)



Features

- **Ambient temperature range:** Certified for use from -20°C to $+60^{\circ}\text{C}$ (-4°F to $+140^{\circ}\text{F}$).
- **Purge flow rate:** Up to 540 NI/min (19 SCFM). Suitable for most enclosure sizes and series purging applications
- **Purging modes:** Can operate in Leakage Compensation, or Continuous Flow depending on configuration.
- **Status Indication:** Local LCD display, with remote panel option.
- **Direct enclosure mounting:** Requires limited interconnecting piping for air supply unit only
- **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; FM; KOSHA; NEPSI, PESO
- **Signal outputs:** Configurable alarm outputs
- **External inputs:** Accepts alarm inputs from external devices such as gas detectors, fire alarms etc.
- **Enclosure power control:** The SmartPurge II can control equipment loads up to 5A. For higher power applications, use of a SmartPurge Interface Unit (SIU) is required.
- **Purge override:** Password controlled or via optional key-switch input.
- **Safety:** SIL 2 rated

Operation

The SmartPurge II system is a fully certified purge and pressurisation system for Zone 1 applications. When fitted to a suitable enclosure, the system enables regular electrical equipment to be operated safely in a hazardous location.

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, in Leakage Compensation mode, the purge flow is switched off and the system controls a lower flow to compensate for enclosure leakage. In Continuous Flow (CF) mode, the high flow rate continues after the end of the purge. CF mode is suitable for dilution in the case of the enclosure containing an Internal Source of Release.

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.

System Components

The system comprises the SPlI Control Unit (CU) and the Air Supply Unit (ASU). The Control Unit contains the programmable logic to monitor and control enclosure air flow, pressure and purge timing, and provides the system outputs. The CU also houses the air outlet / relief valve.

The ASU controls the supply of air into the enclosure and is supplied either in LC or CF configurations.

Certification

Europe: FM 11ATEX0060X

International: IECEX FME 11.0006X

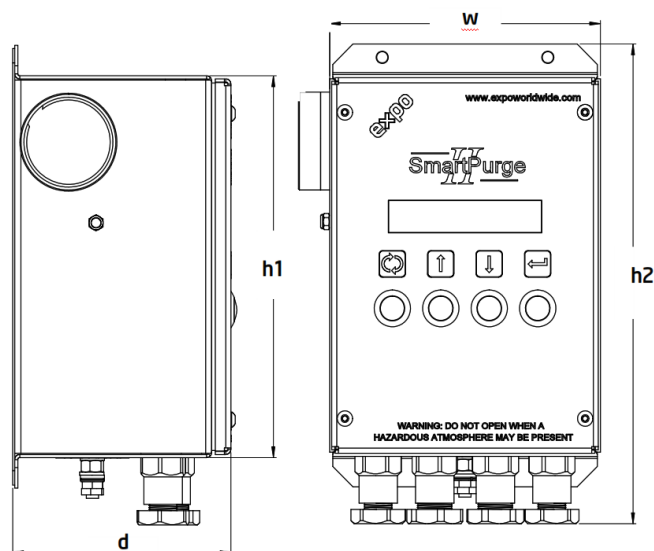
USA/CAN: FM 3047764coc

Korea: KOSHA 19-AV4B0-0035

China: NEPSI GYJ15.1433

India: PESO P374648

System Data SPII



Dimensions	SPII
Height h1	187mm (7.4")
Height h2	235mm (9.3")
Width w	134mm (5.3")
Depth d	108mm (4.3")
Weight	4.2kg (9.3lbs)

Note a minimum of 20mm (0.8") clearance is needed for the air exit/ spark arrestor.

Enclosure & Mounting:

Housing 316L stainless steel. IP64.

Direct enclosure mount.

Process Connections:

Purge inlet: 1/4" BSPP

Purge supply capacity—at least 1.5 times certified flow rate

Purge gas: Clean dry air or inert gas.

Supply pressure 2-7 barg (29-102psi).

Technical Specifications SPII

Purge flow range:

- Leakage compensation 110-540 NI/min (3.88-19 SCFM)
- Continuous flow 10-540 NI/min (0.35-19 SCFM)

Power supply:

- Mains: 90–254 VAC. Part code SP2-PM-SS
- Low voltage: 11-28 VDC. Part code SP2-PL-SS

Purge time: selectable 1-99 mins..

Low pressure alarm: Selectable - Immediate trip; Delay trip (up to 99 mins); Alarm only.

Enclosure pressure: Selectable 0.8 to 7mbarg (0.3 to 2.8"wc) after purge. Enclosure minimum pressure sensor setting 0.5 mbarg (0.2"wc).

Relief Valve: Lift-Off pressure: 10mbarg (4"wc).

Air supply Unit:

- Leakage Compensation (LC): Digital valve SP2-DV (Intrinsically safe) switches between high purge flow rate and LC flow rate
- Continuous Flow (CF): manual valve to set combined purge and CF flow rates.

Certification/Approvals:

ATEX: Ex eb ib mb [ib Gb] [p] IIC T4 Gb; Ex tb [p] IIIC T1 35°C Db

IECEX: Ex eb ib mb [ib Gb] [p] IIC T4 Gb; Ex tb [p] IIIC T1 35°C Db

US: Class I, Zone 1 AEx e ib mb [p] IIC T4 IP64

Class I, Zone 21 AEx tb [pD] IIIC 135°C IP64

CAN: Ex e ib m [p] IIC T4 Gb IP64

Ambient temperature: -20°C to +60°C (-4°F to 140°F)

Options

- Cable gland kit: SP2-GK. M16 cable gland set for field wiring.

- Remote panel: SP2-RP. Permits the system to be controlled from a remote location.

- Override switch: SP2-OS

- SmartPurge Interface Unit: SIU for control of higher power and communication lines. See separate data sheet for more information.