The De Facto Standard in Fire Sprinkler Corrosion Control™

DRY PIPE NITROGEN INERTING **DPNI**

ECS Protector Series Nitrogen Generation Systems

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ECS Engineered Corrosion Solutions™

Complete Corrosion Control.

SPECIFYING A NITROGEN GENERATOR

The Right System for your Project

STEP 1: SELECT A NITROGEN GENERATOR

To ensure the nitrogen generator is adequately sized, the following information is **required**:

1) The total cumulative size of all dry/preaction sprinkler systems
2) The size of the largest single dry/preaction sprinkler system
3) The total number of dry/preaction sprinkler systems
4) The supervisory pressure of all dry/preaction sprinkler systems

With this information an ECS nitrogen generator can be selected. Small to medium projects can generally be supplied with a pre-engineered nitrogen generator that includes an integral air compressor (PGEN-3/5/10/20). Projects with a larger cumulative sprinkler system capacity should be supplied with an engineered stand-alone nitrogen generator paired with a separate air compressor or house air (PGEN-30/40/50/60).

STEP 2: SELECT A VENT

To facilitate the removal of oxygen, ECS utilizes the patented "fill and purge" breathing process which requires installation of a vent to control gas discharge from the fire sprinkler system. One (1) vent is required on each dry/preaction fire sprinkler riser, with two available options:

1) ECS Protector Manual Vent (PAV-D)
2) ECS Protector Dry SMART Vent (PSV-D)

The PAV-D is a mechanical device that is closed manually once the system nitrogen concentration has been verified at 98% or greater and represents the most economical approach to oxygen removal. The PSV-D includes an electronic solenoid valve that closes automatically once the desired nitrogen concentration has been reached and is preferred in applications that value automation or minimal human intervention.

STEP 3: SELECT MONITORING EQUIPMENT

Engineered Corrosion Solutions believes that a true corrosion management system should be monitored for performance to ensure that fire sprinkler system piping is properly protected against oxygen corrosion. ECS offers multiple monitoring options to pair with a nitrogen generation system:

- ECS In-Line Corrosion Detector (includes remote test station)
- ECS Protector SMART Gas Analyzer (permanent installation)
- ECS Protector Handheld Gas Analyzer

STEP 4: CONTACT ECS

Contact ECS Monday thru Friday, 8 AM - 5 PM (cst) to have a **project specific quote returned in four (4) business hours or less**. Your project will be reviewed by an ECS engineer to ensure the most cost effective solution is provided.

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THE ECS ADVANTAGE

Cost Effective Technology Leader

ALL PRODUCTS SOLD DIRECT

- No distributor mark-up
- System design and product selection assistance with every project
- Direct support and training from the manufacturer

PATENTED FILL & PURGE BREATHING PROCESS

- Allows all equipment to be installed in the sprinkler riser room
- No remote equipment in critical areas
- Ensures minimal labor time to install and maintain equipment

NO UNNECCESSARY EQUIPMENT

- No refrigerated dryers, nitrogen tanks, or extensive gas sampling lines
- Reduces equipment footprint where space is limited
- Minimizes installation labor and coordination with other trades

INDUSTRY BEST LEAD TIMES

- 72 hours from purchase order to shipment
- Respond to project demands immediately
- Complete projects on time and under budget

SUPERIOR CUSTOMER SERVICE AND SUPPORT

- Single engineer point of contact for every project
- Replacement parts available for shipment in 24 hours
- Technical support available 24/7

Typical Nitrogen Generator Installation

PGEN-40 with 5 hp oil-lubricated air compressor and SMART vent at riser

MONITORING OUTPUTS INCLUDED WITH EVERY ECS NITROGEN GENERATOR

Providing peace of mind to protect your investment

- **Output for system power**
- **Output for nitrogen generation mode**
- **Output for air bypass mode**
- **Output for leak monitoring**
- **Output for nitrogen supply pressure**

NITROGEN GENERATORS

Pre-Engineered Plug and Play Systems

PGEN-3/5

- Up to 675/950 gallons total sprinkler system capacity
- FM Approved
- UL 508A Listed Industrial Control Panel
- Integrated oil-less air compressor
- Wall-mount ready
- Air bypass and leak monitoring alarm signals included
- Equipped with multiple monitoring outputs

Specifications

- Nitrogen Purity: 98%+
- Electrical: 120VAC, 6 amps
- Dimensions: 36" (H) x 24" (W) x 9" (D)

FM APPROVED

PGEN-10

- Up to 2,000 gallons total sprinkler system capacity
- FM Approved
- UL 508A Listed Industrial Control Panel
- Integrated oil-less air compressor
- Wall-mount ready
- Air bypass and leak monitoring alarm signals included
- Equipped with multiple monitoring outputs

Specifications

- Nitrogen Purity: 98%+
- Electrical: 120VAC, 24amps
- Dimensions: 38" (H) x 29" (W) x 11" (D)

FM APPROVED

PGEN-20

- Up to 3,200 gallons total sprinkler system capacity
- FM Approved
- UL 508A Listed Industrial Control Panel
- Integrated oil-less air compressor w/ air receiver tank
- All equipment skid-mounted
- Air bypass and leak monitoring alarm signals included
- Equipped with multiple monitoring outputs

Specifications

- Nitrogen Purity: 98%+
- Electrical: 120VAC, 2 amps (generator)
  208/480VAC, 3 phase (compressor)
- Dimensions: 57" (H) x 32" (W) x 40" (D)

FM APPROVED

Products for use under U.S. Patents 8,720,591, 9,144,700 and 9,186,533

NITROGEN GENERATORS

Engineered Stand-Alone Systems

PGEN-30

- Up to 6,500 gallons total sprinkler system capacity
- UL 508A Listed Industrial Control Panel
- Paired with oil-less air compressor or house air
- Stand-alone cabinet
- Air bypass and leak monitoring alarm signals included
- Equipped with multiple monitoring outputs

Specifications

- Nitrogen Purity: 98%+
- Electrical: 120VAC, 2 amps
- Dimensions: 53" (H) x 24" (W) x 12" (D)

PGEN-40

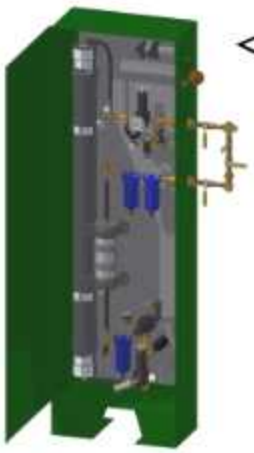
FM APPROVED

- Up to 11,000 gallons total sprinkler system capacity
- FM Approved
- UL 508A Listed Industrial Control Panel
- Paired with 5 hp oil lubricated air compressor
- Stand-alone cabinet
- Air bypass and leak monitoring alarm signals included
- Equipped with multiple monitoring outputs

Specifications

- Nitrogen Purity: 98%+
- Electrical: 120VAC, 2 amps
- Dimensions: 77" (H) x 24" (W) x 12" (D)

PGEN-50/60



FM APPROVED

- Up to 18,500/22,500 gallons total sprinkler system capacity
- FM Approved
- UL 508A Listed Industrial Control Panel
- Paired with 7.5 or 10 hp oil lubricated air compressor
- Stand-alone cabinet
- Air bypass and leak monitoring alarm signals included
- Equipped with multiple monitoring outputs

Specifications

- Nitrogen Purity: 98%+
- Electrical: 120VAC, 2 amps
- Dimensions: 77" (H) x 24" (W) x 12" (D)

Products for use under U.S. Patents 8,720,591, 9,144,700 and 9,186,533

PGEN ACCESSORIES

Venting and Pressure Control Devices

ECS Protector Manual Vent (PAV-D)

- Installed at fire sprinkler riser, no remote installation required
- Facilitates patented "fill and purge" breathing process
- Sprinkler system reaches 98% nitrogen within two (2) weeks
- Pressure regulator prevents system depressurization
- Float valve prevents water discharge
- Requires no plumbing to drain
- No electric required

ECS Protector Dry SMART Vent (PSV-D)

- Installed at fire sprinkler riser, no remote installation required
- Facilitates patented "fill and purge" breathing process
- Automatically closes once 98% nitrogen has been reached
- Pressure regulator prevents system depressurization
- Float valve prevents water discharge
- Requires no plumbing to drain
- Includes control box enclosure, requires 120V power supply

ECS Protector Nitrogen Interface Controller (NIC-1)

- Allows one nitrogen source to supply multiple sprinkler systems operating at different pressures
- Facilitates patented "fill and purge" breathing process when paired with a venting device
- "Plug and Play" performance in self-contained wall mount cabinet
- Includes manual bypass for fast fill option
- Requires 120V power supply

Notes

- One (1) venting device required per sprinkler system, vent assembly requires 1/2" connection at riser
- Install Dry SMART Vent control box on wall adjacent to vent assembly installed at riser
- Nitrogen Interface Controller only required for multiple dry/preaction systems supplied from one nitrogen source and operating at different pressures, not required for multiple dry/preaction systems operating at a single maintenance pressure

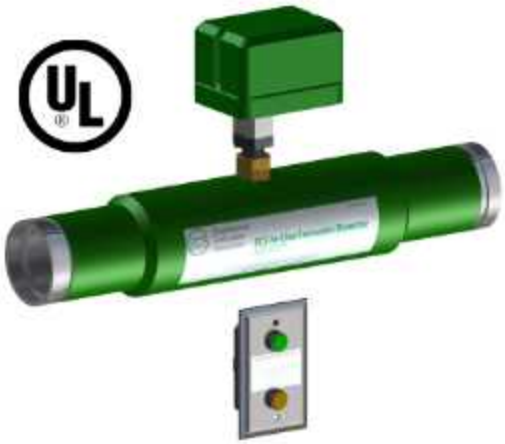
Products for use under U.S. Patents 8,720,591, 9,144,700 and 9,186,533

PGEN ACCESSORIES

Monitoring Devices

ECS In-Line Corrosion Detector (ILD)

- Only device that provides continuous real-time corrosion monitoring of a fire sprinkler system
- UL Listed
- Matches size, schedule, and material of system piping
- Provides 360° surface area to detect internal corrosion
- Thin wall section monitored by UL Listed/FM Approved pressure switch
- Includes remote test station, can be monitored remotely and with fire alarm or building automation systems



ECS Protector SMART Gas Analyzer (SGA-1)

- Provides continuous real-time gas concentration of system
- Multiple signal outputs: contact closure, 0-5V DC, and 4-20mA
- Can be monitored by fire alarm or building management systems
- Includes digital display
- Accepts 24V DC or 120V AC power supply
- Paired with ECS venting device for continuous gas supply

ECS Protector Handheld Gas Analyzer (PHGA-1)

- Handheld battery powered device verifies nitrogen purity
- Measures gas concentration at vent sampling port or nitrogen generator discharge
- Features one button self-calibration

Notes

- Minimum one (1) In-Line Corrosion Detector recommended per nitrogen generator
- In-Line Corrosion Detector typically installed on dry/preaction system mains where trapped water collects
- One (1) SMART Gas Analyzer recommended per nitrogen generator, must be installed adjacent to ECS vent
- Pressure rated gas sample tubing between venting device and gas analyzer provided by ECS

Products for use under U.S. Patents 9,095,736, 9,144,700 and 9,186,533

NITROGEN GENERATOR SPECIFICATIONS

ECS Protector Series

	PGEN-3	PGEN-5	PGEN-10	PGEN-20	PGEN-30	PGEN-40	PGEN-50	PGEN-60
Total System Capacity	675 gal	950 gal	2,000 gal	3,200 gal	6,500 gal	11,000 gal	18,500 gal	22,500 gal
Single System Capacity @ 40 psi(1)	215 gal	265 gal	560 gal	950 gal	1,150 gal	1,440 gal	2,025 gal	2,900 gal
Single System Capacity @ 20 psi(1)	540 gal	590 gal	1,120 gal	1,800 gal	2,300 gal	2,880 gal	4,050 gal	5,800 gal
Air Compressor	Integral Oil-less	Integral Oil-less	Integral Oil-less	Integral Oil-less	Oil Lubricated	Oil Lubricated	Oil Lubricated	Oil Lubricated
Size (H x W x D)	36x24x9	36x24x9	38x29x11	57x32x40	53x24x12(2)	77x24x12(2)	77x24x12(2)	77x24x12(2)
Weight	115 lbs	125 lbs	175 lbs	420 lbs	152 lbs(2)	264 lbs(2)	300 lbs(2)	300 lbs(2)
Configuration	Wall Mount	Wall Mount	Wall Mount	Skid Mount	Stand Alone	Stand Alone	Stand Alone	Stand Alone
Electrical	120V	120V	120V	120V/ 460V/3p(3)	120V(4)	120V(4)	120V(4)	120V(4)
Lead Time(6)	72 hrs	72 hrs	72 hrs	72 hrs	72 hrs	72 hrs	72 hrs	72 hrs

Notes

(1) Single system capacity based on 30 min. fill requirement of largest single sprinkler system; a secondary air compressor with normally closed isolation valve can be used to meet fill requirement for larger individual systems
(2) Size and weight of nitrogen generator only, does not include separate air compressor
(3) 120V power supply required for nitrogen generator, 208 or 460V/3 phase power supply required for compressor
(4) Power requirement for stand alone nitrogen generator only, does not include separate air compressor power requirements, options include: 200V/230V/460V 3 phase
(5) Lead time refers to time from order receipt to shipment from ECS facility, does not include shipping time
(6) All nitrogen generators include 1 year manufacturer's warranty per ECS terms and conditions

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