

NIC-1

ECS Protector Nitrogen Interface Controller



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

Specifications

Stock Number:	NIC-1
Dimensions:	14" (W) x 16" (H) x 6" (D) 356mm (W) x 406mm (H) x 152mm (D)
Weight:	36 Lbs (16 Kg)
Temperature Range:	40°F - 105°F (5°C - 40°C)
Power Supply:	120-240VAC/1 phase/50-60Hz - Dedicated Circuit
Power Consumption:	<2 Amps
Nitrogen/Air Connection:	
Inlet:	½" NPT Female
Outlet:	½" NPT Female

General Description

The ECS Protector Nitrogen Interface Controller (NIC-1) is designed to facilitate the **Dry Pipe Nitrogen Inerting (DPNI)** process for controlling oxygen corrosion in dry pipe and preaction fire sprinkler systems when used in conjunction with a nitrogen gas source. Where a house/plant nitrogen supply is available, the NIC-1 interfaces with the nitrogen gas source to provide maintenance gas for dry pipe and preaction fire sprinkler systems. Where dry pipe and preaction fire sprinkler systems are operating at two (2) different maintenance gas pressures, the NIC-1 can be used with any ECS nitrogen generator to provide corrosion control with supervisory nitrogen gas; thereby eliminating the need for two (2) separate nitrogen sources.

The nitrogen source is controlled by the NIC-1 to inert the sprinkler systems within fourteen (14) days and then automatically provide nitrogen gas for pressure maintenance. The NIC-1 includes a bypass valve that allows for maintenance or "fast fill" needs to meet the NFPA 13 30-minute fill requirement for dry pipe and preaction fire sprinkler systems. When paired with either the Protector Dry Manual Vent (PAV-D) or the Protector Dry SMART Vent (PSV-D/DE) **installed on the sprinkler riser**, the NIC-1 controls the nitrogen gas to facilitate the patented "fill and purge" breathing process. The "fill and purge" breathing process **removes all corrosive oxygen** gas in the sprinkler systems **without the need for nitrogen storage**.

The NIC-1 is a self-contained wall mounted unit that includes the following components:

- Single point nitrogen/air entry - ½" NPT Female
- Single point nitrogen/air discharge - ½" NPT Female
- Nitrogen interface cabinet power supply - 120-240VAC/1 phase/50-60Hz
- Manual bypass for the discharge point
- No nitrogen gas storage

The NIC-1 is designed to be used in conjunction with the following components as part of the complete ECS Dry Pipe Nitrogen Inerting (DPNI) system:

- House/plant nitrogen source when fire sprinkler systems are operating at one (1) system pressure, or with ECS Protector nitrogen generator when two different operating pressures are required
- Air maintenance device with on board adjustable regulator (recommend Victaulic Series 757; Tyco Model AMD-1 or Reliable Model A)
- Riser-mounted ECS Protector Manual Vent (PAV-D) or ECS Protector Dry SMART Vent (PSV-D/DE)
- ECS Protector SMART Gas Analyzer (SGA-1) – one per nitrogen generator is recommended
- ECS In-Line Corrosion Detector (ILD-X) – monitoring at least one per sprinkler system is recommended

Installation Instructions

Installation of the ECS Nitrogen Interface Controller requires four (4) steps:

1. Mount the cabinet assembly on the wall in the appropriate installation location
2. Connect the dedicated power supply to the cabinet
3. Plumb the nitrogen/air supply line from the nitrogen source to the NIC-1 with minimum 1/2" line
4. Plumb the nitrogen/air supply line from the NIC-1 to the dry/preaction sprinkler risers being served with minimum 1/2" line

Step 1: Mounting the nitrogen interface controller

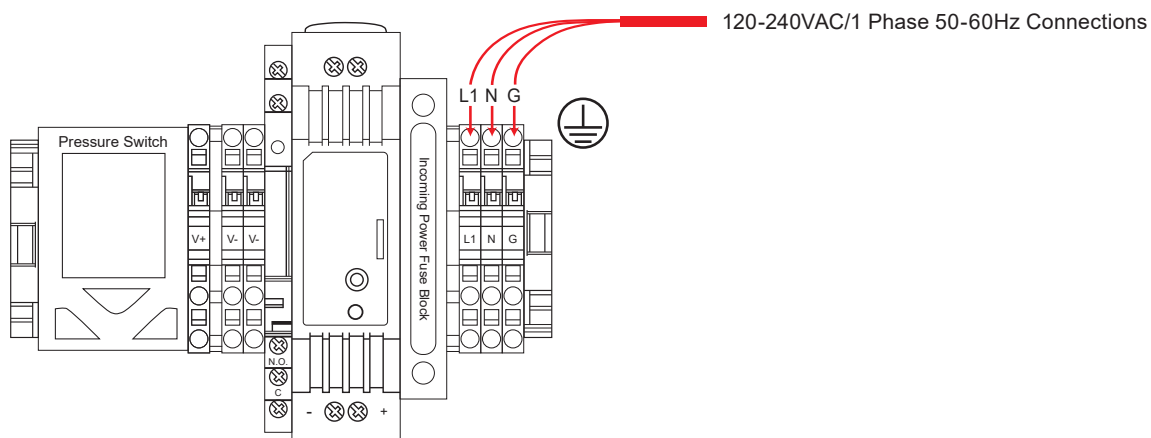
The ECS Nitrogen Interface Controller is designed to be mounted directly to the wall at the installation location. Several factors should be considered in choosing the proper mounting location for the nitrogen interface controller:

- Access to the power supply (dedicated circuits)
- Access to the nitrogen source (nitrogen generator or house/plant nitrogen)
- Access to the sprinkler risers being supplied from the nitrogen interface controller
- Clearance at the front of the unit to open the cabinet door
- Ability to support cabinet weight at mounting location

The cabinet includes pre-punched holes for wall mounting using standard anchors. Ensure the wall is structurally sound to support the weight of cabinet assembly.

Step 2: Power Supply

The ECS Nitrogen Interface Controller requires a dedicated power supply that connects to the terminal blocks inside the cabinet assembly.



Step 3: Plumb the Inlet Nitrogen/Air Supply Line

The nitrogen/air inlet plumbing from the nitrogen generator or house/plant nitrogen supply is connected directly to the inlet connection of the NIC-1 using a minimum 1/2" black steel, galvanized steel or copper piping.

Step 4: Plumb the Outlet Nitrogen/Air Supply Lines

Configuration 1 - Nitrogen Generator with two (2) System Operating Pressures

The nitrogen/air outlet plumbing from the NIC-1 is connected directly to the sprinkler system valve trim using a minimum 1/2" black steel, galvanized steel or copper piping. The size of the nitrogen/air supply line is based on the length of the pipe between NIC-1 and fire sprinkler system along with the total volume of the fire sprinkler system supplied.

- System(s) with a lower operating pressure are connected to the NIC-1 nitrogen/air outlet.
- System(s) with a higher operating pressure are connected to the nitrogen/air supply line prior to the nitrogen/air inlet connection of the NIC-1.
- NIC-1 requires an in-line Air Maintenance Device (AMD) that is equipped with an on board field adjustable pressure regulator for each zone being served. Acceptable AMD models are the Victaulic Series 757, Tyco Model AMD-1, and Reliable Model A.

Configuration 2 - House/Plant Nitrogen Source with one (1) System Operating Pressure

The nitrogen/air outlet plumbing from the NIC-1 is connected directly to the sprinkler system valve trim using a minimum 1/2" black steel, galvanized steel or copper lines. The size of the nitrogen/air supply line is based on the length of the pipe between NIC-1 and fire sprinkler system along with the total volume of the fire sprinkler system supplied. The NIC-1 requires an in-line Air Maintenance Device (AMD) that is equipped with an on board field adjustable pressure regulator for each zone being served. Acceptable AMD models are the Victaulic Series 757, Tyco Model AMD-1, and Reliable Model A.

Configuration 3 - House/Plant Nitrogen Source with two (2) System Operating Pressures

For configurations where house/plant nitrogen is used and the fire sprinkler systems are operating on two different operating pressures, contact Engineered Corrosion Solutions.

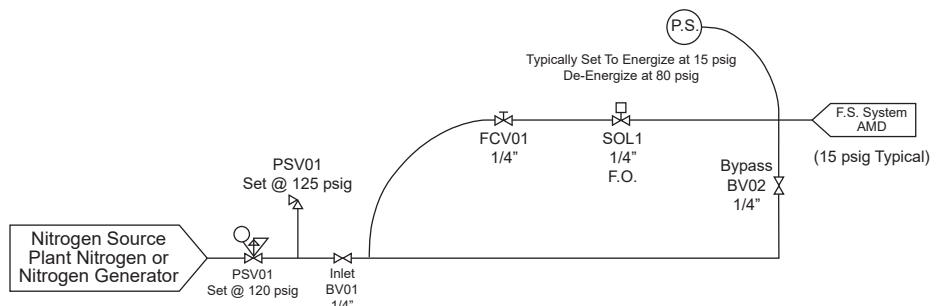
ECS Protector Nitrogen Interface Controller NIC-1



Plumbing and Instrumentation Drawing

Operating Notes:

Ball Valve (BV02) For Complying with NFPA 13 30-Minute Fill Requirement



OUR PRODUCTS. YOUR SYSTEMS.

Solutions for every environment

DRY PIPE SYSTEMS



Corrosion control technology located in the riser room.

WET PIPE SYSTEMS



Automatic air venting and nitrogen corrosion control.

MONITORING SOLUTIONS



Ensure effective corrosion control with real time corrosion monitoring solutions.

SERVICES



Corrosion assessments, pipe analysis, and long term corrosion control programs to mitigate future risk.

Dry Pipe System Nitrogen Generators

Corrosion control technology located in the riser room

	WALL MOUNT			SKID MOUNT	STAND ALONE W/ SEPARATE AIR COMPRESSOR			
	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	Integral	Integral	Integral	Separate	Separate	Separate	Separate
Size (H x W x D)	36x24x9	36x24x9	38x29x11	57x32x40	53x24x9 ⁽²⁾	53x24x9 ⁽²⁾	76x24x12 ⁽²⁾	76x24x12 ⁽²⁾
Weight	115 lbs	125 lbs	175 lbs	420 lbs	152 lbs ⁽²⁾	152 lbs ⁽²⁾	300 lbs ⁽²⁾	300 lbs ⁽²⁾

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) All nitrogen generators include one (1) year manufacturer's warranty per ECS terms and conditions