Model TNIC
Nitrogen Interface Controller

General Description

The TYCO Model TNIC Nitrogen Interface Controller is designed for use in implementing the Dry Pipe Nitrogen Inerting (DPNI) process for controlling oxygen corrosion in dry and pre-action fire sprinkler systems. The TNIC controller is designed for "plug and play" performance in dry or pre-action fire sprinkler system. The controller interfaces with a house/plant nitrogen supply as the source of nitrogen for dry and pre-action fire sprinkler systems. The controller used in conjunction with any TYCO nitrogen generator provides corrosion control to both dry and pre-action fire sprinkler systems operating at two different pressures while connected to one nitrogen source - thereby eliminating the need for two separate nitrogen sources.

The Nitrogen Interface Controller is designed to nitrogen inert all of the zones being served within 14 days. Thereafter, the Nitrogen Interface Controller continues to automatically provide supervisory nitrogen gas sufficient for pressure maintenance of the fire sprinkler system(s).

The Nitrogen Interface Controller facilitates the patented "fill and purge" breathing process in the fire sprinkler system when paired with an oxygen removal vent installed on the sprinkler riser such as the TYCO Model TAV-D Air Vent, Dry or the TYCO Model TSV-D SMART Air Vent, Dry.

The TNIC controller is a self-contained wall mounted unit that includes the following components:

- Single point nitrogen/air entry - ½ in. NPT Female
- Single point nitrogen/air discharge - ½ in. NPT Female
- Nitrogen interface cabinet power supply - 120 VAC/Single Phase/60 Hz (230 VAC/Single Phase/50 Hz)
- Manual bypass for the discharge point
- No nitrogen gas storage

The Nitrogen Interface Controller is designed to be used in conjunction with the following components as part of the complete TYCO Dry Pipe Nitrogen Inerting (DPNI) system:

- House/plant nitrogen source when fire sprinkler systems are operating at one system pressure, or with TYCO Nitrogen Generator when two different operating pressures are required
- TYCO AMD-1 Air Maintenance Device
- Riser-mounted TYCO Model TAV-D Air Vent, Dry or TYCO Model TSV-D SMART Air Vent, Dry
- TYCO Model TSGA SMART Gas Analyzer – one per nitrogen generator is recommended
- TYCO Model TILD In-line Corrosion Detector – monitoring at least one per sprinkler system is recommended

NOTICE

The TYCO Model TNIC Nitrogen Interface Controller described herein must be installed and maintained in compliance with this document, in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the performance of the related devices.

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. Contact the installing contractor or product manufacturer with any questions.

Technical Data

Dimensions
14 in. (W) X 16 in. (H) X 6 in. (H)
(356 mm (W) X 406 mm (D) X 152 mm (H))

Weight
36 lb (16 kg)

Temperature Range
40°F to 105°F (5°C to 40°C)

Power Supply
120 VAC/Single Phase/60 Hz - Dedicated Circuit (230 VAC/Single Phase/50 Hz - Dedicated Circuit)

Nitrogen/Air Connection:
Inlet
½ in. NPT Female

Outlet
½ in. NPT Female

IMPORTANT
Refer to Technical Data Sheet TFP2300 for warnings pertaining to regulatory and health information.

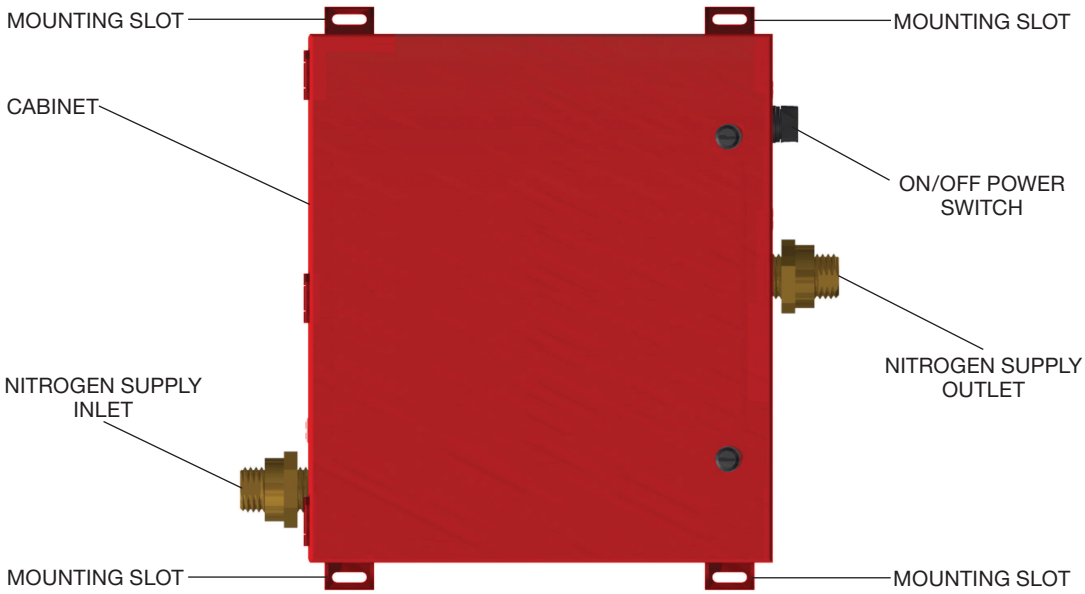

FIGURE 1
MODEL TNIC NITROGEN INTERFACE CONTROLLER ASSEMBLY

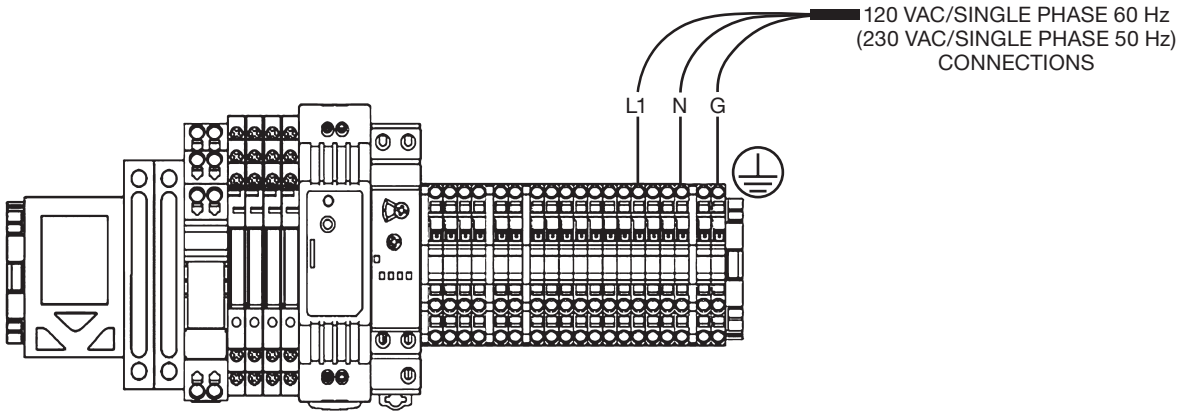

FIGURE 2
MODEL TNIC NITROGEN INTERFACE CONTROLLER POWER WIRING

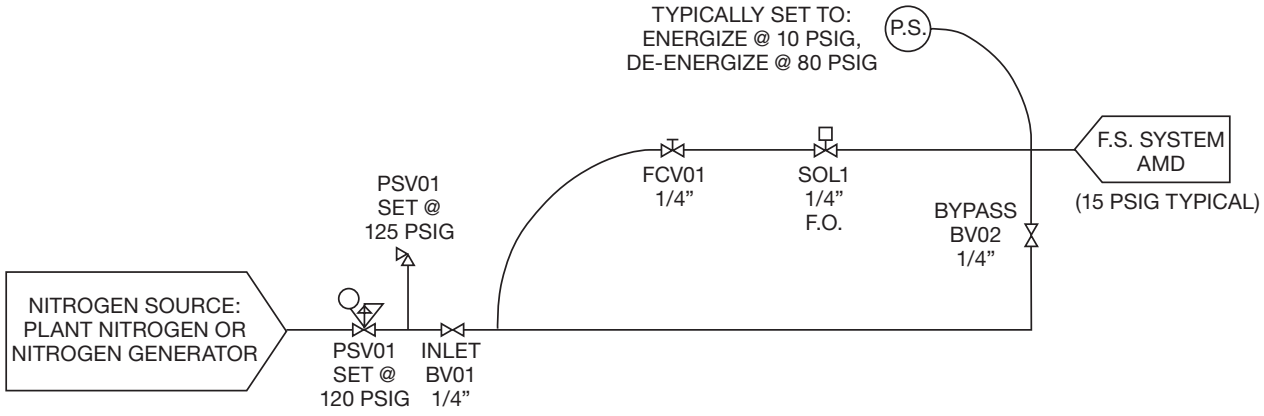

FIGURE 3
MODEL TNIC NITROGEN INTERFACE CONTROLLER PLUMBING AND INSTRUMENTATION DRAWING

Installation

The TYCO Model TNIC Nitrogen Interface Controller must be installed in accordance with this section.

Step 1. Mounting the Nitrogen Interface Controller

The Nitrogen Interface Controller is designed to be mounted directly to the wall at the installation location. The cabinet has upper and lower mounting slots as shown in Figure 1. 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

The cabinet dimensions are 14 in. x 16 in. x 6 in. (356 mm x 406 mm x 152 mm) and includes pre-punched holes for wall mounting using standard anchors. The cabinet frame assembly weighs 36 lb (16 kg). Ensure the wall is structurally sound to support the weight of cabinet assembly.

Step 2. Power Supply

The Nitrogen Interface Controller requires a dedicated power supply that connects to the terminal blocks inside the cabinet assembly. The terminal connections are labeled L1, N, and G as shown in Figure 2.

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 Nitrogen Interface Controller as shown in Figure 3.

Step 4. Plumb the Outlet Nitrogen/Air Supply Lines

Configuration 1 - Nitrogen Generator with two System Operating Pressures

The nitrogen/air outlet plumbing from the Nitrogen Interface Controller is connected directly to the sprinkler system valve trim using ½ in. black steel, galvanized steel or copper piping. The size of the nitrogen/air supply line is based on the length of the pipe between Nitrogen Interface Controller and fire sprinkler system along with the total volume of the fire sprinkler system supplied.

- The system(s) with a lower operating pressure are connected to the Nitrogen Interface Controller nitrogen/air outlet.
- The system(s) with a higher operating pressure are connected to the nitrogen/air supply line prior to the nitrogen/air inlet connection of the Nitrogen Interface Controller .
- For each zone being served, the Nitrogen Interface Controller requires an in-line Air Maintenance Device which is preferably equipped with an on-board field adjustable pressure regulator (such as the TYCO AMD-1).

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

The Nitrogen/air outlet plumbing from the Nitrogen Interface Controller is connected directly to the sprinkler system valve trim using a minimum ½ in. black steel, galvanized steel or copper lines. The size of the nitrogen/air supply line is based on the length of the pipe between the Nitrogen Interface Controller and fire sprinkler system along with the total volume of the fire sprinkler system supplied. For each zone being served, the Nitrogen Interface Controller requires an in-line Air Maintenance Device which is preferably equipped with an on-board field adjustable pressure regulator (such as the TYCO AMD-1).

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

For configurations where house/plant nitrogen is used and the fire sprinkler systems are operating on two different operating pressures, contact TYCO Technical Services.

Care and Maintenance

The TYCO Model TNIC Nitrogen Interface Controller must be maintained and serviced in accordance with this section.

Before closing a fire protection system main control valve for maintenance work on the fire protection system that it controls, permission to shut down the affected fire protection systems must first be obtained from the proper authorities. All personnel who may be affected by this decision must be notified.

Inspection, testing, and maintenance must be performed in accordance with the requirements of the NATIONAL FIRE PROTECTION AGENCY (NFPA), and any impairment must be immediately corrected.

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of any authorities having jurisdiction. Contact the installing contractor or product manufacturer with any questions.

Ordering Procedure

Contact your local distributor for availability. When placing an order, indicate the full product name and Part Number (P/N).

Nitrogen Interface Controller
Specify: Model TNIC Nitrogen Interface Controller, P/N TNIC01

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