PREACTION PAC SPRINKLER VALVE ASSEMBLY

FM APPROVED

Data Sheet UFS-110P
Rev 5.01 Page 1 of 2

UNITED FIRE SYSTEMS

PREACTION-PAC GENERATION 4 WITH INTEGRATED NITROGEN

FEATURES

- **FM Approved**
- Includes preaction valve with optional control panel and integral, self-contained nitrogen-based corrosion inhibiting system
- Industry exclusive - preaction and nitrogen generator assemblies designed and built by the same manufacturer
- Fully factory assembled, programmed, and tested
- No field assembly required
- Just connect water supply, drain, sprinkler piping, power, and electrical devices
- Space for required spare sprinkler heads and wrench
- Attractive, rugged, powder-coated metal enclosures
- Separate, lockable mechanical, electrical, and nitrogen enclosures
- Manual actuation valve behind separate non-locking door
- Easy-to-see indicators and gauges face the front
- Easy-to-follow instructions on control panel enclosure front
- Membrane-based nitrogen generation - no moving parts
- Long-life, low maintenance oilless air compressor
- 2 inch, 3 inch, and 4 inch valve options
- Conventional and addressable control panel options

BENEFITS

- Saves assembly, programming, and installation time
- Installation drawings available
- Quicker commissioning – just place, connect, and it's ready
- Easy inspection and maintenance
- Expert in-house field and technical support
- Finished appearance allows placement in or near protected space
- Rapid access to manual release handle without a key
- Reliable, dependable protection that functions as designed
- Reliable, long-lasting nitrogen generation

DESCRIPTION

The **UNITED Fire Systems PREACTION-PAC™ with Integrated Nitrogen** is a fully assembled preaction fire suppression system, including preaction valve, trim, nitrogen generator, and optional control panel, providing one complete zone of preaction water sprinkler fire protection. All components are contained in three (3) red powder-coated steel enclosures. Preaction and nitrogen system indicators and controls are mounted facing forward for easy reference and use. The system detection and control panel is mounted behind a door on the electrical enclosure with a clear polycarbonate window allowing examination of the detection system visual indicators. Lockable latches on enclosure doors permit restricted access to connections and components. A manual release valve is located behind a non-locking door on the valve enclosure. Gasketing provides sealing of the enclosure doors. Knockouts permit easy attachment of external electrical raceways.

Preaction Valve

The preaction valve assembled in the **PREACTION-PAC™** uses a diaphragm to separate the system water supply from the system piping. The valve uses the supply water pressure in the diaphragm chamber to hold the diaphragm closed against the water supply pressure. When the water pressure in the diaphragm chamber is released, the valve actuates. The diaphragm style design of the preaction valve allows for external resetting. Re-pressurizing the diaphragm chamber resets the valve.

Valve Interlock Designated As "P1"

PREACTION-PAC™ assemblies with **"P1"** in the part number designation (refer to Ordering Information) may be field-configured to operate in *either* of two (2) ways:

- **Single Interlock:** The preaction valve opens upon actuation of a fire detector connected to the system control panel, allowing water into the sprinkler pipe.
- **Double Interlock Electric / Electric:** The preaction valve opens upon actuation of a fire detector connected to the system control panel AND when the system control panel receives a low air signal from the supervisory switch attached to the valve trim (due to an open sprinkler head). [NOTE – Operation of the low air switch without actuation of a fire detector results in a low air supervisory signal and does not open the preaction valve.]

For additional information, refer to **UNITED Fire Systems** Technical Note UFS-24-02.



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Valve Interlock Designated As "P2"

PREACTION-PAC™ assemblies with **"P2"** in the part number designation (refer to Ordering Information) are factory-configured to operate as Double Interlock Pneumatic / Electric. Open sprinkler head actuation is sensed by a pneumatic actuator connected to the valve trim. This is a different device from the low air supervisory switch.

Piping

Water inlet and drain connections are located on the lower right side of the valve enclosure. The outlet connection is on the top surface of the valve enclosure, behind the electrical enclosure. Grooved pipe is used for the inlet and outlet connections.

Detection & Control Panel

Optional control panels allow for a choice between one conventional control panel and four different fully programmable and networkable addressable systems. All necessary internal wiring connections are factory-assembled and tested.

Nitrogen Generator

The integral, self-contained **UNITED Fire Systems NITROGEN-PAC™** corrosion inhibiting system contains an air compressor, filters, and a membrane device to perform nitrogen separation. The system provides dry air for system initial fill and nitrogen for filling the interior of the preaction sprinkler system with nitrogen at 98% or greater purity. The riser-mounted receiver provides a reservoir of nitrogen, reducing the number of compressor starts and the total compressor run time. For additional information, refer to **UNITED Fire Systems** data sheet UFS-600C and manual 30-NPWICM-000.

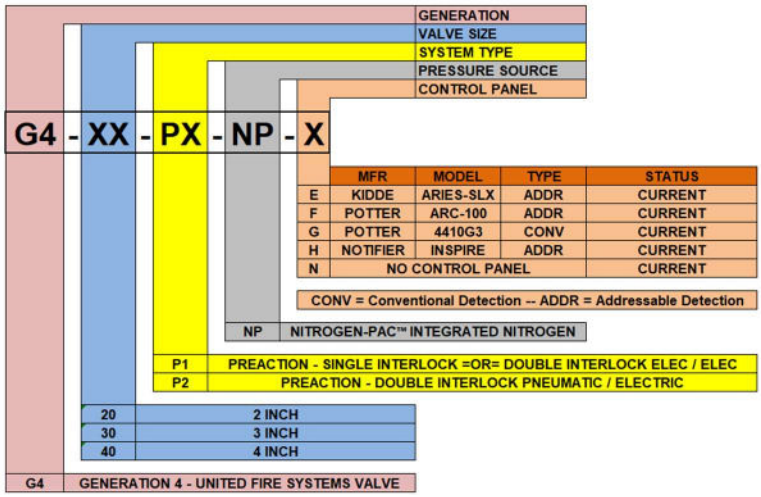
Dimension	With Built-In Control Panel	Without Built-In Control Panel
A - Depth	24	24
B – Mechanical Enclosure	52	52
C – Electrical Enclosure	20	10
D - Width	40	40
E - Height	72	72
NOTE: All dimensions are in inches.		

Table A - Dimensions

Specifications

- Maximum Service Pressure: 250 PSIG (1725 kPa gauge)
- Supervisory Pressure: 15 ± 2 PSIG (103 ± 3 kPa gauge)
- Maximum Supervisory Pressure: 18 PSIG (124 kPa gauge)
- Electrical and Nitrogen Generator Enclosures: 14 gauge steel with continuous welded seams
- Mechanical Enclosure: 12 gauge steel with continuous welded seams

Ordering Information



Options (refer to Ordering Information)

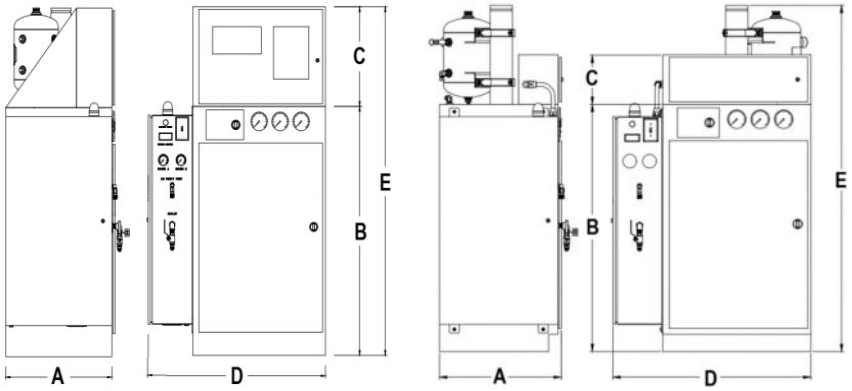
- Choice of preaction valve size and type
- Choice of control panel (1 conventional and 4 addressable panels available)

Wiring

Power for the control panel and for the nitrogen generator is brought to a terminal strip located in the electrical enclosure. Terminal are provided to connect two (2) separate 115 VAC 60 Hz single-phase circuits. No access to the inside of the valve enclosure or the nitrogen generator enclosure is necessary to complete the wiring installation. All necessary internal wiring for waterflow, tamper, and supervisory switches, plus solenioid activation, is factory-installed and tested.

Dimensions – Refer to Table A

With Control Panel **Without Control Panel**



- PREACTION-PAC™ Access Doors: Full hinge with oil-resistant gaskets
- NITROGEN-PAC Access Door: Lift-off hinge pins for easy door removal
- External Power Requirement: Qty. (2) 115 VAC, 60 Hz, single-phase circuits
- Maximum Sprinkler System Volume: **500 gallons** for initial-fill in 30 minutes or less with air per NFPA 13

Maximum volume value based on sprinkler-pipe leakage not exceeding 1-1/2 PSIG air pressure loss in 24 hours starting at 40 PSIG per NFPA 13 requirement

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