



**Data Sheet UFS-1400B**  
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## PREACTION-PAC™ WITH INTEGRATED NITROGEN

### FEATURES

- **FM Approved**
- **NYC FD Certificate of Approval #6148**
- **CSFM Listing No. 7080-2143:0100**
- 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 valve and electrical enclosures
- Manual actuation valve behind separate non-locking door
- Easy-to-see pressure gauges on enclosure front
- Easy-to-follow instructions on enclosure front
- Membrane-based nitrogen generation – no moving parts
- Long-life, low maintenance oilless air compressor
- 1-½ inch, 2 inch, 2-½ inch, 3 inch, 4 inch and 6 inch valve options
- Addressable and conventional 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 **FM Approved 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

**G2:** The preaction valve assembled in the **PREACTION-PAC™** is a low-differential, latched clapper valve using a unique direct acting diaphragm to separate the system water supply from the system piping. The positive latching system uses the supply water pressure to hold the clapper shut. When the water pressure in the diaphragm chamber is released, the latch retracts from the clapper and the valve opens. The low differential and unique latch and actuator design allows the valve to be self-resetting.

**G3 & G4:** 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 Configurations

#### SINGLE INTERLOCK =OR= DOUBLE INTERLOCK ELEC / ELEC

**PREACTION-PAC™** assemblies with “P1” in the part number designation 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](#).

#### DOUBLE INTERLOCK ELEC / PNEUMATIC

**PREACTION-PAC™** assemblies with “P2” in the part number designation are factory-configured to operate as Double Interlock **Electric / Pneumatic**. 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. The preaction valve opens **ONLY** when actuation of a fire detector connected to the system control panel **AND** when the pneumatic actuator opens due to a drop in system pressure (due to an open sprinkler head). [NOTE – Operation of the low air supervisory switch results in a low air supervisory signal and is **NOT** considered an actuation event.]

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**Piping**

Water inlet and drain connections are located on the lower left and right side of the valve enclosure. The unused inlet is left plugged. 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 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](#).

**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 solenoid activation, is factory-installed and tested.

**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 Enclosure: 14 gauge steel with continuous welded seams
- Valve Enclosure: 12 gauge steel with continuous welded seams
- 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 current draw: 11.0 A
- Maximum Sprinkler System Volume: 500 gallons

**Maximum sprinkler pipe volume is for initial fill with air to 18 PSIG in 30 minutes to satisfy NFPA 13**

**Ordering Information**

		GENERATION	
		VALVE SIZE	
		SYSTEM TYPE	
		PRESSURE SOURCE	
		CONTROL PANEL	
<b>GX</b>	<b>- XX</b>	<b>- PX</b>	<b>- NP - X</b>
		MFR.	MODEL
		B	NOTIFIER NFS2-640 ADDR
		E	KIDDE ARIES-SLX ADDR
		F	POTTER ARC-100 ADDR
		G	POTTER 4410G3 CONV
		H	NOTIFIER INSPIRE ADDR
		N	NO CONTROL PANEL
		CONV = Conventional Detection -- ADDR = Addressable Detection	
		NP NITROGEN-PAC™ INTEGRATED NITROGEN	
P1	PREACTION - SINGLE INTERLOCK =OR= DOUBLE INTERLOCK ELEC / ELEC		
P2	PREACTION - DOUBLE INTERLOCK ELECTRIC / PNEUMATIC		
15	1-1/2 INCH	G2 ONLY	
20	2 INCH	ALL MODELS	
25	2-1/2 INCH	G2 ONLY	
30	3 INCH	ALL MODELS	
40	4 INCH	ALL MODELS	
60	6 INCH	G2 ONLY	
G2	GENERATION 2 - VICTAULIC VALVE		
G3	GENERATION 3 - TYCO VALVE		
G4	GENERATION 4 - UNITED FIRE SYSTEMS VALVE		

**Options**

- Choice of preaction valve size and configuration
- Choice of control panel

**Table A – Dimensions**

	With Control Panel	Without Control Panel
<b>Dimension</b>	<b>With Control Panel</b>	<b>Without Control Panel</b>
A - Depth	24 in.	24 in.
B - Valve Enclosure	52 in.	52 in.
C - Electrical Enclosure	20 in.	10 in.
D - Width	40 in.	40 in.
E - Height	72 in.	62 in.

For downloadable architect's specifications and drawing details, go to: [unitedfiresystems.com/preactionpac](http://unitedfiresystems.com/preactionpac)

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