

# TOTALPAC® 3

Datasheet  
Self contained - Double interlock Preaction system  
Electric / Pneumatic release



## 211316 - Dry-Pipe Pre-Action Sprinkler Systems

This submittal is to be forwarded to the Electrical Engineer for review of the electrical characteristics and fire alarm integration.



### DESCRIPTION

This **TOTALPAC®3** integrated fire protection system by FireFlex Systems Inc. consists of a preaction system trim totally pre-assembled, pre-wired and factory tested. All electrical and mechanical components of the system are contained in one single unit

**TOTALPAC®3** preaction systems are built around the Viking trim using deluge valves model F-1.

Electric/pneumatic controlled, double interlock preaction systems requires a pneumatic actuator, normally held closed by supervisory pressure maintained in the sprinkler system AND a normally closed electric solenoid valve controlled by an approved system releasing control panel with compatible detection system. Both the electric detection system AND supervisory pressure must be relieved from the sprinkler system before the deluge valve will open and fill the sprinkler system with water.

Activation of a releasing device alone or operation of a sprinkler alone will sound an alarm but will NOT cause the system to fill with water.

All the valves are rated up to a maximum of 250 psi WWP (1724 kPa) max. and are available in the following diameters:

- |                                      |                                      |
|--------------------------------------|--------------------------------------|
| <input type="checkbox"/> 1½" (40 mm) | <input type="checkbox"/> 4" (100 mm) |
| <input type="checkbox"/> 2" (50 mm)  | <input type="checkbox"/> 6" (150 mm) |
| <input type="checkbox"/> 3" (80 mm)  | <input type="checkbox"/> 8" (200 mm) |

### Standard features

- cULus Listed & FM Approved as an assembled unit
- Factory assembled and tested under ISO-9001 standards
- Prewired to the Viking VFR-400 releasing control panel.
- Easy and compact installation
- OSHPD certification pre-approval: OSP-0341-10
- Viking conventional trim rated at 250 psi (1724 kPa)
- Galvanized trim piping
- Serial number for easy reference
- Corrosion resistant cabinet with flush type handle and lock
- No open drain cup inside the unit
- Remote controlled unit pre-wired to a terminals strip.
- numerous modular options to meet the most demanding jobsite requirements
- Four styles of modular air supply options
- Inlet & outlet hydrostatic test ports
- User-friendly standardized operation & installation manual
- Free interactive simulator

Cabinet is to fit with the space provided and maintain manufacturers recommended clearance requirements.

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## Cabinet

The TOTALPAC® 3 cabinets are made of sturdy 14 gauge steel, they are available in four (4) sizes;

23" x 25" x 77" (58.4 x 63.5 x 195.6 cm) for 1½", and 2" systems,

36" x 25" x 77" (91.4 x 63.5 x 195.6 cm) for 3" and 4" system,

46" x 25" x 77" (116.8 x 63.5 x 195.6 cm) for 6" system

54" x 31" x 81" (137.2 x 78.7 x 205.7 cm) for 8" system

All surfaces are rust proof coated, inside and outside, with fire red, oven baked polyester powder on phosphate base. Cabinet is provided with one or two doors, all provided with a neoprene gasket to absorb vibrations.

A field wiring electrical junction boxes is integrated with the cabinet for connection of detection system, auxiliary contacts and signaling devices. All inputs & outputs are factory wired to a terminal strip (TBA) for contractor's field wiring.

Gauges to indicate air, water supply pressure and priming water pressure are all visible through clear Lexan windows.

**IMPORTANT:** TOTALPAC® 3 units are NOT designed to be installed where they will be subjected to outdoors and/or freezing conditions. Refer to environmental data for additional details. Subjecting the unit to conditions outside these limitations might tamper the normal operation of the system.

Cabinet doors are provided with hinges that can easily be disassembled on site to remove the door assemblies for servicing. The cabinet assembly is pre-assembled, pre-wired, and factory tested under ISO-9001 conditions.

Multiple unit installations are easily achieved by manifolding units together at their water inlets but drains shall remain separate and open.

## Sequence of operation (see trim diagram)

In a fire condition, when the detection system operates, system releasing control panel energizes solenoid valve (F1) open. Alarms activate, but the deluge valve will NOT open until a sprinkler opens relieving supervisory pressure from the sprinkler system. When a sprinkler opens, supervisory pressure in the sprinkler piping is reduced causing the pneumatic actuator (F3) to open.

Pressure is released from the priming chamber of the deluge valve (A1) to the open drain manifold faster than it is supplied through the restricted orifice (B3). The deluge valve clapper opens to allow water to flow into the system piping and alarm devices, causing the alarm pressure switch (C1) and optional water motor alarm (C2) to activate. Water will flow from any open sprinklers and/or other opening in the sprinkler piping.

When the deluge valve operates, the sensing end of the PORV (B9) is pressurized, causing the PORV to open. When the PORV opens, it drains the priming water pressure to the priming chamber, preventing the deluge valve (A1) from resetting, even if the open releasing devices close. The deluge valve can only be reset after the system is taken out of service, and the outlet chamber of the deluge valve and associated trim piping is depressurized and drained.

## Systems hydraulic limitations

**WARNING** The information contained herewith is for estimation and evaluation purposes only. Its use remains the responsibility of the designer.

Designers should refer to the appropriate NFPA Standards and any other applicable codes for their final design. Also refer to FireFlex Systems Inc. appropriate user manuals and to manufacturer's data sheets for additional details.

Systems limitations indicated below are nominal flow limitations.

| System size<br>(in.) | Usage Range<br>(gpm) | Piping Equivalent Lengths w/o<br>shut off valve |        | Piping Equivalent Lengths c/w<br>shut off valve |       | Drain flow @<br>250 PSIG w.p.<br>GPM |
|----------------------|----------------------|-------------------------------------------------|--------|-------------------------------------------------|-------|--------------------------------------|
|                      |                      | (m.)                                            | (ft.)  | (m.)                                            | (ft.) |                                      |
| 1½                   | 0 – 210              | 8.3                                             | 27.2   | 8.5                                             | 27.9  | 272                                  |
| 2                    | 0 – 360              | 11.65                                           | 38.2   | 11.85                                           | 38.9  | 272                                  |
| 3                    | 100 - 700            | 16.8                                            | 55.1   | 20.33                                           | 66.7  | 762                                  |
| 4                    | 200 – 1400           | 21.89                                           | 71.8   | 25.33                                           | 83.1  | 1597                                 |
| 6                    | 400 - 3500           | 33.28                                           | 109.15 | 37.28                                           | 122.3 | 1597                                 |
| 8                    | 750 - 5250           | 41.15                                           | 135    | 44.71                                           | 146.7 | 1597                                 |

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## Standard equipments

### Releasing control panel

- ☐ 120 VAC / 60 Hz, 165VA.
- ☐ 220 VAC / 50 Hz, 185VA.
- ☐ 12VDC / 7Ah batteries. (factory installed)
- ☐ 12VDC / 12Ah batteries. (optional)
- ☐ Single Zone detection  
(Activated by Zone 1 **or** Zone 2)
- ☐ Crossed-Zone detection  
(Activated by Zone 1 **and** Zone 2)

The releasing control panel integrated into the **TOTALPAC<sup>®</sup> 3** cabinet is Viking's Model **VFR-400**. This panel includes four Class B, programmable detection zones (optional Class A); two Class B supervisory zones and four Class B, programmable output circuits (optional Class A). It is also provided with menu driven programming, including a specific program assigned at the factory.

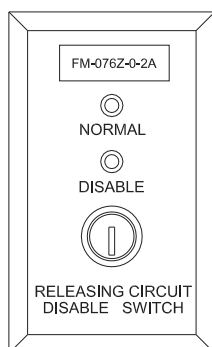
The panel is compatible with many types of fire alarm & supervisory devices such as linear heat detectors, spot-type heat and smoke detectors, water flow and release indicators, low and high air pressure switches, manual pull stations.

The releasing control panel also includes an alphanumeric display with 2 lines of 16 characters describing all the system conditions, as well as a set of red and yellow LED lamps individually indicating each of the alarm and trouble conditions of the system

Easy to operate control buttons are also provided to activate and operate the system's various functions.

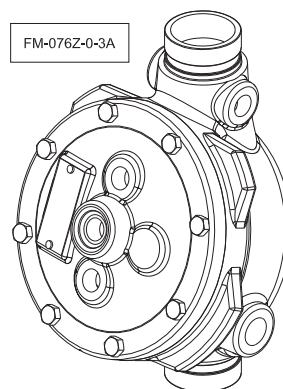
### Releasing circuit disable switch

The releasing circuit disable switch is used to disable the releasing solenoid. When the key is set to "Disable", the releasing solenoid will be disconnected from the control panel's releasing circuit, causing a trouble signal and preventing accidental discharge during maintenance or inspection.



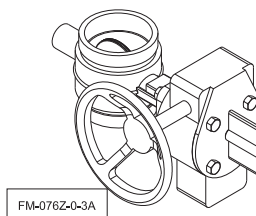
### Deluge valve

The Viking Model deluge valve is a quick-opening, differential diaphragm, flood valve with one moving mechanism. The deluge valve is used to control water flow in deluge and preaction sprinkler systems. The valve is held closed by system water pressure trapped in the priming chamber, keeping the outlet chamber and system piping dry. In fire conditions, when the releasing system operates, pressure is released from the priming chamber. The deluge valve clapper opens to allow water to flow into the system piping.



### Water supply control valve

The water inlet control valve is a supervised, indicating butterfly valve. Purpose of this valve is to manually shutoff the preaction system.

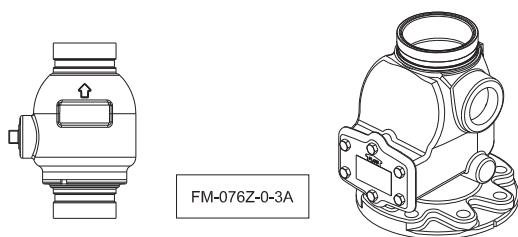


### Standard equipments (continued)

#### Preaction riser check valve

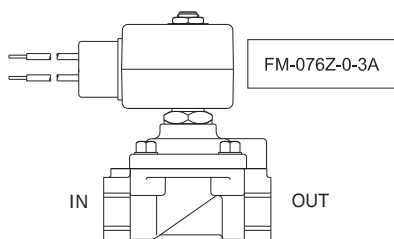
The Viking spring loaded In-Line check valve is a general purpose rubber-faced check valve approved for use in fire-service systems. The Spring Loaded In-Line check valve is manufactured with a brass body, brass seat, and a rubber-faced clapper assembly.

The Viking Easy Riser® Swing check valve is a general purpose rubber-faced check valve approved for use in fire service systems. The valve is for use in preaction system risers.



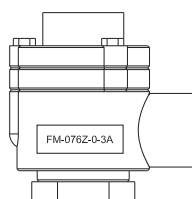
#### Solenoid valve

The high pressure solenoid valve is a two-way type with one inlet and one outlet. It is a packless, internal pilot operated valve, suitable for use in releasing water pressure from the priming chamber of Viking deluge valves. The solenoid valve has floating diaphragm construction, which requires a minimum pressure drop across the valve to operate properly.



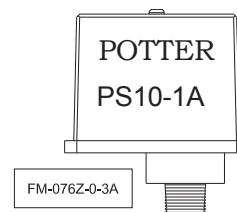
#### Pneumatic actuator

Used in conjunction with the solenoid valve, the Viking Pneumatic Actuator is a spring loaded, rolling diaphragm and piston operated valve. It is used wherever a combination is required between the detection and system's loss of air.



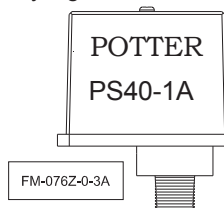
#### Alarm pressure switch

The alarm pressure switch monitors the water flow within the sprinkler piping. Should the Deluge Valve clapper opens to allow water to flow into the sprinkler piping. The alarm pressure switch will activate, indicating a water flow signal.



#### Low air supervisory switch

The low pressure switches monitors the pressure within the sprinkler piping should a loss pressure of the air below 25PSI occurs. The pressure switch contacts transfer indicating supervisory signal.



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## Optional mechanical equipments

### ❑ Shut-off valve & sight glass option

The Shut-off valve & sight glass option is intended to be used for applications where testing of the system operation without filling the sprinkler piping network is desirable and where it is critical that all functions of the preaction system be tested under actual discharge conditions. Examples of such applications are freezers, ovens, museums, data processing and other hazards where the possibility of water leaking from the piping system is to be avoided at all costs.

**Warning:** Shut-off valve & sight glass option is **not available** on 8" systems.

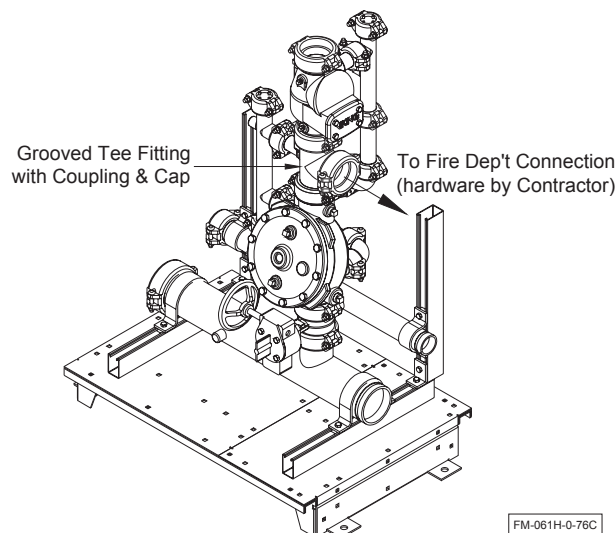
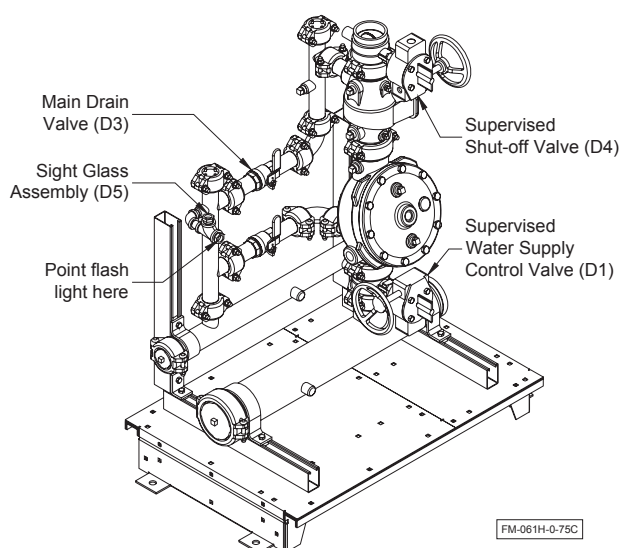
**Warning:** Shut-off valve is **not available** combined with Fire department connection on 6" systems.

### ❑ Fire department connection

The fire department connection option consists of a grooved tee fitting installed at the outlet of the deluge valve (A1). An access hole of the proper diameter is factory pre-drilled on the side of the TOTALPAC®3 enclosures for connection of the piping going to the fire department connection.

**Note:** The fire department connection hardware itself (drain, Siamese, etc.) is NOT provided with this option and shall be provided by the installing contractor. Refer to NFPA-13 Standard for additional information about the equipment layout and installation.

**Warning:** Fire department connection is **not available** on 8" systems.



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## Optional mechanical equipments (continued)

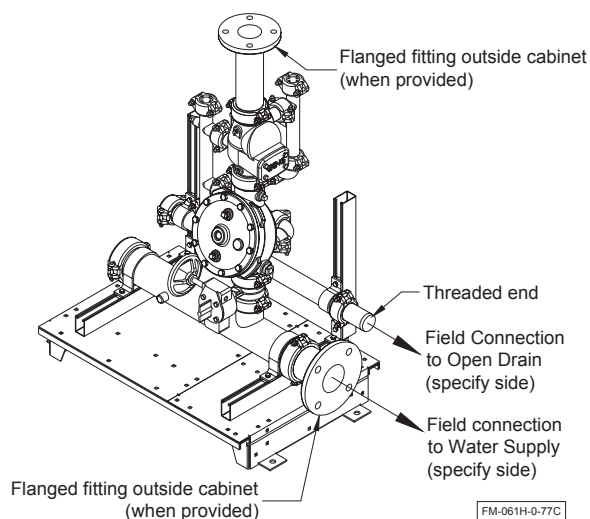
### □ Semi and full flanged option

When required by the user, TOTALPAC<sup>®</sup>3 units can be provided in either a semi-flanged or full flanged configuration.

The semi flanged option provides flanged fittings only on the water inlet pipe (side needs to be specified at the time of order) and on the system riser outlet. The drain manifold is then provided with a threaded end that also needs to have its side specified (left or right). The rest of the fittings are the same as usual with the main components being provided in the standard grooved-grooved configuration.

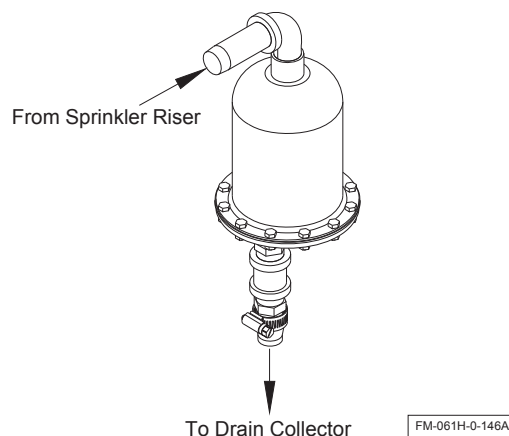
The full flanged option is the same as above but goes a step further with the main components being also provided with a flanged-flanged configuration.

When provided, the face of the flanges will always be situated 6 inches from the outside face of the mounting base or cabinet surface.



### □ Anti-column device option

The model LD-1 anti-column device is an optional trim component designed for use with preaction sprinkler systems. The anti-column device automatically prevents an unwanted water column from establishing within the system riser. On preaction sprinkler systems the anti-column device prevents water from columning downstream of the easy riser check valve.



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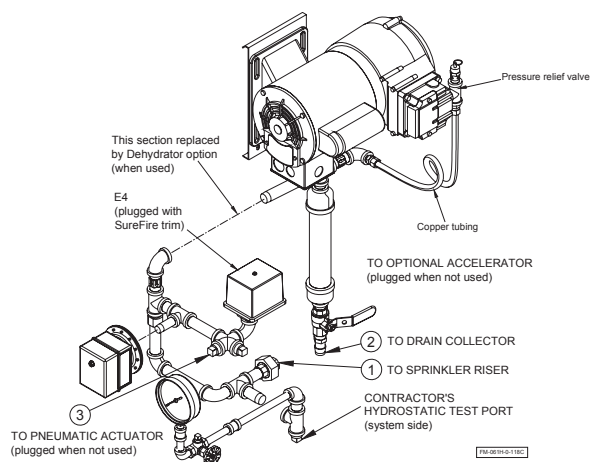
## Air supply

### ☐ Direct air compressor (Style "A")

Used only for the sprinkler piping network of the preaction system. Air supply style "A" includes the air compressor mounted inside the TOTALPAC®3 cabinets with its supervisory trim and options. Compressors are of the tankless, oilless piston type and are factory piped to the sprinkler system riser, all within the TOTALPAC®3 cabinets.

Compressors are available in six (6) sizes:

- ☐ 1/6HP    ☐ 1/2HP    ☐ 1-1/2HP  
☐ 1/3HP    ☐ 1HP    ☐ 2HP



### Compressor Service Factor Amp (S.F.A) rating

| Compressor Size (HP) | 115Vac / 60Hz | 230Vac / 60Hz | 220Vac / 50Hz |
|----------------------|---------------|---------------|---------------|
| 1/6                  | 5.0 Amp.      | 2.5 Amp.      | 1.3 Amp.      |
| 1/3                  | 7.4 Amp.      | 3.7 Amp.      | 2.5 Amp.      |
| 1/2                  | 10.0 Amp.     | 5.0 Amp.      | 4.0 Amp.      |
| 1                    | 18.0 Amp.     | 9.0 Amp.      | 6.0 Amp.      |
| 1-1/2                | 16.6 Amp.     | 8.3 Amp.      | 6.3 Amp.      |
| 2                    | N/A           | 11.0 Amp.     | N/A.          |

### 115 / 230 Vac – 60Hz air compressor selection Table:

| H.P   | CFM @ 40 PSI | System capacity to fill system to 35 PSI in 30 minutes * | System capacity to fill system to 55 PSI in 30 minutes ** |
|-------|--------------|----------------------------------------------------------|-----------------------------------------------------------|
| 1/6   | 1.33         | 142 gal.                                                 | 90 gal.                                                   |
| 1/3   | 2.61         | 285 gal.                                                 | 181 gal.                                                  |
| 1/2   | 4.06         | 417 gal.                                                 | 265 gal.                                                  |
| 1     | 7.40         | 702 gal.                                                 | 447 gal.                                                  |
| 1-1/2 | 7.40         | 1045 gal.                                                | 665 gal.                                                  |
| 2     | 7.40         | 1400 gal.                                                | 890 gal.                                                  |

### 220 / 240 Vac – 50Hz air compressor selection Table:

| H.P   | LPM @ 40 PSI | System capacity to fill system to 35 PSI in 30 minutes * | System capacity to fill system to 55 PSI in 30 minutes ** |
|-------|--------------|----------------------------------------------------------|-----------------------------------------------------------|
| 1/6   | 35.4         | 442 L                                                    | 268 L                                                     |
| 1/3   | 68           | 855 L                                                    | 545 L                                                     |
| 1/2   | 4.06         | 1302 L                                                   | 825 L                                                     |
| 1     | 7.40         | 2244 L                                                   | 1427 L                                                    |
| 1-1/2 | 7.40         | 3278 L                                                   | 2085 L                                                    |

\* For systems with maximum water supply pressure of 175 PSI (1206 kPa)

\*\* For systems with water supply pressure between 175 PSI (1207 kPa) and 250 PSI (1724 kPa)

**WARNING** The information contained herewith is for estimation and evaluation purposes only. Its use remains the responsibility of the designer.

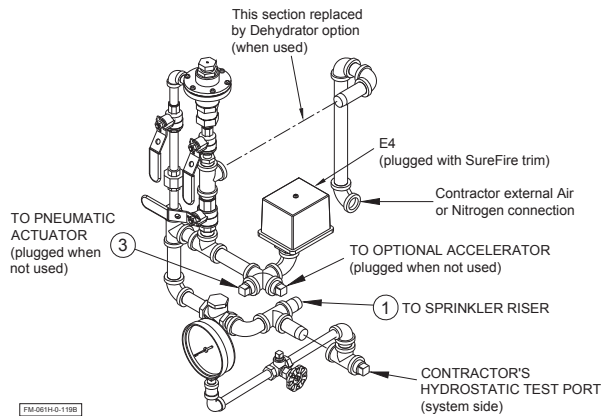
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## Air supply (continued)

### □ Air Pressure Maintenance Device (Style "B")

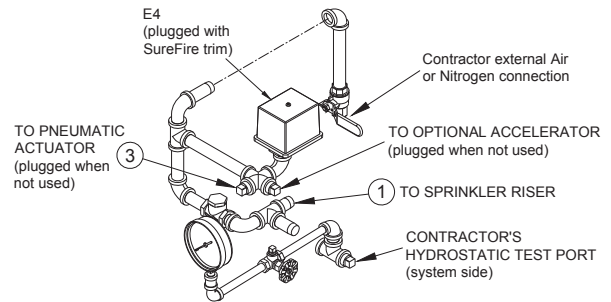
Used only for the sprinkler piping network of the preaction system, when an external air supply is provided by others (tank mounted compressor, plant air or dry nitrogen cylinders) and piped to the air inlet port of the unit. Air supply style "B" provides an Air Pressure Maintenance Device (APMD) trim, factory mounted in the **TOTALPAC®3** cabinets.



### □ Direct air, external compressor (Style "D")

Mainly used with Preaction systems protecting refrigerated spaces and freezers, where a special dry external air supply unit is piped directly to the system riser inside the freezer itself, as shown in NFPA-13. Air supply Style "D" provides only an air supervisory and shut-off trim.

**Warning:** When air supplies style "B" or "D" is selected, the air supply should be provided and installed by the sprinkler contractor OUTSIDE of the **TOTALPAC®3** cabinet. It is NOT provided with the unit.



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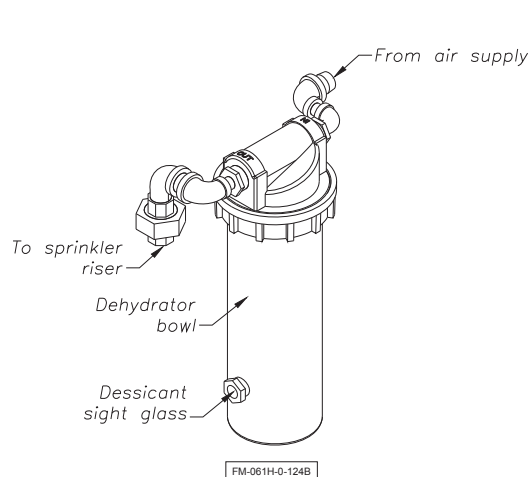
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## Optional air supply equipments

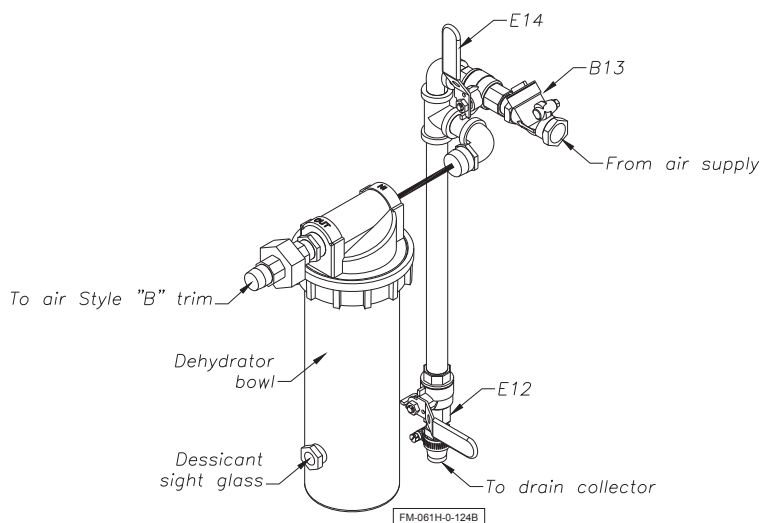
### ☐ Dehydrator option

The Viking Dehydrator is a manually regenerated desiccant-type air dryer. The desiccant acts as a moisture indicator by changing color, and is visible through the sight gauge.

The Dehydrator directs the incoming air down through the silica gel desiccant. The silica gel absorbs the moisture without physically changing. As the relative humidity increases, the silica gel begins to change color from dark blue to light pink, indicating the desiccant must be replaced.



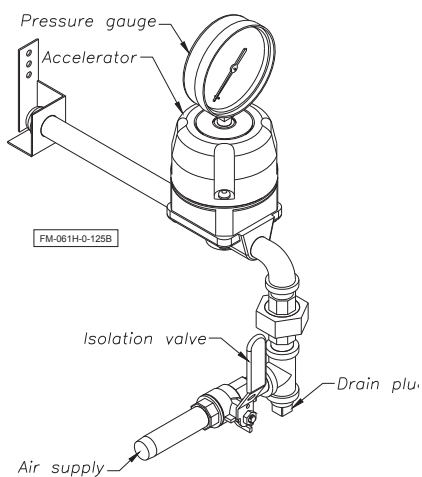
Style "A" layout



Style "B" layout

### ☐ Accelerator option

The Viking Model E-1 Accelerator is a quick-opening device. The Viking Model E-1 Accelerator may be used without the Anti-flood device to speed the action of a pneumatic release system on a preaction system.

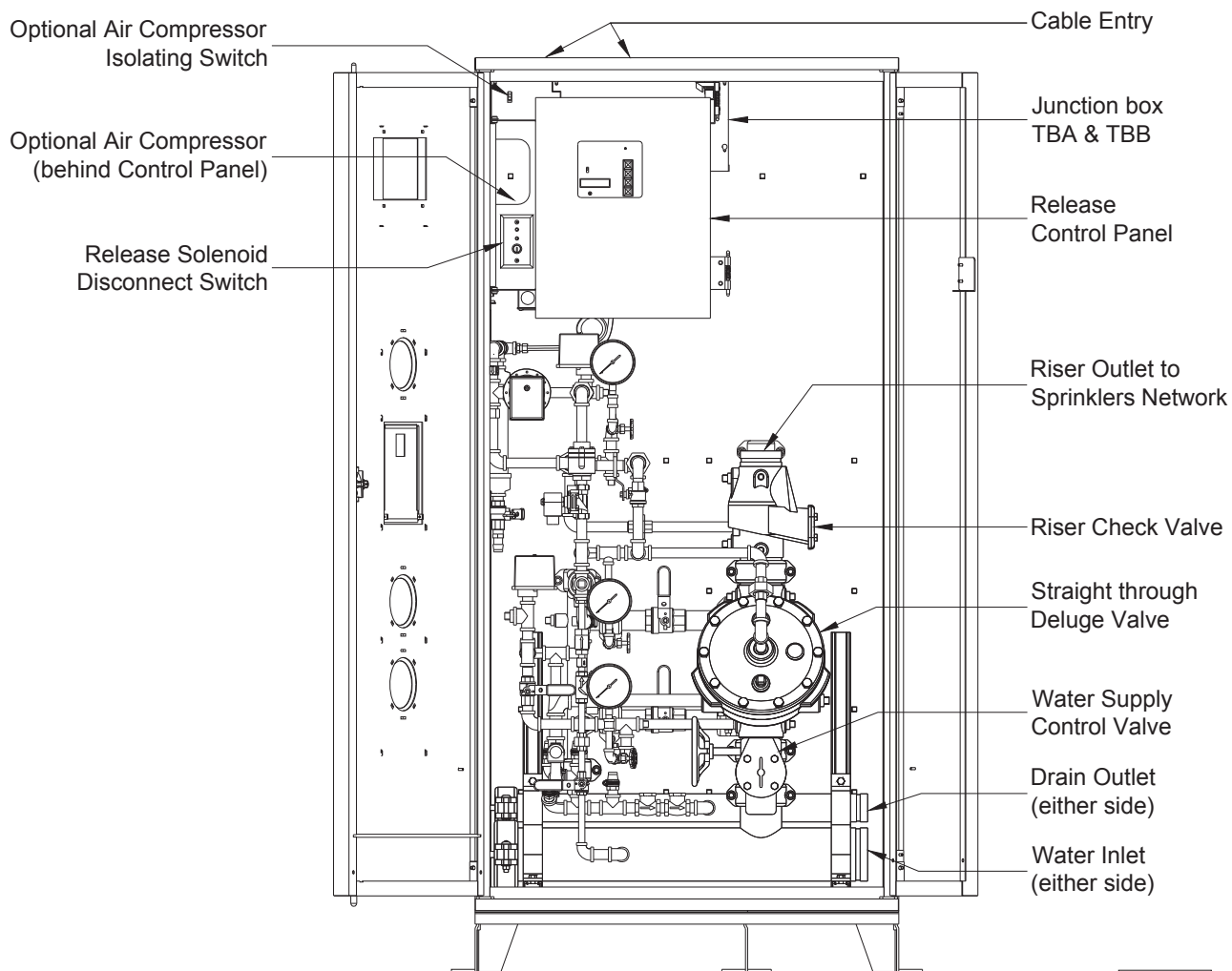


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## Details & field wiring diagrams

Cabinet with main components - Configuration with releasing control panel, shown with air style "A"

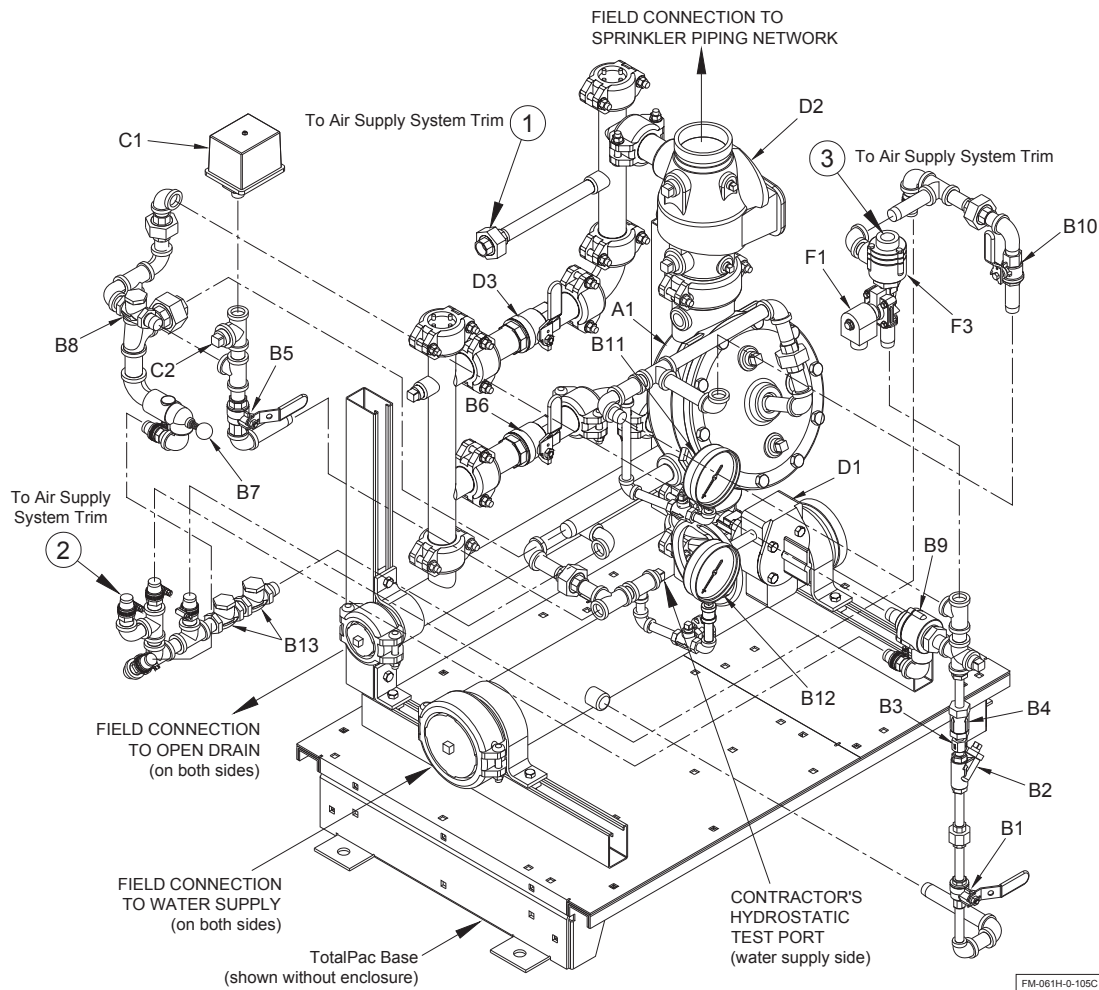


FM-061H-0-160B

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**Trim diagram**



FM-061H-0-105C

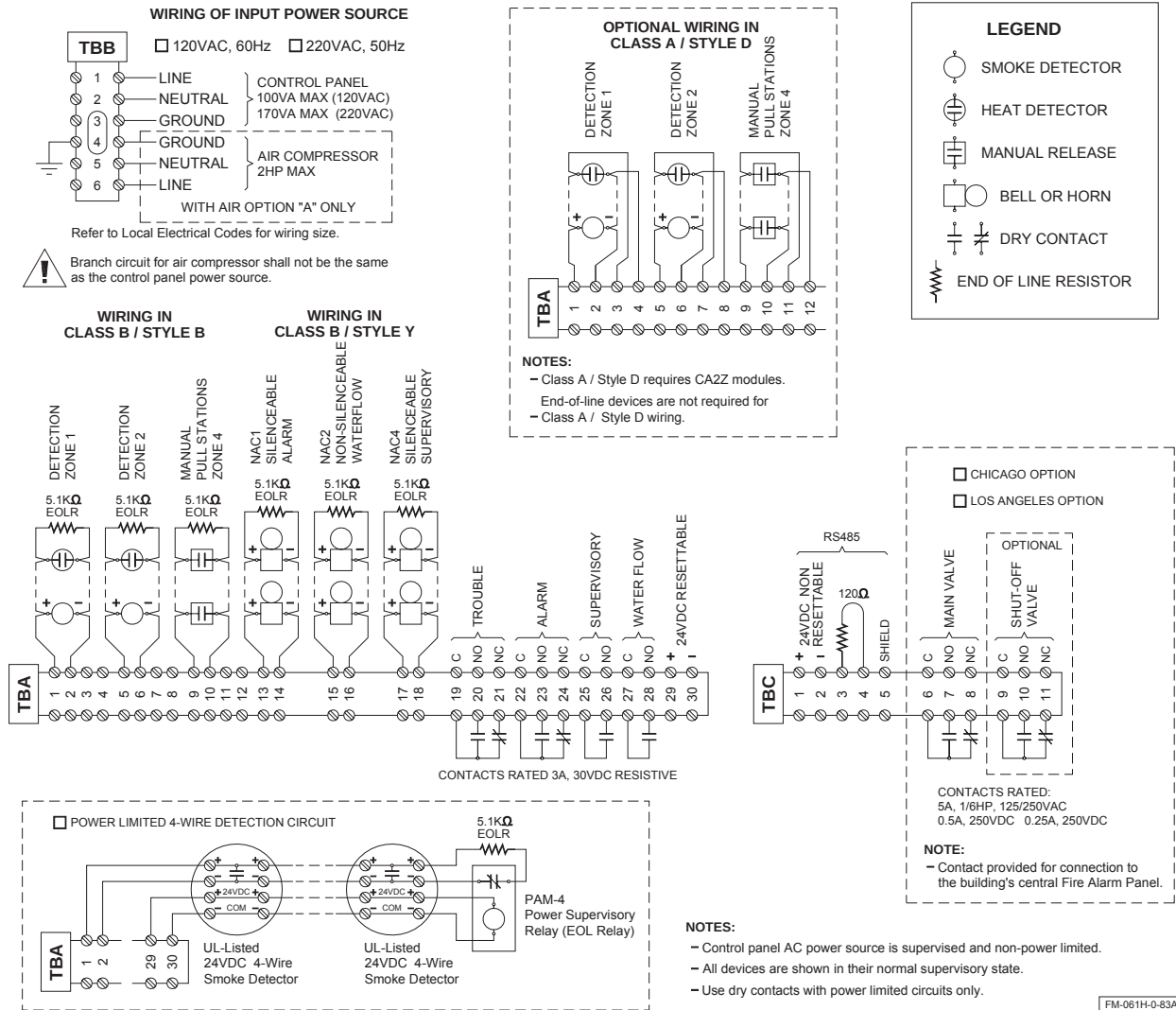
**Trim Components:**

|     |                                       |    |                                                                  |
|-----|---------------------------------------|----|------------------------------------------------------------------|
| A1  | Deluge valve                          | C1 | Alarm pressure switch                                            |
| B1  | Priming valve                         | C2 | Connection to water motor gong (strainer supplied by contractor) |
| B2  | Strainer                              | D1 | Water supply control valve                                       |
| B3  | 1/16" Restricted orifice              | D2 | Riser check valve                                                |
| B4  | Spring loaded check valve             | D3 | Main drain valve                                                 |
| B5  | Alarm test valve                      | F1 | N.C. Solenoid Valve – 24Vdc                                      |
| B6  | Flow test valve                       | F3 | Pneumatic actuator                                               |
| B7  | Drip check valve                      |    |                                                                  |
| B8  | Drain check valve                     |    |                                                                  |
| B9  | Pressure operated relief valve (PORV) |    |                                                                  |
| B10 | Emergency release valve               |    |                                                                  |
| B11 | Prime pressure water gauge & valve    |    |                                                                  |
| B12 | Water supply pressure gauge & valve   |    |                                                                  |
| B13 | Clapper check valve                   |    |                                                                  |

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### Field wiring diagrams, Double interlock Electric / Pneumatic, Self-Contained:



#### Power Limited (supervised) Initiating Device Circuits

Detection Zone 1, 2, 3, and 4.

Max. loop resistance: 100 ohms

End of line: 5.1K ohms, 1/4W

Leave ELR (provided) on all unused circuits.

Refer to Device Compatibility in the VFR-400 Releasing control panel Manual.

#### Power Limited (supervised) Initiating Device Circuits

Supervision Zone 1, and 2.

Max. loop resistance: 100 ohms

End of line: 5.1K ohms, 1/4W

Leave ELR (provided) on all unused circuits.

For dry contact supervisory devices such as tamper, low air, or high air switches. (Class-B only)

#### Power Limited (supervised) Notification Appliance Circuits

Output Circuit 1, 2, 3, and 4

Maximum operating voltage: 27Vdc (ripple: 0.3Vdc)

Maximum usable current per circuit: 1.0A

Total current available (all circuits): 2.5A

Polarity is reversed in supervisory condition.

Leave ELR (provided) on all unused circuits.

Refer to Device Compatibility in the VFR-400 Releasing control panel Manual.

#### Auxiliary Power 24Vdc Regulated Source

Total current available: 0.2A

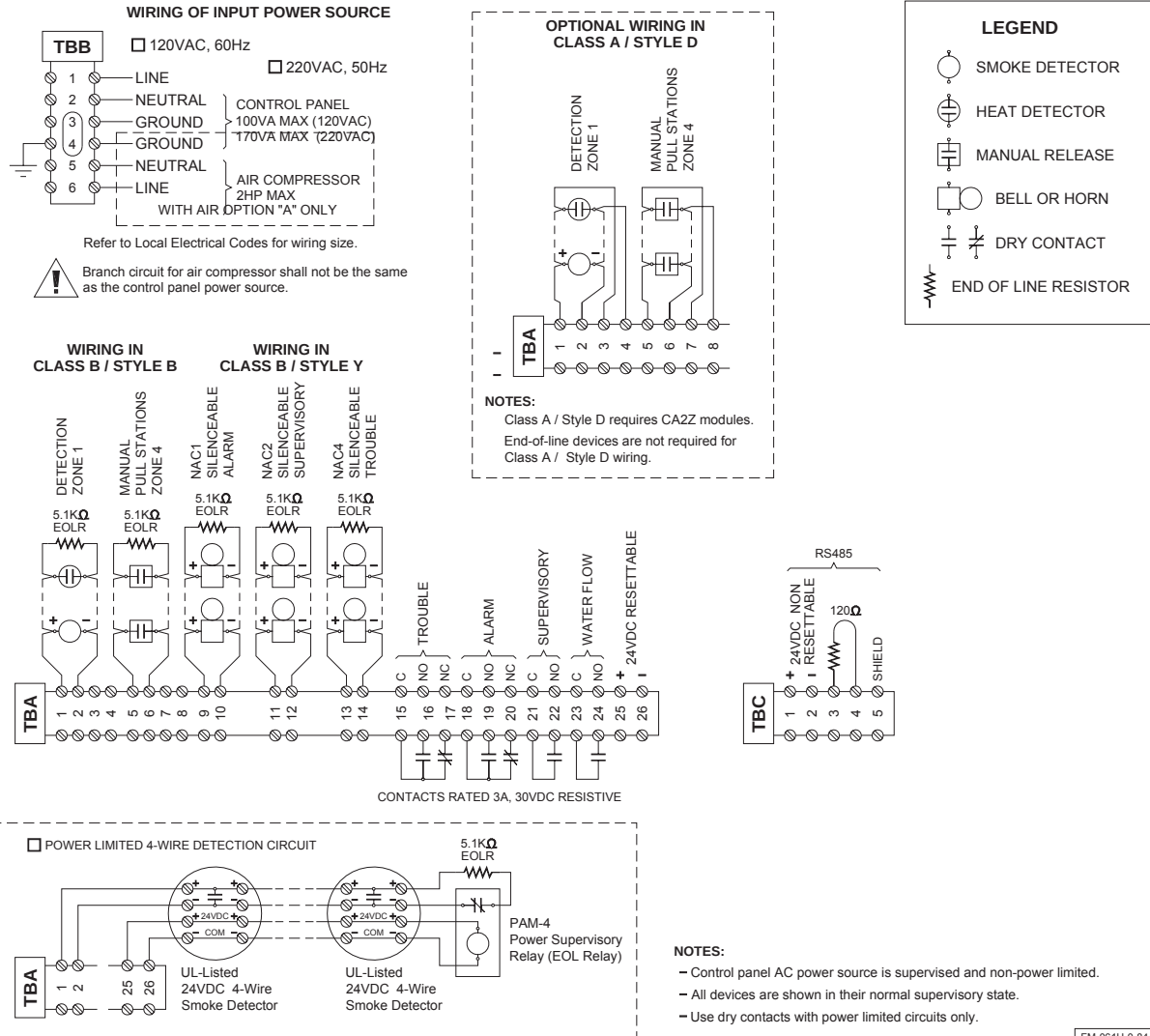
Resettable for 4 wires smoke detectors

**WARNING** Releasing control panel shall be supplied by a dedicated circuit breaker, as per NFPA 70, Section 760 and Canadian Electrical Code, Section 32.

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### Field wiring diagrams, Double interlock Electric / Pneumatic, Self-Contained, New York City:



#### Power Limited (supervised) Initiating Device Circuits

Detection Zone 1, 2, 3, and 4.

Max. loop resistance: 100 ohms

End of line: 5.1K ohms, 1/4W

Leave ELR (provided) on all unused circuits.

Refer to Device Compatibility in the VFR-400 Releasing control panel Manual.

#### Power Limited (supervised) Initiating Device Circuits

Supervision Zone 1, and 2.

Max. loop resistance: 100 ohms

End of line: 5.1K ohms, 1/4W

Leave ELR (provided) on all unused circuits.

For dry contact supervisory devices such as tamper, low air, or high air switches. (Class-B only)

#### Power Limited (supervised) Notification Appliance Circuits

Output Circuit 1, 2, 3, and 4

Maximum operating voltage: 27Vdc (ripple: 0.3Vdc)

Maximum usable current per circuit: 1.0A

Total current available (all circuits): 2.5A

Polarity is reversed in supervisory condition.

Leave ELR (provided) on all unused circuits.

Refer to Device Compatibility in the VFR-400 Releasing control panel Manual.

#### Auxiliary Power 24Vdc Regulated Source

Total current available: 0.2A

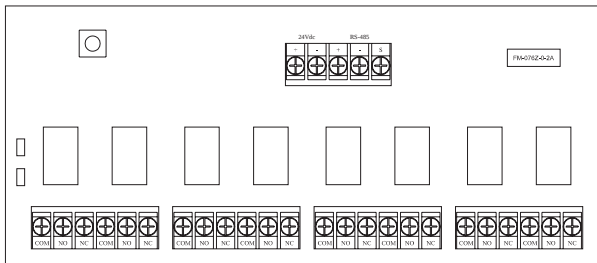
Resettable for 4 wires smoke detectors

**WARNING** Releasing control panel shall be supplied by a dedicated circuit breaker, as per NFPA 70, Section 760 and Canadian Electrical Code, Section 32.

### Optional electrical equipments

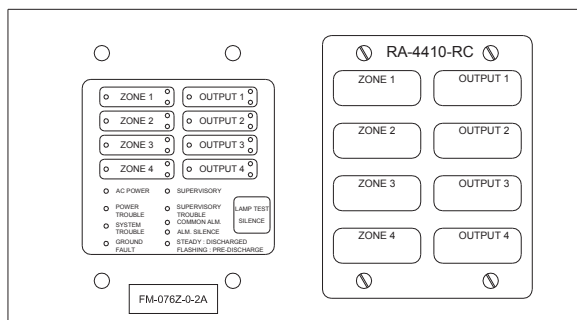
#### □ Relay module ARM-44

The ARM-44 is an auxiliary relay module designed to operate with the Viking **VFR-400** releasing control panel to provide 4 independent form C relay outputs. The 4 output circuits each have a dedicated relay. Each relay is rated for 3 amps at 24 volts DC resistive load. The relay module mounts directly to the back of the cabinet and is connected to the main board. All of the relay terminals are wired back to the field wiring junction box. A disable switch is available for disabling the relays when the system is being tested or serviced.



#### □ Remote Annunciator RA-4410-RC

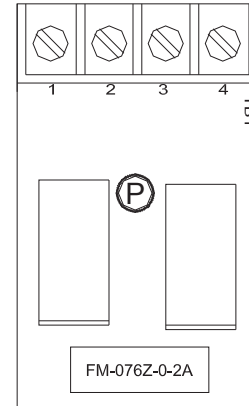
The RA-4410-RC remote annunciator is designed to operate with the Viking **VFR-400** releasing control panel. There are 34 LED's to indicate a change in panel status. There is a buzzer on the annunciator that sounds for any trouble or supervisory condition. The release releasing control panel supervises and communicates with the annunciator via separate connections for the RS-485 communication and the 24VDC power requirement of the RA-4410-RC. Separate cables should be used for power and communication. Shielded cable **MUST** be used for the RS-485 communication line.



#### □ Class A initiating device module CA2Z

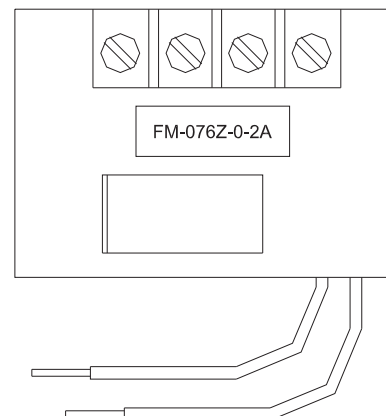
The Model CA2Z Class A Module is designed to be used with the Viking **VFR-400** releasing control panel to convert from two (Class B) initiating device circuits to two (Class A) circuits.

The module is to be mounted in the upper right hand corner of the panel. All the connections are wired back to the field wiring junction box.



#### □ CLASS A INDICATING APPLIANCE CIRCUIT MODULE

The Model CAM Class A Module is designed to be used with the Viking **VFR-400** releasing control panel to convert a single (Class B) indicating appliance circuit to a (Class A) circuit (one module is required for each indicating appliance circuit). After installing the CAM, the indicating circuit should be activated to ensure proper operation and connections. The module is provided with double-sided foam tape and should be mounted in the field wiring junction box so that the terminals are accessible.

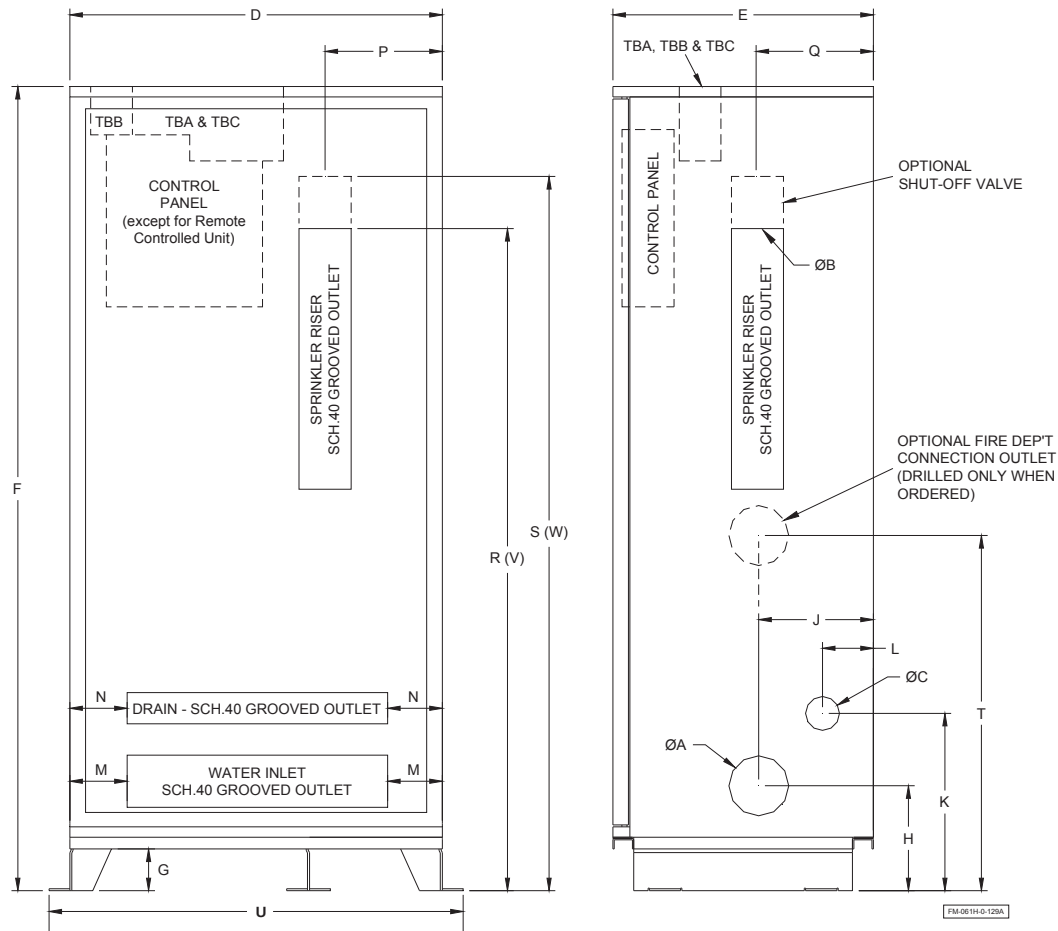


# TOTALPAC® 3

**Datasheet**  
Self contained - Double interlock Preaction system  
Electric / Pneumatic release

## Dimensions

Figure 1 – Cabinet dimensions:



Dimensions are nominal and may vary  $\pm 1/4$ ".

Dimensions V and W are with the optional Fire Department Connection

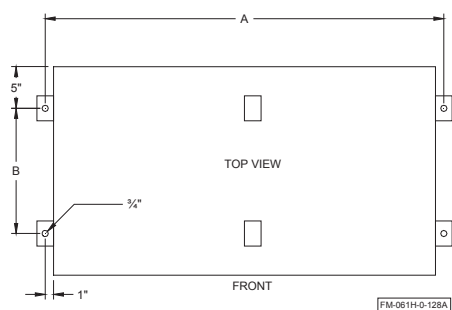
| System Size | A  | B   | C  | D    | E   | F    | G  | H   | J    | K    | L   | M   | N   | P    | Q    | R    | S    | T    | U    | V    | W    |
|-------------|----|-----|----|------|-----|------|----|-----|------|------|-----|-----|-----|------|------|------|------|------|------|------|------|
| 1½"         | 2" | 1½" | 2" | 23"  | 25" | 77¼" | 4" | 8¾" | 11½" | 13¾" | 3¾" | 2¾" | 2¾" | 8"   | 11½" | 37½" | 44¾" | 47½" | 27"  | 43"  | 50¼" |
| 2"          | 2" | 2"  | 2" | 23"  | 25" | 77¼" | 4" | 8¾" | 11½" | 13¾" | 3¾" | 2¾" | 2¾" | 8"   | 11½" | 37¾" | 45"  | 47¾" | 27"  | 43¾" | 50½" |
| 3"          | 4" | 3"  | 2" | 35¾" | 25" | 77¼" | 4" | 10" | 11½" | 13¾" | 3¾" | 2¾" | 2¾" | 11¾" | 11½" | 44"  | 47¾" | 51¼" | 39¾" | 51"  | 54¾" |
| 4"          | 4" | 4"  | 2" | 35¾" | 25" | 77¼" | 4" | 10" | 11½" | 13¾" | 3¾" | 2½" | 2½" | 12"  | 11½" | 48½" | 53"  | 59"  | 39¾" | 56½" | 61"  |
| 6"          | 6" | 6"  | 2" | 46"  | 25" | 77¼" | 4" | 11" | 11½" | 13¾" | 3¾" | 5¼" | 5¼" | 17¾" | 11½" | 59¼" | 65"  | 70½" | 50"  | 70¼" | n/a  |
| 8"          | 8" | 8"  | 2" | 54"  | 31" | 81¼" | 4" | 12" | 13¾" | 17"  | 3¾" | 9"  | 6¾" | 27"  | 13¾" | 70"  | 75½" | n/a  | 58"  | n/a  | n/a  |

| SYSTEMS WEIGHTS             |              |             |
|-----------------------------|--------------|-------------|
| Cabinets with control panel |              |             |
| System Description          | Weight (lbs) | Weight (Kg) |
| 1½" Preaction cabinet unit  | 475          | 215         |
| 2" Preaction cabinet unit   | 480          | 218         |
| 3" Preaction cabinet unit   | 755          | 342         |
| 4" Preaction cabinet unit   | 770          | 349         |
| 6" Preaction cabinet unit   | 1050         | 476         |
| 8" Preaction cabinet unit   | 1500         | 680         |

# TOTALPAC<sup>®</sup> 3

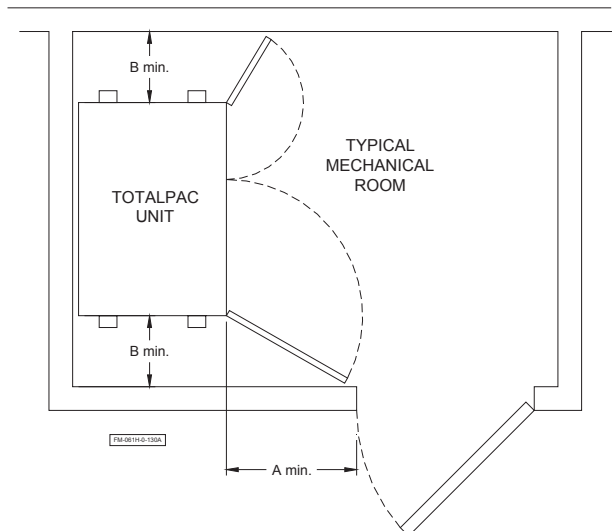
**Datasheet**  
Self contained - Double interlock Preaction system  
Electric / Pneumatic release

**Figure 2 – Anchoring dimensions:**



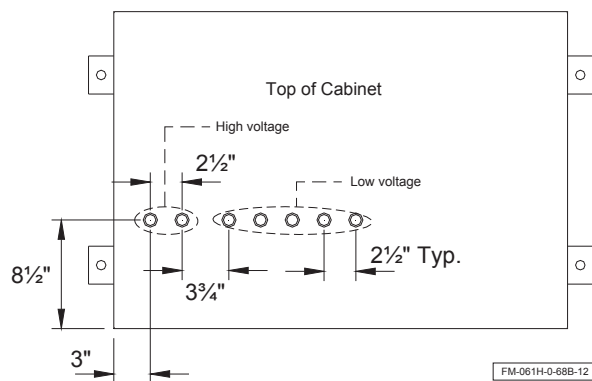
| System Size | A    | B   |
|-------------|------|-----|
| 1½"         | 25"  | 15" |
| 2"          | 25"  | 15" |
| 3"          | 37¾" | 15" |
| 4"          | 37¾" | 15" |
| 6"          | 48"  | 15" |
| 8"          | 56"  | 21" |

**Figure 3 – Cabinet clearance dimensions**



| System Size | A   | B   |
|-------------|-----|-----|
| 1½"         | 24" | 12" |
| 2"          | 24" | 12" |
| 3"          | 24" | 12" |
| 4"          | 24" | 12" |
| 6"          | 24" | 12" |
| 8"          | 32" | 12" |

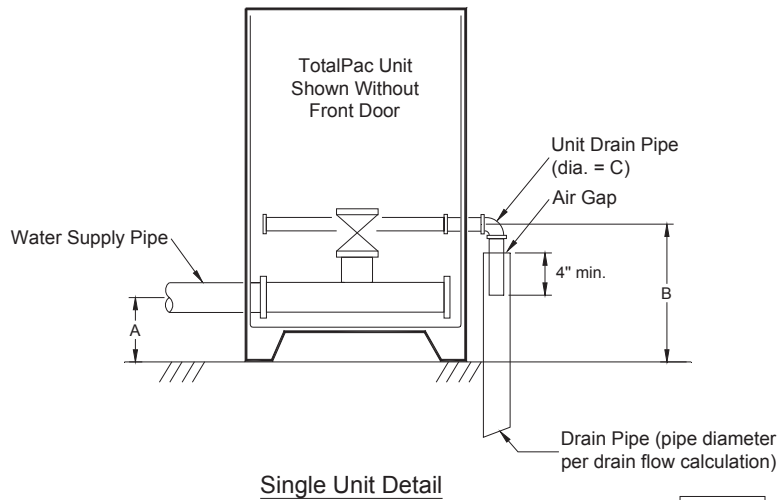
**Figure 4 – Knockouts detail**



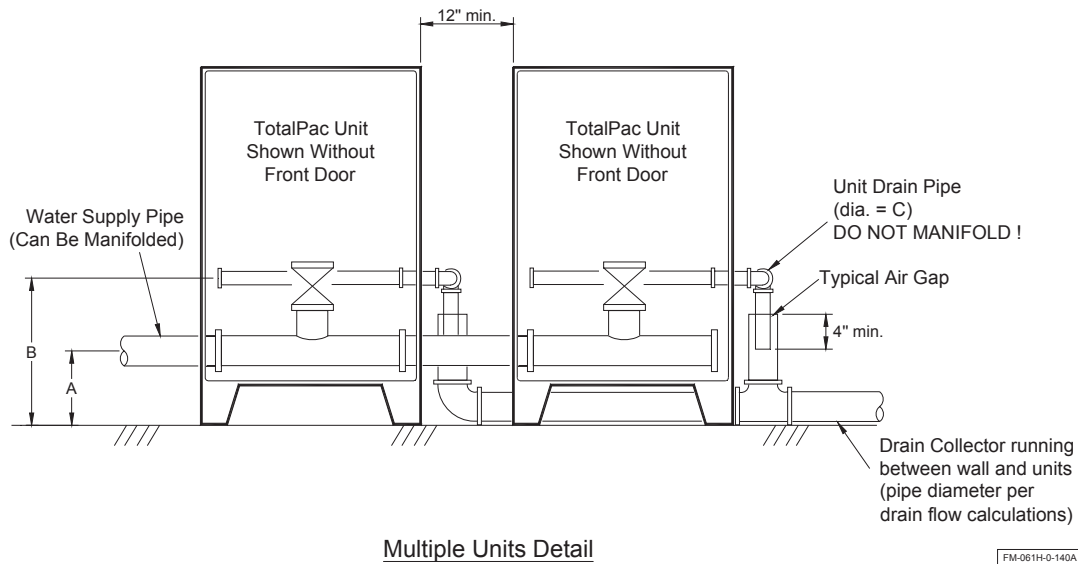
# TOTALPAC<sup>®</sup> 3

**Datasheet**  
Self contained - Double interlock Preaction system  
Electric / Pneumatic release

**Figure 5: Open drain details for single unit:**  
(See dimensions in table below)



**Figure 6: Open drain details for multiple units:**  
(See dimensions in table below)



**Dimension table**

| Unit Size: | 1½"  | 2"   | 3"   | 4"   | 6"   | 8"  |
|------------|------|------|------|------|------|-----|
| A          | 8¾"  | 8¾"  | 10"  | 10"  | 11"  | 12" |
| B          | 13¾" | 13¾" | 13¾" | 13¾" | 13¾" | 17" |
| C          | 2"   | 2"   | 2"   | 2"   | 2"   | 2"  |

**Notes:**

1. Supply and drain pipes can be connected on either sides of cabinet.
2. All pipes and fittings should meet applicable codes.
3. Actual drain collector diameter shall be determined with detailed hydraulic calculations and is the responsibility of the system designer.



1935, Lionel-Bertrand Blvd.  
Boisbriand QC Canada J7H 1N8  
**Tel.: 450-437-3473 • Fax: 450-437-1930**  
**Toll Free: 866-347-3353**  
**Email: [info@fireflex.com](mailto:info@fireflex.com) • Web: [www.fireflex.com](http://www.fireflex.com)**

## Shop Drawing Submittal Review

Transmitted To: Cannon Design

Date: December 20, 2016

Attention: [stl-cac@cannondesign.com](mailto:stl-cac@cannondesign.com)

Contact Person / WTA Field Inspector:  
Patrick Garner

Project Name: Webster University-**ISB**

Reviewed by: Mike Whitworth (WES)  
Joe Krussel (WTA/Elec)

Project No. WT 14127.01  
WES 607

☐ UPS ☐ Courier ☒ **Email**

| Copies | No.       | Description                                               |
|--------|-----------|-----------------------------------------------------------|
| 1 PDF  | 211316F03 | (Submittal No.'s:)                                        |
|        |           | (Cannon #211316-003) - (Paric #15051-0352) – (WES #607)   |
|        |           | ➤ <b>Dry Pipe PreAction Sprinkler System Product Data</b> |
|        |           |                                                           |
|        |           |                                                           |

**\*Remarks: See Submittal Review from Webb Engineering.**

c: Kelvin Patel  
[Kpatel@cannondesign.com](mailto:Kpatel@cannondesign.com)

☒ **\*Reviewed**

☒ **\*No Exceptions Taken**

☐

☐ \*Make Corrections As Noted,  
No Resubmittal Required

Corrections or comments made on shop drawings during this review do not relieve contractor from compliance with requirements of drawings and specifications. This check is only for review of general conformance with the design concept of project and general compliance with information given in contract documents. Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner.



1400 S. 3<sup>rd</sup> Street, Suite 201  
St. Louis, Missouri 63104  
Phone: (314) 588-0600  
Fax: (314) 588-0604

# Letter of Transmittal

**To:** wtashop@wmtao.com

**From:** Mike Whitworth

**Date:** December 13, 2016

**Re:** Webster University ISB

**WES No:** 607

☐ For your Files

☐ For Review

☐ Please Comment

☐ Please Reply

| Item No. | Description                                                            | No. of Copies | Date     |
|----------|------------------------------------------------------------------------|---------------|----------|
| 1        | Shop Drawing Review – (211316-003)<br>211316 Dry Pipe Sprinkler System | 1             | 12/13/16 |
|          |                                                                        |               |          |
|          |                                                                        |               |          |
|          |                                                                        |               |          |

•Signature: Mike Whitworth

The review of this submittal is limited to the general conformance with the designated design concept and intent of this project and with the general compliance of the information provided in the contract documents. All comments, remarks and notations made on the submittal(s) as a result of this review do not relieve the contractor from full compliance with requirements of the contract documents. Approval for a specific item shall not include approval of an assembly of which the item is not a component. The contractor is solely responsible for rough-in and installation confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordination of this work with that of other trades on this project; and in a safe and satisfactory manner. All work shall be installed in full compliance with the manufacturer's recommendation, Federal, State and Local rules and regulation and the Authority Having Jurisdiction (AHJ) and applicable adopted codes and standards.

PROJECT NAME: Webster  
University ISB  
LOCATION: St. Louis  
Missouri  
CLIENT PROJ. NO.: N/A  
WES PROJ. NO.: 607  
SPECIFICATION 211316  
SECTION: Dry Pipe Sprinkler  
System  
SUBMITTAL ITEM: See Below -

CONTRACTOR: J.F. Ahern Co.  
CTR. SUBMITTAL #: 21 1316-003  
SUBMITTAL DATE: November 29, 2016  
DATE RECEIVED: December 07, 2016  
RECEIVED VIA: E-Mail  
RECEIVED FROM: WTA  
DATE RETURNED: DECEMBER 13, 2016  
RETURNED VIA: E-MAIL  
RETRURNED TO: WTASHOP@WMTAO.COM

STATUS KEY:

|                                                                                                                                       |     |     |     |     |                                                                  |                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| NO EXCEPTION TAKEN                                                                                                                    |     |     |     |     |                                                                  |                                                                                                                |
| MAKE CORRECTIONS NOTED, NO RESUBMITTAL:                                                                                               |     |     |     |     |                                                                  |                                                                                                                |
| AMEND AND RESUBMIT                                                                                                                    |     |     |     |     |                                                                  |                                                                                                                |
| REJECTED, SEE REMARKS:                                                                                                                |     |     |     |     |                                                                  |                                                                                                                |
| REVIEWED ONLY                                                                                                                         |     |     |     |     |                                                                  |                                                                                                                |
| NEC                                                                                                                                   | MCN | AAR | REJ | REV | ITEM                                                             | REMARKS                                                                                                        |
| This submittal is to be forwarded to the Electrical Engineer for review of the electrical characteristics and fire alarm integration. |     |     |     |     |                                                                  |                                                                                                                |
| X                                                                                                                                     |     |     |     |     | Schedule 40 Pipe<br>Various Manufacturers                        | 1. For galvanized pipe only.                                                                                   |
| X                                                                                                                                     |     |     |     |     | Dry-Pipe Preaction<br>System<br>Fire-Flex<br>Model – Total Pac 3 | 1. Cabinet is to fit with the space provided and maintain manufacturers<br>recommended clearance requirements. |

REVIEWED BY: Michael R. Whitworth DATE: December 13, 2016

THESE COMMENTS ARE TO BE ATTACHED TO ALL COPIES OF THE SHOP DRAWING REFERENCED ABOVE.

## SUBMITTAL IDENTIFICATION SHEET

**To be completed by Contractor/CM**

|                               |                                   |
|-------------------------------|-----------------------------------|
| PROJECT NAME                  |                                   |
| <input type="text"/>          |                                   |
| ADDRESS                       |                                   |
| <input type="text"/>          |                                   |
| NUMBER                        |                                   |
| <input type="text"/>          |                                   |
| OWNER                         |                                   |
| <input type="text"/>          |                                   |
| ARCHITECT / ENGINEER          |                                   |
| <input type="text"/>          |                                   |
| SUBMITTED BY                  |                                   |
| <input type="text"/>          | <input type="text"/>              |
| CONTRACTOR / CM SUBMITTAL NO. | CANNON DESIGN SUBMITTAL NO.       |
| <input type="text"/>          | <input type="text"/>              |
| DRAWING / DETAIL REFERENCE    | SPECIFICATION SECTION / PARAGRAPH |
| <input type="text"/>          | <input type="text"/>              |
| MANUFACTURER / SUPPLIER       | ITEM / PRODUCT ID                 |
| <input type="text"/>          | <input type="text"/>              |
| REQUIRED DATE                 | PRIORITY                          |
| <input type="text"/>          | <input type="text"/>              |
| CRITICALITY                   |                                   |
| <input type="text"/>          |                                   |

**To be completed by Reviewer**

|                                |
|--------------------------------|
|                                |
| CANNON DESIGN SUBMITTAL NUMBER |
|                                |
| RECEIVED DATE                  |

- ☐ **A. No Exceptions Taken**  
No further review of submittal is required.
- ☐ **B. Make Corrections Noted**  
Incorporate corrections in work;  
resubmission is not required.
- ☐ **C. Revise and Resubmit**  
Revise as noted, and resubmit for review.
- ☐ **D. Rejected**  
Submittal is not in compliance with Contract Documents;  
provide new submittal.
- ☐ **E. For Record / Information Only**  
Submittal was reviewed for Record / Information  
purposes only.
- ☐ **F. Not Required for Review**  
Submittal is not required by Contract Documents  
and has not been reviewed.

Review is for conformance with the design concept of this project and for general compliance with contract documents. Contractor is responsible for quantities, dimensions and compliance with contract documents and for information that pertains to fabrication processes, construction techniques and coordination of this work with all trades which will be affected thereby. This review is null and void if submittal deviates from contract documents and does not indicate or note deviations.

## ITEM BEING SUBMITTED (check only one)

- ☐ Shop Drawings      ☐ Certification / Qualifications      ☐ Coordination Drawing  
☐ Samples      ☐ Record Documents      ☐ Calculations  
 ( \_\_\_\_\_ copies)      ☐ Product Data      ☐ Schedules  
☐ LEED Submittal      ☐ O&M Manuals  
☐ Other

## ITEM BEING SUBMITTED FOR (check only one)

- ☐ Action      ☐ Information Only      ☐ Record

## REMARKS OR DEVIATIONS

CONTRACTOR / CM CERTIFICATION  
(SUBMITTALS NOT CERTIFIED WILL BE RETURNED WITHOUT REVIEW)



PARIC CORPORATION  
SUBMITTAL STAMP

THIS SHOP DRAWING HAS BEEN REVIEWED BY PARIC CORPORATION

Subcontractor remains responsible for dimensions, quantities, coordination with other trades and compliance with contract documents.

Ry:

By:  
**Devin D. Gates**

|             |      |
|-------------|------|
|             |      |
| REVIEWED BY | DATE |

## A/E COMMENTS

- ☐
- See attached sheet(s) for additional comments

|             |      |
|-------------|------|
|             |      |
| REVIEWED BY | DATE |



77 Westport Plaza  
Suite 250  
St. Louis, MO 63146

**TRANSMITTAL**

**No. 15051-0352**

*Paric Corporation*

**PROJECT:** 15051-Webster University Interdisciplinary Science Building

**DATE:** 11/29/2016

**TO:** Cannon Design  
1100 Clark Ave  
St Louis MO 63102

Fax;  
314-241-2203

**RE:** Dry Pipe PreAction Sprinkler System  
Product Data

**ATTN:** Kelvin Patel

**JOB:** 15051

| WE ARE SENDING:                                         |  | SUBMITTED FOR:                               | ACTION TAKEN:                                     |
|---------------------------------------------------------|--|----------------------------------------------|---------------------------------------------------|
| <input type="checkbox"/> Shop Drawings                  |  | <input checked="" type="checkbox"/> Approval | <input type="checkbox"/> Approved as Submitted    |
| <input type="checkbox"/> Letter                         |  | <input type="checkbox"/> Your Use            | <input type="checkbox"/> Approved as Noted        |
| <input type="checkbox"/> Prints                         |  | <input type="checkbox"/> As Requested        | <input type="checkbox"/> Returned After Loan      |
| <input type="checkbox"/> Change Order                   |  | <input type="checkbox"/> Review and Comment  | <input type="checkbox"/> Resubmit                 |
| <input type="checkbox"/> Plans                          |  |                                              | <input type="checkbox"/> Submit                   |
| <input type="checkbox"/> Samples                        |  | SENT VIA:                                    | <input type="checkbox"/> Returned                 |
| <input type="checkbox"/> Specifications                 |  | <input type="checkbox"/> Attached            | <input type="checkbox"/> Returned for Corrections |
| <input checked="" type="checkbox"/> Other: Product Data |  | <input type="checkbox"/> Separate Cover Via: | <input type="checkbox"/> Due Date:                |

| Item      | Package | Code       | Rev. | Copies | Date       | Description                                      | Status    |
|-----------|---------|------------|------|--------|------------|--------------------------------------------------|-----------|
| Submittal |         | 211316-003 | 1    |        | 11/29/2016 | Dry Pipe PreAction Sprinkler System Product Data | Submitted |

**NOTES:**

**CC:**

**Signed:** \_\_\_\_\_  
Devin Gates