



#### DESCRIPTION

This **TOTALPAC®3** integrated fire protection system by FireFlex Systems Inc. consists of an integrated wet type sprinkler riser assembly with retard chamber, totally pre-assembled, pre-wired and factory tested. All electrical and mechanical components of the system are contained in one single unit

Standard wet Pipe systems are built around the Viking trim Alarm Check Valve Model J-1. The valves are rated up to a maximum of 250 psi WWP (1724 kPa) max and are available in the following diameters:

- 3" (80 mm)       4" (100 mm)
- 6" (150 mm)     8" (200 mm)

#### Standard features

- cULus Listed as an assembled unit
- cULus Listed & FM Approved parts
- Factory assembled, programmed and tested under ISO-9001 standards
- Prewired to a terminal block
- Easy and compact installation
- 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
- numerous modular options to meet the most demanding jobsite requirements
- User-friendly standardized operation & installation manual
- Free interactive simulator

### Cabinet

The **TOTALPAC®3** cabinets are made of sturdy 14 gauge steel, they are available in two (2) sizes;

36" x 25" x 77" (91.4 x 63.5 x 195.6 cm) for 3" & 4" systems

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

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

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 all electrical components in the trim. Pressure switches, supervisory switches, etc. are all 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.

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, the activation of at least one automatic sprinkler head is necessary to cause the water discharge.

The activation of at least one automatic sprinkler head will trip the wet pipe valve and cause the system to spray through all open sprinklers. This will activate alarm and water flow switch contacts connected to the building fire alarm panel and sound an alarm.

### 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.

System size (in.)	Usage Range (gpm)	Piping Equivalent Lengths	
		(m.)	(ft.)
3	125 - 700	20.76	68.1
4	250 - 1200	25.57	83.9
6	750 - 2800	36.45	119.6
8	750 - 5250	38.92	127.7

### System drain flow:

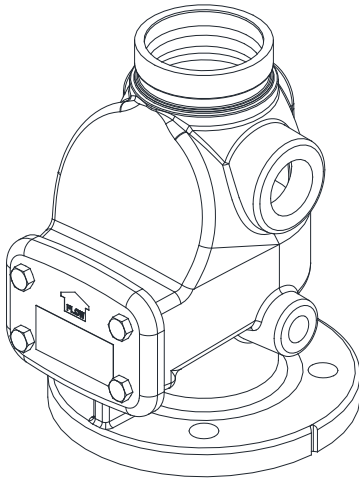
System size	USGPM Formula
3"	1.2 x (water pressure Psi) + 130 = USGPM
4", 6" & 8"	2.7 x (water pressure Psi) + 215 = USGPM

System size	LPM Formula
3"	4 x (water pressure Psi) + 490 = LPM
4", 6" & 8"	10 x (water pressure Psi) + 800 = LPM

*Standard equipment*

**Alarm check valve**

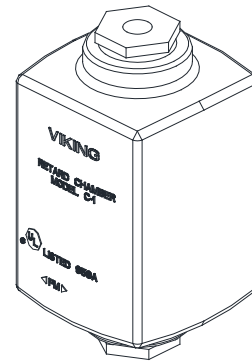
The Viking Model J-1 Alarm Check Valve serves as a check valve by trapping pressurized water above the clapper and preventing reverse flow from sprinkler piping. The valve is designed to initiate an alarm during a sustained flow of water (such as the flow required by an open sprinkler) by operating an optional water motor alarm and/or alarm pressure switch. The valve is made suitable for use on variable pressure water supplies by adding the optional retard chamber to the standard trim.



**Retard Chamber**

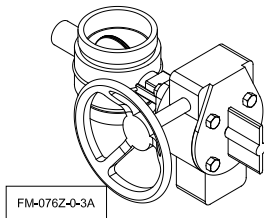
The Viking Model C-1 Retard Chamber is a surge tank used with Viking Alarm Check Valves to reduce the possibility of false alarms due to changes in the water supply pressure.

When the clapper of the Alarm Check Valve opens, water flows through the restricted alarm line piping into the inlet of the Retard Chamber. The Retard Chamber begins to fill while simultaneously draining through the 1/8 inch (3.2 mm) Drain Restriction. During a sustained flow of water, the retard chamber fills faster than water can drain through the drain restriction. Pressurized water fills the retard chamber and pressurizes the alarm pressure switch. Pressure surge insufficient to overcome the volume and drain capacity of the retard chamber will not activate the alarm pressure switch.



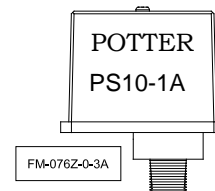
**Water supply control valve**

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



**Alarm pressure switch**

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



*Optional mechanical equipment*

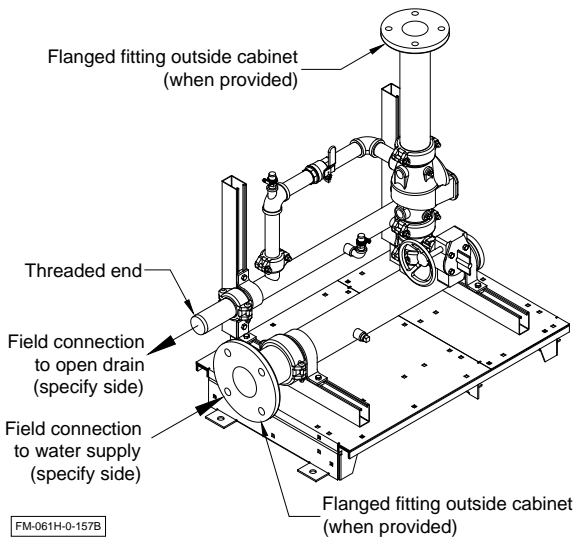
❑ **Semi and full flanged option**

When required by the user, **TOTALPAC®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.

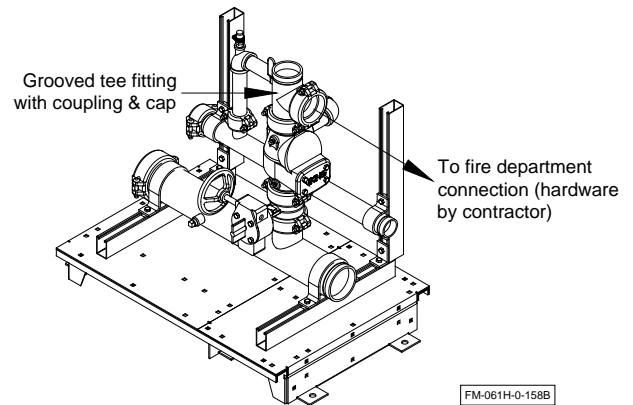


❑ **Fire department connection option**

The fire department connection option consists of a grooved tee fitting installed at the outlet of the Alarm check 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.

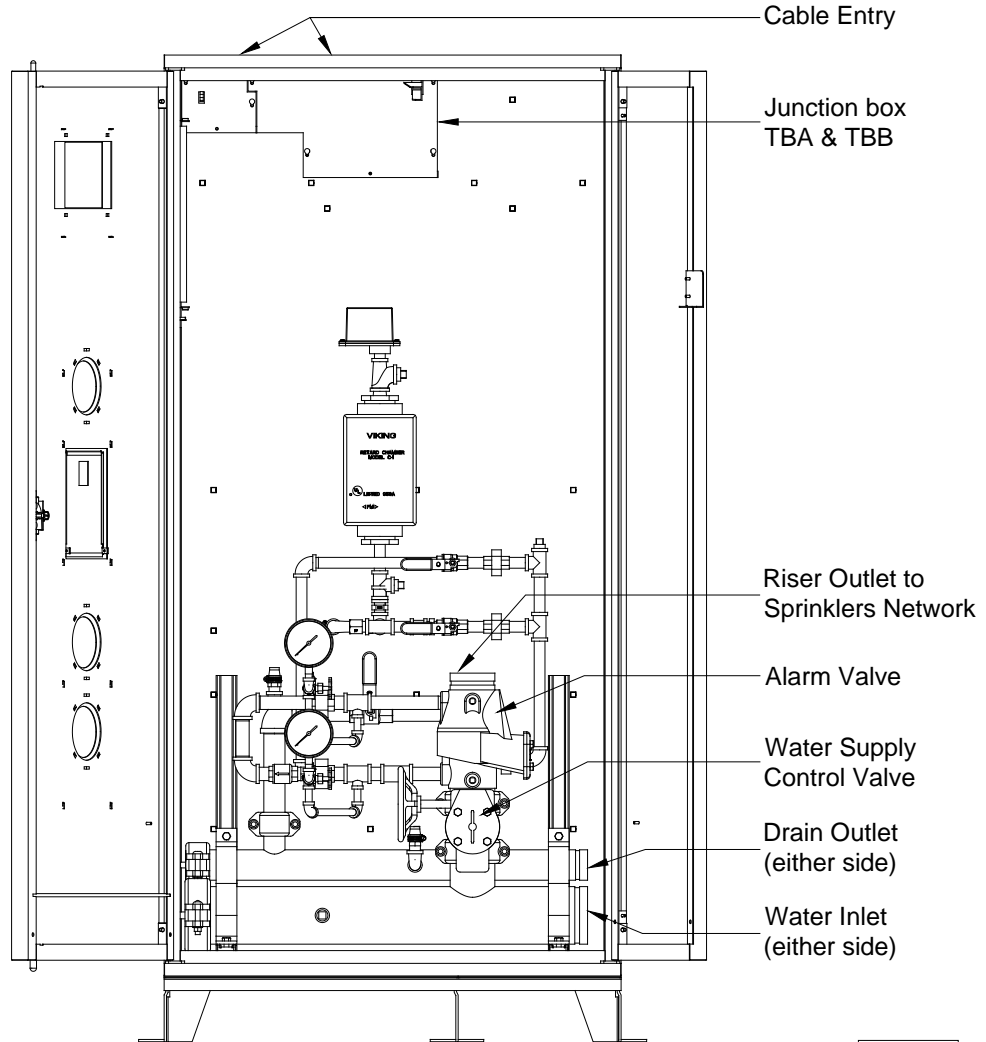
**Note:** The fire department connection hardware itself (drain, Siamese, etc.) is NOT provided with this option and shall be provided by the installing contractor. Refer to NFPA-13 Standard for additional information about the equipment layout and installation.

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



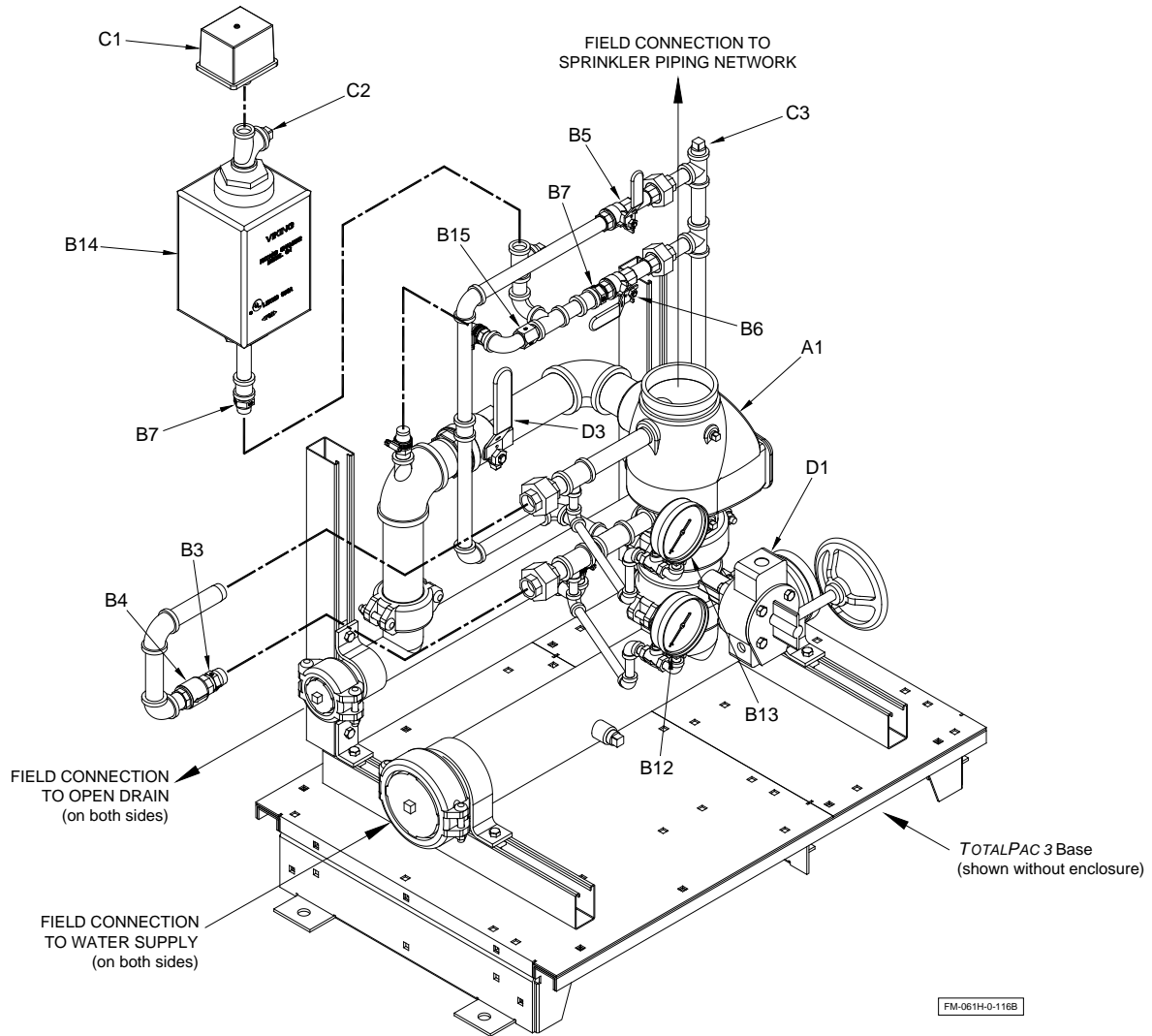
*Details & field wiring diagrams*

**Cabinet with main components**



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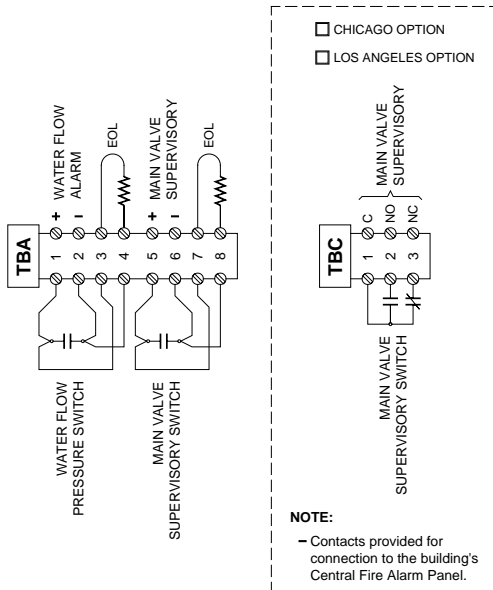
**Trim diagram**



**Trim Components:**

- |     |  |    |  |
|-----|--|----|--|
| A1  | Alarm valve                                  | C1 | Alarm pressure switch  |
| B3  | 3/8" Restricted orifice                      | C2 | Connection to water motor gong (strainer supplied by contractor) |
| B4  | Spring loaded check valve                    | C3 | Connection to optional electric alarm switch                     |
| B5  | Alarm test valve                             | D1 | Water supply control valve                                       |
| B6  | Alarm shut-off valve                         | D3 | Main drain valve   |
| B7  | 7/32" Restricted orifice                     |    |  |
| B12 | Water supply pressure gauge & valve - Supply |    |  |
| B13 | Water pressure gauge & valve - System        |    |  |
| B14 | Retard chamber                               |    |  |
| B15 | 1/8" Restricted orifice                      |    |  |

Field wiring diagrams:



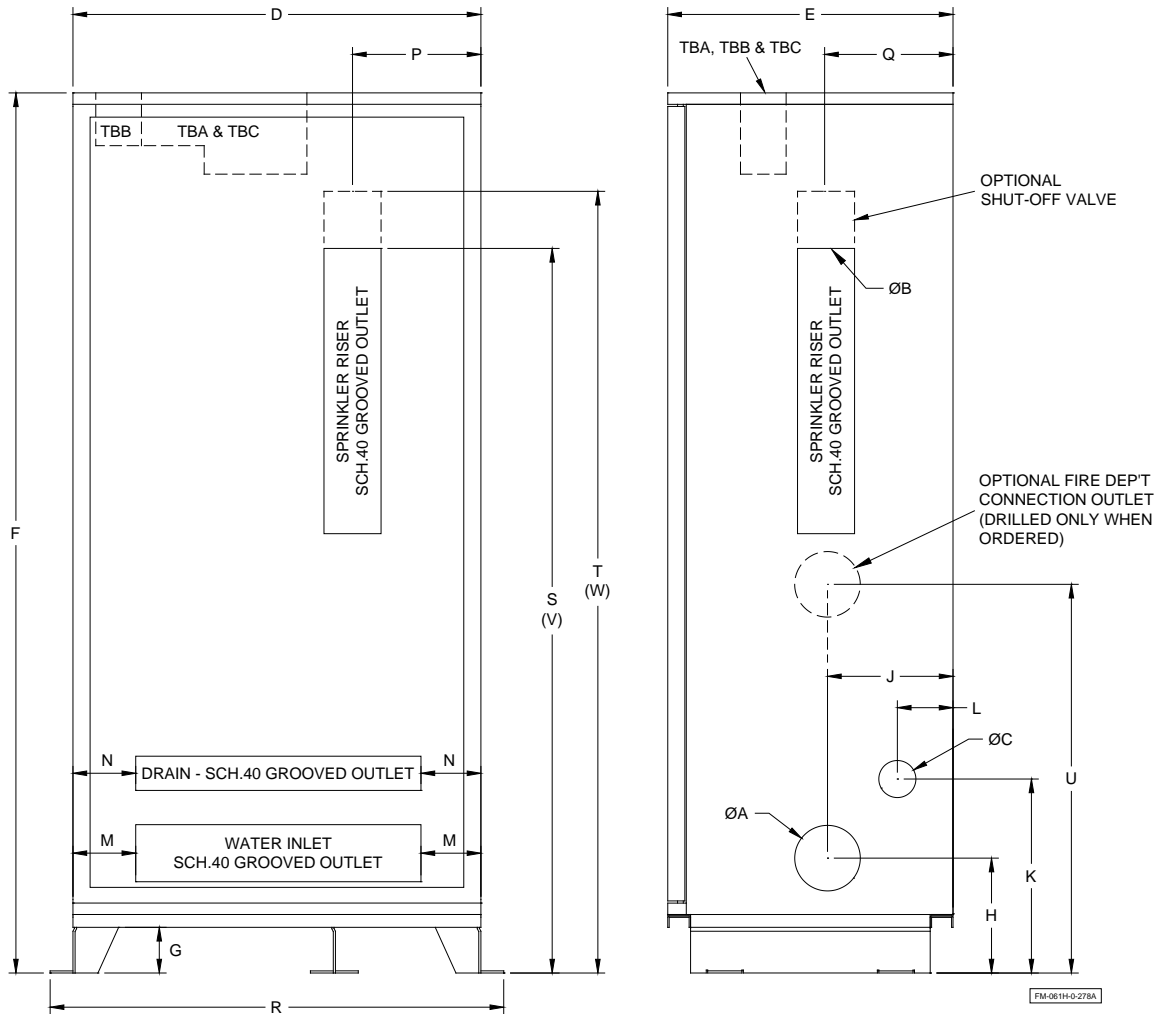
**NOTES:**

- All devices are factory wired.
- All devices are shown in their normal supervisory state.
- Contacts are rated:  
Pressure switches: 2A, 30VDC 10A, 125/250VAC  
Supervisory switches: 0.5A, 125VDC 0.25A, 250VDC 5A, 1/6HP, 125/250VAC
- Use dry contacts with power limited circuits only.
- EOL devices (not included) must be compatible with the Release Control Panel used.

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*Dimensions and weights*

**Figure 1 – Cabinet dimensions:**



**Table 1 - Cabinet dimensions - dimensions are in inches (mm)**

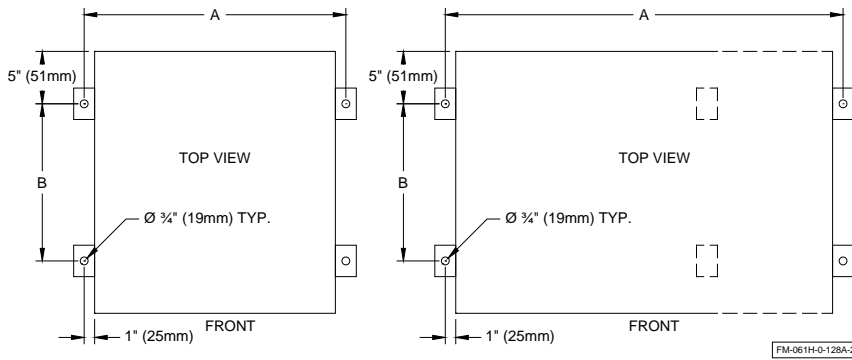
Unit size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W
<b>3" (80)</b>	4" (102)	3" (76)	2" (51)	35¾" (908)	25" (635)	77" (1956)	4" (102)	10" (254)	11½" (292)	13¾" (349)	3¾" (95)	2½" (64)	2½" (64)	11½" (292)	11½" (292)	39¾" (1010)	28¾" (730)	33¼" (845)	32¼" (819)	35½" (901)	40¼" (1022)
<b>4" (100)</b>	4" (102)	4" (102)	2" (51)	46" (1168)	25" (635)	77" (1956)	4" (102)	10" (254)	11½" (292)	13¾" (349)	3¾" (95)	2½" (64)	2½" (64)	12" (305)	11½" (292)	39¾" (1010)	29¼" (743)	33½" (851)	33" (838)	37" (940)	41¾" (1060)
<b>6" (150)</b>	6" (152)	6" (152)	2" (51)	46" (1168)	25" (635)	77" (1956)	4" (102)	11" (279)	11½" (292)	13¾" (349)	3¾" (95)	5¼" (133)	5¼" (133)	18" (457)	11½" (292)	50" (1270)	35" (889)	39½" (1003)	40½" (1029)	46" (1168)	50½" (1283)
<b>8" (200)</b>	8" (203)	8" (203)	2" (51)	54" (1372)	31" (787)	81" (2057)	4" (102)	12" (305)	13¾" (337)	17½" (445)	3¾" (95)	9" (229)	6¾" (171)	27" (686)	13¾" (337)	58" (1473)	40½" (1029)	45½" (1156)	47½" (1207)	54½" (1384)	59½" (1511)

**Notes:**

- Dimensions are nominal and may vary ±¼" (±5mm).
- Dimensions U, V & W are for optional fire department connection.

**Figure 2 - Floor anchoring dimensions**

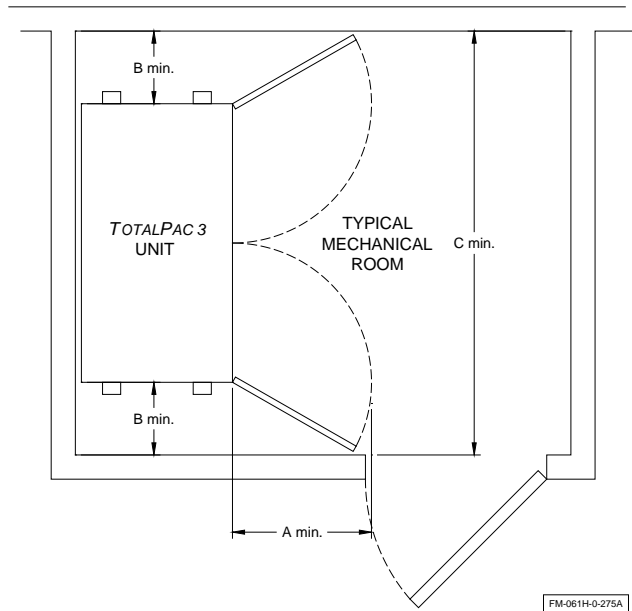




**Figure 3 - Cabinet & doors clearance detail**

**Table 2 - Floor anchoring dimensions**

Unit size	A	B
3" (80mm)	37¾" (959mm)	15" (380mm)
4" (100mm)	37¾" (959mm)	15" (380mm)
6" (150mm)	48" (1220mm)	15" (380mm)
8" (200mm)	56" (1422mm)	21" (530mm)



**Figure 4 - Knockouts details**

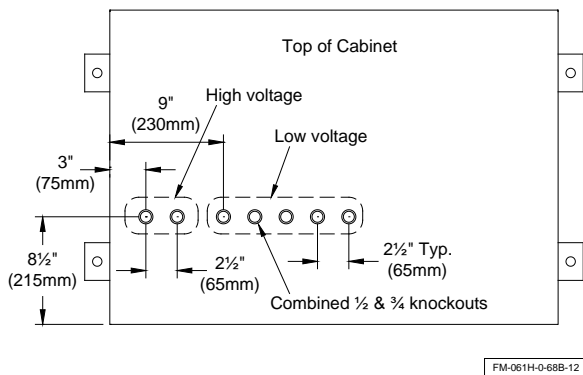
**Table 3 - Cabinet clearance dimensions**

Unit size	A	B	C
3" (80mm)	24" (610mm)	12" (305mm)	60" (1524mm)
4" (100mm)	24" (610mm)	12" (305mm)	60" (1524mm)
6" (150mm)	24" (610mm)	12" (305mm)	70" (1778mm)
8" (200mm)	32" (813mm)	12" (305mm)	78" (1981mm)

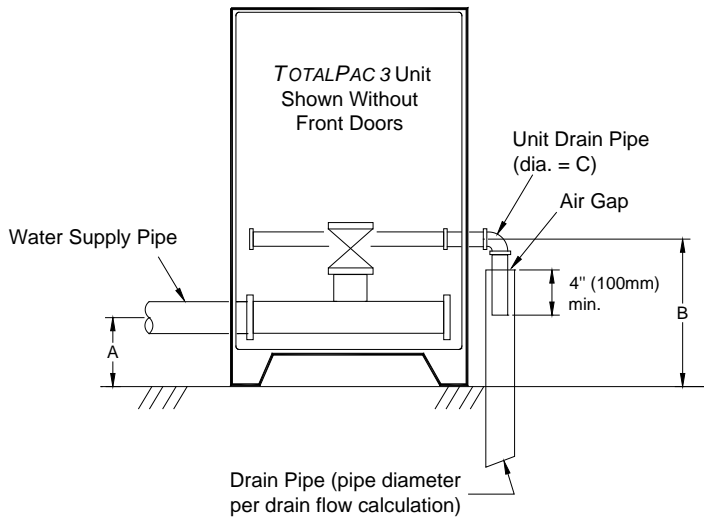
**Note :** Minimum dimensions are according to door clearance and external piping requirements.

**Table 4 - System weight in cabinet**

System size	Weight <sup>1</sup>
3" (80mm)	503 lb (228 kg)
4" (100mm)	510 lb (231 kg)
6" (150mm)	756 lb (433 kg)
8" (200mm)	822 lb (373 kg)



**Figure 5 - Open drain details for single unit**



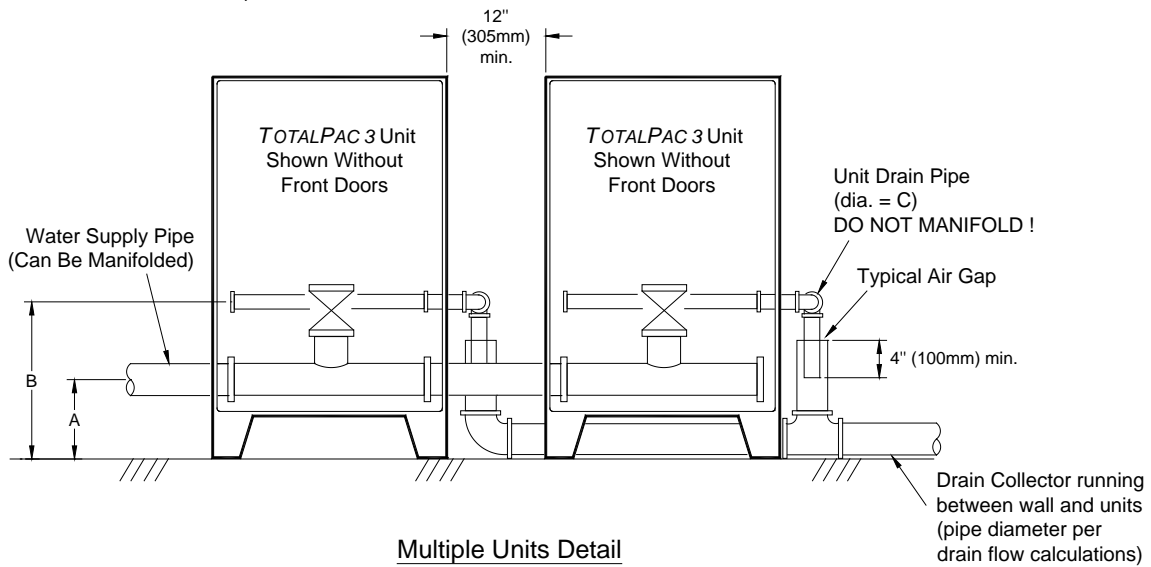
**Single Unit Detail**

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**Table 5 - Manifold dimensions**

Unit size	A	B	C
<b>3" (80mm)</b>	10" (255mm)	13¾" (350mm)	2" (50mm)
<b>4" (100mm)</b>	10" (255mm)	13¾" (350mm)	2" (50mm)
<b>6" (150mm)</b>	11" (280mm)	13¾" (350mm)	2" (50mm)
<b>8" (200mm)</b>	12" (305mm)	17½" (445mm)	2" (50mm)

**Figure 6 - Open drain details for multiple units**  
(refer to dimensions in table 5)



**Multiple Units Detail**

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**Notes:**

1. Water 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.

**FIREFLEX**

Systems Inc.

ADVANCED INTEGRATED FIRE PROTECTION SYSTEMS

TotalPac®3  
Wet pipe system  
c/w retard chamber



**ADVANCED INTEGRATED FIRE PROTECTION SYSTEMS**

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