

TotalPac®X description

The **TOTALPAC®X** integrated system consists of an integrated sprinkler riser assembly, totally pre-assembled, pre-wired and factory tested. All electrical and mechanical components of the system are contained in one single unit

System can be provided with a choice of air supplies to suit the project requirements.

HP® Dry Pipe systems are built around the Viking Easy-Trim using Deluge Valves Model E-3 for 1½" (40 mm) diameter and Model E-1 for 2" (50 mm) diameter and up.

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

Standard features

- NEMA 3 or NEMA 4 construction
- Factory assembled 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
- Wide door for easy access
- Quarter turn door latches
- Lockable door to protect against tampering
- Lifting lugs provided for safe and easy handling
- Corrosion resistant paint finish
- Water supply and drain through the bottom center of the unit to avoid freeze-up potential
- Single drain connection

Cabinet

NEMA 3

Enclosures constructed for either indoor or outdoor use to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt and windblown dust); to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (rain, sleet, snow); and that will be undamaged by the external formation of ice on the enclosure.

NEMA 4

Enclosures constructed for either indoor or outdoor use to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt and windblown dust); to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (rain, sleet, snow, splashing water, and hose directed water); and that will be undamaged by the external formation of ice on the enclosure.

NEMA 3X

Enclosures constructed for either indoor or outdoor use to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt and windblown dust); to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (rain, sleet, snow); that provides an additional level of protection against corrosion and that will be undamaged by the external formation of ice on the enclosure.

NEMA 4X

Enclosures constructed for either indoor or outdoor use to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (windblown dust); to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (rain, sleet, snow, splashing water, and hose directed water); that provides an additional level of protection against corrosion; and that will be undamaged by the external formation of ice on the enclosure.

COMPARISON OF SPECIFIC NON-HAZARDOUS APPLICATIONS

Provide a degree of protection against the following environmental conditions	Type of enclosure			
	3 ^a	3X ^a	4	4X
Incidental contact with enclosed equipment	•	•	•	•
Rain, snow and sleet	•	•	•	•
Hose down and splashing water			•	•
Corrosive agents		•		•
Ingress of solid foreign object (circulating or setting airborne dust, lint, fibers, and flyings) ^b			•	•
Ingress of solid foreign objects (winblown dust, lint, fibers, and flyings) ^b	•	•	•	•

^a : these cabinet may be ventilated.

^b : these fibers and flyings are non hazardous materials and are not considered class III type ignitable fibers or combustible flyings.

a = Available with air style "B" or "D"

Sequence of operation

When a sprinkler head operates, pressure in the system piping escapes causing alarms controlled by air supervisory switch (E4) to activate and anti-flood device to open. When anti-flood device opens, pressure is released from the priming chamber to open drain manifold faster than it is supplied through the restricted orifice (B3). The deluge valve (A1) clapper opens to allow water to flow into the system piping and activate alarm devices, including a water flow alarm pressure switch (C1). Water will immediately flow from any sprinklers which may have operated. 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 of the priming chamber, preventing the deluge Valve (A1) from resetting.

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.

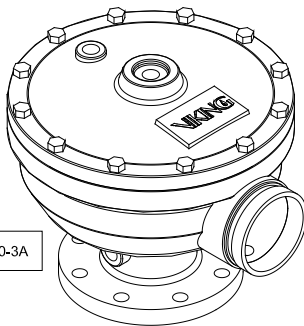
Systems limitations indicated below are nominal flow limitations.

System size (in.)	Usage Range (gpm)	Piping Equivalent Lengths w/o shut off valve	
		(m.)	(ft.)
1½	0 – 200	8.6	28.2
2	0 – 330	12.9	42.3
3	125 - 700	19.8	64.8
4	250 – 1200	27	88.8
6	750 - 2800	31.2	102.4

HP® dry pipe system equipment

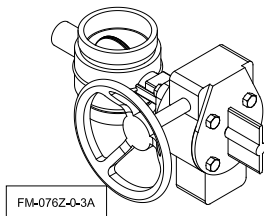
Deluge valve

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 HP® Dry Pipe 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 a sprinkler head operates, pressure is released from the priming chamber. The deluge valve clapper opens to allow water to flow into the system piping.



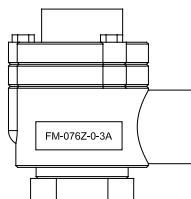
Water supply control valve

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



Anti-flood device

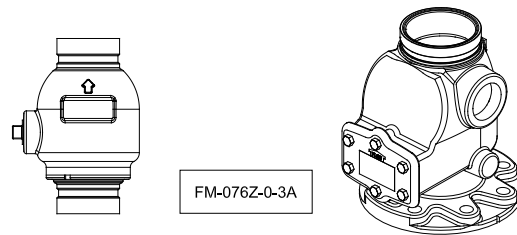
The Viking anti-flood device is a spring loaded, rolling diaphragm and piston operated valve. It is used wherever a loss of air is required to activate the system.



Riser check valve

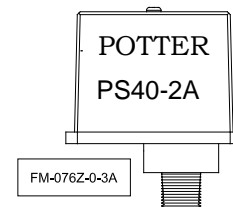
The Viking spring loaded In-Line check valve is a general purpose rubber-faced check valve approved for use in fire-service systems. The Spring Loaded In-Line check valve is manufactured with a brass body, brass seat, and a rubber-faced clapper assembly.

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



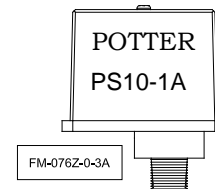
Low/High air supervisory switch

The low/high pressure switches monitors the pressure within the sprinkler piping should a loss or over pressure of the air occurs. The pressure switch contacts transfer indicating supervisory signal.



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.



Optional equipment

Heater option

Heater option is recommended where ambient temperatures can drop below 40°F (4.5°C). The cabinet's electric heater temperature cut-out point is set at 50°F (10°C). The heater option is equipped with a low temperature sensor that will activate a supervisory signal when temperature drops below 40°±5°F (4.5°±3°C).

Heater option can be ordered in two supply voltage settings:

- 120Vac-60Hz. 400Watts.
- 220Vac-50Hz. 400Watts.

Insulated enclosure (standard with heater option)

Insulation is made on foam core 2" thick R13 and have a foil-faced sheathing board composed of a uniform closed cell polyisocyanurate foam core bonded on each side to a trimitate foil facer. One side has a foil reflective facer and the other side has a non-reflective foil facer.

Warning: TOTALPAC®X cabinet is rated to provide freeze protection down to a minimum temperature of 14°F (-10°C).

Low temperature sensor (standard with heater option)

The low temperature sensor will close the normally open contact when the temperature drops below 40°F (4,5°C).

The sensor will automatically reset to its normal state when the temperature rises above 40°F (4,5°C).

Light option

Optional fluorescent enclosure light is available for all cabinet configurations. Remote door switch activates the light when the door is opened.

Light option can be ordered in two supply voltage settings:

- 120Vac-60Hz.
- 220Vac-50Hz.

Air supply

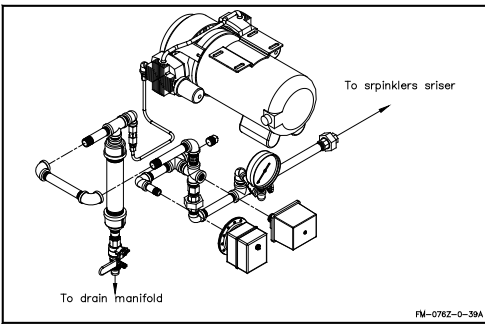
Direct air compressor (Style "A")

Used only for the sprinkler piping network of the preaction system. Air supply style "A" includes the air compressor mounted inside the TOTALPAC®X cabinet 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®X cabinet.

Note: Direct air compressor is available only with NEMA 3, 3X cabinet.

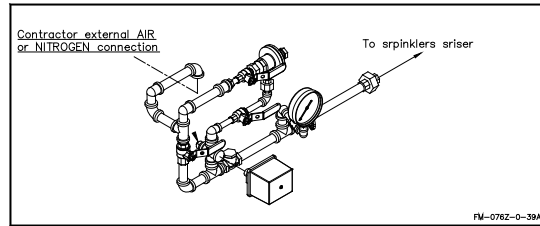
Compressors are available in four (4) sizes;

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



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®X cabinet.



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.

Note: The external air supply must be restricted to insure that it cannot replace air as fast as it escapes when a releasing device or sprinkler operates.

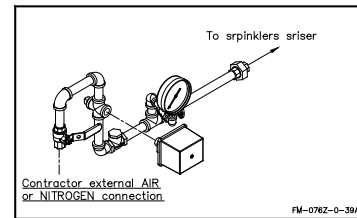
Air compressor selection Table:

H.P.	CFM @ 40 psi	120Vac System capacity (gallon) to Pump to 40 psi in 30 Minutes	220Vac System capacity (gallon) to Pump to 40 psi in 30 Minutes
1/6	1.33	110	90
1/3	2.61	215	170
1/2	4.06	335	270
1	7.40	610	400

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®X cabinet. It is NOT provided with the unit.

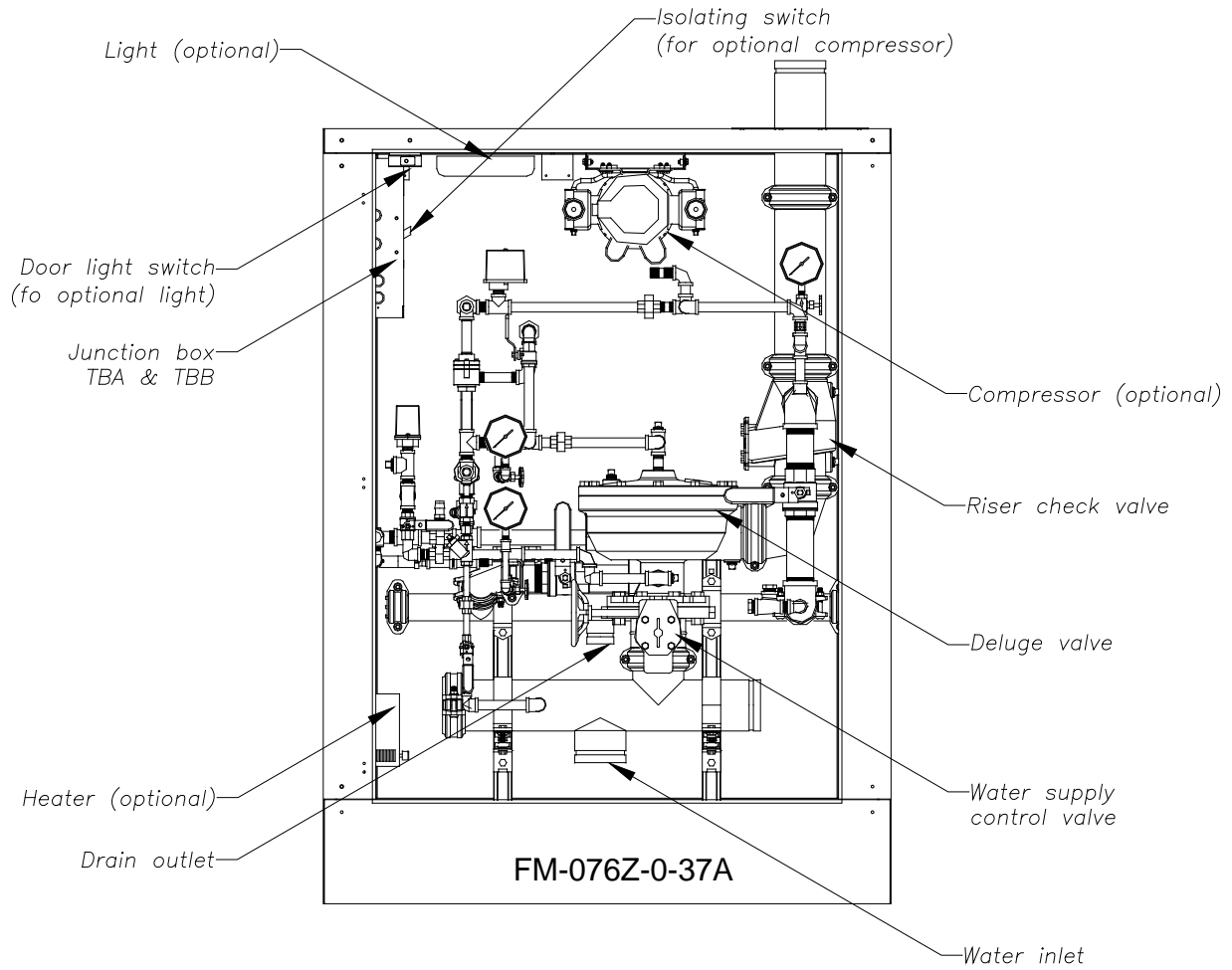
Compressor Amp rating

Compressor Size (HP)	Amp. Rating at 120Vac - 60Hz	Amp. Rating at 220Vac - 50Hz
1/6	6.6 A	3.3 A
1/3	6.6 A	3.3 A
1/2	8 A	4 A
1	12.4 A	6.2 A

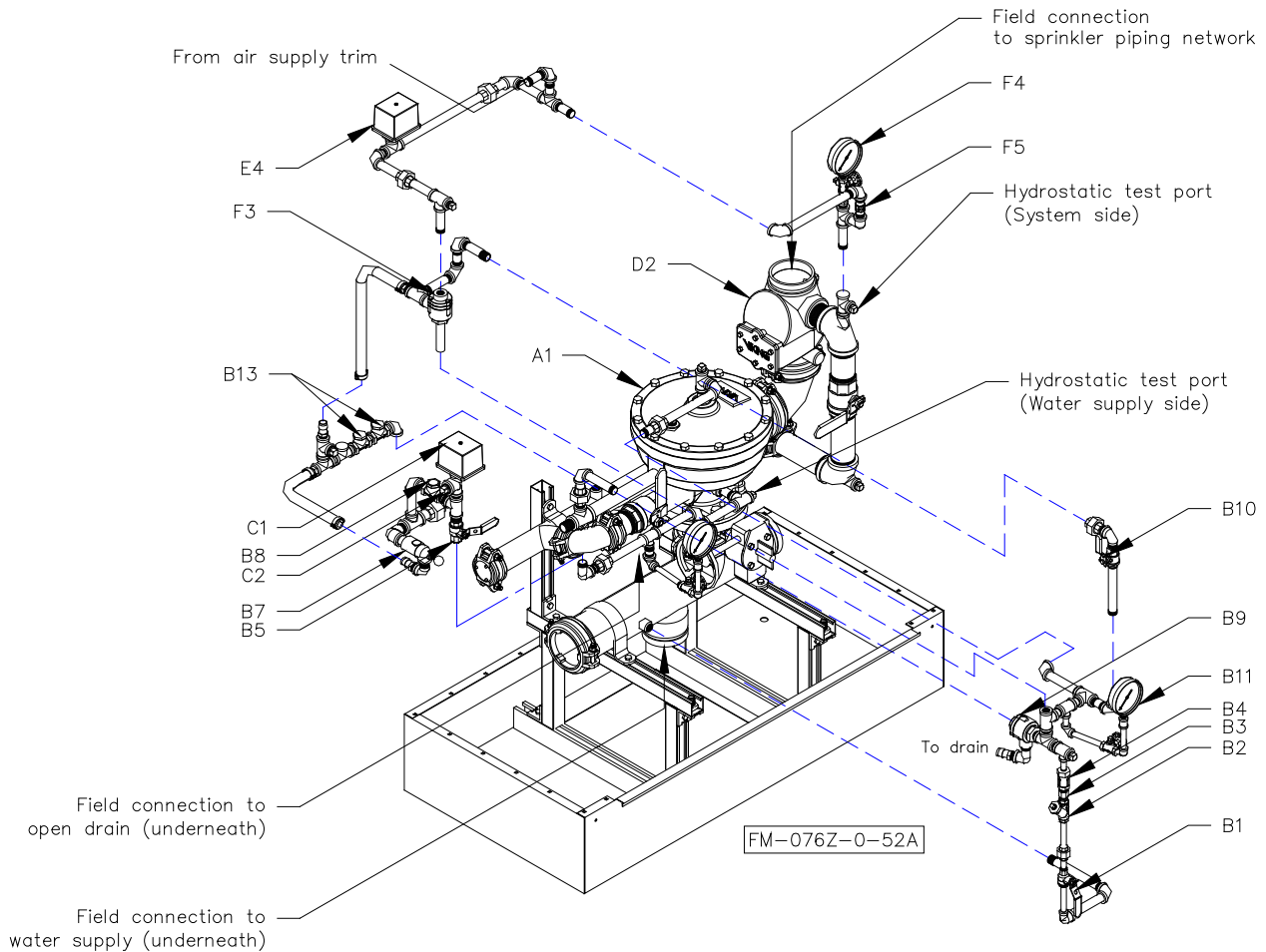


Details & field wiring diagrams

Cabinet with main components, shown without door



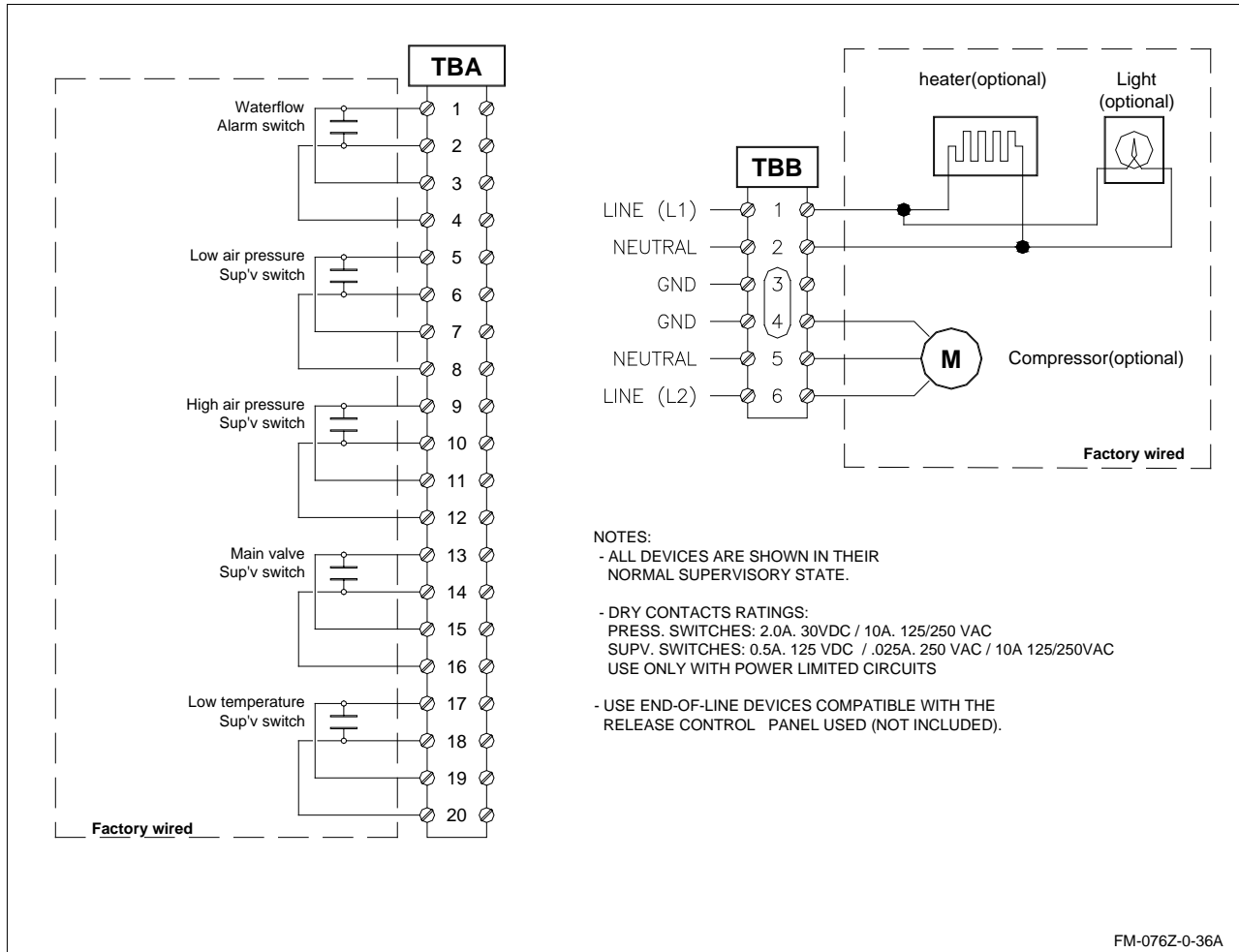
Trim diagram



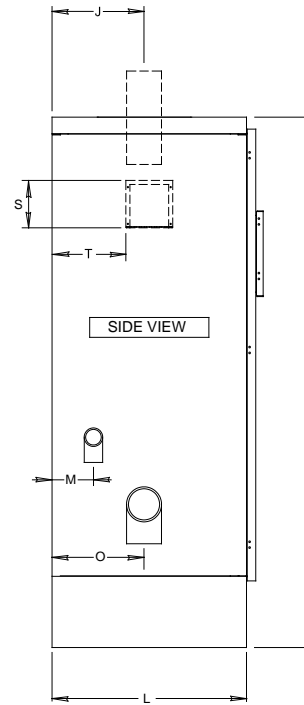
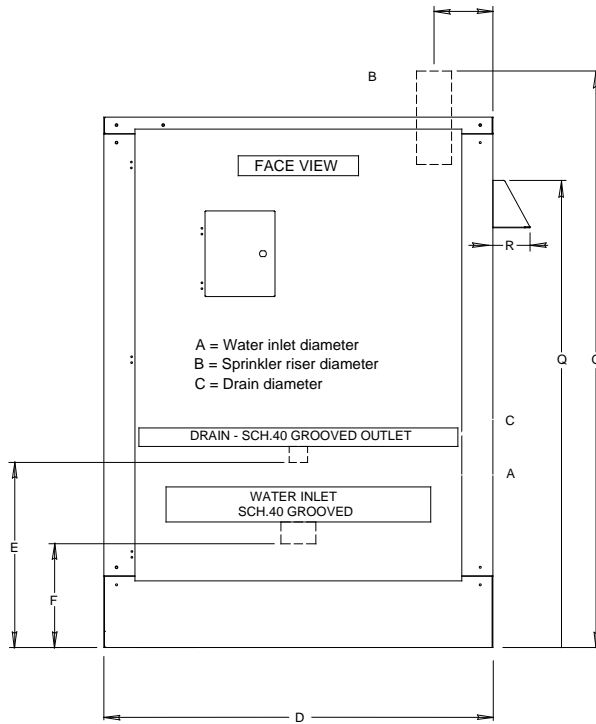
Components:

- | | | | |
|-----|---------------------------------------|----|--|
| 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 | Main drain valve |
| B4 | Spring loaded check valve | E4 | Air supervisory switch |
| B5 | Alarm test valve | F3 | Anti-flood device |
| B6 | Flow test valve | | |
| 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 | | |

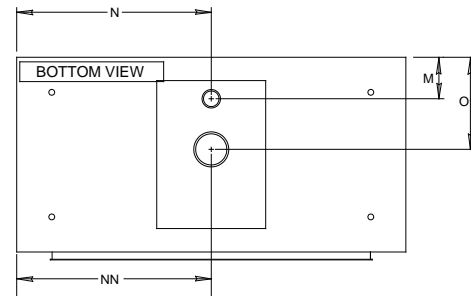
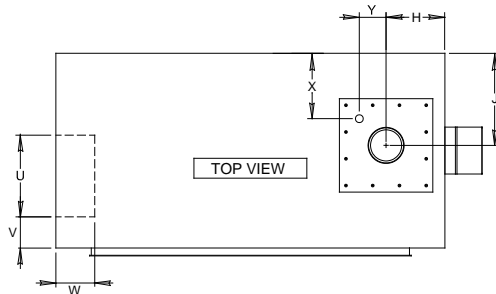
Details & field wiring diagrams



Dimensions

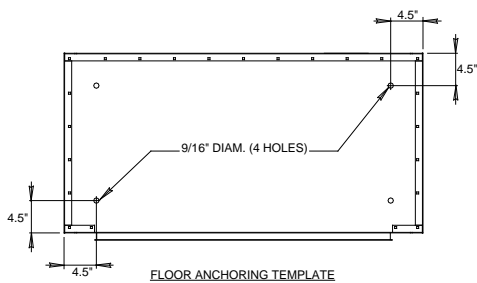


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Dimensions are nominal and may vary $\pm 1/4"$.

Size	A	B	C	D	E	F	G	H	J	K	L	M	N	NN	O	Q	R	S	T	U	V	W	X	Y
1.5"	2"	1.5"	2"	50"	24.5"	14.5"	74"	11.5"	11"	68"	25"	5.5"	25"	25"	11"	60"	4.75"	6"	9.5"	10.5"	4"	5"	9.5"	7.75"
2"	2"	2"	2"	50"	23"	12"	74"	12"	11"	68"	25"	5"	25"	25"	11"	60"	4.75"	6"	9.5"	10.5"	4"	5"	9.5"	8"
3"	4"	3"	2"	50"	23"	12.5"	74"	8.5"	11"	68"	25"	5.5"	28.5"	22"	11"	60"	4.75"	6"	9.5"	10.5"	4"	5"	9.5"	8.5"
4"	4"	4"	2"	50"	22.5"	12.5"	74"	8"	12"	68"	25"	5.5"	25.5"	25.5"	12"	60"	4.75"	6"	9.5"	10.5"	4"	5"	9.5"	9"
6"	6"	6"	2"	50"	21"	12"	74"	8"	12"	68"	25"	5"	25"	25"	12"	60"	4.75"	6"	9.5"	10.5"	4"	5"	9.5"	9"





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