tyco®

Red-E

Installation Guide

Doc DV5A RED-E 001 REV2 06/2019

Johnson Controls

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Introduction

This manual provides guidance for the installation of Red-E Cabinet DV-5A integrated fire protection packages. The installation procedure does not cover the testing and commissioning of the system. The entire sprinkler system including this integrated package must be tested before placing the system in operation. A competent fire protection technician should do testing of the system in accordance with National Fire Protection Association standards, Building Codes, and Owner's and Insurer's test procedures.

NOTE:

This manual is not a replacement of the technical data sheets for assemblies and individual components used in a Red-E DV-5A Cabinet. The technical data sheets contain important information concerning safety, system operation, maintenance and equipment testing responsibilities.

Read and understand the Installation, Operation and Instruction Manual for the Potter PFC-4410RC and the General Air Products, Inc. Oil-Less Compressor Instruction Sheets which were provided with this unit. These documents include important safety warnings, installation instructions and testing and maintenance procedures for those devices which are included in this unit

Overview

Read Documentation

- ❑ Read the documentation which was provided with the unit

Position the cabinet.

- ❑ Insure sufficient room for cabinet door swings.
- ❑ Place near an open drain (funnel drain, sump, etc.).
- ❑ Take into consideration the supply and system piping, drains and electrical conduits.

Connect the Piping

- ❑ Connect the water supply to the cabinet.
- ❑ Connect the sprinkler system to the top outlet of cabinet.
- ❑ Connect the main drain header to a suitable drain.

Connect the Electrical Circuits

- ❑ Connect the initiating circuits.
- ❑ Connect the bells, sirens and strobes lights.
- ❑ Connect the remote signals.
- ❑ Connect the compressor power supply circuit.
- ❑ Connect the panel power supply circuit.

Set the System

- ❑ Start up the control panel
- ❑ Set the valve.

Positioning the Cabinet

Place the cabinet on a hard level surface. The cabinet is equipped with rollers that allow it to be moved more easily into its final position. Once the cabinet is located, retract the wheels by turning the adjusting nut in the counter-clockwise direction to lower the cabinet rails until they contact the floor.

Unevenness in the floor can cause the cabinet doors to appear misaligned, minor floor unevenness can be corrected by using the adjustable wheels. On the door side that appears lower, raise the cabinet by turning the adjusting nut to raise the cabinet. Use shims to fill voids between the cabinet base and the floor.

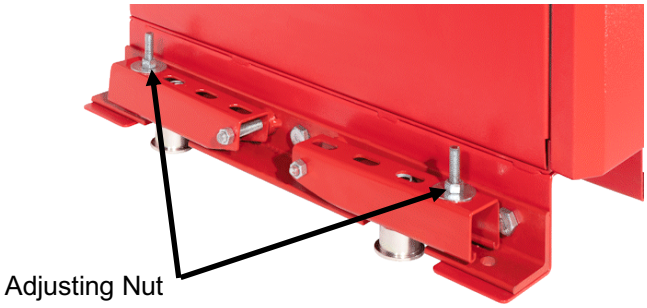


Figure 1 Base Wheel Adjustment Parts

Figure 2 Base Wheel Retraction

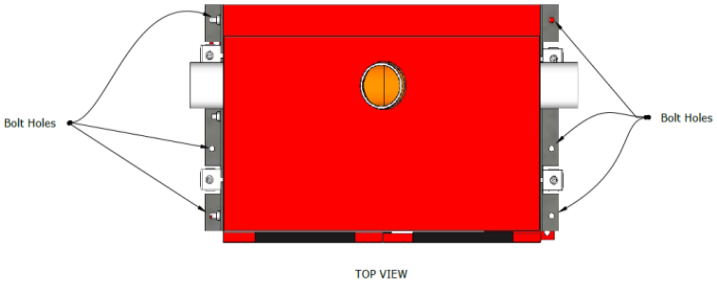


Figure 3 Bolt Hole Locations

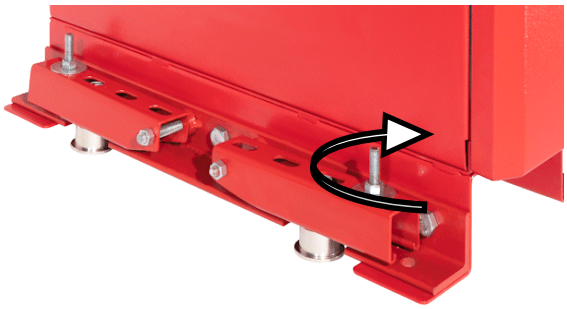


Figure 4 Wheel Base Extension

The cabinet is provided with anchor point bolt holes. These can be used to bolt the cabinet to the floor if this is required. If an anchor point is not in contact with the floor due to unevenness, use shims to fill the space before tightening down anchor bolts.

Piping Connections

The Red-E Cabinet requires a minimum of three piping connections; water supply, system connection and main drain. The connections can be made from the right or left side of the cabinet in any combination. The water supply and system connections are grooved schedule 40 pipe. The

main drain connection size is indicated in the Red-E Cabinet DV-5A technical data sheets TFP1301 and TFP1401.

Connect the water supply header to a water main of sufficient size in accordance with NFPA standards and other applicable codes.

Connect the system connection to a network of sprinkler heads.

IMPORTANT: Connect the cabinet drains to a drain that is capable of handling the discharge from a fully open main drain valve at the supply pressure without causing water damage to the surrounding area and/or equipment. Always follow applicable plumbing codes when connecting the drain.

Connect the main drain to an appropriately sized drainpipe, to an outdoor area, a funnel drain, sump or other drain.

Electrical Connections

Deluge and preaction Red-E Cabinet models require power connections and initiating circuit connections. Audible and visual signaling device circuit connections and remote signal circuit connections may also be required. Verify which circuits will be needed for your particular installation. Standard pre-action and deluge dry pilot release Red-E Cabinets require two power sources, one for the control panel (or lighting features) and one for the air compressor. Deluge electric and wet pilot units do not require an air compressor, so only a panel (or lighting feature) power supply is required. To access the wiring connections to the compressor, use the conduit coupling provided at the roof of the enclosure to route wires down to the cut-out switch at the compressor. Follow wiring recommendations in the General Air Products, Inc. Oil-Less Compressor Instruction Sheets which were provided with the unit.

Figure 1 Small Cabinet Enclosure

Figure 2 Large Cabinet Enclosure

IMPORTANT

- For models equipped with compressors, read and understand the complete *General Air Products, Inc. Oil-Less Compressor Instruction Sheets* which were provided in the documentation package with this unit before connecting electrical wiring to the compressor or attempting to set the valve.

- For models equipped with integrated releasing panels read and understand the complete *Installation, Operation and Instruction Manual for the Potter PFC-4410RC* which was provided in the documentation package with this unit before connecting electrical wiring or attempting to set the valve.

- For Red-E Cabinet units equipped with an integral releasing panel, verify detector compatibility with the *Model PFC-4410RC 2-Wire Detector Compatibility Data* which is affixed to the door of the control panel before installing detection devices.

  Some designers call for a bell or siren upon detection with strobe light or distinctive tone to signal water flow. Check with the system designer to determine which signaling devices your system requires.

  Remote signals may be required on your system. Check with the system designer to determine if remote signals are required.

  Red-E Cabinet DV-5A units provide pre-connected wiring to the trim devices and allow for the field connection of external system devices such as heat or smoke detectors, visual and audible signaling devices, remote panels or equipment shutdown relays, etc. Each unit is provided with a wiring schematic on the inside of the main door which indicates the pre-connected and field wired circuits. The wiring schematics for Deluge, Single Interlock Preaction, Double Interlock Preaction Electric are reproduced below for easy reference. Complete wiring instructions are provided in the *Installation, Operation and Instruction Manual for the Potter PFC-4410RC.* The wiring diagrams for models without integral release panels are located in Appendix A.

Standard Programs

The following standard programs are recommended for easy operation of the Red-E DV-5A.

Deluge, Single Interlock Preaction or Double Interlock Preaction (Pneumatic-Electric)

The PFC-4410RC, has more than 20 standard programs which are detailed in the *Installation, Operation and Instruction Manual for the Potter PFC-4410RC.* Red-E Cabinet Deluge, Single Interlock Preaction or Double Interlock Preaction (Pneumatic-Electric) configurations are pre-wired to function with standard program **#12.**

CAUTION

Selecting a standard program other than #12 can cause unintended results if pre-wired devices are re-assigned (e.g. supervisory switch assigned as a manual dump).

If the standard program is not acceptable for the installation required, select the custom program #0 then press the SET button. This will allow the user to custom program the panel. Refer to PFC-4410RC Custom Program Information for Water Based Extinguishing Systems in the Installation, Operation and Instruction Manual for the Potter PFC-4410RC for custom program information.

PROGRAM #12 MODE

1. Apply power to panel.
2. Move the program switch to program.
3. Press the FUNCTION button until the display reads “PASSWORD = 000”.
4. To enter a password, press the SELECT button until the proper number is displayed above the ^ symbol, then press the SET button to move to the next digit. After entering the third number the display will change. (All panels are shipped with a 000 password.)
5. Press the FUNCTION button until the display reads “PROGRAM #”.
6. Press the SELECT button until the display reads “PROGRAM #12”.
7. Press the SET button.
8. The panel is completely programmed except for the custom banner and zone messages.

The panel should now display:

B	A	N	N	E	R		M	E	S	S	A	G	E	?	

SET 

SELECT  **Press the SELECT button to display the current message**

FUNCTION 

The panel will display the current banner message. Custom messages are created by using the SET and SELECT buttons to scroll through the alphabet and symbol characters then selecting the character by pressing the FUNCTION button in the box above the "up" arrow. When the FUNCTION button is pressed, the "up" arrow advances to the next box which is now the active box and the scrolling selection can be repeated to set the next character. The default message is:

R	E	D	-	E		D	V	5	A						
^															

When the "up" arrow has been advanced to the last selectable character, pressing the FUNCTION button will cause the display to move to the next custom message:

B	O	T	T	O	M		L	I	N	E	?				

SET 

SELECT  **Press the SELECT button to display the current message**

FUNCTION 

The bottom line is set in the same way as the banner. The bottom line default value is:

R	E	A	D	Y											
^															

When the "up" arrow has been advanced to the last selectable character, pressing the FUNCTION button will cause the display to move to the next custom message:

Z	O	N	E	1		M	E	S	S	A	G	E	?		

SET 

SELECT  **Press the SELECT button to display the current message**

FUNCTION 

The Zone 1 label is set in the same way as the banner. The zone 1 label default value is:

Z	O	N	E		1										
^															

When the "up" arrow has been advanced to the last selectable character, pressing the FUNCTION button will cause the display to move to the next custom message:

Z	O	N	E	2		M	E	S	S	A	G	E	?		

SET 

SELECT  **Press the SELECT button to display the current message**

FUNCTION 

The Zone 2 label is set in the same way as the banner. The zone 2 label default value is:

Z	O	N	E		2										
^															

When the "up" arrow has been advanced to the last selectable character, pressing the FUNCTION button will cause the display to move to the next custom message:

Z	O	N	E	3		M	E	S	S	A	G	E	?		

SET 

SELECT  **Press the SELECT button to display the current message**

FUNCTION 

The Zone 3 label is set in the same way as the banner. The zone 3 label default value is:

S	Y	S	T		V	A	L	V	E						
^															

When the "up" arrow has been advanced to the last selectable character, pressing the FUNCTION button will cause the display to move to the next custom message:

Z	O	N	E	4		M	E	S	S	A	G	E	?		

SET 

SELECT 

Press the SELECT button to display the current message

FUNCTION 

The Zone 4 label is set in the same way as the banner. The zone 4 label default value is:

W	A	T	E	R	F	L	O	W							
^															

When the "up" arrow has been advanced to the last selectable character, pressing the FUNCTION button will cause the display to move to the next programming section and the following screen will be displayed:

N	E	W		P	A	S	S	W	O	R	D	=	0	0	0
													^		

This allows the user to change the password. All panels are shipped from the factory with a password of 000.

SET 

Leave the password at 000, press the SET button 3 times

SELECT 

FUNCTION 

Refer to the Installation, Operation and Instruction Manual for the Potter PFC-4410RC in order to change the password.

The panel now displays the following:

P	U	S	H		P	R	O	G	R	A	M	M	I	N	G
S	W	I	T	C	H		B	A	C	K		U	P		

Push the programming switch back to run in order to exit the programming mode. The panel now displays the standby screen:

R	E	D	-	E		D	V	5	A		0	1	/	0	1
R	E	A	D	Y							0	0	:	4	1

Red-E DV-5A Deluge, Single Interlock Preaction, Double Interlock Preaction (Pneumatic-Electric) Program						
	ZONES					
	SUP 1	SUP 2	#1	#2	#3	#4
OUTPUTS	Supervisory	Low Air Supervisory	Conventional	Conventional	Tamper	Waterflow
GENERAL ALARM			X	X		X
WATERFLOW BELL						X
SOLENOID VALVE (#7)			X	X		
WATERFLOW ALARM						X

Description: Red-E DV-5A Deluge, Single Interlock Preaction or Double Interlock Preaction (Pneumatic-Electric) release for single hazard

Inputs: 2 supervisory zones*, 2 conventional detection zones, 1 valve tamper zone, 1 waterflow alarm zone

Outputs: 1 general alarm, 2 waterflow, 1 solenoid release circuit

Operation:
Activation of either conventional detection zone will operate the release and the general alarm output, and cause the alarm contact to change state.

Activation of the wateflow zone will operate the general alarm bell output, the waterflow output, the alarm contact, and cause the waterflow contact to change state.

Activation of any of the tamper or supervisory zones will operate the supervisory relay only.

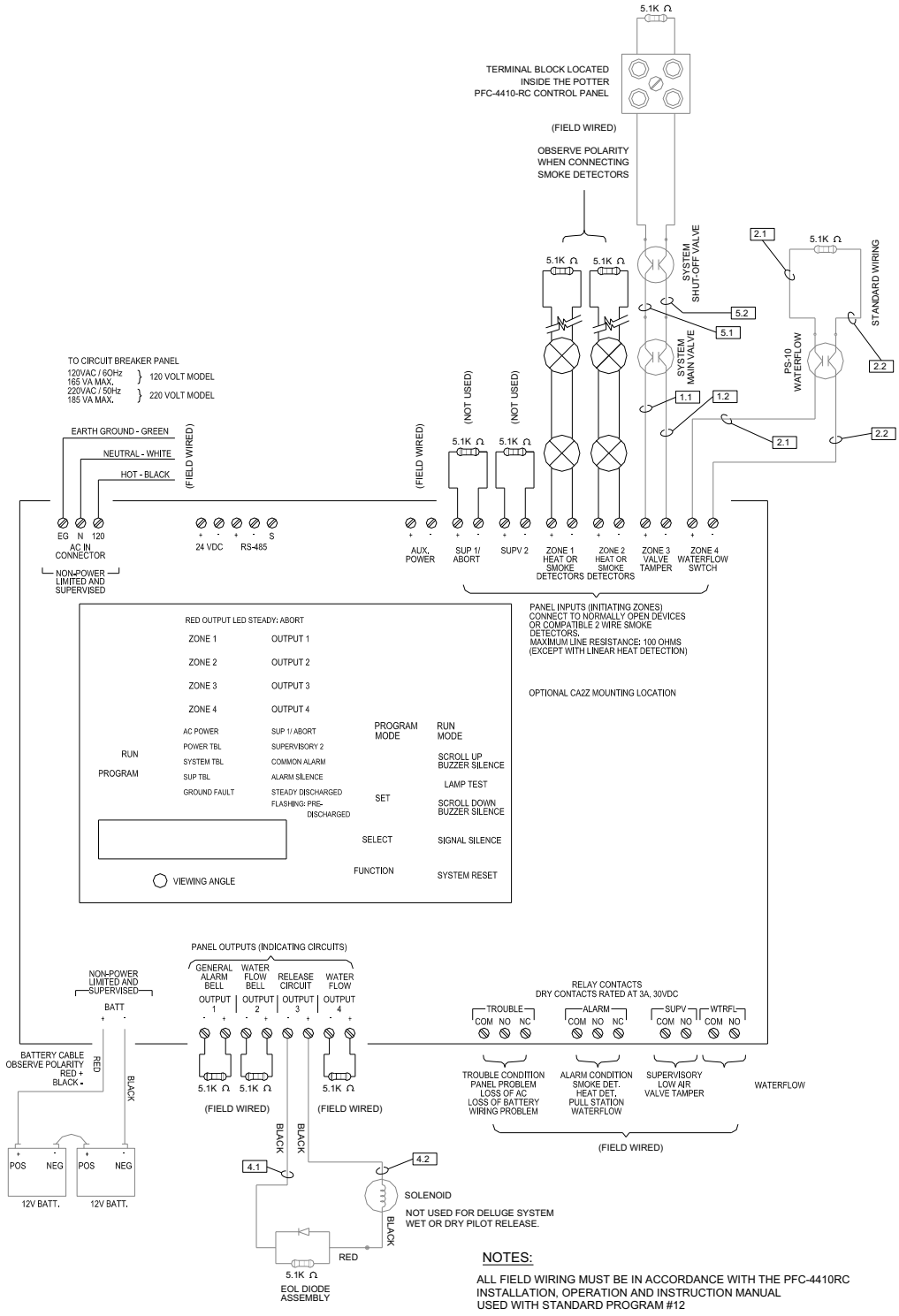
When either zone 1 or 2 is in alarm, outputs 1 & 3 will operate

When zone 1 and 2 is in alarm, outputs 1 & 3 will operate

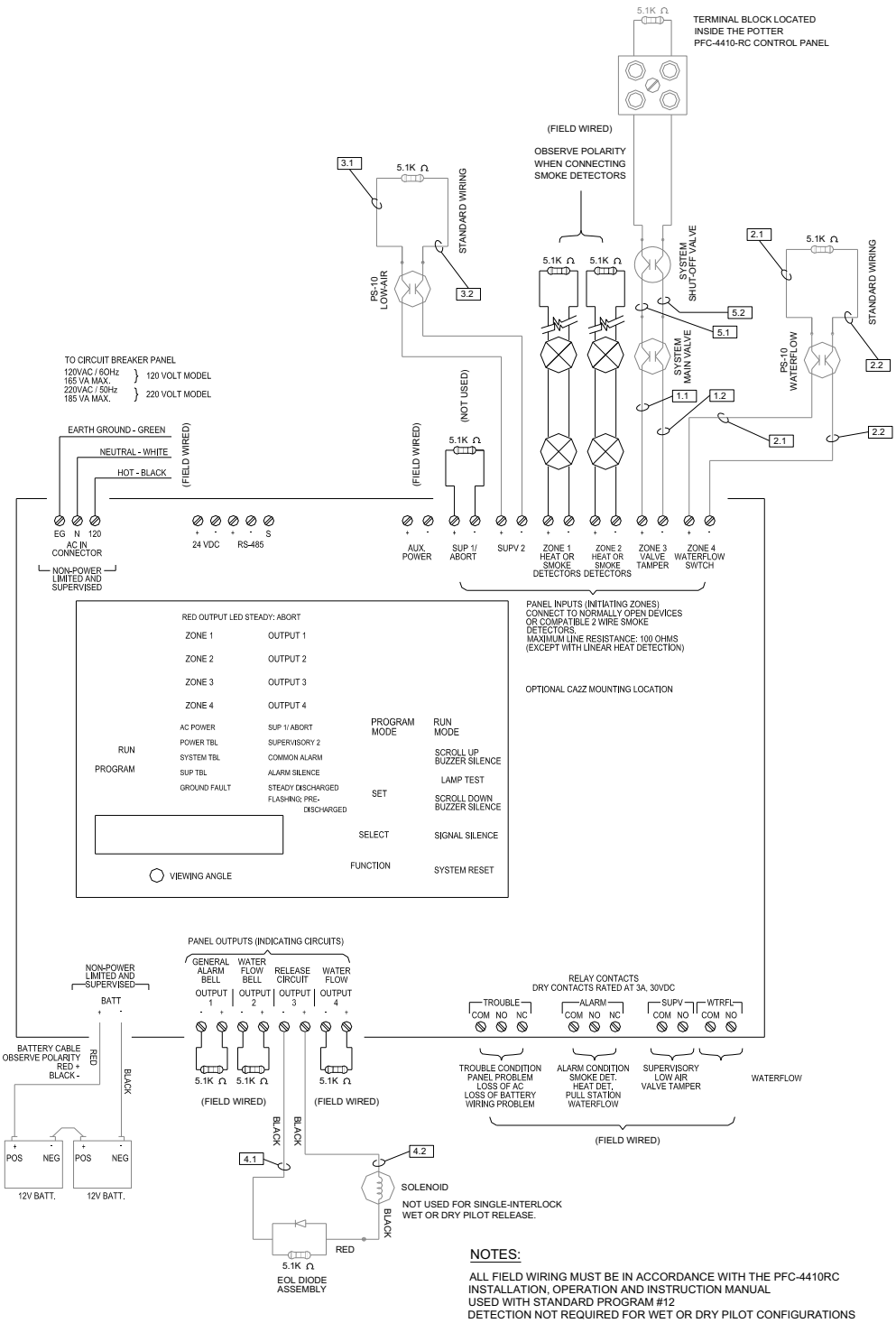
When zone 3 or either supervisory zones is activated, only the supervisory relay operates

When zone 4 is in alarm, outputs 1, 2, & 4 will operate

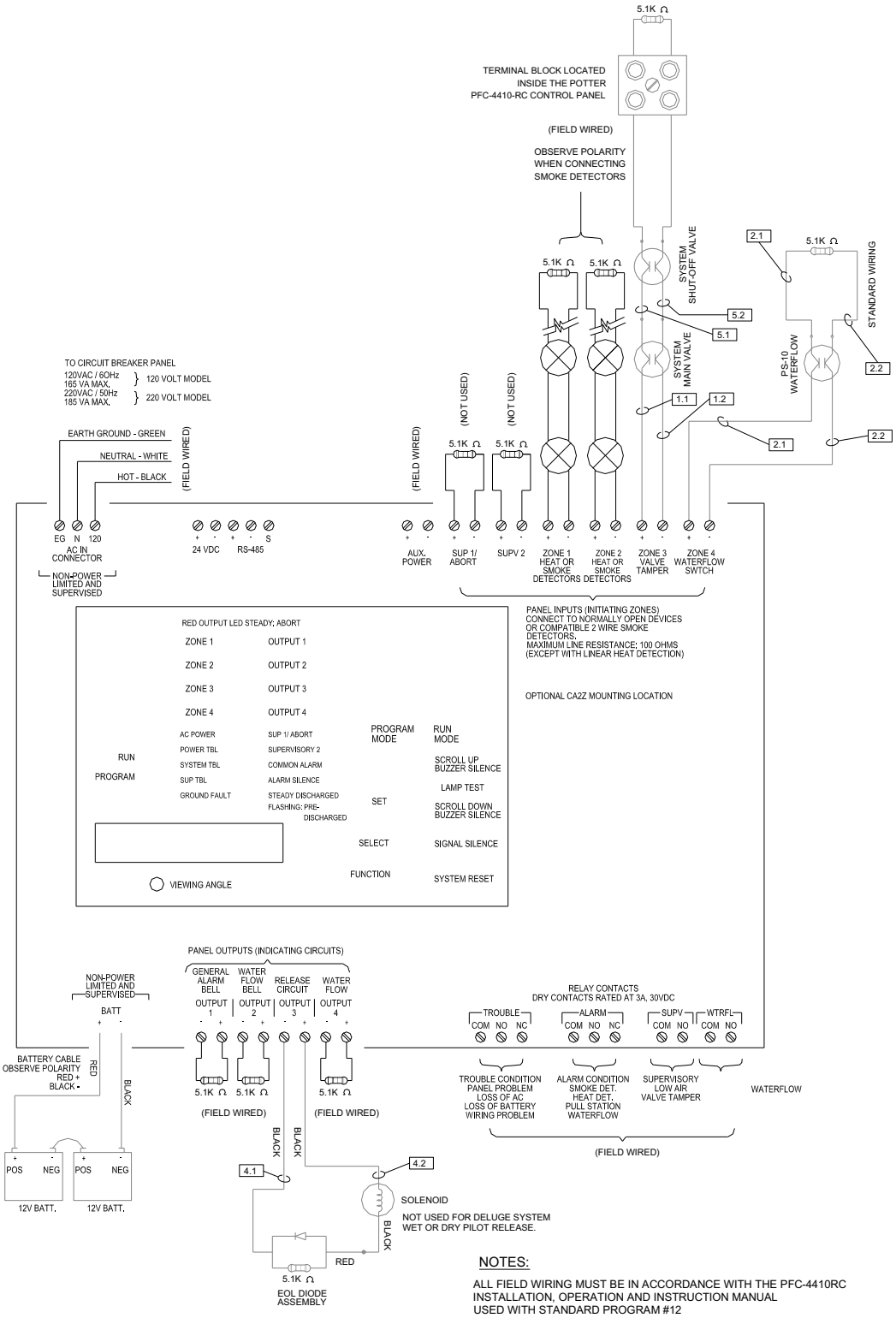
* The low air supervisory zone is not used on Deluge electric release and wet pilot release models



Red-E DV-5A Deluge Wiring Schematic



Red-E DV-5A Single Interlock Preaction Wiring Schematic



Red-E DV-5A Double Interlock Preaction (Electric-Pneumatic) Wiriing Schematic

Double Interlock Preaction (Electric-Electric)

The PFC-4410RC has more than 20 standard programs which are detailed in the *Installation, Operation and Instruction Manual for the Potter PFC-4410RC*. Red-E Cabinet Double Interlock Preaction (Electric-Electric) configurations are pre-wired to function with standard program **#13.**

CAUTION
Selecting a standard program other than #13 can cause unintended results if pre-wired devices are re-assigned (e.g. supervisory switch assigned as a manual dump).

If the standard program is not acceptable for the installation required, select the custom program #0 then press the SET button. This will allow the user to custom program the panel. Refer to PFC-4410RC Custom Program Information for Water Based Extinguishing Systems in *Installation, Operation and Instruction Manual for the Potter PFC-4410RC* for custom program information.

PROGRAM #13 MODE
1. Apply power to panel.

2. Move the program switch to PROGRAM.

3. Press the FUNCTION button until the display reads "PASSWORD = 000".

4. To enter a password, press the SELECT button until the proper number is displayed above the symbol, then press the SET button to move to the next digit. After entering the third number the display will change. (All panels are shipped with a 000 password.)

5. Press the FUNCTION button until the display reads "PROGRAM #".

6. Press the SELECT button until the display reads "PROGRAM #13".

7. Press the SET button.

8. The panel is completely programmed except for the custom banner and zone messages.

The panel should now display:

B	A	N	N	E	R		M	E	S	S	A	G	E	?	

SET 

SELECT  **Press the SELECT button to display the current message**

FUNCTION 

The panel will display the current banner message. Custom messages are created by using the SET and SELECT buttons to scroll through the alphabet and other characters then selecting the character by pressing the FUNCTION button in the box above the "up" arrow. When the FUNCTION button is pressed, the "up" arrow advances to the next box which is now the active box and the scrolling selection can be repeated to set the next character. The default message is:

R	E	D	-	E		D	V	5	A						
^															

When the "up" arrow has been advanced to the last selectable character, pressing the FUNCTION button will cause the display to move to the next custom message:

B	O	T	T	O	M		L	I	N	E	?				

SET 

SELECT  **Press the SELECT button to display the current message**

FUNCTION 

The bottom line is set in the same way as the banner. The bottom line default value is:

R	E	A	D	Y											
^															

When the "up" arrow has been advanced to the last selectable character, pressing the FUNCTION button will cause the display to move to the next custom message:

Z	O	N	E	1		M	E	S	S	A	G	E	?		

SET 

SELECT  **Press the SELECT button to display the current message**

FUNCTION 

The Zone 1 label is set in the same way as the banner. The zone 1 label default value is:

Z	O	N	E		1										
^															

When the "up" arrow has been advanced to the last selectable character, pressing the FUNCTION button will cause the display to move to the next custom message:

Z	O	N	E	2		M	E	S	S	A	G	E	?		

SET 

SELECT  **Press the SELECT button to display the current message**

FUNCTION 

The Zone 2 label is set in the same way as the banner. The zone 2 label default value is:

L	O	W		A	I	R									
^															

When the "up" arrow has been advanced to the last selectable character, pressing the FUNCTION button will cause the display to move to the next custom message:

Z	O	N	E	3		M	E	S	S	A	G	E	?		

SET 

SELECT  **Press the SELECT button to display the current message**

FUNCTION 

The Zone 3 label is set in the same way as the banner. The zone 3 label default value is:

S	Y	S	T		V	A	L	V	E						
^															

When the "up" arrow has been advanced to the last selectable character, pressing the FUNCTION button will cause the display to move to the next custom message:

Z	O	N	E	4		M	E	S	S	A	G	E	?		

SET 

SELECT  **Press the SELECT button to display the current message**

FUNCTION 

The Zone 4 label is set in the same way as the banner. The zone 4 label default value is:

W	A	T	E	R	F	L	O	W							
^															

When the "up" arrow has been advanced to the last selectable character, pressing the FUNCTION button will cause the display to move to the next programming section and the following screen will be displayed:

N	E	W		P	A	S	S	W	O	R	D	=	0	0	0
													^		

This allows the user to change the password. All panels are shipped from the factory with a password of 000.

SET 

To leave the password at 000,press the SET button 3 times

SELECT 

FUNCTION 

Refer to the Installation, Operation and Instruction Manual for the Potter PFC-4410RC in order to change the password.

The panel now displays the following:

P	U	S	H		P	R	O	G	R	A	M	M	I	N	G
S	W	I	T	C	H		B	A	C	K		U	P		

Push the programming switch back to run in order to exit the programming mode. The panel now displays the standby screen:

R	E	D	-	E		D	V	5	A		0	1	/	0	1
R	E	A	D	Y							0	0	:	4	1

Red-E DV-5A Double Interlock Preaction (Electric-Electric) Program					
	ZONES				
	SUPERVISORY	**#1**	**#2**	**#3**	**#4**
OUTPUTS	Supervisory	Conventional	Low Air Alarm	Tamper	Waterflow
GENERAL ALARM		X			X
WATERFLOW BELL					X
SOLENOID VALVE (#7)		X ●——● X			
WATERFLOW ALARM					X

Description: Red-E DV-5A Double Interlock Preaction (Electric -Electric) release for single hazard, detection and low air alarm zones cross-zoned.

Inputs: 2 supervisory zones, 1 detection zone, 1 low air alarm zone, 1 valve tamper zone, 1 waterflow alarm zone

Outputs: 1 general alarm, 2 waterflow, 1 solenoid release circuit

Operation:
Activation of the detection zone and the low air alarm zone at the same time will operate the release and the general alarm output, the alarm contact and the supervisory contact

Activation of the wateflow zone will operate both waterflow bell outputs, and the general alarm output.

Activation of the low air alarm zone will not operate the alarm relay, only the supervisory relay.

When zone 1 is in alarm, output 1 will operate

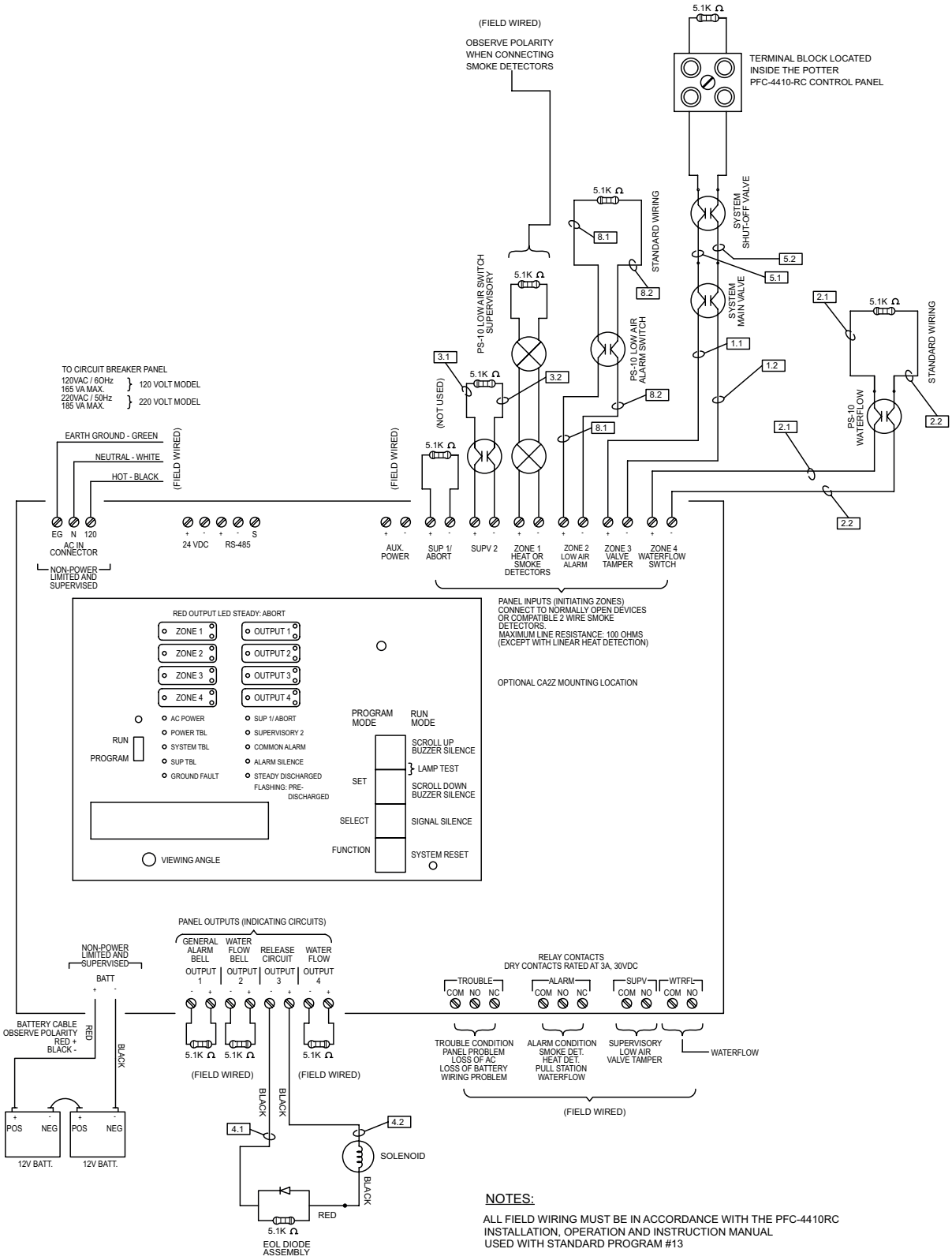
When zone 2 is activated, it will create a supervisory condition not an alarm condition.
The alarm relay will not operate, the supervisory relay will.

When zone 3 is activated, only the supervisory relay operate.

When zone 4 is in alarm, outputs 1, 2, & 4 will operate.

When both zones 1 & 2 are activated at the same time, the solenoid release circuit, output 3, will operate.

The panel is now completely programmed. The Red-E Cabinet DV-5A valve can now be set.



NOTES:

ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE PFC-4410RC INSTALLATION, OPERATION AND INSTRUCTION MANUAL USED WITH STANDARD PROGRAM #13

Red-E DV-5A Double-Interlock Pre-Action (Electric-Electric) Wiring Schematic

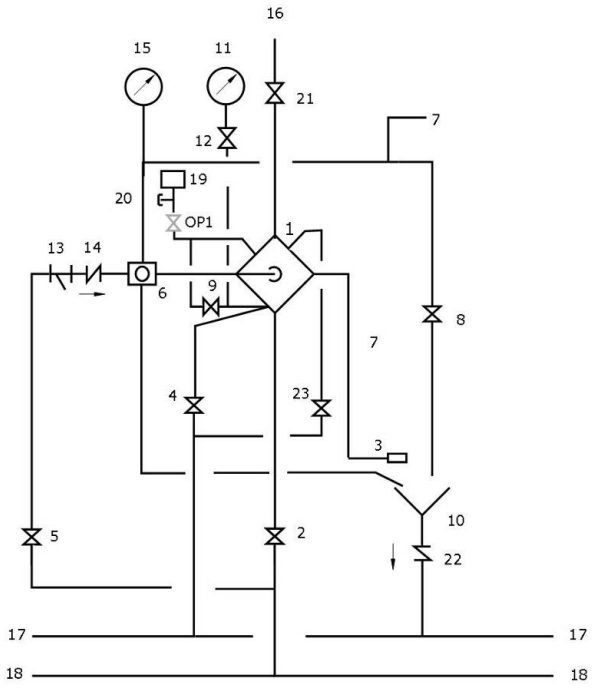
Setting the Valve

NOTE
It is normal for the control panel to indicate various supervisory conditions related to supervised valve position and system air pressure while the valve is being set. These may be silenced by pressing on the "Buzzer Silence" button.

Deluge Valve Setting Procedure

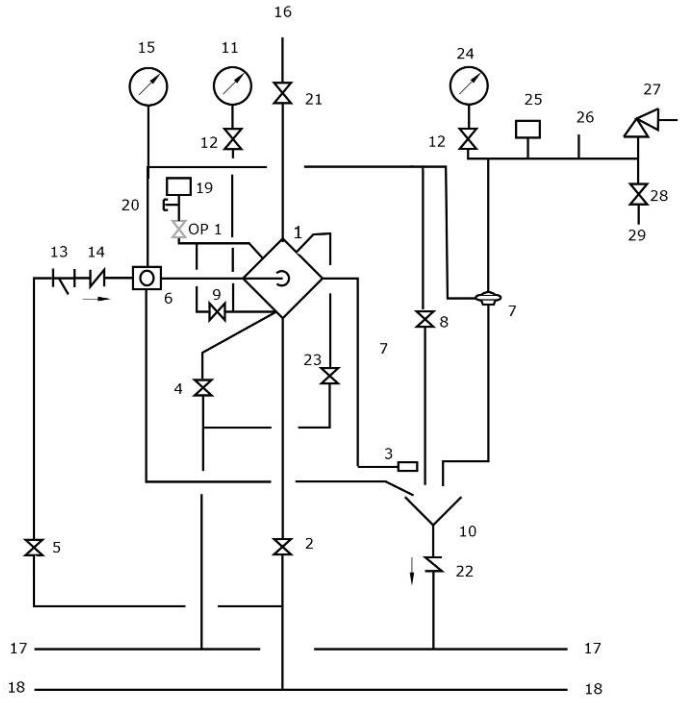
Perform Steps 1 through 13 when initially setting the TYCO DV-5A Valve, after an operational test of the fire protection system, or after system operation due to a fire. Refer to Figures 7, 8, or 9, as applicable.

Refer to Tyco Fire Products technical data sheet TFP1306 for complete maintenance, testing and compliance requirements. For electrically actuated releases, make sure to replace any heat detectors that may have been affected by heat, clean or replace any smoke detector heads affected by smoke and to clear all smoke prior to resetting the control panel. Follow the instructions in the Installation, Operation and Instruction Manual for the Potter PFC-4410RC for complete resetting instructions.



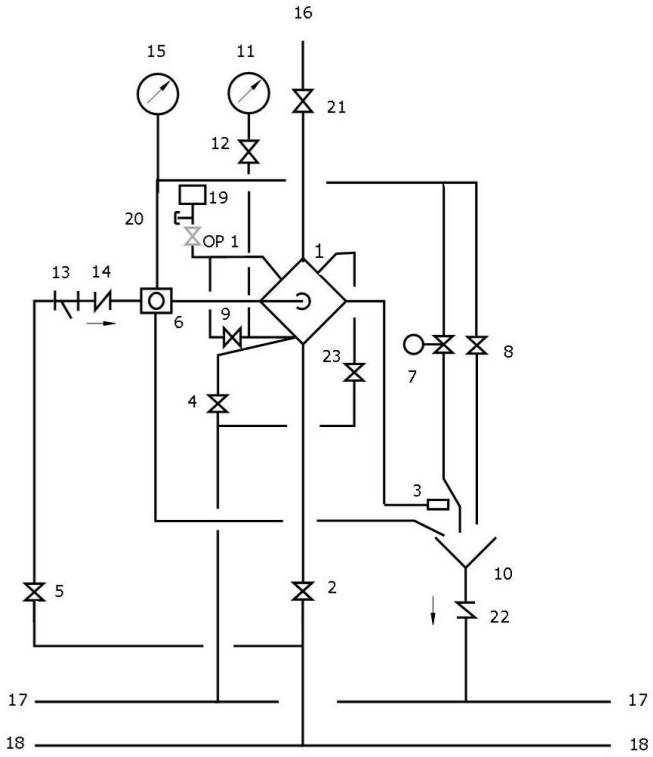
1	DV-5A Valve	Auto.
2	System Main Control Valve	N.O.
3	Automatic Drain Valve	Auto.
4	Main Drain Valve	N.C.
5	Diaphragm Supply Valve	N.O.
6	Manual Reset Actuator	
7	Wet Pilot Line Connection	
8	Manual Control Station	N.C.
9	Alarm Test Valve	N.C.
10	Drip Funnel Drain	
11	Water Supply Gauge	
12	Gauge Test Valve	N.O.
13	Diaphragm Supply Strainer	
14	Diaphragm Supply Check Valve	Auto.
15	Diaphragm Gauge	
16	System Riser	
17	Drain Header	
18	Supply Header	
19	Waterflow Pressure Switch	
20	Water Motor Alarm Connection	
21	Downstream Shut Off Valve	N.O
22	Funnel Drain Check Valve	Auto.
23	System Drain Valve	
OP 1	Alarm Control Valve (Optional)	N.O.

Figure 4 Deluge Wet Pilot Schematic Piping Diagram



1	DV-5A Valve	Auto.
2	System Main Control Valve	N.O.
3	Automatic Drain Valve	Auto.
4	Main Drain Valve	N.C.
5	Diaphragm Supply Valve	N.O.
6	Manual Reset Actuator	
7	Dry Pilot Actuator	Auto.
8	Manual Control Station	N.C.
9	Alarm Test Valve	N.C.
10	Drip Funnel Drain	
11	Water Supply Gauge	
12	Gauge Test Valve	N.O.
13	Diaphragm Supply Strainer	
14	Diaphragm Supply Check Valve	Auto.
15	Diaphragm Gauge	
16	System Riser	
17	Drain Header	
18	Supply Header	
19	Waterflow Pressure Switch	
20	Water Motor Alarm Connection	
21	Downstream Shut Off Valve	N.O.
22	Funnel Drain Check Valve	Auto.
23	System Drain Valve	N.C.
24	Dry Pilot Line Gauge	N.O.
25	Dry Pilot Low Pressure Switch	
26	Dry Pilot Line Connection	
27	Pressure Relief Valve	Auto.
28	Dry Pilot Air Supply Valve	N.O.
29	Dry Pilot Air Supply Connection	
OP 1	Alarm Control Valve (Optional)	N.O.

Figure 5 Deluge Dry Pilot Schematic Piping Diagram



1	DV-5A Valve	Auto.
2	System Main Control Valve	N.O.
3	Automatic Drain Valve	Auto.
4	Main Drain Valve	N.C.
5	Diaphragm Supply Valve	N.O.
6	Manual Reset Actuator	
7	Solenoid Valve	N.C.
8	Manual Control Station	N.C.
9	Alarm Test Valve	N.C.
10	Drip Funnel Drain	
11	Water Supply Gauge	
12	Gauge Test Valve	N.O.
13	Diaphragm Supply Strainer	
14	Diaphragm Supply Check Valve	Auto.
15	Diaphragm Gauge	
16	System Riser	
17	Drain Header	
18	Supply Header	
19	Waterflow Pressure Switch	
20	Water Motor Alarm Connection	
21	Downstream Shut Off Valve	N.O.
22	Funnel Drain Check Valve	Auto.
23	System Drain Valve	N.C.
OP 1	Alarm Control Valve (Optional)	N.O.

Figure 6 Deluge Electric Schematic Piping Diagram

Step 1. Close the System Main Control Valve (2).

Step 2. Close the Diaphragm Supply Valve (5). For Dry Pilot Actuation, close the Dry Pilot Air Supply Valve (28).

Step 3. Open the Main Drain Valve (4), System Drain Valve (23), and all auxiliary drains in the system. Close the auxiliary drain valves and the System Drain Valve (23) after water ceases to discharge. Leave the Main Drain Valve (4) open.

At this time make certain that the Pressure Gauge Valves and the Alarm Control Valve (OP 1), as applicable, are open.

Step 4. Depress the plunger of the Automatic Drain Valve (3) to verify that it is open.

Step 5. Clean the Diaphragm Supply Strainer (13) by removing the clean-out plug and strainer basket. The Diaphragm Supply Strainer (13) may be flushed out by momentarily opening the Diaphragm Supply Valve (5).

Step 6. Reset the automatic actuation system.

Wet Pilot Actuation – Replace operated pilot sprinklers and/or reset the remote manual control stations.

Dry Pilot Actuation – Replace operated pilot sprinklers and/or reset the remote manual control stations. Re-establish dry pilot pneumatic pressure.

Electric Actuation – Reset the electric detection system in accordance with the manufacturer's instructions to de-energize the solenoid valve.

NOTICE

In order to prevent the possibility of a subsequent operation of an overheated solder type pilot sprinkler, any solder type pilot sprinklers that were possibly exposed to a temperature greater than their maximum rated ambient must be replaced.

Step 7. Operate (open) the Manual Control Station (8) and then open the Diaphragm Supply Valve (5). After unaerated water ceases to discharge from the Manual Control Station (8) drain tube, slowly close the operating lever by pushing it up. Do not close the hinged cover at this time.

Step 8. After allowing water to flow out of the Manual Reset Actuator (6) drain tube until aerated water ceases to discharge, reset the Manual Reset Actuator (6) by pressing the Reset Knob and hold until the pressure builds and reaches approximately 15 psi (1,0 bar) on the Diaphragm Gauge (15) and water stops flowing from its drain tube. Pressure will then build up in the DV-5A Diaphragm Chamber.

For Wet Pilot Actuation, crack open the Inspector's Test Connection and any other vent valves on the wet pilot line to relieve trapped air. After the discharge of air has stopped, close the vent valves and the Inspector's Test Connection.

Note: After relieving trapped air, check the Manual Reset Actuator (6) to make sure there is no water draining from its drain tube. If water is draining, reset the Manual Reset Actuator (6) as previously instructed.

Step 9. Verify the ability for the DV-5A Diaphragm to hold pressure as follows:

With the diaphragm chamber pressurized per Step 8, temporarily close the Diaphragm Supply Valve (5), and then observe the Diaphragm Gauge (15) for a drop in pressure.

If a drop in pressure is noted, the DV-5A Diaphragm is to be replaced and/or any leaks must be corrected before proceeding to the next step.

If the Diaphragm Gauge (15) indicates no drop in pressure, re-open the Diaphragm Supply Valve (5) and proceed to the next step.

Step 10. Partially open the System Main Control Valve (2). Slowly close the Main Drain Valve (4) as soon as water discharges from the Main Drain Valve (4). Observe the Automatic Drain Valve (3) for leaks. If there are leaks, determine/correct the cause of the leakage problem before proceeding.

NOTICE

When the System Main Control Valve (2) is partially opened, the pressure on the DV-5A Diaphragm Chamber may increase. This increase in pressure is normal, and if the pressure is greater than the valve trim maximum pressure rating provided in the Technical Data section, the pressure is to be relieved to at least the valve trim pressure rating by partially and temporarily opening the Manual Control Station (8); however, do not allow the pressure as indicated on the Diaphragm Gauge (15) to drop below the supply pressure shown on the Water Supply Gauge (11), since this action may result in tripping of the DV-5A Valve.

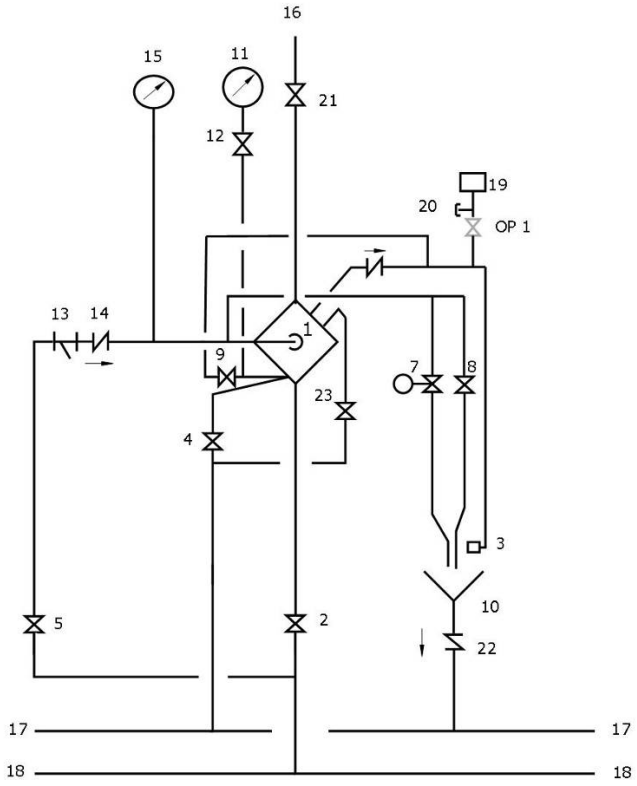
Step 11. Close the hinged cover of the Manual Control Station (8), and insert a new break rod in the small hole through the top of the enclosing box.

Step 12. Fully open the System Main Control Valve (2).

Step 13. After setting a fire protection system, notify the proper authorities and advise those responsible for monitoring proprietary and/or central station alarms.

Remote Resetting Deluge Valve Setting Procedure

Perform Steps 1 through 13 when initially setting the TYCO DV-5A Valve with Remote-Resetting Trim for service or after an operational test of the fire protection system (Ref. Figure 10).



1	DV-5A Valve	Auto.
2	System Main Control Valve	N.O.
3	Automatic Drain Valve	Auto.
4	Main Drain Valve	N.C.
5	Diaphragm Supply Valve	N.O.
6	NOT USED	
7	Solenoid Valve	N.C.
8	Manual Control Station	N.C.
9	Alarm Test Valve	N.C.
10	Drip Funnel Drain	
11	Water Supply Gauge	
12	Gauge Test Valve	N.O.
13	Diaphragm Supply Strainer	
14	Diaphragm Supply Check Valve	Auto.
15	Diaphragm Gauge	
16	System Riser	
17	Drain Header	
18	Supply Header	
19	Waterflow Pressure Switch	
20	Water Motor Alarm Connection	
21	Downstream Shut Off Valve	N.O.
22	Funnel Drain Check Valve	Auto.
23	System Drain Valve	N.C.
OP 1	Alarm Control Valve (Optional)	N.O.

Figure 7 Remote Resetting Deluge Electric Schematic Piping Diagram

Step 1. Close the System Main Control Valve (2).

Step 2. Close the Diaphragm Supply Valve (5).

Step 3. Open the Main Drain Valve (4) and System Drain Valve (23). Close the System Drain Valve (23) after water ceases to discharge. Leave the Main Drain Valve (4) open.

At this time make certain that the Pressure Gauge Valves and the Alarm Control Valve (OP1), as applicable, are open.

Step 4. Depress the plunger of the Automatic Drain Valve (3) to verify that it is open.

Step 5. Clean the Diaphragm Supply Strainer (13) by removing the clean-out plug and strainer basket. The Diaphragm Supply Strainer (13) may be flushed out by momentarily opening the Diaphragm Supply Valve (5).

Step 6. Reset the electric detection system in accordance with the manufacturer's instructions to de-energize the solenoid valve.

Step 7. Operate (open) the Manual Control Station (8) and then open the Diaphragm Supply Valve (5). After unaerated water ceases to discharge from the Manual Control Station (8) drain tube, slowly close the operating lever by pushing it up. Do not close the hinged cover at this time.

Step 8. Inspect drain connections from the Manual Control Station and Solenoid Valve. Before proceeding to the next step, correct any leaks.

Step 9. Verify the ability for the DV-5A Diaphragm to hold pressure as follows:

With the diaphragm chamber pressurized per Step 7, temporarily close the Diaphragm Supply Valve (5), and then observe the Diaphragm Gauge (15) for a drop in pressure.

If a drop in pressure is noted, the DV-5A Diaphragm is to be replaced and/or any leaks must be corrected before proceeding to the next step.

If the Diaphragm Gauge (15) indicates no drop in pressure, re-open the Diaphragm Supply Valve (5) and proceed to the next step.

Step 10. Partially open the System Main Control Valve (2). Slowly close the Main Drain Valve (4) as soon as water discharges from the Main Drain Valve (4). Observe the Automatic Drain Valve (3) for leaks. If there are leaks, determine/correct the cause of the leakage problem before proceeding.

When the System Main Control Valve (4) is partially opened, the pressure on the DV-5A Diaphragm Chamber may increase. This increase in pressure is normal, and if the pressure is greater than the valve trim maximum pressure rating provided in the Technical Data section, the pressure is to be relieved to at least the valve trim pressure rating by partially and temporarily opening the Manual Control Station (8); however, do not allow the pressure as indicated on the Diaphragm Gauge (15) to drop below the supply pressure shown on the Water Supply Gauge (11), since this action may result in tripping of the DV-5A Valve.

Step 11. Close the hinged cover of the Manual Control Station Valve (8) and insert a new break rod in the small hole through the top of the enclosing box.

Step 12. Fully open the System Main Control Valve (4).

Step 13. After setting a fire protection system, notify the proper authorities and advise those responsible for monitoring proprietary and/or central station alarms.

Remote Resetting Pressure Reducing Deluge Valve Setting Procedure

Perform Steps 1 through 13 when initially setting the TYCO DV-5A Valve with Remote-Resetting, Pressure-Reducing Trim for service or after an operational test of the fire protection system (Ref. Figure 11).

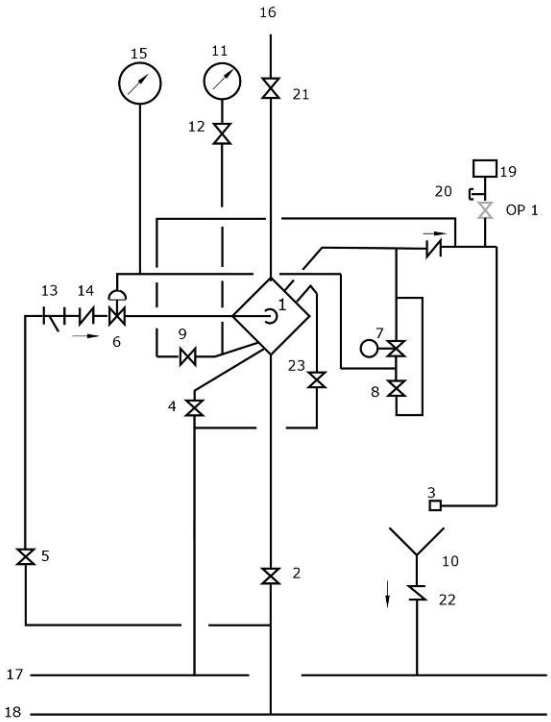


Figure 8 Remote Resetting Pressure Reducing Deluge Schematic Piping Diagram

Step 1. Close the System Main Control Valve (4).

Step 2. Close the Diaphragm Supply Valve (5).

Step 3. Open the Main Drain Valve (4) and System Drain Valve (23). Close the System Drain Valve (23) after water ceases to discharge. Leave the Main Drain Valve (4) open.

At this time make certain that the Pressure Gauge Valves and the Alarm Control Valve (OP1), as applicable, are open.

Step 4. Depress the plunger of the Automatic Drain Valve (3) to verify that it is open.

Step 5. Clean the Diaphragm Supply Strainer (13) by removing the clean-out plug and strainer basket. The Diaphragm Supply Strainer (13) may be flushed out by momentarily opening the Diaphragm Supply Valve (5).

Step 6. Reset the electric detection system in accordance with the manufacturer's instructions to de-energize the solenoid valve.

Step 7. Operate (open) the Manual Control Station (8) and then open the Diaphragm Supply Valve (5). After unaerated water ceases to discharge from the Manual Control Station (8) drain tube, slowly close the operating lever by pushing it up. Do not close the hinged cover at this time.

Step 8. Inspect drain connections from the Manual Control Station and Solenoid Valve. Before proceeding to the next step, correct any leaks.

Step 9. Verify the ability for the DV-5A Diaphragm to hold pressure as follows:

With the diaphragm chamber pressurized per Step 7, temporarily close the Diaphragm Supply Valve (5), and then observe the Diaphragm Gauge (15) for a drop in pressure.

If a drop in pressure is noted, the DV-5A Diaphragm is to be replaced and/or any leaks must be corrected before proceeding to the next step.

If the Diaphragm Gauge (15) indicates no drop in pressure, re-open the Diaphragm Supply Valve (5) and proceed to the next step.

Step 10. Partially open the System Main Control Valve (4). Slowly close the Main Drain Valve (4) as soon as water discharges from the Main Drain Valve (4). Observe the Automatic Drain Valve (3) for leaks. If there are leaks, determine/correct the cause of the leakage problem before proceeding.

NOTICE

When the System Main Control Valve (4) is partially opened, the pressure on the DV-5A Diaphragm Chamber may increase. This increase in pressure is normal, and if the pressure is greater than the valve trim maximum pressure rating provided in the Technical Data section, the pressure is to be relieved to at least the valve trim pressure rating by partially and temporarily opening the Manual Control Station (8); however, do not allow the pressure as indicated on the Diaphragm Gauge (15) to drop below the supply pressure shown on the Water Supply Gauge (11), since this action may result in tripping of the DV-5A Valve.

Step 11. Close the hinged cover of the Manual Control Station Valve (8) and insert a new break rod in the small hole through the top of the enclosing box.

Step 12. Fully open the System Main Control Valve (4).

Step 13. After setting a fire protection system, notify the proper authorities and advise those responsible for monitoring proprietary and/or central station alarms.

Adjusting Pilot Valve Pressure

A minimum flow of 100 gpm (380 lpm) is required to adjust the Pilot Valve's pressure.

NOTICE

After any downstream pressure adjustment, the following items are to be recorded on a tag attached to the valve:

- *Valve installation location*
- *Inlet static pressure*
- *Inlet residual pressure*
- *Outlet residual pressure*
- *Intended outlet flow*

The tag is not to be removed until after the system has been accepted by the authority having jurisdiction. It is recommended that the tag not be removed even after acceptance by the authority having jurisdiction unless another means of record keeping is maintained.

Pressure in the Pilot Valve is factory-set. To re-adjust the pressure, set the valve first, according to the Valve Setting Procedure described in this technical data sheet, then follow the steps below. Refer to Figure 12 as needed.

Step 1. To set the pressure in the field, trip the valve manually or electrically. It is recommended that the valve is tripped electrically to test the entire system.

Step 2. Remove the Tamper Cap of the Pilot Valve by first loosening the Set Screw and unscrewing the Tamper Cap.

Step 3. If surging flow occurs, attempt to bleed trapped air from the system via the Automatic Drain Valve.

Step 4. Loosen the Lock Nut on the Adjusting Screw of the Pilot Valve.

Step 5. Turn the Adjusting Screw clockwise to increase outlet pressure or counterclockwise to decrease outlet pressure.

Step 6. Observe the Outlet Pressure Gauge for changes. The valve needs time to reach the new set point after changing the preset pressure. Turn the Adjusting Screw 1/2 a turn at a time until the pressure stabilizes.

If necessary, turn the Adjusting Screw again until the desired set point is achieved.

Step 7. After the desired performance, tighten the Lock Nut.

Step 8. Replace the Tamper Cap and tighten the Set Screw.

Step 9. Ensure that the system is properly drained.

The DV-5A Deluge Valve is now set for service.

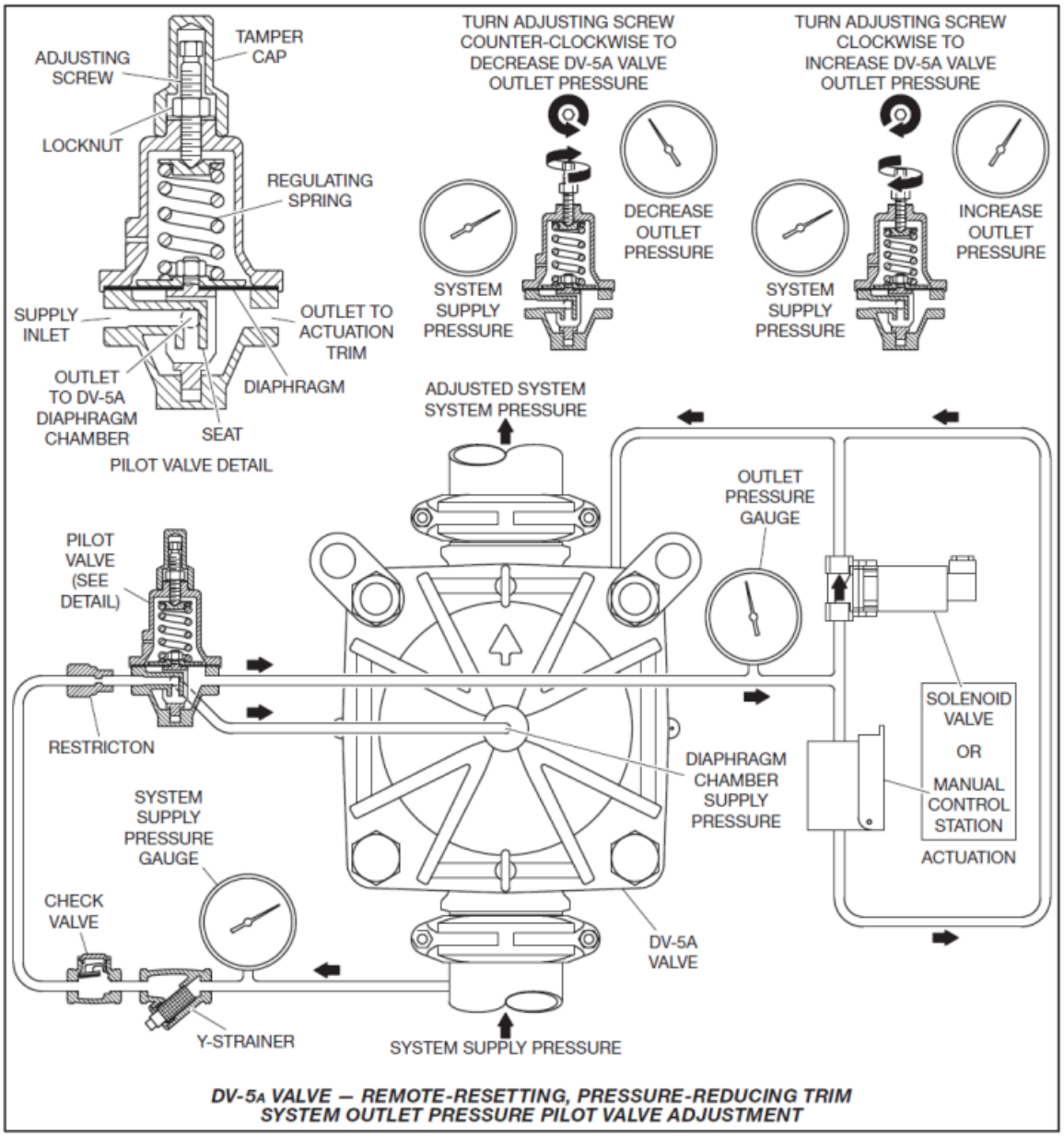


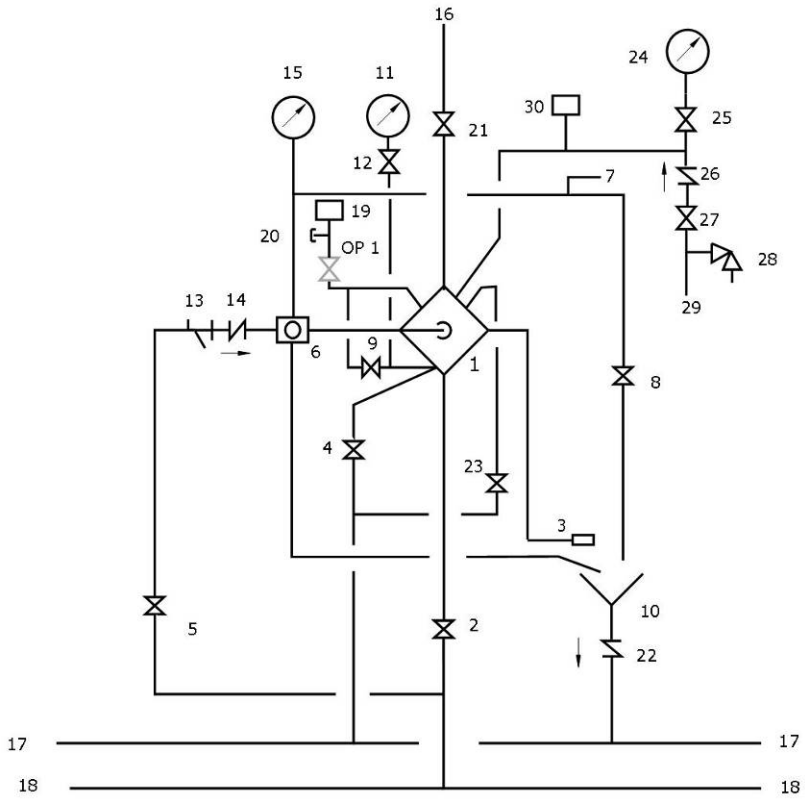
Figure 9 DV-5A Valve - Remote-Resetting, Pressure-Reducing Trim System Outlet Pressure Pilot Valve Adjustment

NOTE

It is normal for the control panel to indicate various supervisory conditions related to supervised valve position and system air pressure while the valve is being set. These may be silenced by pressing on the "Buzzer Silence" button.

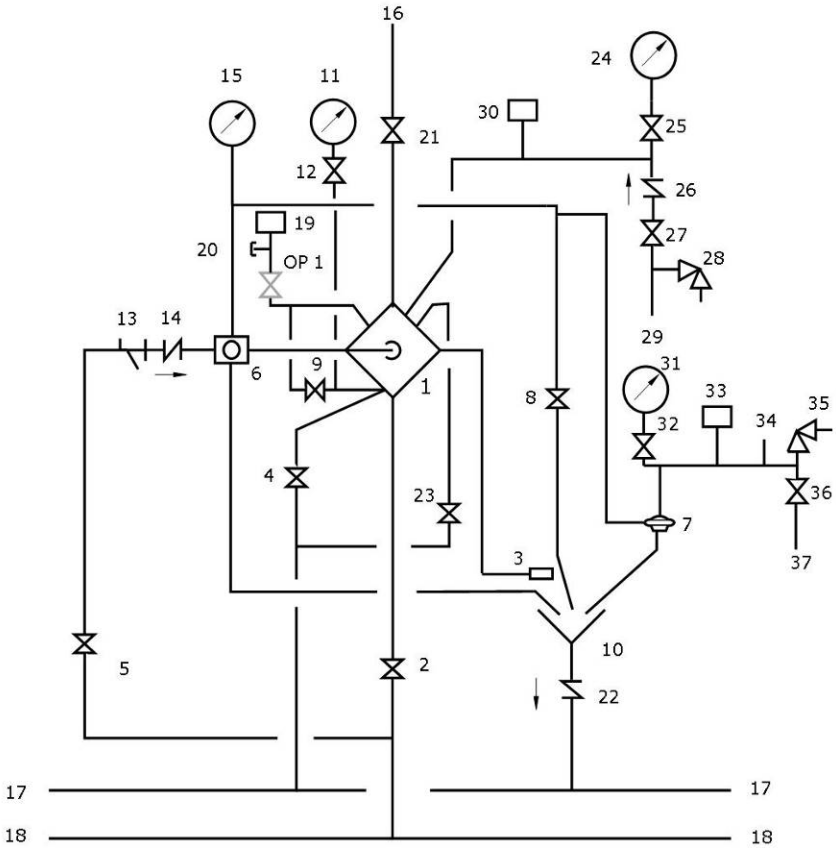
Single Interlock Preaction Valve Setting Procedure

Perform Steps 1 through 16 when initially setting the TYCO DV-5A Valve, after an operational test of the fire protection system, or after system operation due to a fire. Refer to Figure 13, 14, or 15, as applicable.



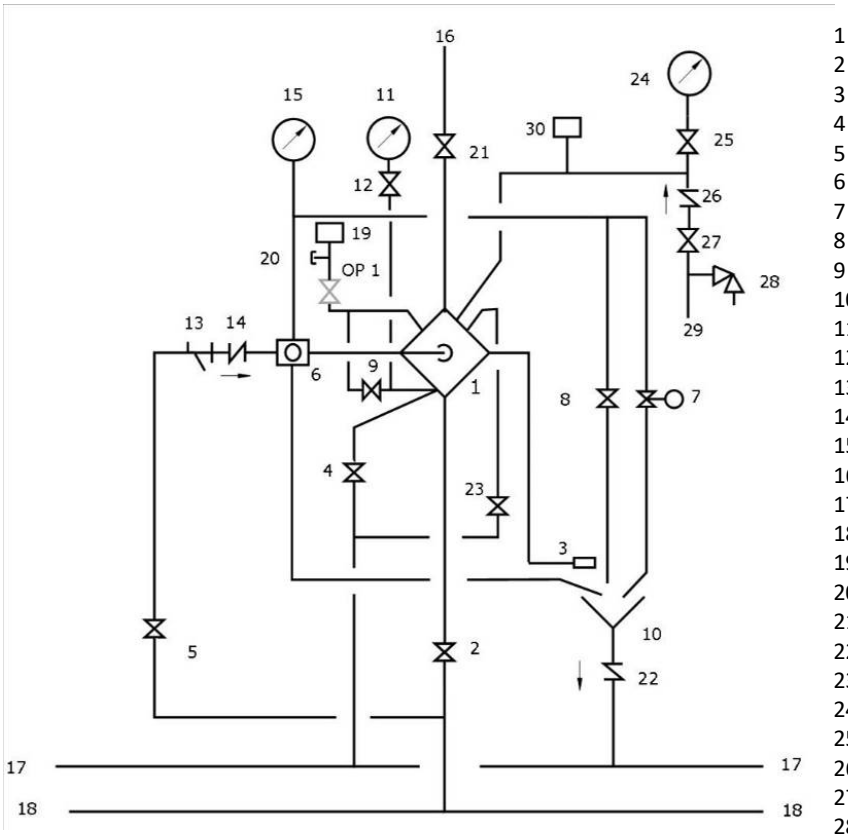
1	DV-5A Valve	Auto.
2	System Main Control Valve	N.O.
3	Automatic Drain Valve	Auto.
4	Main Drain Valve	N.C.
5	Diaphragm Supply Valve	N.O.
6	Manual Reset Actuator	
7	Wet Pilot Line Connection	
8	Manual Control Station	N.C.
9	Alarm Test Valve	N.C.
10	Drip Funnel Drain	
11	Water Supply Gauge	
12	Water Supply Gauge Test Valve	N.O.
13	Diaphragm Supply Strainer	
14	Diaphragm Supply Check Valve	Auto.
15	Diaphragm Gauge	
16	System Riser	
17	Drain Header	
18	Supply Header	
19	Waterflow Pressure Switch	
20	Water Motor Alarm Connection	
21	Downstream Shut Off Valve	N.O.
22	Funnel Drain Check Valve	Auto.
23	System Drain Valve	N.C.
24	System Gauge	
25	System Gauge Valve	N.O.
26	Supervisory Air Check Valve	Auto.
27	Supervisory Air Supply Valve	N.O.
28	Supervisory Air Pressure Relief Valve	Auto.
29	Supervisory Air Supply Connection	N.O.
30	Supervisory Low Pressure Switch	
OP 1	Alarm Control Valve (Optional)	N.O.

Figure 10 Single Interlock Preaction Wet Pilot Actuation Schematic Piping Diagram



1	DV-5A Valve	Auto.
2	System Main Control Valve	N.O.
3	Automatic Drain Valve	Auto.
4	Main Drain Valve	N.C.
5	Diaphragm Supply Valve	N.O.
6	Manual Reset Actuator	
7	Dry Pilot Actuator	Auto.
8	Manual Control Station	N.C.
9	Alarm Test Valve	N.C.
10	Drip Funnel Drain	
11	Water Supply Gauge	
12	Water Supply Gauge Test Valve	N.O.
13	Diaphragm Supply Strainer	
14	Diaphragm Supply Check Valve	Auto.
15	Diaphragm Gauge	
16	System Riser	
17	Drain Header	
18	Supply Header	
19	Waterflow Pressure Switch	
20	Water Motor Alarm Connection	
21	Downstream Shut Off Valve	N.O.
22	Funnel Drain Check Valve	Auto.
23	System Drain Valve	N.C.
24	System Gauge	
25	System Gauge Test Valve	N.O.
26	Supervisory Air Check Valve	Auto.
27	Supervisory Air Supply Valve	N.O.
28	Supervisory Air Pressure Relief Valve	Auto.
29	Supervisory Air Supply Connection	
30	Supervisory Low Pressure Switch	
31	Dry Pilot Line Gauge	
32	Dry Pilot Gauge Test Valve	N.O.
33	Dry Pilot Low Pressure Switch	
34	Dry Pilot Line Connection	
35	Dry Pilot Air Pressure Relief Valve	Auto.
36	Dry Pilot Air Supply Valve	N.O.
37	Dry Pilot Air Connection	
OP 1	Alarm Control Valve (Optional)	N.O.

Figure 11 Single Interlock Preaction Dry Pilot Actuation Schematic Piping Diagram



1	DV-5A Valve	Auto.
2	System Main Control Valve	N.O.
3	Automatic Drain Valve	Auto.
4	Main Drain Valve	N.C.
5	Diaphragm Supply Valve	N.O.
6	Manual Reset Actuator	
7	Solenoid Valve	Auto.
8	Manual Control Station	N.C.
9	Alarm Test Valve	N.C.
10	Drip Funnel Drain	
11	Water Supply Gauge	
12	Water Supply Gauge Test Valve	N.O.
13	Diaphragm Supply Strainer	
14	Diaphragm Supply Check Valve	Auto.
15	Diaphragm Gauge	
16	System Riser	
17	Drain Header	
18	Supply Header	
19	Waterflow Pressure Switch	
20	Water Motor Alarm Connection	
21	Downstream Shut Off Valve	N.O.
22	Funnel Drain Check Valve	Auto.
23	System Drain Valve	N.C.
24	System Gauge	
25	System Gauge Valve	N.O.
26	Supervisory Air Check Valve	Auto.
27	Supervisory Air Supply Valve	N.O.
28	Supervisory Air Pressure Relief Valve	Auto.
29	Supervisory Air Supply Connection	N.O.
30	Supervisory Low Pressure Switch	
OP 1	Alarm Control Valve (Optional)	N.O.

Figure 12 Single Interlock Preaction Electric Actuation Schematic Piping Diagram

Perform Steps 1 through 16 when initially setting the TYCO DV-5A Valve, after an operational test of the fire protection system, or after system operation due to a fire. Refer to Figure 13, Figure 14, or Figure 15, as applicable.

Step 1. Close the System Main Control Valve (2).

Step 2. Close the Diaphragm Supply Valve (5). For Dry Pilot Actuation, close the Dry Pilot Air Supply Valve (36).

Step 3. Close the Supervisory Air Supply Valve (27).

Step 4. Open the Main Drain Valve (4), System Drain Valve (23),and all auxiliary drains in the system. Close the auxiliary drain valves and the System Drain Valve (23) after water ceases to discharge. Leave the Main Drain Valve (4) open.

At this time make certain that the Pressure Gauge Valves and the Alarm Control Valve (OP 1), as applicable, are open.

Step 5. Depress the plunger of the Automatic Drain Valve (3) to verify that it is open.

Step 6. Clean the Diaphragm Supply Strainer (13) by removing the clean-out plug and strainer basket. The Diaphragm Supply Strainer (13) may be flushed out by momentarily opening the Diaphragm Supply Valve (5).

Step 7. Replace any operated sprinklers on the system piping, as applicable.

Step 8. Reset the automatic actuation system.

Wet Pilot Actuation – Replace operated pilot sprinklers and/or reset the remote Manual Control Stations.

Dry Pilot Actuation – Replace operated pilot sprinklers and/or reset the remote Manual Control Stations. Re-establish dry pilot pneumatic pressure.

Electric Actuation – Reset the electric detection system in accordance with the manufacturer's instructions to de-energize the solenoid valve.

In order to prevent the possibility of a subsequent operation of an overheated solder type pilot sprinkler, any solder type pilot sprinklers that were possibly exposed to a temperature greater than their maximum rated ambient must be replaced.

Step 9. Operate (open) the Manual Control Station (8) and then open the Diaphragm Supply Valve (5). After unaerated water ceases to discharge from the Manual Control Station (8) drain tube, slowly close the operating lever by pushing it up. Do not close the hinged cover at this time.

Step 10. After allowing water to flow out of the Manual Reset Actuator (6) drain tube until aerated water ceases to discharge, reset the Manual Reset Actuator (6) by pressing the Reset Knob and hold until the pressure builds and reaches approximately 15 psi (1,0 bar) on the Diaphragm Gauge (15) and water stops flowing from its drain tube. Pressure will then build up in the DV-5A Diaphragm Chamber.

For Wet Pilot Actuation, crack open the Inspector's Test Connection and any other vent valves on the wet pilot line to relieve trapped air. After the discharge of air has stopped, close the vent valves and the Inspector's Test Connection.

Note: After relieving trapped air, check the Manual Reset Actuator (6) to make sure there is no water draining from its drain tube. If water is draining, reset the Manual Reset Actuator (6) as previously instructed.

Step 11. Verify the ability for the DV-5A Diaphragm to hold pressure as follows:

With the diaphragm chamber pressurized per Step 10, temporarily close the Diaphragm Supply Valve (5), and then observe the Diaphragm Gauge (15) for a drop in pressure.

If a drop in pressure is noted, the DV-5A Diaphragm is to be replaced and/or any leaks must be corrected before proceeding to the next step.

If the Diaphragm Gauge (15) indicates no drop in pressure, re-open the Diaphragm Supply Valve (5) and proceed to the next step.

Step 12. Open the Supervisory Air Supply Valve (27) to re-establish supervisory system air pressure at nominally
10 psi (0,68 bar).

Step 13. Partially open the System Main Control Valve (2). Slowly close the Main Drain Valve (4) as soon as water discharges from the Main Drain Valve (4). Observe the Automatic Drain Valve (3) for leaks. If there are leaks, determine/correct the cause of the leakage problem before proceeding.

When the System Main Control Valve (2) is partially opened, the pressure on the DV-5A Diaphragm Chamber may increase. This increase in pressure is normal, and if the pressure is greater than 300 psi (20,7 bar), the pressure is to be relieved by partially and temporarily opening the Manual Control Station (8); however, do not allow the pressure as indicated on the Diaphragm Gauge (15) to drop below the supply pressure shown on the Water Supply Gauge (11), since this action may result in tripping of the DV-5A Valve.

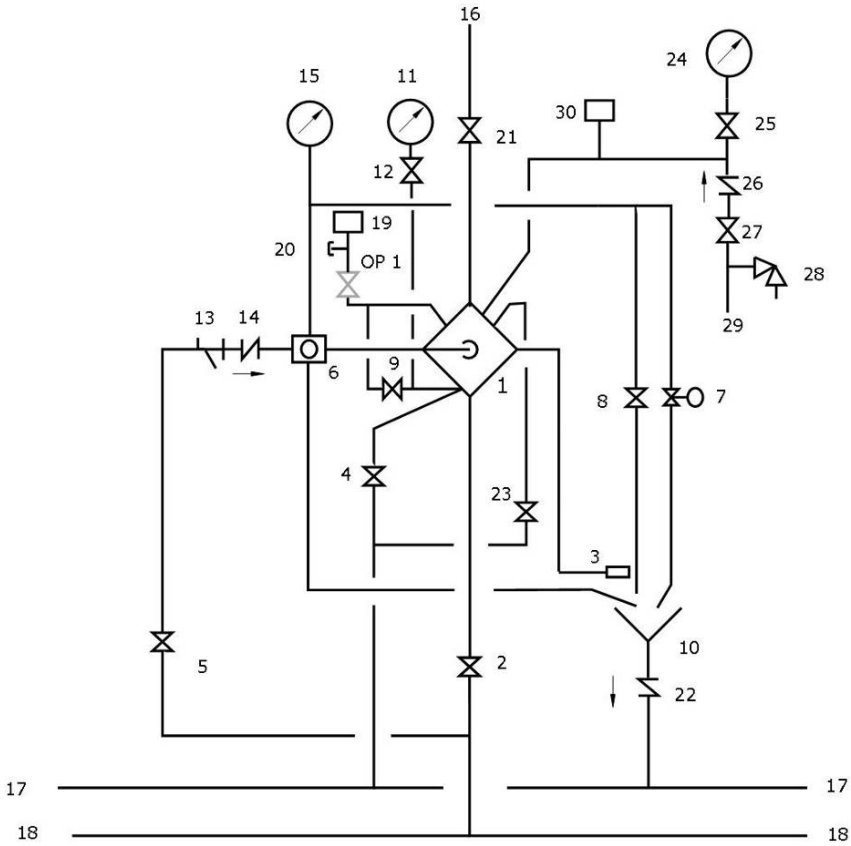
Step 14. Close the hinged cover of the Manual Control Station (8) and insert a new break rod in the small hole through the top of the enclosing box.

Step 15. Fully open the System Main Control Valve (2).

Step 16. After setting a fire protection system, notify the proper authorities and advise those responsible for monitoring proprietary and/or central station alarms.

Double Interlock Preaction Valve Setting Procedure

Perform Steps 1 through 20 when initially setting the TYCO DV-5A Valve, after an operational test of the fire protection system, or after system operation due to a fire. Refer to 16 or 17, as applicable, and determine which type actuation system is being set.



1	DV-5A Valve	Auto.
2	System Main Control Valve	N.O.
3	Automatic Drain Valve	Auto.
4	Main Drain Valve	N.C.
5	Diaphragm Supply Valve	N.O.
6	Manual Reset Actuator	
7	Solenoid Valve	Auto.
8	Manual Control Station	N.C.
9	Alarm Test Valve	N.C.
10	Drip Funnel Drain	
11	Water Supply Gauge	
12	Water Supply Gauge Test Valve	N.O.
13	Diaphragm Supply Strainer	
14	Diaphragm Supply Check Valve	Auto.
15	Diaphragm Gauge	
16	System Riser	
17	Drain Header	
18	Supply Header	
19	Waterflow Pressure Switch	
20	Water Motor Alarm Connection	
21	Downstream Shut Off Valve	N.O.
22	Funnel Drain Check Valve	Auto.
23	System Drain Valve	N.C.
24	System Gauge	
25	System Gauge Valve	N.O.
26	Air Check Valve	Auto.
27	Air Supply Valve	N.O.
28	Air Pressure Relief Valve	Auto.
29	Air Supply Connection	N.O.
30	Low Pressure Switch	
OP 1	Alarm Control Valve (Optional)	N.O.

Figure 13 Double Interlock Preaction Electric Electric Actuation Schematic Piping Diagram

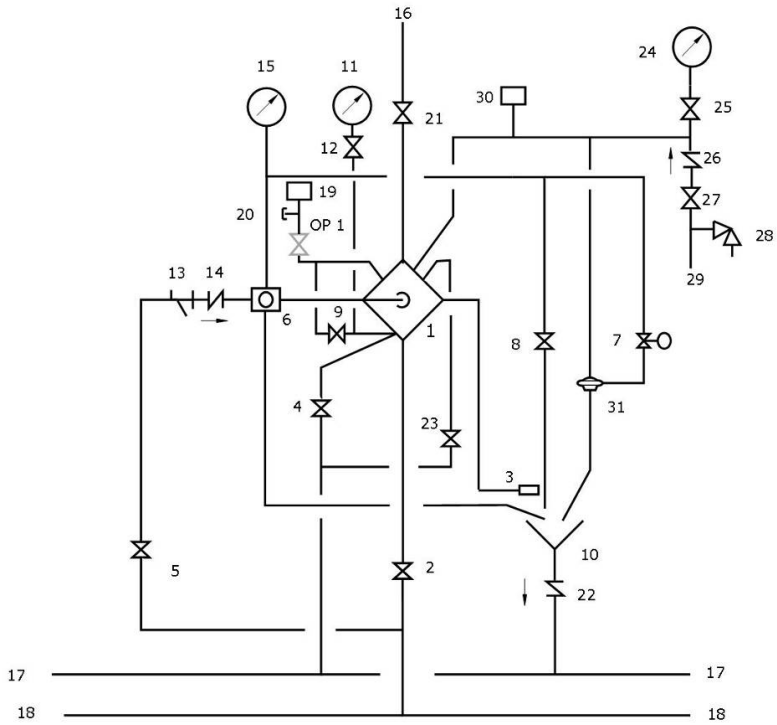


Figure 14 Double Interlock Preaction Electric Pneumatic Actuation Schematic Piping Diagram

1	DV-5A Valve	Auto.
2	System Main Control Valve	N.O.
3	Automatic Drain Valve	Auto.
4	Main Drain Valve	N.C.
5	Diaphragm Supply Valve	N.O.
6	Manual Reset Actuator	
7	Solenoid Valve	Auto.
8	Manual Control Station	N.C.
9	Alarm Test Valve	N.C.
10	Drip Funnel Drain	
11	Water Supply Gauge	
12	Water Supply Gauge Test Valve	N.O.
13	Diaphragm Supply Strainer	
14	Diaphragm Supply Check Valve	Auto.
15	Diaphragm Gauge	
16	System Riser	
17	Drain Header	
18	Supply Header	
19	Waterflow Pressure Switch	
20	Water Motor Alarm Connection	
21	Downstream Shut Off Valve	N.O.
22	Funnel Drain Check Valve	Auto.
23	System Drain Valve	N.C.
24	System Gauge	
25	System Gauge Valve	N.O.
26	Air Check Valve	Auto.
27	Air Supply Valve	N.O.
28	Air Pressure Relief Valve	Auto.
29	Air Supply Connection	N.O.
30	Low Pressure Switch	
31	Dry Pilot Actuation	Auto.
OP 1	Alarm Control Valve (Optional)	N.O.

Step 1. Close the System Main Control Valve (2).

Step 2. Close the Diaphragm Supply Valve (5) and Air Supply Valve (27).

Step 3. Open the Main Drain Valve (4), System Drain Valve (23), and all auxiliary drains in the system. Close the auxiliary drain valves and the System Drain Valve (23) after water ceases to discharge. Leave the Main Drain Valve (4) open.

At this time make certain that the Pressure Gauge Valves and the Alarm Control Valve (OP 1), as applicable, are open.

Do not open the Inspector's Test Connection and auxiliary drains if resetting after a system test; otherwise, system air pressure will be relieved unnecessarily.

Step 4. Depress the plunger of the Automatic Drain Valve (3) to verify that it is open.

Step 5. Clean the Diaphragm Supply Strainer (13) by removing the clean-out plug and strainer basket. The Diaphragm Supply Strainer (13) may be flushed out by momentarily opening the Diaphragm Supply Valve (5).

Step 6. Inspect for and clear all ice plugs where system piping has been exposed to freezing conditions and when there has been a flow of water into the system.

Step 7. Replace all damaged or operated sprinklers. Replacement sprinklers must be of the same type and temperature rating as those that operated.

In order to prevent the possibility of a subsequent operation of an overheated solder type sprinkler, any solder type sprinklers possibly exposed to a temperature greater than their maximum rated ambient must also be replaced.

Step 8. Service the air dryer, if applicable, in accordance with the manufacturer's instructions.

Step 9. De-energize the Solenoid Valve.

For Electric/Electric Actuation, de-energize the Solenoid Valve (7) via the Potter RCDS-1 Releasing Circuit Disable Switch, or equivalent.

For Electric/Pneumatic Actuation, de-energize the Solenoid Valve (7) by resetting the electric detection system in accordance with the manufacturer's instructions.

Step 10. Operate (open) the Manual Control Station (8) and then open the Diaphragm Supply Valve (5). After unaerated water ceases to discharge from the Manual Control Station (8) drain tube, slowly close the operating lever by pushing it up. Do not close the hinged cover at this time.

Step 11. After allowing water to flow out of the Manual Reset Actuator (6) drain tube until aerated water ceases to discharge, reset the Manual Reset Actuator (6) by pressing the Reset Knob and hold until the pressure builds and reaches approximately 15 psi (1,0 bar) on the Diaphragm Gauge (15) and water stops flowing from its drain tube. Pressure will then build up in the DV-5A Diaphragm Chamber.

Step 12. Inspect the actuation device drain connections. Any leaks must be corrected before proceeding to the next step.

Electric/Electric actuation drain connection to be inspected are from the Manual Control Station (8) and Solenoid Valve (7) shown in Figure 4.

Electric/Pneumatic actuation drain connection to be inspected are from the Manual Control Station (8) and Dry Pilot Actuator (31) shown in Figure 5.

Step 13. Verify the ability for the DV-5A Diaphragm to hold pressure as follows:

With the diaphragm chamber pressurized per Step 11, temporarily close the Diaphragm Supply Valve (5), and then observe the Diaphragm Gauge (15) for a drop in pressure.

If a drop in pressure is noted, the DV-5A Diaphragm is to be replaced and/or any leaks must be corrected before proceeding to the next step.

If the Diaphragm Gauge (15) indicates no drop in pressure, re-open the Diaphragm Supply Valve (5) and proceed to the next step.

Step 14. Open the Air Supply Valve (27) and allow the system to automatically re-establish its nominal system air pressure. Observe the Automatic Drain Valve (3) for leaks. If there are leaks, determine/correct the cause of the leakage problem.

Nominal system air pressure for Electric/Electric Actuation is typically 15 psi (1,0 bar).

Nominal system air pressure for Electric/Pneumatic Actuation is per Graph B.

Step 15. Open the (System) Downstream Shut-Off Valve (21), as will be the case when resetting a system after performing an operational test.

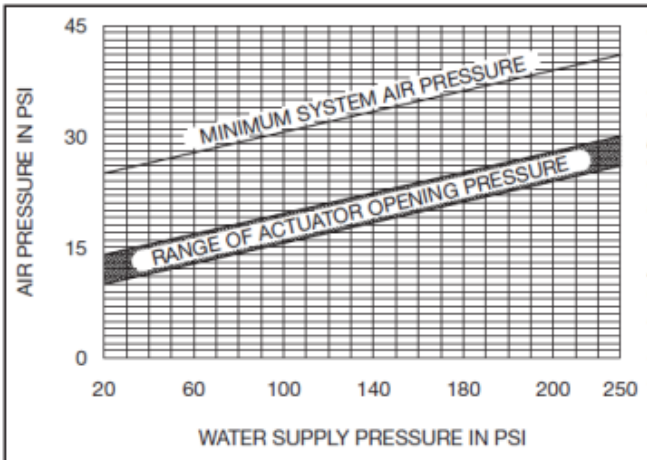
Step 16. Previously in Step 9 for Electric/Pneumatic Actuation, the detection system was reset; however, at this time for Electric/Electric Actuation, the Solenoid Valve (7) is disconnected via the Potter RCDS-1 Releasing Circuit Switch, or equivalent.

For Electric/Electric Actuation, first proceed to reset the electric detection system in accordance with the manufacturer's instructions. After setting the releasing panel, return the Potter RCDS-1 to "green light - releasing circuit system normal".

Step 17. Partially open the System Main Control Valve (2). Slowly close the Main Drain Valve (4) as soon as water discharges from the Main Drain Valve (4). Observe the Automatic Drain Valve (3) for leaks. If there are leaks, determine/correct the cause of the leakage problem before proceeding.

When the System Main Control Valve (2) is partially opened, the pressure on the DV-5A Diaphragm Chamber may increase. This increase in pressure is normal, and if the pressure is greater than 300 psi (20,7 bar), the pressure is to be relieved by partially and temporarily opening the Manual Control Station (8); however, do not allow the pressure as indicated on the Diaphragm Gauge (15) to drop below the supply pressure shown on the Water Supply Gauge (11), since this action may result in tripping of the DV-5A Valve.

Step 18. Close the hinged cover on the Manual Control Station (8) and insert a new break rod in the small hole through the top of the enclosing box.



NOTES:

The dew point of the pilot line air pressure must be maintained below the lowest ambient temperature to which the dry pilot actuation system will be exposed. Accumulation of water in the pilot line connection to the Actuator will lower the air pressure at which the actuator will open and possibly prevent proper operation. Also, introduction of moisture into the pilot lines exposed to freezing temperatures can create an ice buildup that could prevent proper operation of the Actuator.

An air dryer must be installed where the moisture content of the air supply is not properly controlled at less than the required value.

It is recommended that an AMD-3 Nitrogen Maintenance Device be utilized in dry pilot actuation system applications where the dew point must be maintained below -20°F (-29°C). Refer to Technical Data Sheet TFP1241.

GRAPH B
DV-5A VALVE DOUBLE INTERLOCK PREACTION SYSTEM
AIR PRESSURE REQUIREMENTS

Step 19. Fully open the System Main Control Valve (2).

Step 20. After setting a fire protection system, notify the proper authorities and advise those responsible for monitoring proprietary and/or central station alarms.

Component Access

Red-E DV-5A Cabinets have been designed to permit easy access to all valve and trim components in order to facilitate the maintenance and testing without removing the enclosure components.

Compressor Access:

The DV-5A compressor is mounted on a quick access extendable rail to permit easy servicing of the compressor air filter (follow the instructions in the compressor manual for air filter servicing requirements). In order to access the compressor, open the main door, loosen the retaining thumb screws located at the front of the compressor mounting rails. Slide the compressor forward.

Figure 15 Compressor Extended

Figure 16 Compressor Stowed

Standard Programming Entries

Deluge, Single Interlock Preaction and Double Interlock Preaction Electric-Pneumatic

The following can be used to verify that the panel settings correspond to the default values for Deluge, Single Interlock preaction and Double Interlock Preaction Electric-Pneumatic configurations.

To verify the program settings of the standard program, push the Program switch to the PROGRAM position. The panel displays the following:

L	O	O	K		A	T									
H	I	S	T	O	R	Y	?								

SET 

SELECT 

FUNCTION  **Press the FUNCTION button to move to the next position.**

S	E	T		T	I	M	E	?							

SET 

SELECT 

FUNCTION  **Press the FUNCTION button to move to the next position.**

P	A	S	S	W	O	R	D	=	0	0	0				

									^						

SET 

SELECT 

FUNCTION 

Press the SET button 3 times to move to the next position.

I	N	I	T		Z	O	N	E		#	1				
E	N	A	B	L	E	D									

SET 

SELECT 

FUNCTION 

Press the SET button to move to the next position.

I	N	I	T		Z	O	N	E		#	2				
E	N	A	B	L	E	D									

SET 

SELECT 

FUNCTION 

Press the SET button to move to the next position.

I	N	I	T		Z	O	N	E		#	3				
E	N	A	B	L	E	D									

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

I	N	I	T		Z	O	N	E		#	4				
E	N	A	B	L	E	D									

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

O	U	T	P	U	T		#	1							
E	N	A	B	L	E	D									

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

O	U	T	P	U	T		#	2							
E	N	A	B	L	E	D									

SET 

Press the SET button to move to the next position.

SELECT 

FUNCTION 

O	U	T	P	U	T		#	3							
E	N	A	B	L	E	D									

SET 

Press the SET button to move to the next position.

SELECT 

FUNCTION 

O	U	T	P	U	T		#	4							
E	N	A	B	L	E	D									

SET 

Press the SET button to move to the next position.

SELECT 

FUNCTION 

S	Y	S	T	E	M		M	O	D	E	:				
N	O	R	M	A	L										

SET 

Press the SET button to move to the next position.

SELECT 

FUNCTION 

P	R	O	G	R	A	M		#		1	2				

OR

P	R	O	G	R	A	M		#		0					
N	O	R	M	A	L										

SET 

SELECT 

Press the SELECT button until the display reads "PROGRAM # 0"

FUNCTION 

SET 

Press the SET button to set PROGRAM #0 and move to the next position.

SELECT 

FUNCTION 

P	R	O	G	R	A	M		T	Y	P	E	:			
W	A	T	E	R		B	A	S	E	D					

SET 

Press the SET button to move to the next position.

SELECT 

FUNCTION 

I	N	I	T		Z	O	N	E		#	1				
D	E	T	E	C	T	I	O	N							

SET 

Press the SET button to move to the next position.

SELECT 

FUNCTION 

I	N	I	T		Z	O	N	E		#	2				
D	E	T	E	C	T	I	O	N							

SET 

Press the SET button to move to the next position.

SELECT 

FUNCTION 

I	N	I	T		Z	O	N	E		#	3				
V	A	L	V	E		T	A	M	P	E	R				

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

I	N	I	T		Z	O	N	E		#	4				
W	A	T	E	R	F	L	O	W							

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

S	U	P	E	R	V	S	R	Y		1		Z	O	N	E
S	U	P	E	R	V	S	R	Y							

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

S	U	P	E	R	V	S	R	Y		2		Z	O	N	E
L	O	W		A	I	R		S	U	P					

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

O	U	T	P	U	T		#	1							
I	N	D	I	C	A	T	I	N	G						

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

O	U	T	P	U	T		#	2							
I	N	D	I	C	A	T	I	N	G						

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

O	U	T	P	U	T		#	3							
R	E	L	E	A	S	I	N	G							

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

O	U	T	P	U	T		#	4							
I	N	D	I	C	A	T	I	N	G						

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

O	U	T	P	U	T		#	3							
N	O	R	M	A	L										

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

D	I	S	C	H	A	R	G	E		T	I	M	E		
C	O	N	T	I	N	U	O	U	S						

SET 

SELECT 

FUNCTION 

Press the FUNCTION button to move to the next position.

Z	O	N	E		1				V						
O	U	T	P	U	T	S	:		1				3		

SET 

SELECT 

FUNCTION 

Press the FUNCTION button to move to the next position.

Z	O	N	E		2				V						
O	U	T	P	U	T	S	:		1				3		

SET 

SELECT 

FUNCTION 

Press the FUNCTION button to move to the next position.

Z	O	N	E		4				V						

O	U	T	P	U	T	S	:		1		2				4

SET 

SELECT 

FUNCTION 

Press the FUNCTION button to move to the next position.

B	A	N	N	E	R		M	E	S	S	A	G	E	?	

SET 

SELECT 

Press the SELECT button to display the current message

FUNCTION 

R	E	D	-	E		D	V	5	A						
^															

SET 

SELECT 

FUNCTION 

Press the FUNCTION button 10 times to move to the next position.

B	O	T	T	O	M		L	I	N	E	?				

SET 

SELECT 

Press the SELECT button to display the current message

FUNCTION 

R	E	A	D	Y											
^															

SET 

SELECT 

FUNCTION 

Press the FUNCTION button 10 times to move to the next position.

Z	O	N	E	1		M	E	S	S	A	G	E	?		

SET 

SELECT 

Press the SELECT button to display the current message

FUNCTION 

Z	O	N	E		1										

^															

SET 

SELECT 

FUNCTION 

Press the FUNCTION button 10 times to move to the next position.

Z	O	N	E	2		M	E	S	S	A	G	E	?		

SET 

SELECT 

Press the SELECT button to display the current message

FUNCTION 

Z	O	N	E		2										
^															

SET 

SELECT 

FUNCTION 

Press the FUNCTION button 10 times to move to the next position.

Z	O	N	E	3		M	E	S	S	A	G	E	?		

SET 

SELECT 

Press the SELECT button to display the current message

FUNCTION 

S	Y	S	T		V	A	L	V	E						
^															

SET 

SELECT 

FUNCTION 

Press the FUNCTION button 10 times to move to the next position.

Z	O	N	E	4		M	E	S	S	A	G	E	?		

SET 

SELECT 

Press the SELECT button to display the current message

FUNCTION 

W	A	T	E	R	F	L	O	W							
^															

SET 

SELECT 

FUNCTION 

Press the FUNCTION button 10 times to move to the next position.

N	E	W		P	A	S	S	W	O	R	D	=	0	0	0

SET 

Press the SET button 3 times to move to the next position.

SELECT 

FUNCTION 

P	U	S	H		P	R	O	G	R	A	M	M	I	N	G
S	W	I	T	C	H		B	A	C	K		U	P		

Push the programming switch back to the run position to exit the program mode. The panel now displays the standby screen:

R	E	D	-	E		D	V	5	A		0	1	/	0	1
R	E	A	D	Y							0	0	:	4	1

If all of the entries above match those on the actual panel, the control panel is in the default Red-E DV-5A deluge, single interlock or double interlock preaction electric-pneumatic configuration. To modify the custom message labels, refer to the Custom Message section of the installation manual. To modify the programming of the panel, refer to PFC-4410RC Custom Program Information for Water Based Extinguishing Installation, Operation and Instruction Manual for the Potter PFC-4410RC.

Double Interlock Preaction Electric-Electric

The following can be used to verify that the panel settings correspond to the default values for Double Interlock Preaction Electric-Electric configurations.

To verify the program settings of the standard program, push the Program switch to the right. The panel displays the following:

L	O	O	K		A	T									
H	I	S	T	O	R	Y	?								

SET 

SELECT 

FUNCTION 

Press the FUNCTION button to move to the next position.

S	E	T		T	I	M	E	?							

SET 

SELECT 

FUNCTION 

Press the FUNCTION button to move to the next position.

P	A	S	S	W	O	R	D	=	0	0	0				
									^						

SET  **Press the SET button 3 times to move to the next position.**

SELECT 

FUNCTION 

I	N	I	T		Z	O	N	E		#	1				
E	N	A	B	L	E	D									

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

I	N	I	T		Z	O	N	E		#	2				
E	N	A	B	L	E	D									

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

I	N	I	T		Z	O	N	E		#	3				
E	N	A	B	L	E	D									

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

I	N	I	T		Z	O	N	E		#	4				
E	N	A	B	L	E	D									

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

O	U	T	P	U	T		#	1							
E	N	A	B	L	E	D									

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

O	U	T	P	U	T		#	2							
E	N	A	B	L	E	D									

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

O	U	T	P	U	T		#	3							
E	N	A	B	L	E	D									

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

O	U	T	P	U	T		#	4							
E	N	A	B	L	E	D									

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

S	Y	S	T	E	M		M	O	D	E	:				
N	O	R	M	A	L										

SET 

Press the SET button to move to the next position.

SELECT 

FUNCTION 

P	R	O	G	R	A	M		#		1	3				

OR

P	R	O	G	R	A	M		#			0				

SET 

SELECT 

Press the SELECT button until the display reads "PROGRAM # 0"

FUNCTION 

P	R	O	G	R	A	M		#		0					

SET 

Press the SET button to set PROGRAM #0 and move to the next position.

SELECT 

FUNCTION 

P	R	O	G	R	A	M		T	Y	P	E	:			
W	A	T	E	R		B	A	S	E	D					

SET 

Press the SET button to move to the next position.

SELECT 

FUNCTION 

I	N	I	T		Z	O	N	E		#	1				
D	E	T	E	C	T	I	O	N							

SET 

Press the SET button to move to the next position.

SELECT 

FUNCTION 

I	N	I	T		Z	O	N	E		#	2				
L	O	W		A	I	R		A	L	R	M				

SET 

Press the SET button to move to the next position.

SELECT 

FUNCTION 

I	N	I	T		Z	O	N	E		#	3				
V	A	L	V	E		T A	M	P	E	R					

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

I	N	I	T		Z	O	N	E		#	4				
W	A	T	E	R	F	L	O	W							

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

S	U	P	E	R	V	S	R	Y		1		Z	O	N	E
S	U	P	E	R	V	S	R	Y							

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

S	U	P	E	R	V	S	R	Y		2		Z	O	N	E
S	U	P	E	R	V	S	R	Y							

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

O	U	T	P	U	T		#	1							
I	N	D	I	C	A	T	I	N	G						

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

O	U	T	P	U	T		#	2							
I	N	D	I	C	A	T	I	N	G						

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

O	U	T	P	U	T		#	3							
R	E	L	E	A	S	I	N	G							

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

O	U	T	P	U	T		#	4							
I	N	D	I	C	A	T	I	N	G						

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

O	U	T	P	U	T		#	3							
C	R	O	S	S		Z	O	N	E	D					

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

D	I	S	C	H	A	R	G	E		T	I	M	E		
C	O	N	T	I	N	U	O	U	S						

SET  **Press the SET button to move to the next position.**

SELECT 

FUNCTION 

Z	O	N	E		1				V						
O	U	T	P	U	T	S	:		1				3		

SET 

SELECT 

FUNCTION  **Press the FUNCTION button to move to the next position.**

Z	O	N	E		2				V						
O	U	T	P	U	T	S	:						3		

SET 

SELECT 

FUNCTION  **Press the FUNCTION button to move to the next position.**

Z	O	N	E		4				V						
O	U	T	P	U	T	S	:		1		2				4

SET 

SELECT 

FUNCTION 

Press the FUNCTION button to move to the next position.

B	A	N	N	E	R		M	E	S	S	A	G	E	?	

SET 

SELECT 

Press the SELECT button to display the current message

FUNCTION 

R	E	D	-	E		D	V	5	A						
^															

SET 

SELECT 

FUNCTION 

Press the FUNCTION button 10 times to move to the next position.

B	O	T	T	O	M		L	I	N	E	?				

SET 

SELECT 

Press the SELECT button to display the current message

FUNCTION 

R	E	A	D	Y											
^															

SET 

SELECT 

FUNCTION 

Press the FUNCTION button 10 times to move to the next position.

Z	O	N	E	1		M	E	S	S	A	G	E	?		

SET 

SELECT 

Press the SELECT button to display the current message

FUNCTION 

Z	O	N	E		1										
^															

SET 

SELECT 

FUNCTION 

Press the FUNCTION button 10 times to move to the next position.

Z	O	N	E	2		M	E	S	S	A	G	E	?		

SET 

SELECT 

Press the SELECT button to display the current message

FUNCTION 

L	O	W		A	I	R									
^															

SET 

Press the SET button to move to the next position.

SELECT 

FUNCTION 

Z	O	N	E	3		M	E	S	S	A	G	E	?		

SET 

SELECT 

Press the SELECT button to display the current message

FUNCTION 

S	Y	S	T		V	A	L	V	E						
^															

SET 

SELECT 

FUNCTION 

Press the FUNCTION button 10 times to move to the next position.

Z	O	N	E	4		M	E	S	S	A	G	E	?		

SET 

SELECT 

Press the SELECT button to display the current message

FUNCTION 

W	A	T	E	R	F	L	O	W							
^															

SET 

SELECT 

FUNCTION 

Press the FUNCTION button 10 times to move to the next position.

N	E	W		P	A	S	S	W	O	R	D	=	0	0	0

SET 

Press the SET button 3 times to move to the next position.

SELECT 

FUNCTION 

P	U	S	H		P	R	O	G	R	A	M	M	I	N	G
S	W	I	T	C	H		B	A	C	K		U	P		

Push the programming switch back to the run position to exit the program mode. The panel now displays the standby screen:

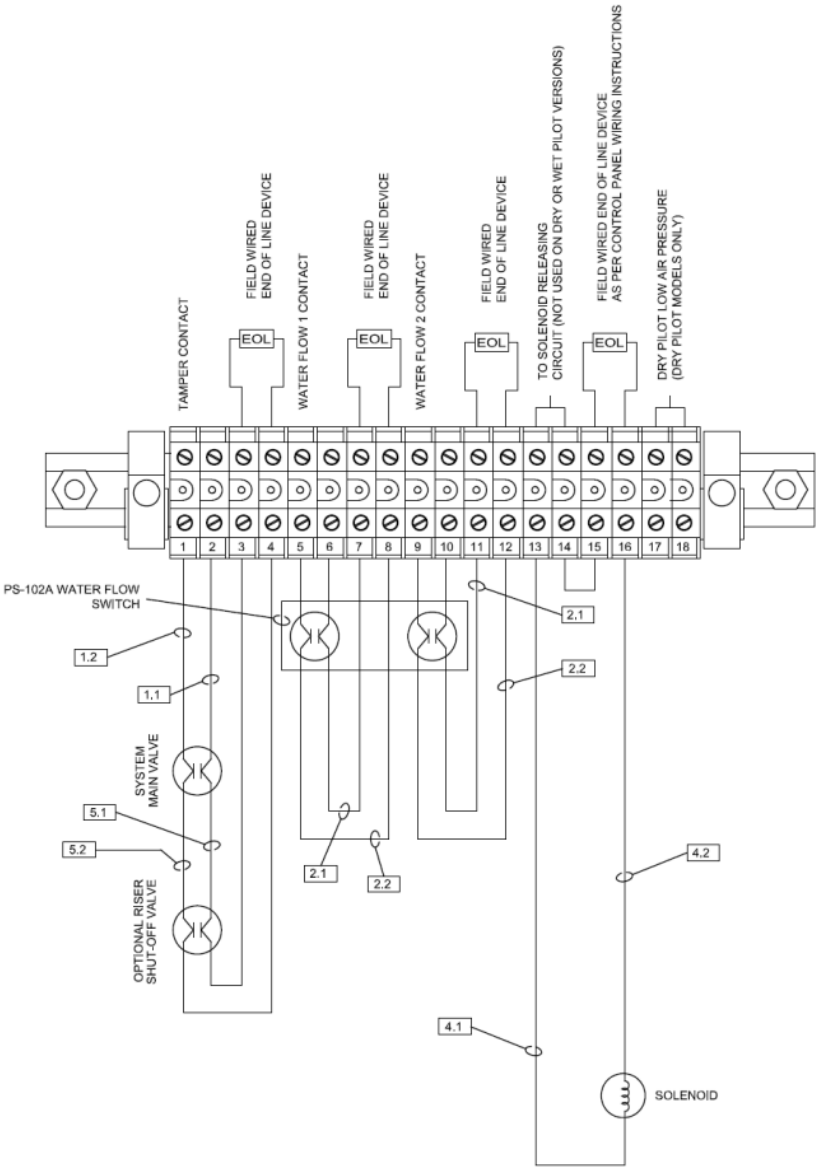
R	E	D	-	E		D	V	5	A		0	1	/	0	1
R	E	A	D	Y							0	0	:	4	1

If all of the entries above match those on the actual panel, the control panel is in the default Red-E DV-5A double interlock preaction electric-electric configuration.

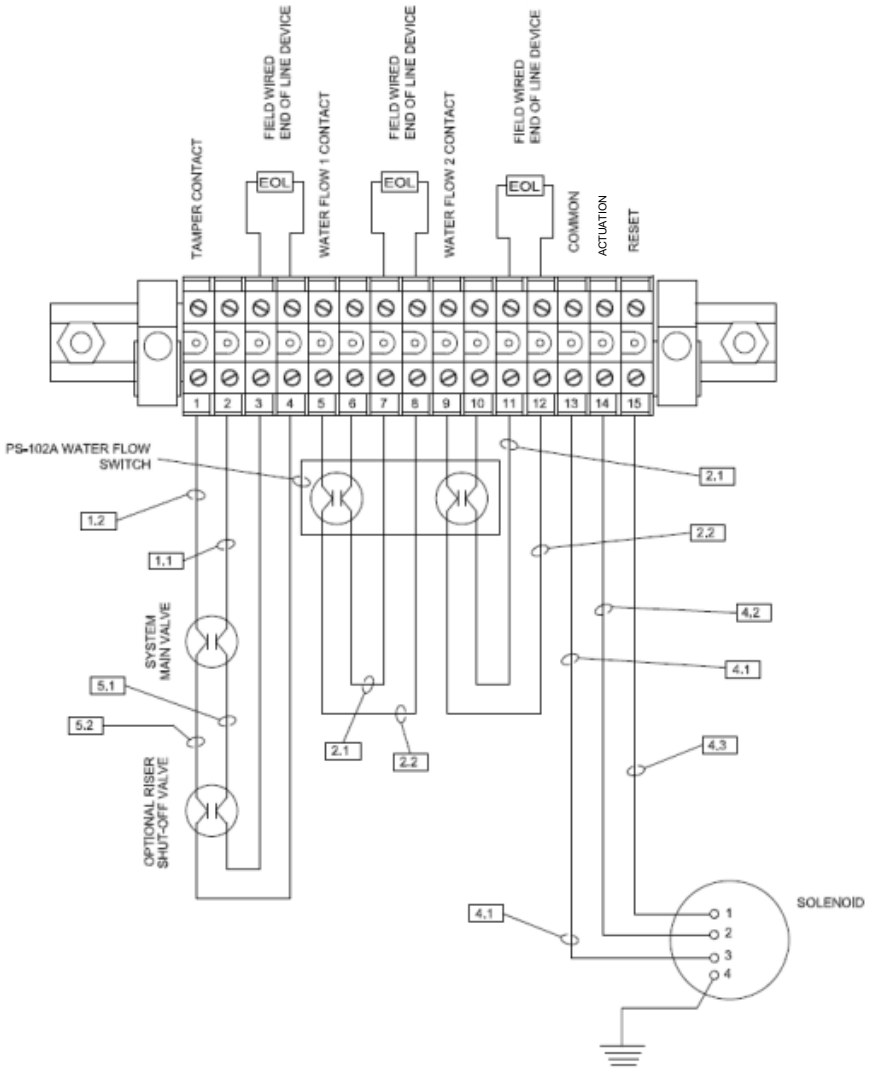
To modify the custom message labels, refer to the Custom Message section of the installation manual. To modify the programming of the panel, Refer to PFC-4410RC Custom Program Information for Water Based Extinguishing Installation, Operation and Instruction Manual for the Potter PFC-4410RC

APPENDIX A

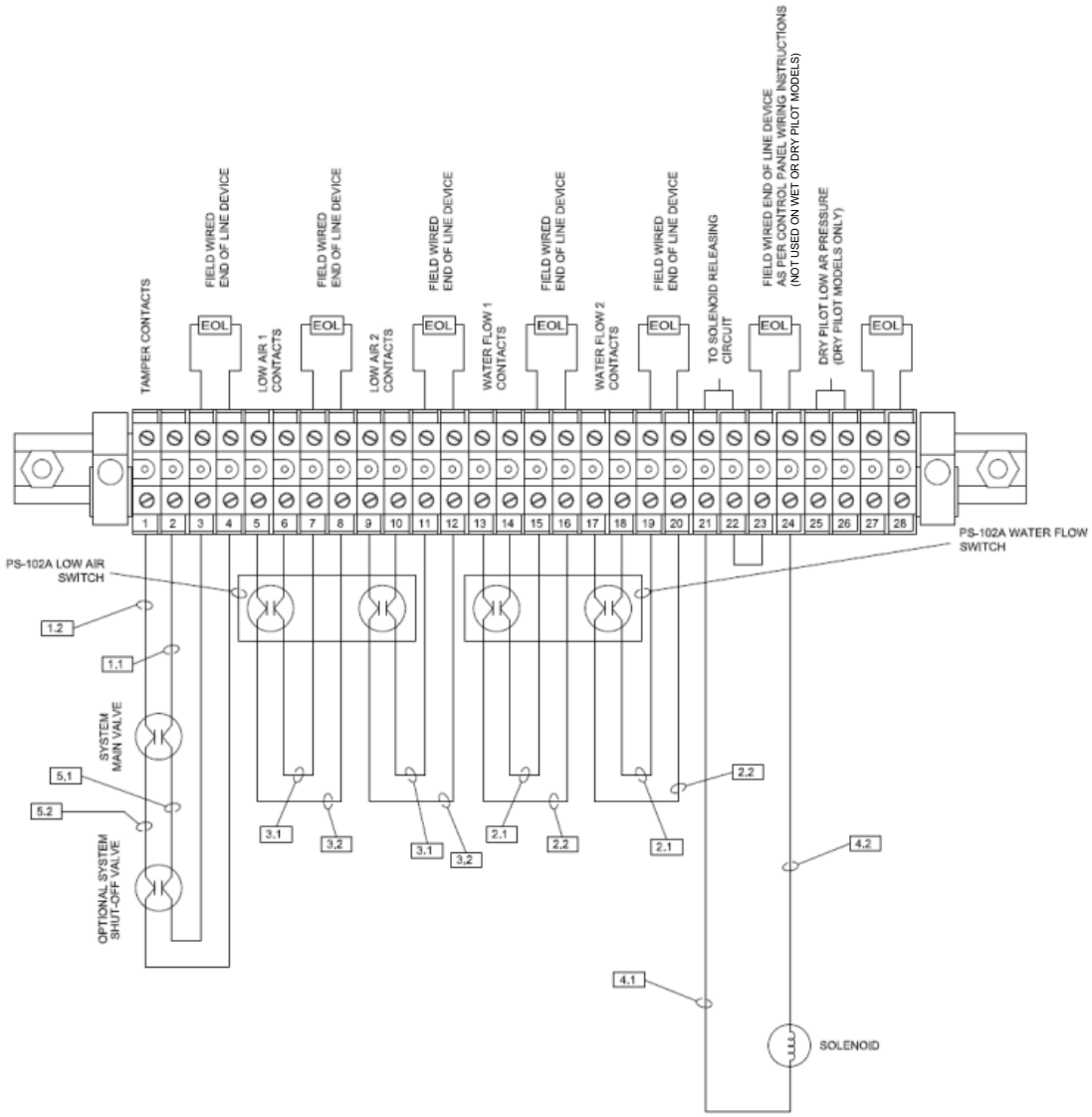
Electrical Wiring Schematics for Non-Integral Panel Models.



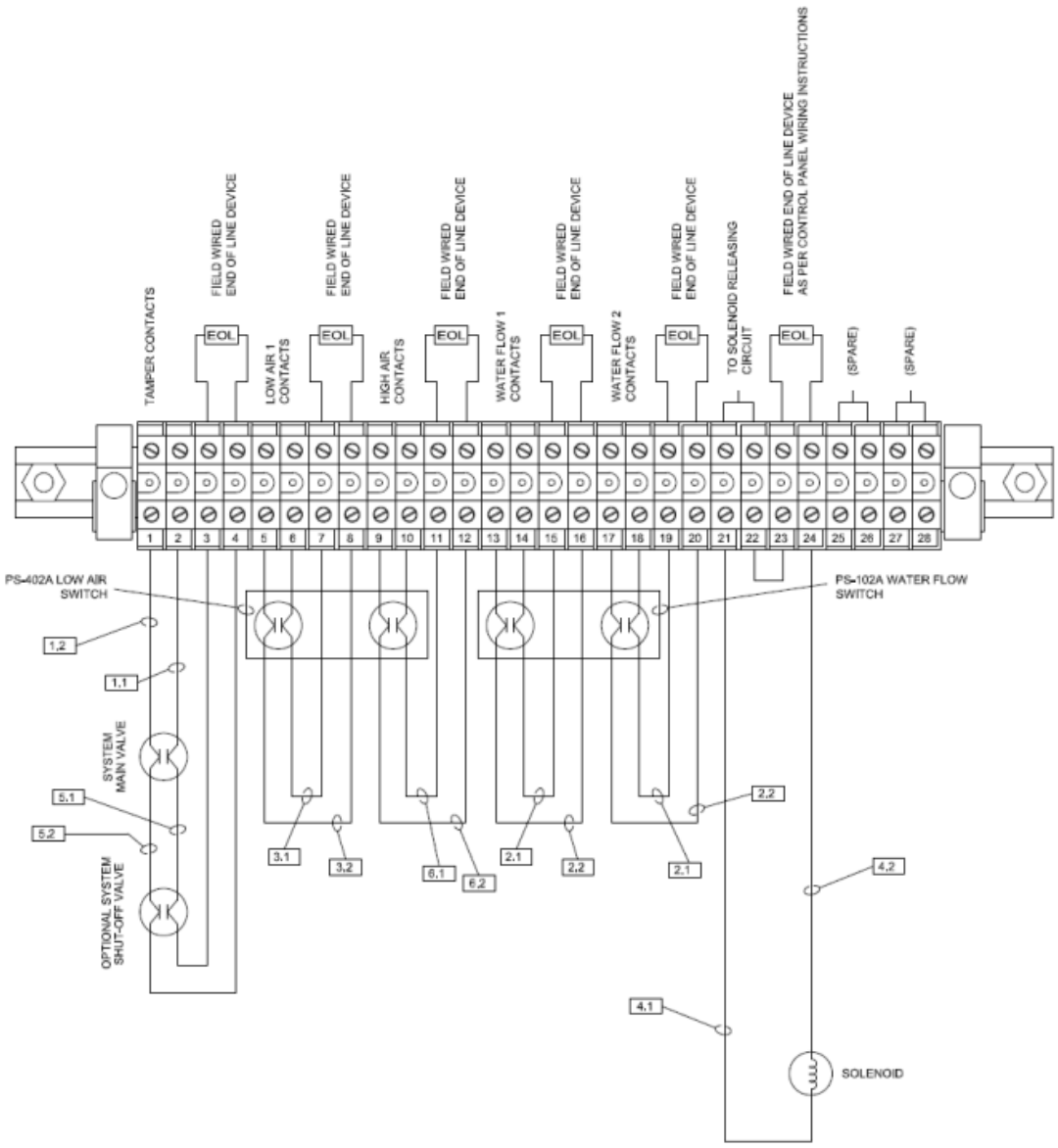
Deluge Release Wiring Schematic (Non-Integrated Releasing Panel)



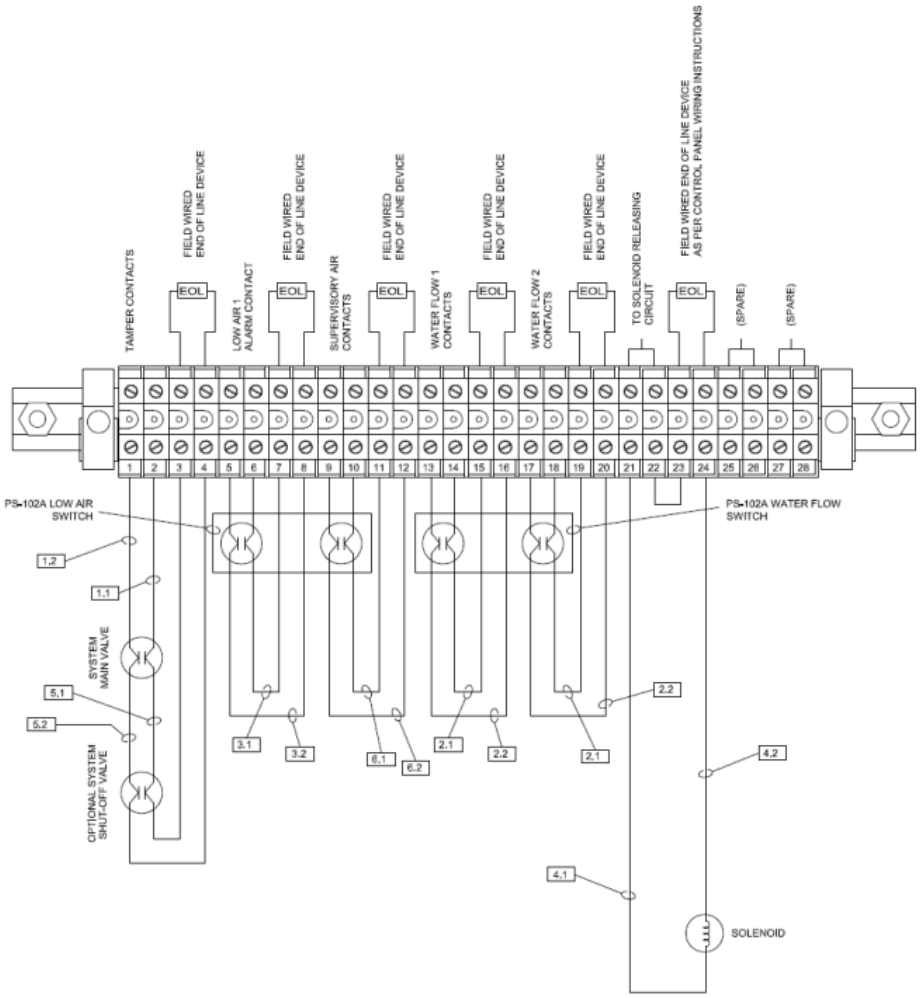
Remote Resetting and Remote Resetting Pressure Reducing Deluge Wiring Schematic (Non-Integrated Releasing Panel)



Single Interlock Wiring Schematic (Non-Integrated Releasing Panel)



Double Interlock Electric-Pneumatic Wiring Schematic (Non-Integrated Releasing Panel)



Double Interlock Electric-Electric Wiring Schematic (Non-Integrated Releasing Panel)

END