

Features

- Replaces supervisory and alarm pressures switch with single device
- Automated testing of supervisory and alarm pressure switches
- Integrated digital pressure transducers for accurate and repeatable results
- Monitors the room temperature via a built in media temperature sensor
- Built in media temperature sensor
- Easy to read display, displaying real time system pressure and temperature
- 4 user definable outputs
- Riser and wall mounting options supported



WARNING

- Installation must be performed by qualified personnel and in accordance with all national and local codes and ordinances.
- Shock hazard. Disconnect power source before servicing. Serious injury or death could result.
- Risk of explosion. Not for use in hazardous locations. Serious injury or death could result



Patents Pending

Description

The Potter Auto-Test Pressure Switch (ATPS) is an electronic pressure activated switch designed for the detection of a waterflow condition and an increase and/or decrease from normal system pressure in automatic fire sprinkler systems. Typical applications include: air/nitrogen supervised dry pipe and pre-action systems and deluge systems. The ATPS can be mounted on the riser or on other convenient surfaces in the riser room. The ATPS monitors the room temperature via a built in media temperature sensor.

The ATPS contains 4 sets of SPST contacts that are user definable for waterflow, air supervisory or temperature.

Local display allows for monitoring of system pressures, ambient temperature and status. Integrated passcode protected menus allow for setup and local testing. The ATPS includes presets for common installation pressures.

The ATPS may be remotely tested using the optional auto test control model ATC-1 or ATC-4 or the use of addressable relays and monitor modules as part of a listed addressable fire alarm panel.

When the auto test feature is initiated, the ATPS performs a self-test to ensure compliance with UL requirements regarding waterflow detection and supervisory pressure monitoring. In addition, the auto test feature ensures the integrity of the pressure transducers and piping from the system to the ATPS. A successful completion of the auto test will display TEST PASSED at the ATPS and will activate all sets of contacts assigned to a pressure setpoint. If the auto test detects a problem or if there is no changes in pressure, the ATPS will indicate a failed test locally and at the test switch, none of the contacts assigned to a pressure setpoint will operate and the ATPS will transmit a trouble signal to the fire alarm panel.

Technical Specifications

Conduit Entrances	1/2" conduit connections provided (4 total)
Output Contact Ratings	2A @ 30 VDC, resistive
Dimensions	10.0"x7.6"x6.6"
Restore Differential	2 psi
Enclosure	16-gauge CRS – powder coated w/ locking door.
Environmental Limitations	NEMA Type 2 for indoor dry use*
Power Requirements	<ul style="list-style-type: none"> • 24VDC Aux. power of fire panel or other Listed supply • Standby current: 65 mA • Alarm current: 95 mA • Auto Test Current: 500mA
Operational Pressure Range	0 to 275 PSI
Max system pressure	300 PSI
Temperature	0F to 140F (-18C to 60C)
Wire gauge range	12-22 AWG
Shipping Weight	15 lbs.

NOTICE

This document contains important information on the installation and operation of the Auto Test Pressure Switch. Please read all instructions carefully and notify the building owner or their authorized representative before any work is done on the fire sprinkler or fire alarm system. A copy of this document is required by NFPA 72 to be maintained on site.

*NEMA Type 2 Rating not validated by UL

Installation Instructions

NOTICE

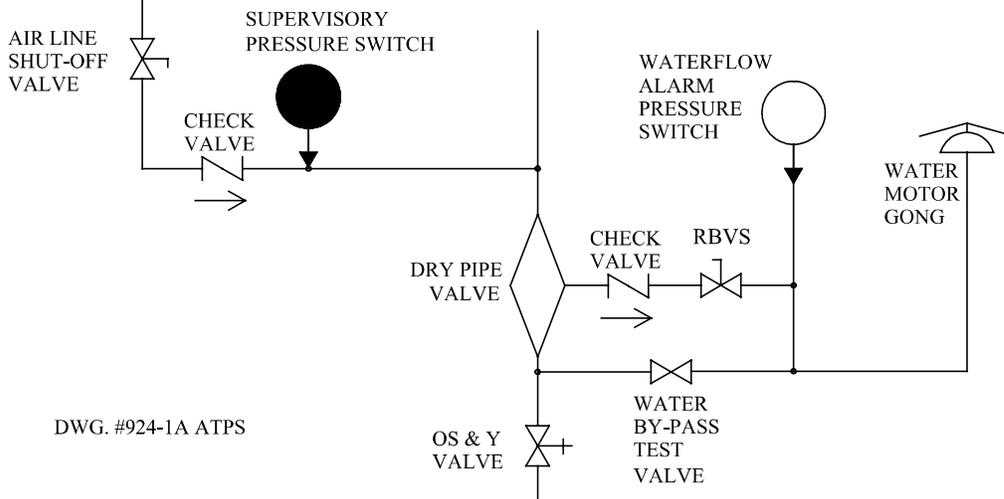
Not intended for use with electronic or mechanical accelerators on systems under 150 gal

Identify critical components

Refer to valve manufacture's instruction to identify the location of the below components, refer to figure 1 for typical system

1. Supervisory Switch Connection Point
 - a. Location where high air or low air supervisory switch would be installed
2. Waterflow Alarm Pressure Switch Connection Point
 - a. Location where alarm pressure switch or water motor gong would be installed
3. Water Bypass Test Valve
 - a. Valve used to test alarm switch and/or water motor gong

Fig. 1 Typical System



Mounting

1. General Mounting Guidelines

The unit should be mounted in a convenient location, approximately 5 feet from the floor where it will be accessible for testing and servicing. The ATPS includes convenient mounting points for attachment to a riser pipe or a wall. Supplied worm gear clamps fit pipe sizes 2-10".
NOTE: The ATPS shall be located within 20 feet of the water by-pass test valve identified earlier

- a. Riser Mounting:

- i. Insert the supplied worm gear clamps through the opening in the back of the ATPS housing.

⚠ CAUTION
Ensure device is properly supported during mounting.

- ii. Position the ATPS housing on front of riser, ensuring the location is within 30" of critical connection points identified earlier (or 10' when used with part number 0090266 Extended Hose Kit). Insert end of band into worm gear and tighten.

- iii. Repeat the process on second worm gear clamp.

- iv. Cut excess clamp material if desired.

⚠ CAUTION
Cut clamps may be sharp

- a. Wall Mounting

- i. Position the ATPS housing against the wall. Secure housing to mounting surface using #10 screws and appropriate anchors(not included). Ensure the location is within 30" of critical connection points (or 10' when used with P/N 0090266 Extended Hose Kit).

2. Supervisory Connection
 - a. Install the 1/2" NPT side of the first supplied hose into the Supervisory Switch connection point (both hoses are identical).
 - b. Attach the other end of the hose to the Supervisory inlet port on the bottom of the ATPS housing. Refer to Figure 2.
3. Alarm Connection
 - a. Install the 1/2" NPT side of the first supplied hose into the waterflow alarm pressure switch connection point (both hoses are identical).
 - b. Attach the other end of the hose to the alarm inlet port on the bottom of the ATPS housing. Refer to Figure 2.
4. Install the Alarm Test Solenoid Valve
 - a. Remove Water By-Pass Test Valve from trim.
 - b. Install supplied strainer and bypass test solenoid in place of valve removed in step 4a. Additional fittings not included may be required. Refer to Figure 2.

NOTICE

Ensure the strainer and solenoid valve are installed in the proper orientation to the direction of flow.

5. Vent Line
 - a. Install the supplied vent tubing to the vent on the bottom of the ATPS. Refer to Figure 2.

CAUTION

The vent line should be routed and secured so the exhaust is pointed in a safe direction.

- b. Route the vent to a drain or an appropriate location. Ensure the vent line is appropriately secured.

Fig. 2 Ports and connections

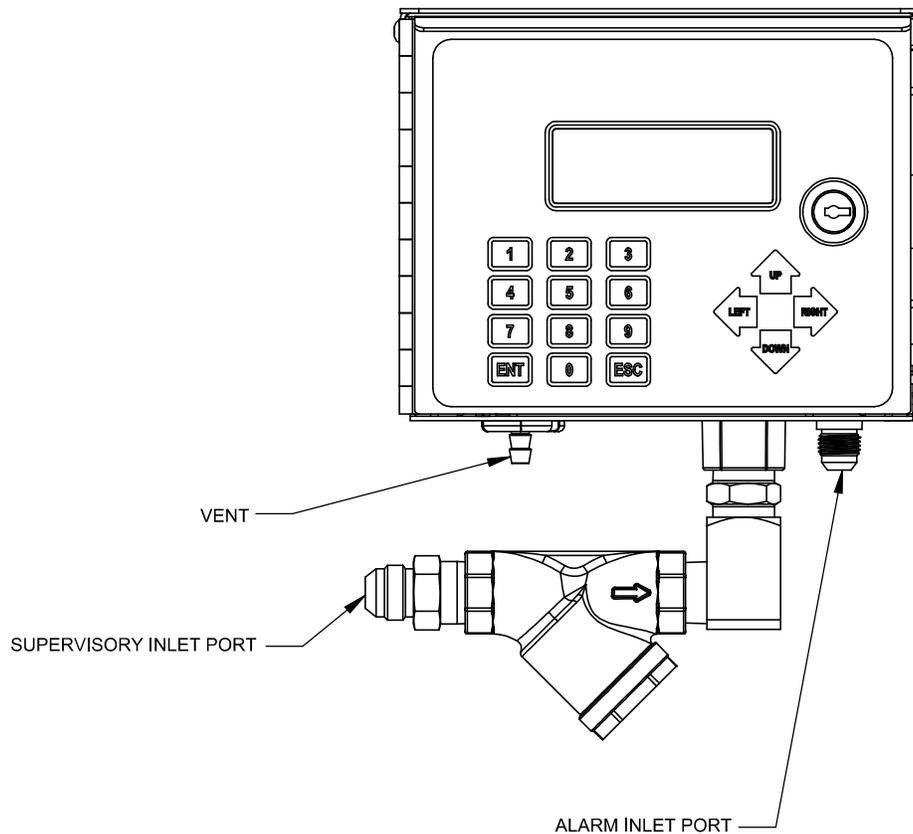
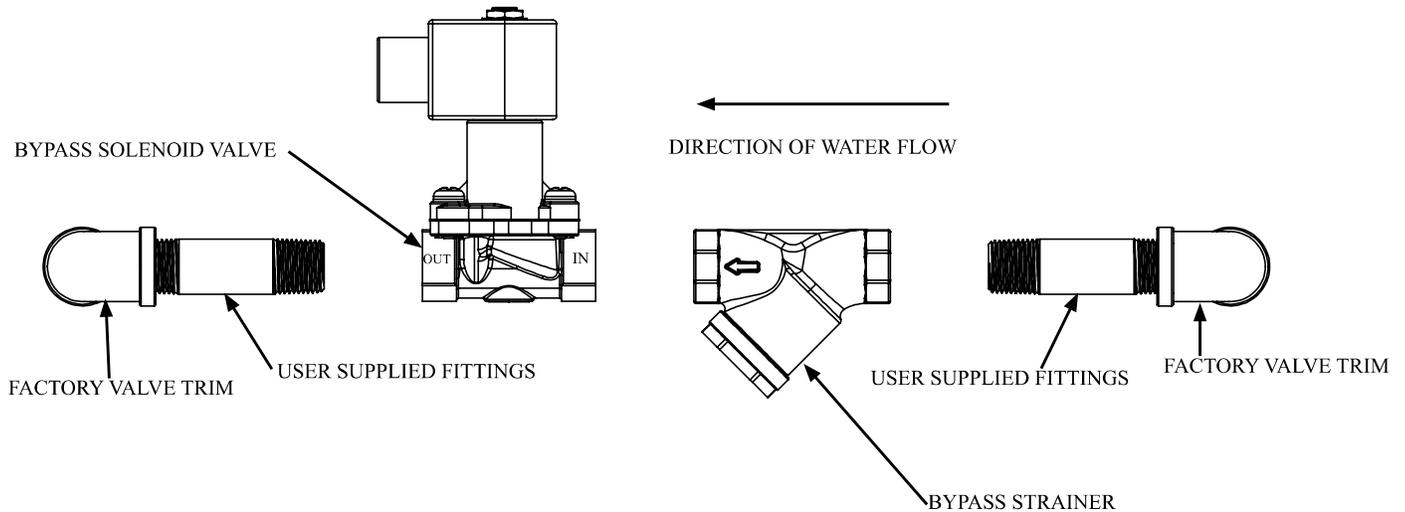
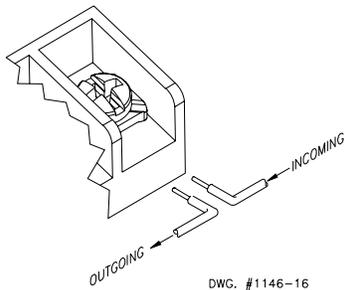


Fig. 3 Bypass solenoid and strainer orientation



Wiring

Fig. 4



WARNING

An uninsulated section of a single conductor should not be looped around the terminal and serve as two separate connections. The wire must be severed, thereby providing supervision of the connection in the event that the wire become dislodged from under the terminal. Failure to sever the wire may render the device inoperable risking severe property damage and loss of life.

Do not strip wire beyond 3/8" of length or expose an uninsulated conductor beyond the edge of the terminal block. When using stranded wire, capture all strands under the clamping plate.

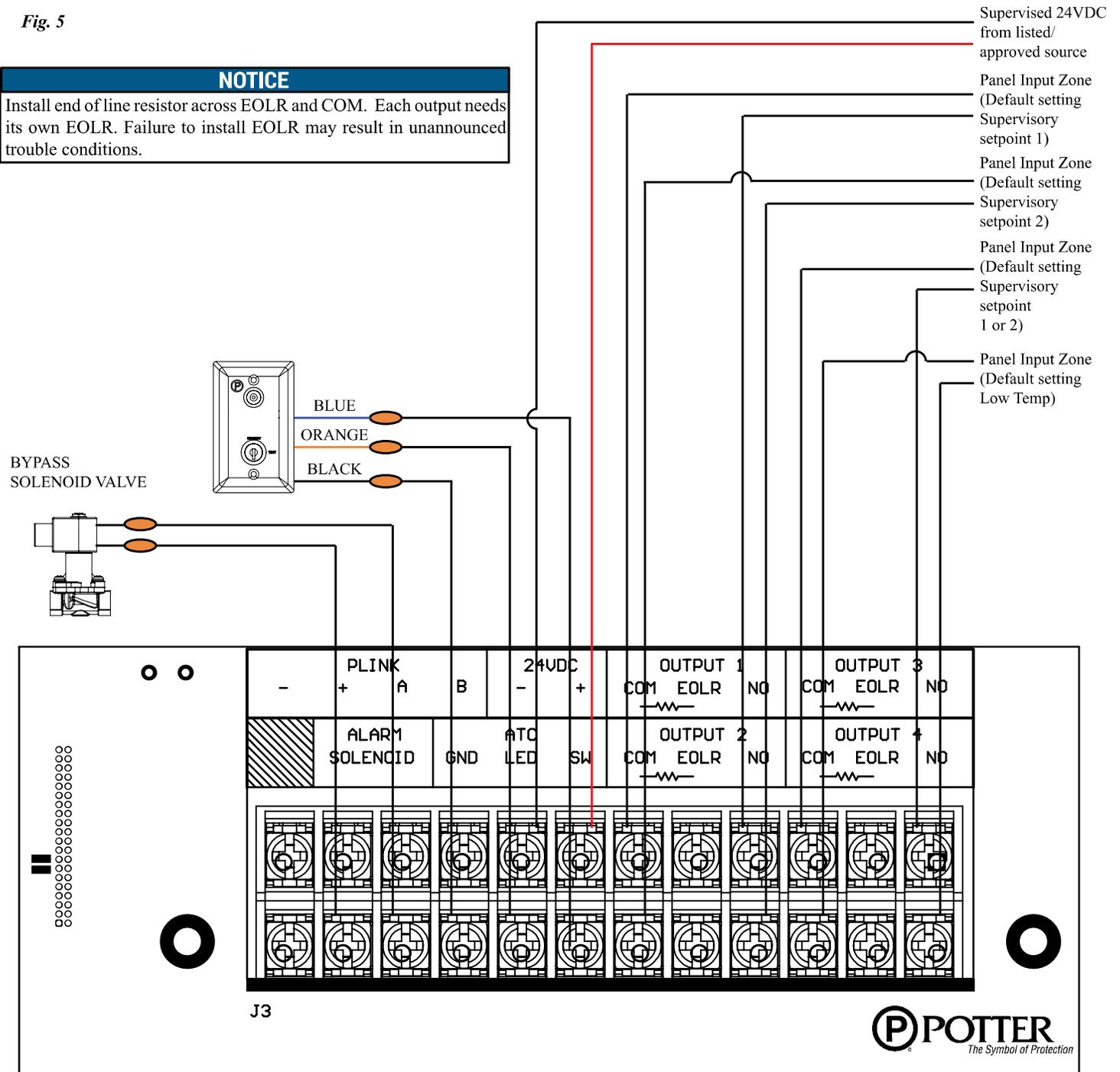
Wiring methods shall be in accordance with CSA C22.1 Canadian Electrical Code, Part I Safety Standard for Electrical Installations, Section 32 and with CAN/ULC-S524 Standard for Installation of Fire Alarm Systems, and with NFPA 70 - National Electrical Code, NFPA 72 - National Fire Alarm Code .

Wiring Diagram

Fig. 5

NOTICE

Install end of line resistor across EOLR and COM. Each output needs its own EOLR. Failure to install EOLR may result in unannounced trouble conditions.



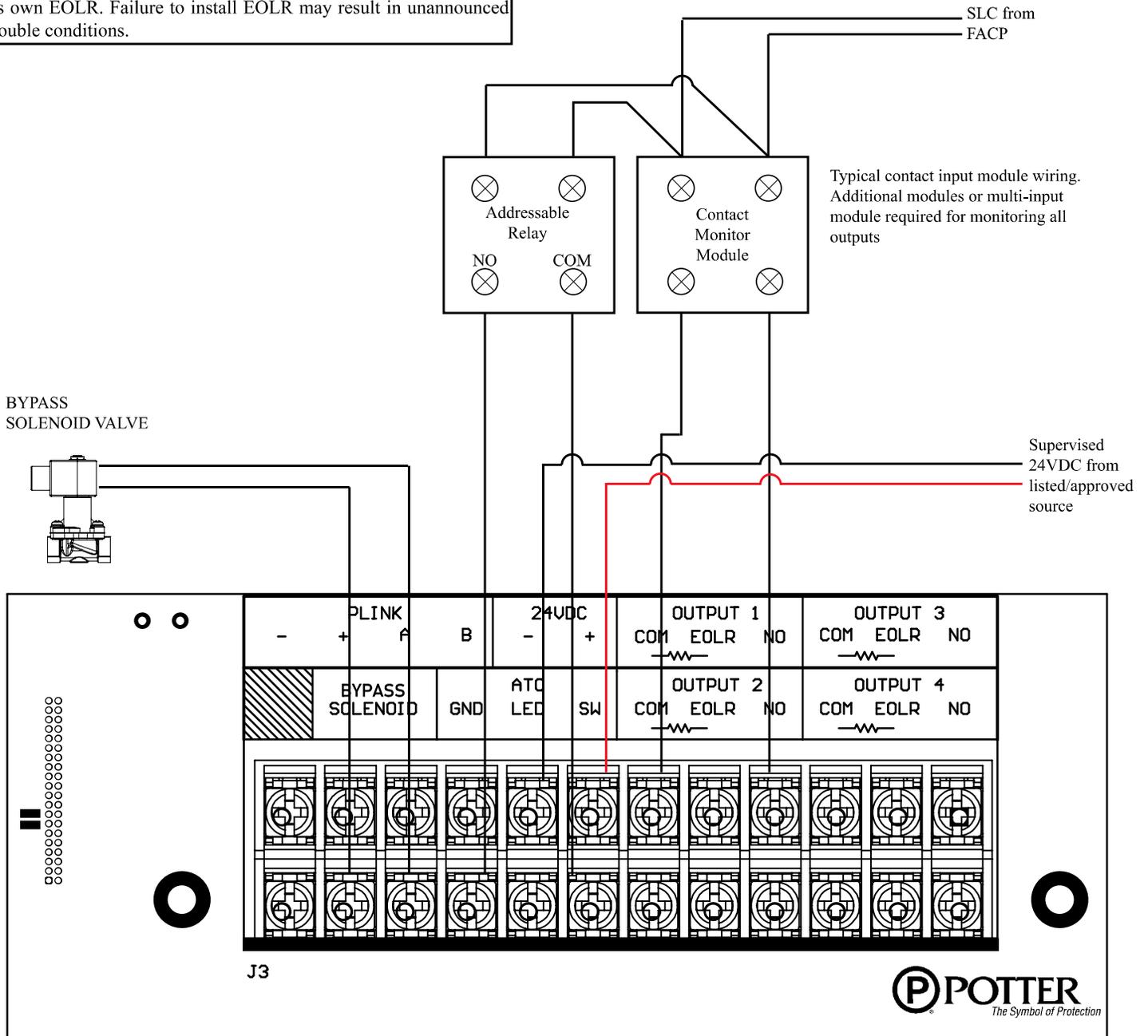
NOTE: P-Link terminals reserved for future use

Typical Electrical Connections For Operation by Addressable Fire Alarm Panel

Fig. 6

NOTICE

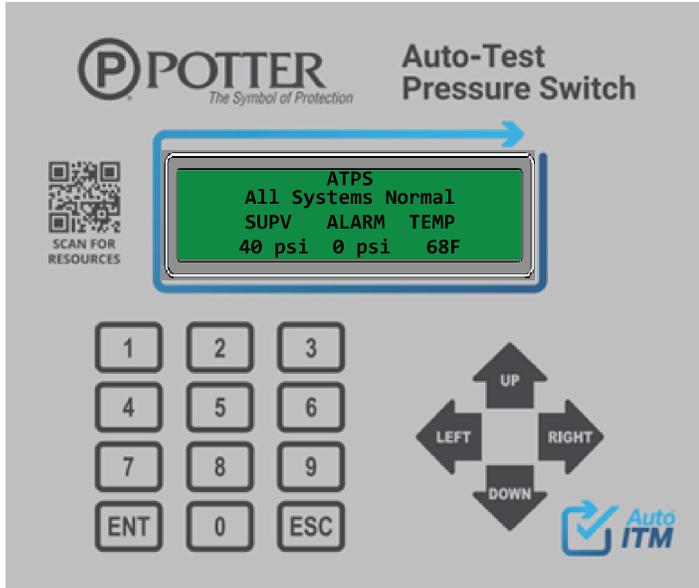
Install end of line resistor across EOLR and COM. Each output needs its own EOLR. Failure to install EOLR may result in unannounced trouble conditions.



NOTE: P-Link terminals reserved for future use

Operations

Fig. 7



Menu Navigation Keys

The arrow keys allow you to scroll or move through the control panel menus. The ENT and ESC keys may also be used to navigate through menus; they are located on the numeric keypad. The table shown below provides a summary of the navigation keys.

Push button	Description
	Moves/scrolls up or down through menus and events
	Scrolls to the left or right to display details, if any, of current menu item. Note: When the LCD panel displays a LEFT and/or RIGHT arrow, this indicates more information may be viewed.
	Displays the Main Menu or selects the current menu option. Note: The blinking ">" indicates the current menu option.
	Returns to previous menu or backs up to previous screen.

Numeric Keypad

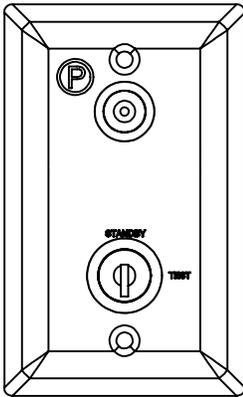
The numeric keypad allows you to enter user codes when required to access restricted functions.

Fig. 8



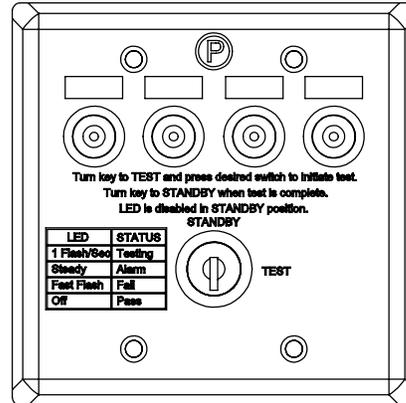
Auto Test Controller

Fig. 9



ATC-1
Mounts to standard single gang, handy, or switch box 4"L X 2 1/8"W X 1 7/8"D such as RACO 660 or equivalent.
Box not included.

Fig. 10

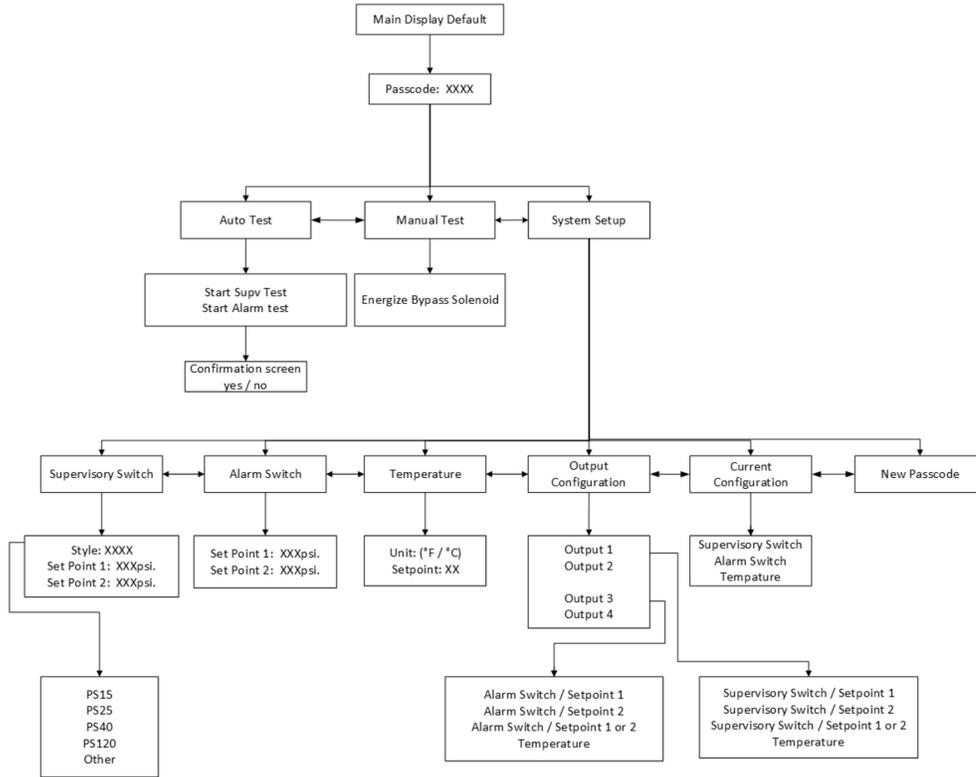


ATC-4
Mounts to standard two gang, handy box 4"L X 2 4"W X 2 1/8"D such as RACO 683 or equivalent.
Box not included.

The Auto Test Controller (ATC) consists of a momentary push button switch, a key switch to enable/disable the push button.

Programming

Fig. 11



Default Style Settings

Table 1

	PS10	PS15	PS20	PS40	PS120	OTHER
SP1	7	20	28	50	130	90
SP2	7	10	18	30	110	60
Adjustment Limits	4-15	5-30	10-60	10-60	35-225	4-250
Device Type	Alarm	Sup	Sup	Sup	Sup	SUP
Rotary Encoder Setting	1,2,3,4	1	2	3	4	

Default Output Configuration

- Output 1 = Supervisory Switch Set Point 1
- Output 2 = Supervisory Switch Set Point 2
- Output 3 = Alarm Switch Set Point 1 or Set Point 2
- Output 4 = Low Temperature

Adjusting Setpoints:

1. Press ENT to enter the menu
2. Enter passcode (default is 1111)
3. Select "SYSTEM SETUP"
4. Select "SUPERVISORY SWITCH"
5. Select style to load default switch set points, refer to table 1 for styles options and default setpoints.

NOTE: If style is followed by LOCKED the style has been defined by the rotary encoder. The setpoints can be adjusted within the adjustment range shown in TABLE 1. To unlock switch style, turn rotary encoder located on the back of the door to 0.

6. Scroll down to Setpoint 1 and press ENT to adjust

NOTE: SP1 must be greater than or equal to setpoint 2

NOTICE

Refer to TABLE 2 for minimum supervisory setpoint 2. Failure to define supervisory switch setpoint 2 above the pressure in the table corresponding to the systems supervisory pressure may result in a failed autotest.

Adjusting Output Configuration:

1. Press ENT to enter the menu
2. Enter passcode (default is 1111)
3. Select "SYSTEM SETUP"
4. Select "OUTPUT CONFIG"
5. Select "OUTPUT 1"
6. Select desired output operation refer to menu tree for options

Table 2

System Supervisory Pressure (PSI)	Supervisory Switch Setpoint 2 Minimum (PSI)
15	4
20	7
23	9
25	10
30	13
35	17
40	21
45	24
50	28
55	32
60	35
65	39
70	43
75	47
80	50
85	54
90	57
95	61
100	65
105	69
110	72
115	76
120	79
125	83
130	87

For system pressures above 130 psi, a max delta of 45 psi is allowed

Testing

Auto-Testing Operation:

The frequency of inspection and testing for the Model ATPS and its associated protective monitoring system shall be in accordance with applicable NFPA Codes and Standards and/or the authority having jurisdiction (manufacturer recommends quarterly or more frequently).

NOTICE

Notify the building owner or their representative before testing the ATPS. Testing of the ATPS will result in an alarm condition on the control panel which may be transmitted to the monitoring station. It may be possible to silence the trouble buzzer on the control panel by pressing the SILENCE or ACKNOWLEDGE button on the control panel. Water motor gongs if present may be activated during testing.

Testing using ATC

Turn the key on the ATC to test position and momentarily press button on ATC to initiate test. The LED will flash once per second during the test. ATPS is put through a simulated pressure test. If the test was successful, the LED will light for a few seconds and all sets of outputs on the ATPS set to pressure will briefly alarm, sending a waterflow and supervisory signal to the fire alarm panel. After the LED goes out, the key switch can be returned to Standby and the fire alarm panel reset. If the test was unsuccessful, the LED will flash 4 times per second, the outputs of the ATPS will initiate a trouble on the fire alarm panel by opening the circuit between the NO terminal and the End Of Line Resistor terminal. ATPS cannot be returned to "Normal state without a successfully completed auto test.

Testing Using ATPS user interface

1. Press ENT to enter the menu
2. Enter passcode (default is 1111)
3. Select "AUTO TEST"
4. Select "START SUPV TEST"
5. Select "YES" to start test
6. The ATPS is put through a simulated pressure test.
7. If the test passed the display will show "SUPV TEST PASSED" and sets of outputs associated with the supervisory switch will briefly alarm, sending a supervisory signal to the panel. If the test was unsuccessful, the display will show "SUPV TEST FAILED", the outputs of the ATPS will initiate a trouble on the fire alarm panel by opening the circuit between the NO terminal and the End Of Line Resistor terminal.
8. Repeat steps 1-6 for the alarm pressure switch selecting "START ALARM TEST"
9. If the test passed the display will show "ALARM TEST PASSED" and sets of outputs associated with the alarm switch will briefly alarm, sending an alarm signal to the panel. If the test was unsuccessful, the display will show "ALARM TEST FAILED", the outputs of the ATPS will initiate a trouble on the fire alarm panel by opening the circuit between the NO terminal and the End Of Line Resistor terminal.

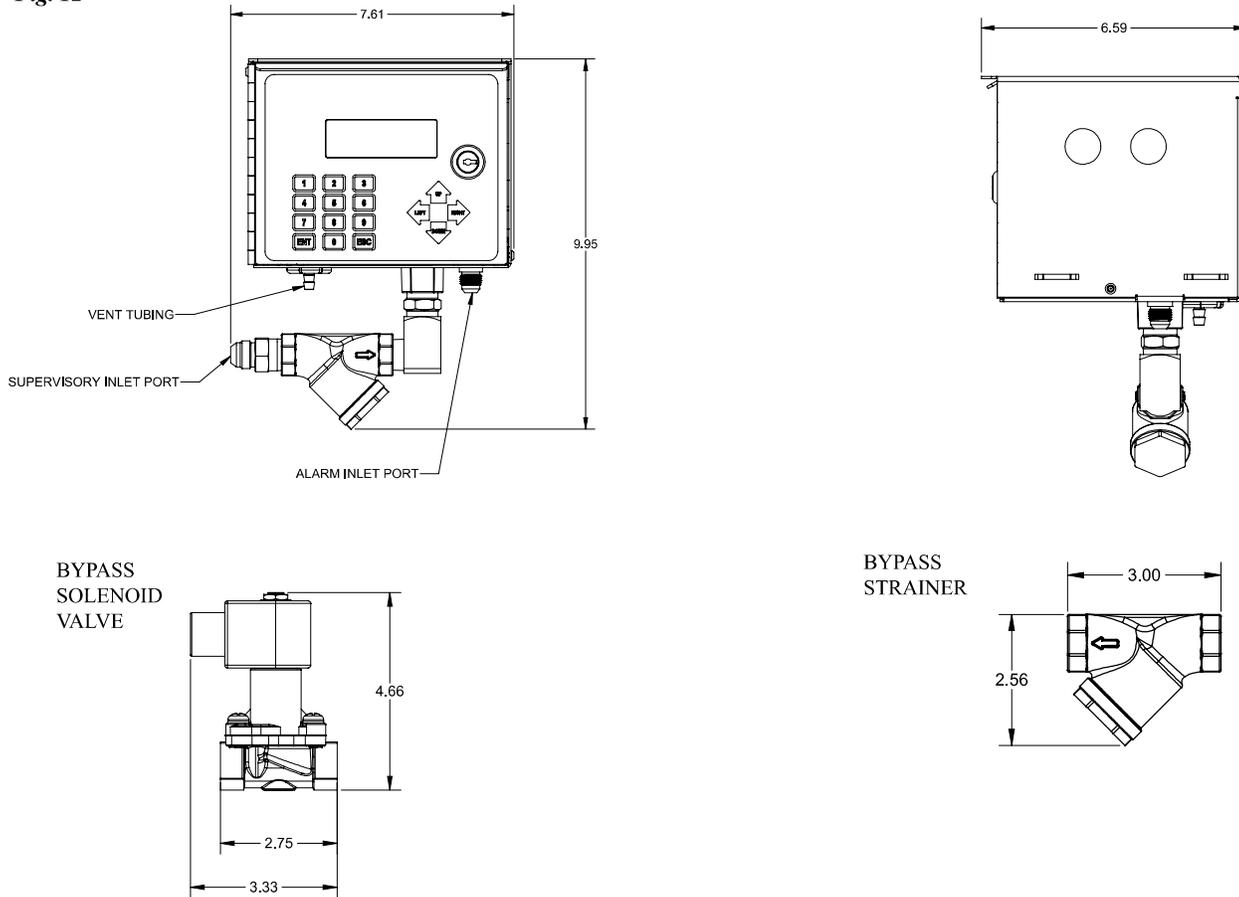
Maintenance

The strainers shall be inspected and cleaned. Remove the screen and flush with clean water. Use a wire brush if necessary to remove any particles trapped in the screen. The manufacture recommends annual or more frequently.

Dimensions

Outline Drawing & Dimensions

Fig. 12



Ordering Information

Model	Description	Stock No.
ATPS	Auto Test Pressure Switch	1341500
	Extended Hose Kit	0090266
ATC-1	Single Zone Test Control	1000221
ATC-4	Four Zone Test Control	1000224
SGB-R	Single Gang Box-Red	1000483
DGB-R	Double Gang Box-Red	1000484

NOTICE

Supervisory products have a normal service life of approximately 10 years. Service life may be reduced by local environmental conditions.