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Find the *United Electric J54-25* at our website: ***Click HERE***



54 Series Pressure Switches

Types
Enclosed: J54, J54A, H54
Skeleton: J54S, J54AS, H54S

UNITED ELECTRIC CONTROLS

Installation and Maintenance Instructions

Please read all instructional literature carefully and thoroughly before starting. Refer to the final page for the listing of Recommended Practices, Liabilities and Warranties.

GENERAL

BEFORE INSTALLING, CHECK THE SENSOR MODEL SELECTED FOR COMPATIBILITY BETWEEN THE PROCESS MEDIA AND THE SENSOR AND WETTED PARTS.

54 Series pressure switches are activated when a bellows, diaphragm or piston sensor responds to a pressure change. This response, at a pre-determined set point, actuates one or two snap-acting switch(es), converting the pressure signal into an electrical signal. Control set point may be varied by turning the adjustment hex on "J" types or a reference adjustment dial on "H" types. (See Adjustment -PART II).

PROOF PRESSURE* LIMITS STATED IN THE LITERATURE AND ON NAMEPLATES MUST NEVER BE EXCEEDED, EVEN BY SURGES IN THE SYSTEM. OCCASIONAL OPERATION OF UNIT UP TO PROOF PRESSURE IS ACCEPTABLE (E.G., START-UP, TESTING). CONTINUOUS OPERATION SHOULD NOT EXCEED THE DESIGNATED OVER RANGE PRESSURE**.

*Proof Pressure - the maximum pressure to which a pressure sensor may be occasionally subjected, which causes no permanent damage (e.g., start-up, testing). The unit may require re-gapping.

**Over Range Pressure - the maximum pressure to which a pressure sensor may be continuously subjected without causing damage and maintaining set point repeatability.

THESE PRODUCTS DO NOT HAVE FIELD REPLACEABLE PARTS.

Please refer to product bulletin for product specifications. Product bulletins may be found at www.ueonline.com

Part I - Installation

Tools Needed
Adjustable Wrench
Screwdriver

MOUNTING

ALWAYS LOCATE UNITS WHERE SHOCK, VIBRATION AND TEMPERATURE FLUCTUATIONS ARE MINIMAL. DO NOT MOUNT UNIT IN AMBIENT TEMPERATURES EXCEEDING PUBLISHED LIMITS.

UNIT MAY BE MOUNTED IN ANY POSITION PROVIDED THE ELECTRICAL CONDUIT IS NOT FACING UP (ON ENCLOSED TYPES). THE RECOMMENDED MOUNTING POSITION IS VERTICAL (PRESSURE CONNECTION FACING DOWN), SPECIFICALLY WHERE HEAVY CONDENSATION IS EXPECTED.

Enclosed Versions J54, J54A, and H54

Remove cover by removing the one captive screw located on the front of the cover.

Pipe Mounting
Mount the switch directly to the line via the NPT pressure connection.

Vertical Surface Mount
Two holes for #10 screws are provided in the bracket plate (see Dimensions page).

Conduit Connection
A 7/8" diameter hole has been provided in the bracket plate for mounting a conduit fitting.

ALWAYS HOLD A WRENCH ON THE PRESSURE HOUSING HEX WHEN MOUNTING UNIT. DO NOT TIGHTEN BY TURNING ENCLOSURE. THIS WILL DAMAGE SENSOR AND WEAKEN SOLDER OR WELDED JOINT.

Skeleton Versions J54S, J54AS H54S

Pipe Mounting
Mount the switch directly to the line via the NPT pressure connection.

Vertical Surface Mount
Two openings for #6 screws are provided in the rear of the bracket plate. (See Figure 1).

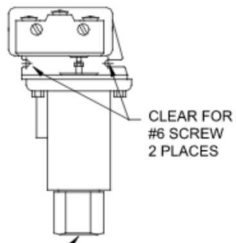


Figure 1

WIRING

DISCONNECT ALL SUPPLY CIRCUITS BEFORE WIRING UNIT. WIRE UNITS ACCORDING TO NATIONAL AND LOCAL ELECTRICAL CODES. MAXIMUM RECOMMENDED WIRE SIZE IS 14 AWG. THE RECOMMENDED TIGHTENING TORQUE FOR FIELD WIRING TERMINALS IS 7 TO 17 IN-LBS.

ELECTRICAL RATINGS STATED IN LITERATURE AND ON NAMEPLATES MUST NEVER BE EXCEEDED - OVERLOAD ON A SWITCH CAN CAUSE FAILURE ON THE FIRST CYCLE.

Bring wires up to the terminals from the rear, so that wires lay along insulator. The three switch terminals are clearly labeled "common," "normally open" and "normally closed". For optional switches supplied with leadwires, the following color coding applies:

	Manual Reset *(Option 1530)*
	SPDT
Common	Violet
Normally Open	Blue
Normally Closed	Black

Part II - Adjustments

Tools Needed
1/4" open end wrench
Flatblade screwdriver

Uncalibrated Single Switch Versions J54, J54S

Mount switch onto a calibrated pressure source or vacuum source for model 22 and 126. Secure fitting to source tight enough to prevent leaks. Use pipe sealant or Teflon® tape to ensure tight seal. Apply tightening torque to the fitting only.

USING THE SENSOR HOUSING OR BRACKET TO TIGHTEN THE FITTING TO THE SOURCE WILL RESULT IN DAMAGE TO THE SWITCH.

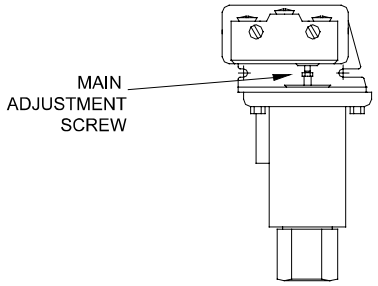


Figure 2

Using a 1/4" open end wrench, turn main adjustment screw right (counter-clockwise) to lower set point or left (clockwise) to raise set point. (See Figure 2).

ALWAYS CHECK SET POINTS AFTER ANY ADJUSTMENTS ARE MADE.

Calibrated Single Switch Versions H54, H54S

Turn the reference dial to desired set point by aligning setting on dial with dowel pin. (See Figure 3).

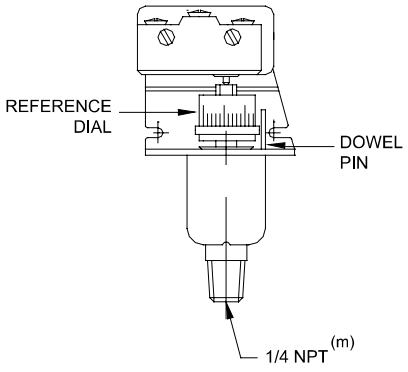


Figure 3

Uncalibrated Dual Switch Versions J54A, J54AS

Mount switch onto a calibrated pressure source or vacuum source for model 22 and 126. Secure fitting to source tight enough to prevent leaks. Use pipe sealant or Teflon® tape to ensure tight seal. Apply tightening torque to the fitting only.

USING THE SENSOR HOUSING OR BRACKET TO TIGHTEN THE FITTING TO THE SOURCE WILL RESULT IN DAMAGE TO THE SWITCH.

High Set

Using a 1/4" open end wrench, slowly turn the main adjustment screw towards the right (counter-clockwise) until the "Hi Set" switch transfers. If switch does not transfer, turn the main adjustment screw towards the left (clockwise) until the switch transfers, and then towards the right until it transfers again. The "Hi Set" switch should now transfer on "pressure rise." If it is desired that the switch transfer on "pressure fall," turn the main adjustment screw towards the left until the switch transfers again (see Figure 4).

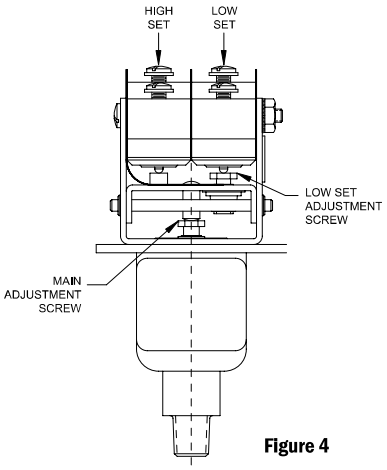


Figure 4

Low Set

Using a 1/4" open end wrench, slowly turn the low set adjustment screw towards the left until the switch transfers. If switch does not transfer, turn the low set adjustment screw towards the right until the switch transfers, and then towards the left until it transfers again. The "Low Set" switch is now set to actuate on "pressure fall." If it is desired that the "Low Set" switch transfers on "pressure rise," turn the low set adjustment screw towards the right until the switch transfers (see Figure 4).

Fine Adjustment

If it is necessary to "fine adjust" the "High Set" setting, raise the pressure source to a value slightly higher than the "High Set" pressure. Not the pressure at which the switch transfers (on rise). Lower the pressure source and note when switch transfers again (on fall). Turn the main adjustment screw towards the left to raise or towards the right to lower the settings.

If necessary, perform the same "fine adjustment" procedure outlined above for the "Low Set" switch.

Manual Reset Button

Types J54 or H54 with option code 1530 incorporate a snap switch which when actuated, remains actuated until the pressure decreases and the reset button (located on top of the control) is manually depressed to reset the switch.

Adjustable Differential Models

Control types with option code 1520 or models 16008 and 16009 incorporate a snap switch with internal adjustment wheel. Turning this wheel raises or lowers the pressure rise set point. The fall set point remains constant. To use the adjustable deadband switch:

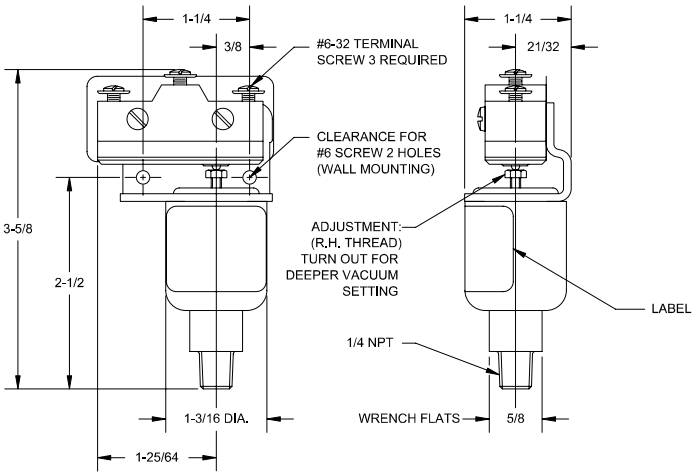
1. Determine set point and deadband values. For example, a rising set point of 20 psi with a deadband value of 6 psi.
2. Set the falling set point at desired deadband value (determined by subtracting the deadband value from the desired set point) using the standard adjustment screw as outlined above. Using the example from step 1, $20 - 6 = 14$, so you would set the fall set point at 14 psi. This is your constant.
3. Set your deadband by turning the adjustment wheel left to raise or right to lower the set point. Using the example from step 1, turn the wheel left or right until 20 psi is achieved. This is your set point.

Consult UE for additional information.

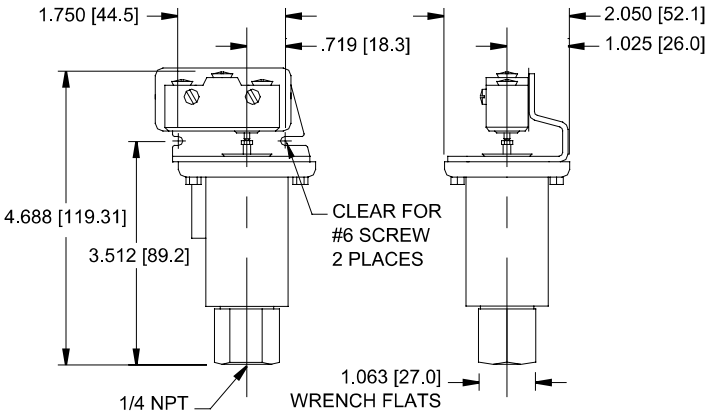
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Dimensions

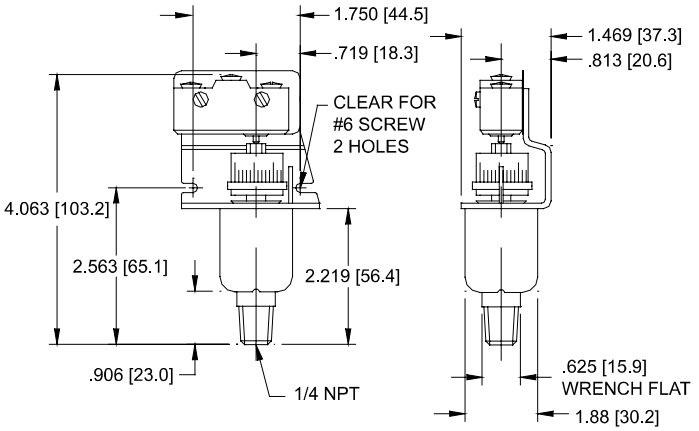
Dimensional drawings for all models may be found at www.ueonline.com.



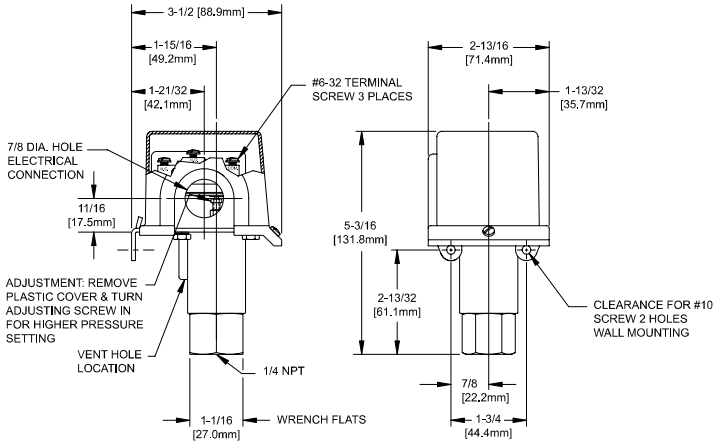
Type J54S models 22-28, & 16008
(adjustable deadband switch not shown)



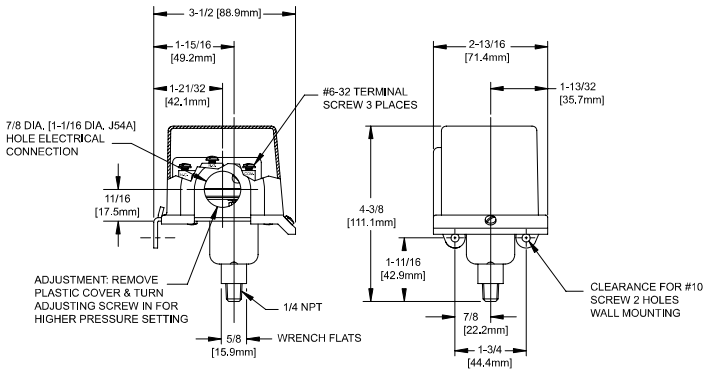
Type J54S models 610-614



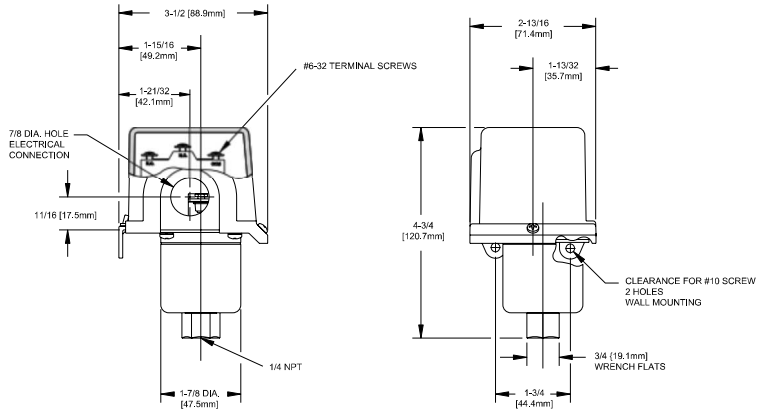
Type H54S models 22-28



Type J54 models 610-614



Type H54, J54 & J54A models 22-28, & 16009



Type H54, J54, & J54A models 126-164

RECOMMENDED PRACTICES AND WARNINGS

United Electric Controls Company recommends careful consideration of the following factors when specifying and installing UE pressure and temperature units. Before installing a unit, the Installation and Maintenance instructions provided with unit must be read and understood.

- To avoid damaging unit, proof pressure and maximum temperature limits stated in literature and on nameplates must never be exceeded, even by surges in the system. Operation of the unit up to maximum pressure or temperature is acceptable on a limited basis (e.g., start-up, testing) but continuous operation must be restricted to the designated adjustable range. Excessive cycling at maximum pressure or temperature limits could reduce sensor life.
- A back-up unit is necessary for applications where damage to a primary unit could endanger life, limb or property. A high or low limit switch is necessary for applications where a dangerous runaway condition could result.
- The adjustable range must be selected so that incorrect, inadvertent or malicious setting at any range point cannot result in an unsafe system condition.
- Install unit where shock, vibration and ambient temperature fluctuations will not damage unit or affect operation. When applicable, orient unit so that moisture does not enter the enclosure via the electrical connection. When appropriate, this entry point should be sealed to prevent moisture entry.
- Unit must not be altered or modified after shipment. Consult UE if modification is necessary.
- Monitor operation to observe warning signs of possible damage to unit, such as drift in set point or faulty display. Check unit immediately.
- Preventative maintenance and periodic testing is necessary for critical applications where damage could endanger property or personnel.
- Electrical ratings stated in literature and on nameplate must not be exceeded. Overload on a switch can cause damage, even on the first cycle. Wire unit according to local and national electrical codes, using wire size recommended in installation sheet.
- Do not mount unit in ambient temp. exceeding published limits.

LIMITED WARRANTY

Seller warrants that the product hereby purchased is, upon delivery, free from defects in material and workmanship and that any such product which is found to be defective in such workmanship or material will be repaired or replaced by Seller (Ex-works, Factory, Watertown, Massachusetts. INCOTERMS); provided, however, that this warranty applies only to equipment found to be so defective within a period of 24 months from the date of manufacture by the Seller. Seller shall not be obligated under this warranty for alleged defects which examination discloses are due to tampering, misuse, neglect, improper storage, and in any case where products are disassembled by anyone other than authorized Seller's representatives. EXCEPT FOR THE LIMITED WARRANTY OF REPAIR AND REPLACEMENT STATED ABOVE, SELLER DISCLAIMS ALL WARRANTIES WHATSOEVER WITH RESPECT TO THE PRODUCT, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

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UE specifications subject to change without notice.

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