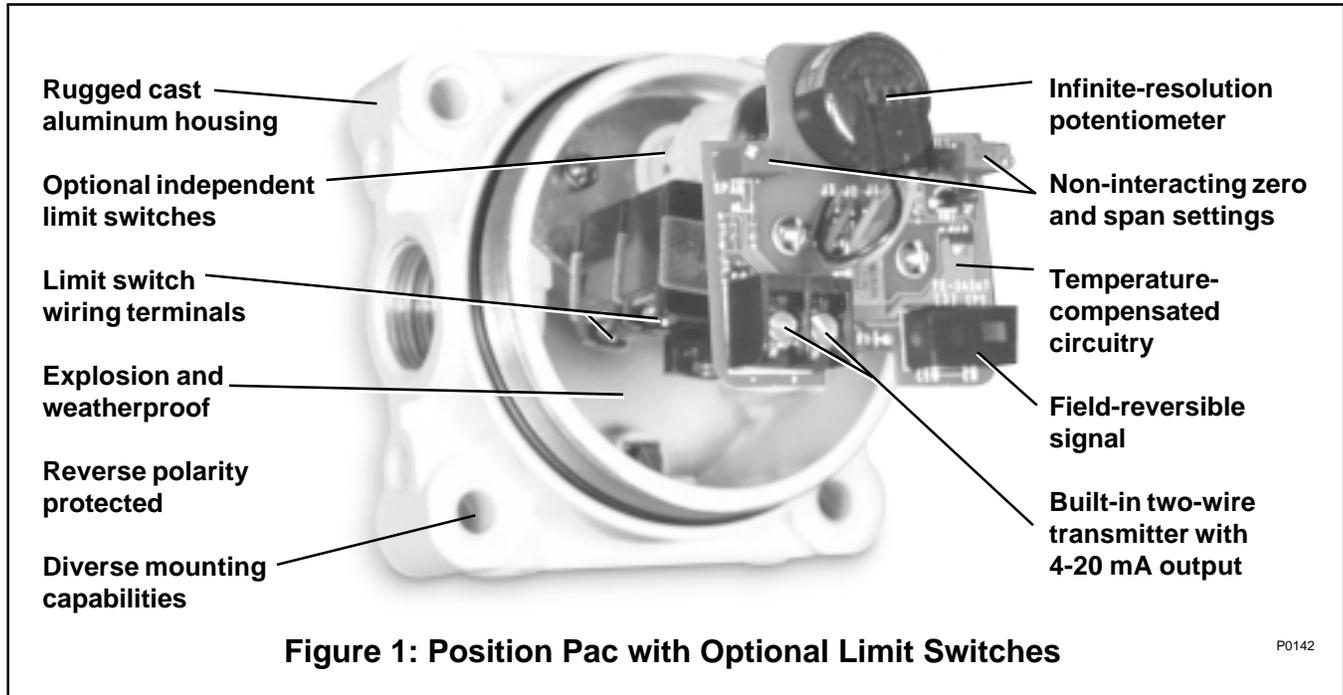




**FLOWSERVE**

*Valtek Position Pac*

## Valtek Position Pac Design Features



The Valtek® Position Pac™ series position transmitter and switches deliver the level of accurate position sensing required by today's modern process control systems.

Position Pac contains an infinite resolution potentiometer which senses the precise position of a valve coupled with a two-wire transmitter, sending a continuous 4-20 mA signal to a remote indicating device.

Position Pac is versatile. The output can be easily adjusted from 5 to 90 degree input rotation with multi-turn zero and span adjustments. Reversing the action is easily accomplished by a switch on the circuit board. Position Pac can be ordered with the analog 4-20 mA position transmitter alone or accompanied by two independently adjustable (SPDT) limit switches. Models are also available with two or four independently adjustable limit switches only.

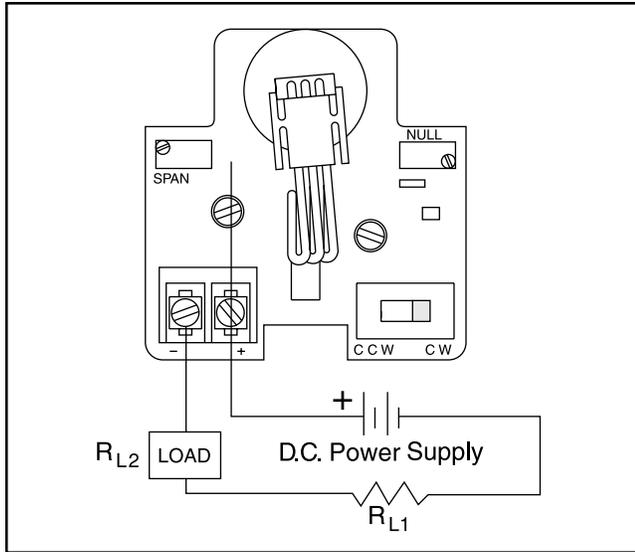
The rugged cast aluminum housing of the Position Pac is explosion proof, in addition to weather and dust-proof protected. The transmitter circuit is conformal coated for humidity protection, and incorporates solid-state integrated circuitry with few components for high reliability.

Mounting hardware is available for the standard Valtek linear and rotary actuators. Position Pac can also be used for position indication on other valves and mechanical devices such as louvers or dampers.

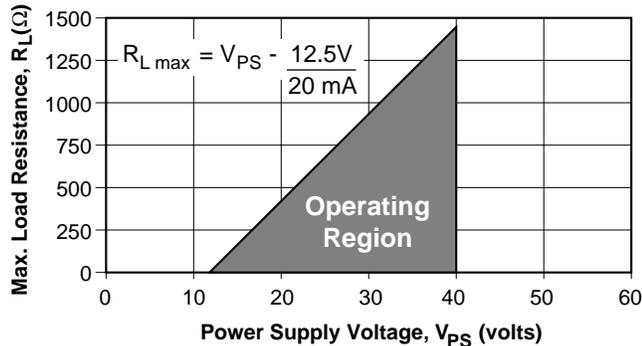
### FEATURES AND ADVANTAGES

- **High accuracy** transmits linear signal within  $\pm 1.0$  percent throughout the range.
- **Two-wire design** reduces field wiring costs.
- **Easy field adjustments** include non-interacting multi-turn zero and span settings, reverse polarity action switch, clockwise or counterclockwise operation.
- **Rugged cast aluminum housing** features baked-on epoxy powder paint coating and Buna-N O-ring seals, insuring explosion proof safety along with weather-proof and dust tight protection.
- **Shock and vibration resistant** withstands acceleration forces to 483 ft/sec<sup>2</sup>.
- **Independent operation** is maintained between limit switches and transmitter.
- **Multiple usage** may be installed on linear and rotary actuators, louvers, dampers and other devices.
- **Stable operation** insensitive to ambient temperature swings and power supply fluctuations.
- **Adjustable span** from 5° to 90° of shaft rotation.
- **Reverse polarity protected** insures trouble-free installation.

# Valtek Position Pac Specifications



**Figure 2: Wiring Diagram**



**Figure 3: Power Supply Requirements**

**Table I: Specifications**

**Analog Output**

Power Supply Range	12.5 to 40 VDC (24V DC typical)
Maximum Load Resistance (see Figure 3)	Maximum Resistance (ohms) = $\frac{\text{Supply Voltage} - 12.5}{0.02}$
Current Signal Output	4-20 mA
Span	Adjustable from 5° to 100° of angular rotation
Null	4 mA position may be set at any angular position
Linearity	±1.0% full-scale*
Repeatability	±0.25% full-scale
Hysteresis	±1.0% full-scale
Operating Temperature Range	-40° to 185° F (-40° to 85° C)
Ambient Temperature Range	For a 100° F (38° C) change in ambient temperature, maximum zero shift is ±0.4% full scale, maximum span shift is ±0.7% full scale
Power Supply	Output signal changes less than 0.05% when supply voltage is varied between 12.5 and 40 volts dc

**Limit Switches**

(SPDT) UL/CSA Rating (L23)	20 amps, 125, 250, 480 VAC, ind. and res. 1 Hp, 125 VAC; 2 Hp, 250 VAC, 0.5 amp, 125 VDC; 0.25 amp, 250 VDC res.
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**Mechanical**

Input motion	±105° from the center; spring loaded to return to the center
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\* Linearity is ±1.0% for 90° rotary shaft input. When mounted to linear travel valves, linearity is dependent on linkage design and stroke length. Typical linearity is ±1.5% full-scale on Valtek Mark One control valves.

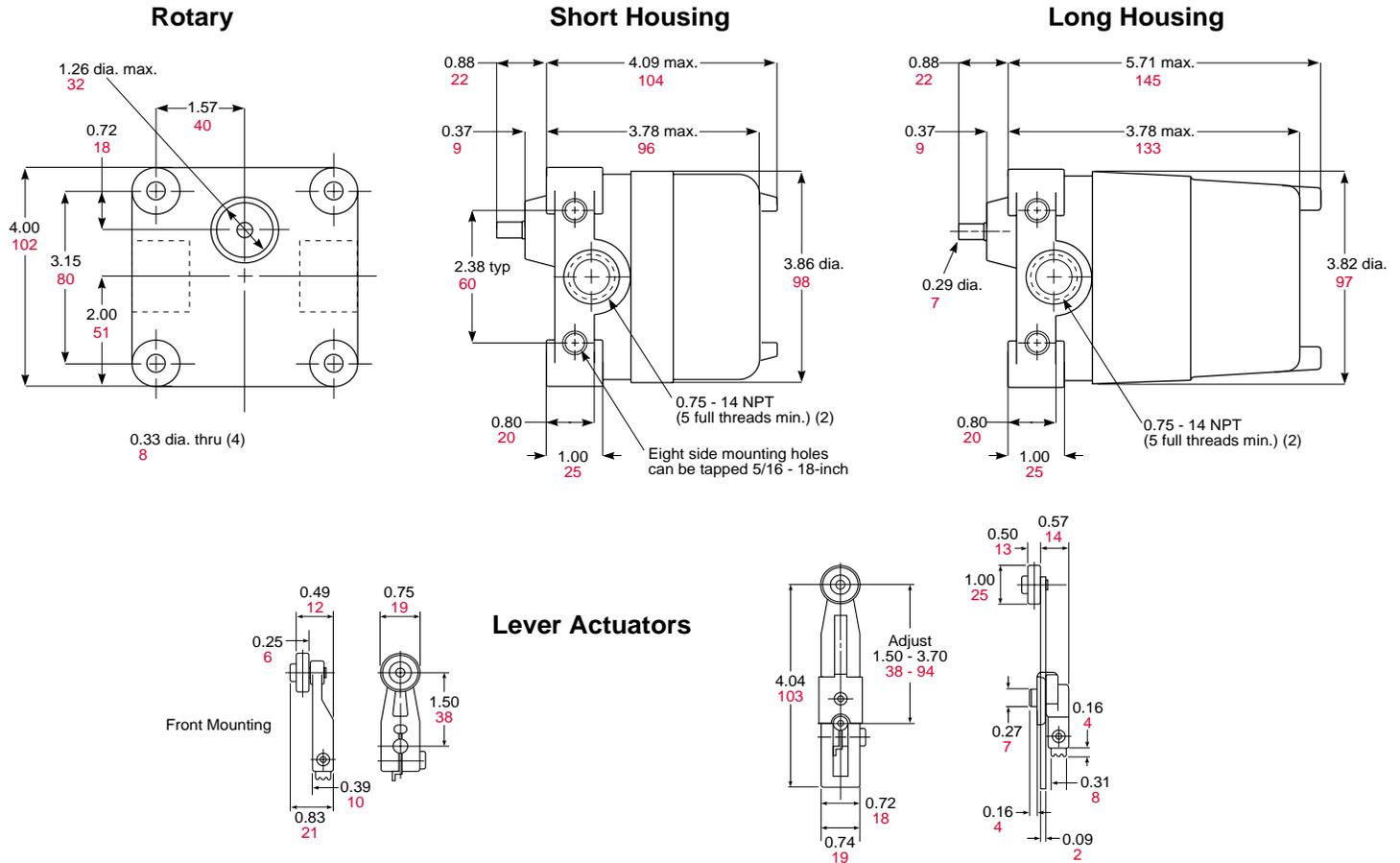
**Table II: Model Configuration**

Model	Description	Electrical Area								CENELEC Approval	Rating	Sealed Switches	Housing Size
		NEMA 4	Explosion Proof										
			Class I Division 1 & 2 (Group)				Class II Division 1 & 2 (Group)						
		A	B	C	D	E	F	G					
TH2	Analog Transmitter with two hermetically sealed SPDT switches								Pending	UL	Yes	Long	
H2TS	Two hermetically sealed SPDT switches with terminal switch									UL	Yes	Long	
TX	Analog transmitter									UL/CSA	No	Short	
TA2	Analog transmitter with two SPDT switches									UL	No	Long	
A2	Two SPDT switches									UL	No	Short	
A4	Four SPDT switches									UL	No	Long	
A2TS	Two SPDT switches with terminal strip									UL	No	Long	

\* Application Note: Enclosures are based, in general, on broad definitions outlined in NEMA Standards. Therefore, it is necessary to check that a particular enclosure will adequately meet any unusual conditions that might exist with intended applications.

# Valtek Position Pac Dimensions

Mounting Dimensions (inches / mm)



Flowserve Corporation has established industry leadership in the design and manufacture of its products. When properly selected, this Flowserve product is designed to perform its intended function safely during its useful life. However, the purchaser or user of Flowserve products should be aware that Flowserve products might be used in numerous applications under a wide variety of industrial service conditions. Although Flowserve can (and often does) provide general guidelines, it cannot provide specific data and warnings for all possible applications. The purchaser/user must therefore assume the ultimate responsibility for the proper sizing and selection, installation, operation and maintenance of Flowserve products. The purchaser/user should read and understand the Installation Operation Maintenance (IOM) instructions included with the product, and train its employees and contractors in the safe use of Flowserve products in connection with the specific application.

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