



## EXPLOSION PROOF ACTUATOR QUARTER-TURN SPRING RETURN VT-SX SERIES



**VAHN-TECH International Inc.**, headquartered in Toronto, Canada is a unique company within the Flow Control Industry.

- ✳ 'vt' brand = high quality certified products (API, NSF, CSA, WRAS etc.)
- ✳ Valves, Actuators and Accessories – all 'vt' branded
- ✳ Width and Depth of Product Offerings
- ✳ Flexibility to customize products to customer needs
- ✳ Specialized user-friendly products including large sizes
- ✳ Quick Response
- ✳ Reduced Delivery times
- ✳ Efficient after sales service
- ✳ Competitive Pricing

**VAHN-TECH International Inc.** is a customer focused organization based on “Value-add” and “Quality Service” principles. Achieving long term partnership with our customers and being their supplier of choice is our prime mission.

We develop, manufacture and market VAHN-TECH (vt) branded Valves, Actuators, Automatic Control Valves and Accessories for variety of Industrial Applications. Our product range includes:



We can supply all types of valves with following materials of construction like:

Ductile Iron, Cast Iron, Carbon Steel, Stainless Steel – SS304, SS304L, SS316, SS316L, Duplex Stainless Steel, Super Duplex, Alloy, Monel and Inconel with variety of seating and stem configurations.



## OVERVIEW

Explosion-proof electric spring return fail-safe actuators, in addition to normal function (floating control, ON / OFF control, modulating control) are designed to provide fail-safe positioning of valves and dampers upon loss of voltage supply. A mechanical spring set is utilized to position the controlled device to either the fully OPEN or fully CLOSED position, without any external power source. For ON / OFF type actuator, a mechanical BUFFER is employed at the end of the spring stroke, in order to reduce the dynamic effects of the spring return system. A clutch-free manual override is optional for standard units to provide full-time manual positioning of the controlled device.

VT-SX series explosion-proof spring return fail-safe actuators are structured as flame-proof and combustible dust-proof. The directive and standards marking is II2GD Ex db IIB T4 Gb, Ex tb IIIC T130°C Db where it is classified as Zone 1 or Zone 2, containing Group IIA and Group IIB gases, Zone 21 or Zone 22, containing the combustible dust atmosphere or a mixture of explosive gas atmospheres and combustible dust atmospheres. Temperature group T1 to T4.

## FEATURES

- ✦ Enclosure conforms to IP68 (7 m / 72 hrs) with explosion-proof rating.
- ✦ Control: Modulating, Floating and ON / OFF.
- ✦ Clutch-free manual override (optional).
- ✦ ISO 5211 mounting flange.
- ✦ Built-in thermal protection prevents motor burnout.
- ✦ Self-locking function provides a stable, reliable and powerful drive system.

## STANDARD SPECIFICATIONS

- ✦ Available supply voltages: 24VAC / DC, 110VAC, 120VAC, 220VAC, 240VAC, 380V/3PH and 440V/3PH.
- ✦ Dry powder coated aluminum alloy housings.
- ✦ Standard 50% duty cycle (In accordance with IEC standard).
- ✦ Continuous mechanical position indicator.
- ✦ 2 limit switches for operation, fail clockwise spring return and ON / OFF control provided as standard.
- ✦ Relative humidity: 30 to 95%
- ✦ Ambient Temperature: -30°C to +70°C / -22°F to +158°F



✦ Vahn-Tech International Inc. reserves the right to change the technical data without prior notice.

## TECHNICAL DATA

Model	Type	Motor Power	Weight				Flange Type	Shaft (A)		Depth of Shaft (B)				
			Standard		w/ Manual Override			mm	inch	mm	inch			
			N.m	in.lb	kg	lb						kg	lb	
VT-SX-500			50	45	50	28	62	38	84	F07	17	0.669	30	1.181
VT-SX-1300		130	1150	130	59	130	76	168	F10	22	0.866	41	1.614	
VT-SX-2000		200	1770	130	97	214	137	302	F12	27	1.063	45	1.772	
VT-SX-2600		260	2300	130	97	214	137	302	F12	27	1.063	45	1.772	

## ENCLOSURE HAZARDOUS AREA RATING

ATEX European Hazardous Area: IEC 60079-0, IEC 60079-1, IEC60079-31

Directive	Group	Ambient Temperature
ATEX II 2 GD	Ex db IIB T4 Gb	-30°C ~ +70°C (-22°F ~ +158°F)
ATEX II 2 GD	Ex tb IIIC T130°C Db	-30°C ~ +70°C (-22°F ~ +158°F)

IECEx International Hazardous Area: EN60079-0, EN60079-1, EN60079-31

Group	Ambient Temperature
Ex db IIB T4 Gb	-30°C ~ +70°C (-22°F ~ +158°F)
Ex tb IIIC T130°C Db	-30°C ~ +70°C (-22°F ~ +158°F)

North American Hazardous Area:

Zone System :

- CAN/CSA-C22.2 No. 0-10
- CAN/CSA-C22.2 No. 60079-1
- UL 60079-0
- CAN/CSA-C22.2 No. 60079-0
- CAN/CSA-C22.2 No. 60079-31
- UL 60079-1
- UL 60079-31

National Community	Class	Zone	Protection Method	Groups	T-Code	Standard Temperature
AEx / Ex	I	1	db	IIB, IIA	T4	-30°C ~ +70°C (-22°F ~ +158°F)
AEx / Ex	II	21	tb	IIIC, IIB, IIIA	T130°C	-30°C ~ +70°C (-22°F ~ +158°F)

## OPTIONS AND ACCESSORIES

### OPERATING DIRECTION



Standard  
Fail clockwise on loss of power.



Optional  
Fail counter-clockwise on loss of power.

### MANUAL OVERRIDE

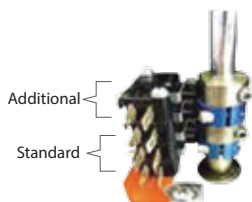


Standard  
(Without Manual Override)  
VT-S Series

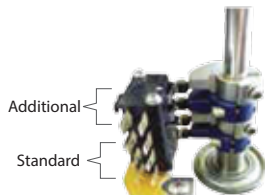


Optional  
(With Manual Override)  
VT-SH Series

### ADDITIONAL LIMIT SWITCHES



S500



S1300~S2600

The standard models are equipped with the 1st & 2nd switches for fully-open and fully-closed. The optional accessory with the 3rd & 4th auxiliary switches which provide dry contacts for fully-open and fully-closed added.

### SPACE HEATER



AC/DC 24V



AC 200V



AC 110V



AC 380V~400V/3PH

A space heater can increase the internal temperature and keep dry inside actuator to avoid the freezing lubricant and moisture causing actuator failure under low temperature or high humidity. Heater is not recommended if the ambient temperature is above 35°C/95°F. However, when the temperature varies much from day to night or between summer and winter, heater and thermostat (25±5°C/77°F±9°F) are recommended.

### HEATER THERMOSTAT



This optional accessory can switch the heater off when the temperature inside the actuator is over 25°C / 77°F.

### FLOATING CONTROLLER



The actuator can be controlled by external controller to open, close and stop at any position between 0 and 90 degree and will fail clockwise to the end position on loss of power. (Based on the standard running direction that the actuator fails clockwise on loss of power.)

## OPTIONS AND ACCESSORIES

### MODULATING CONTROLLER

Input Signal: 4-20mA, 1-5V, 2-10V

Output Signal: 4-20mA, 2-10V



Based on AC 110/220V

Actuator can be operated according to input signal and provide the output signal for indication.

### POTENTIOMETER UNIT



This optional accessory can be ordered with On/Off actuators. The selection has 1k or 5k ohm resistance values. It provides feedback signal for position indicator.

### ANALOG SIGNAL OUTPUT



This optional accessory can provide 4-20mA output signal and suit for two-position control units.

### OTHER OPTION

#### Conduit Entries

Standard: 1/2" PS

Optional: 3/4" PF

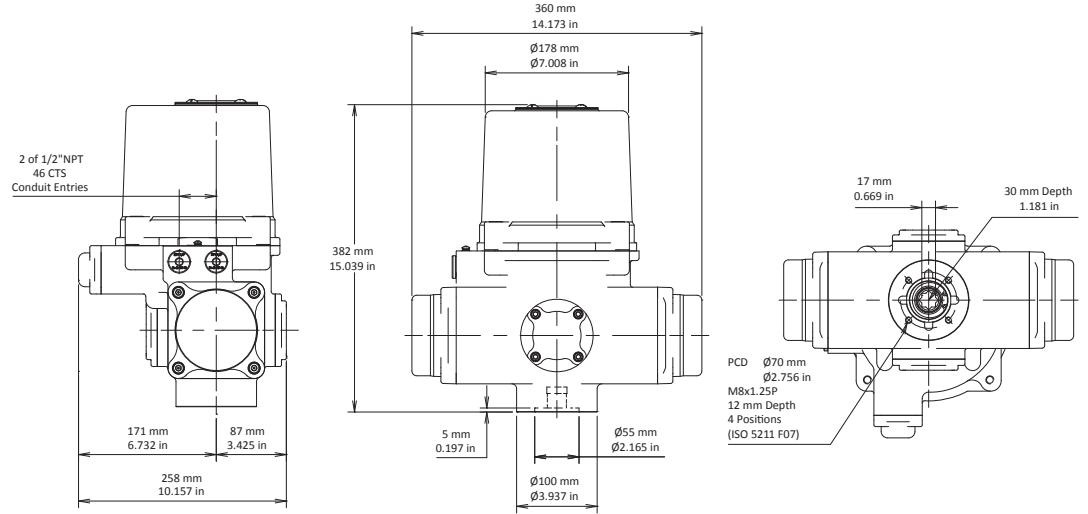
12" NPT

M20

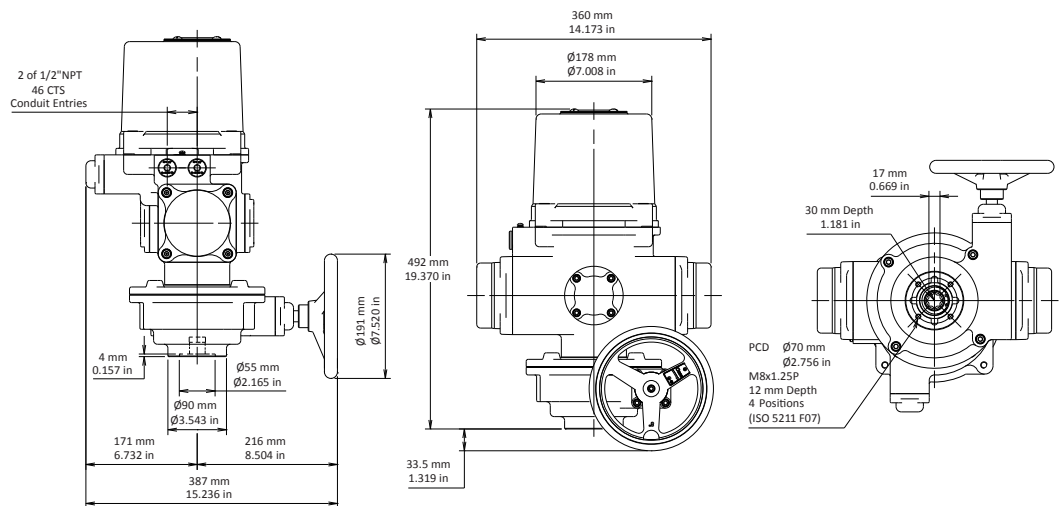
## ACTUATOR DIMENSION (mm/in)



**VT-SX-500**



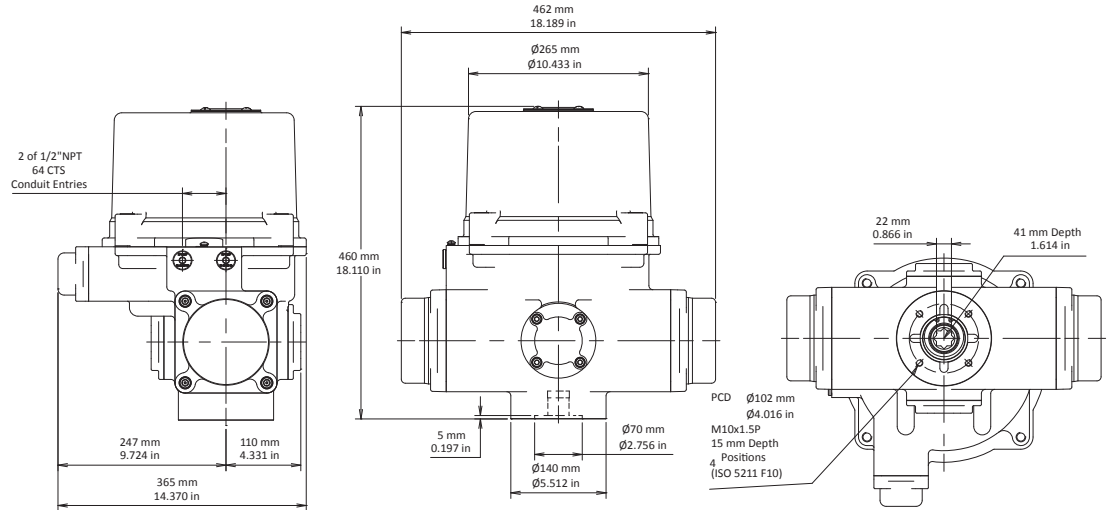
**VT-SXH-500**



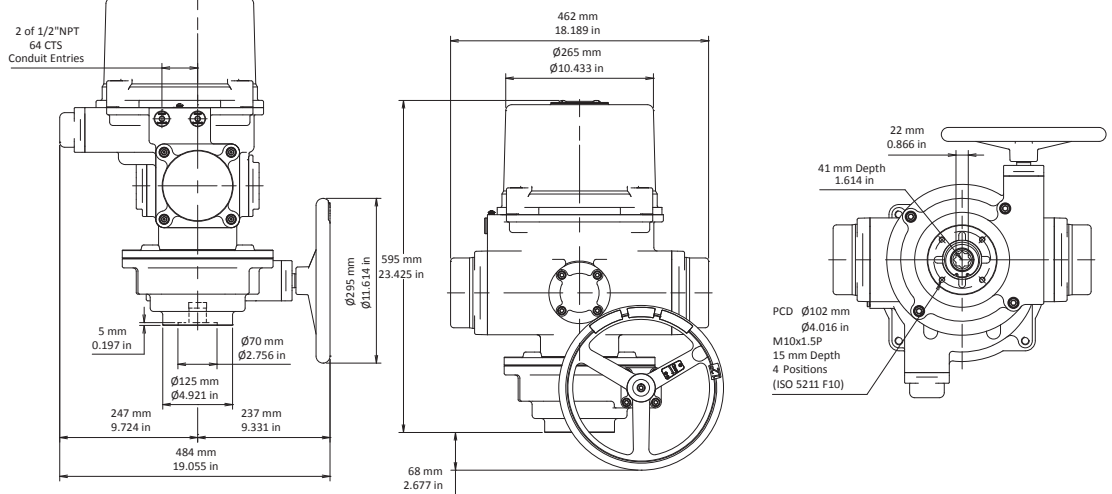
## ACTUATOR DIMENSION (mm/in)



**VT-SX-1300**



**VT-SXH-1300**

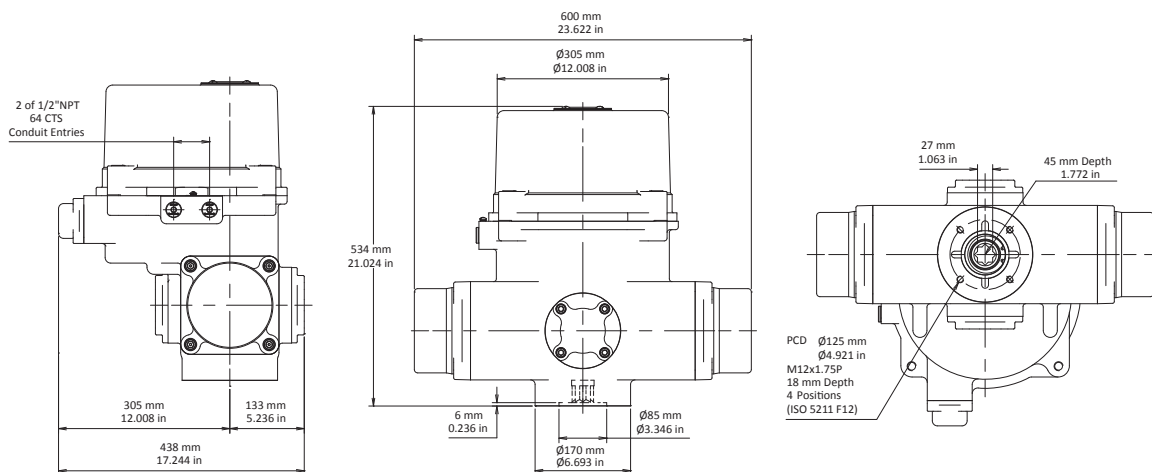




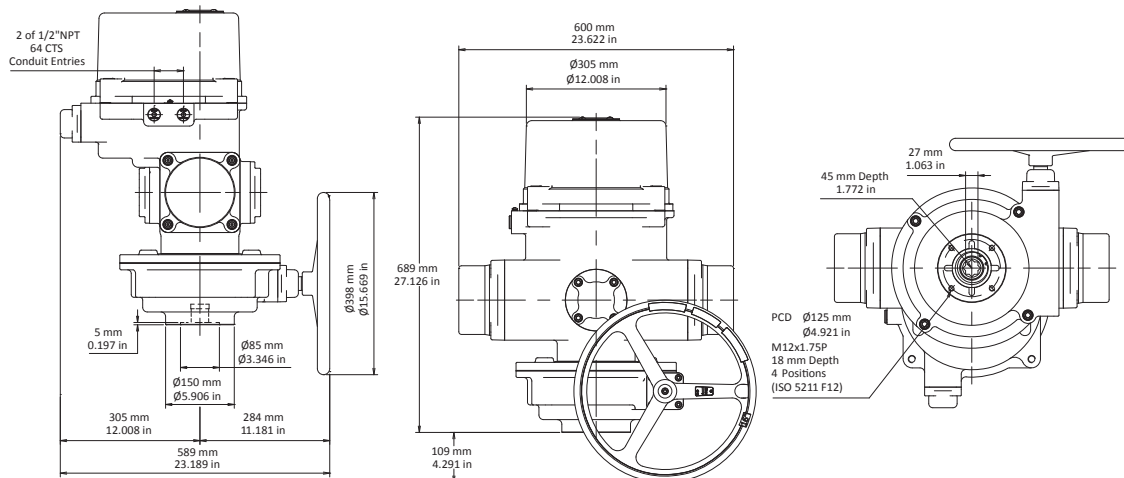
## ACTUATOR DIMENSION (mm/in)



**VT-SX-2600**



**VT-SXH-2600**





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