

**EXPLOSION PROOF ACTUATOR QUARTER-TURN  
VT-OMX 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:



Oil and Gas



Water and Sewage,  
Desalination



Chemicals



Paper and Pulp



Irrigation



Power Plants



Various  
Industrial Applications

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.



License Number 80-1724



## OVERVIEW

Explosion-proof quarter-turn electric actuators offer torque ranges from 35 Nm to 1,500 Nm (310 in.lb to 13,280 in.lb). All Models are ISO 5211 compliant and are equipped with a visual position indicator. The manual override can be operated without clutch and brake.

VT-OMX series explosion-proof quarter-turn electric actuators are structured as flame-proof and combustible dust-proof. The directive and standards marking are II2GD Ex db IIB T4 Gb, Ex tb IIIC T130°C Db. They are classified as Zone 1 or Zone 2, containing Group II A and Group II B gases, Zone 21 or Zone 22, containing combustible dust atmospheres or 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.
- ✦ Self-locking gear system.
- ✦ Clutch-free manual override.
- ✦ Externally adjustable mechanical stops for VT-OMX-2 to VT-OMX-8.
- ✦ Continuous mechanical position indicator.
- ✦ Built-in thermal protection prevents motor burnout.
- ✦ All models are equipped with torque switches (except VT-OMX-1, VT-OMX-A and VT-OMX-AM)

## STANDARD SPECIFICATIONS

- ✦ Available supply voltages: 12 VAC / DC, 24VAC / DC, 100V AC, 110VAC, 120VAC, 200VAC, 220VAC and 240VAC
- ✦ Dry powder coated aluminum alloy housings.
- ✦ Standard 30% duty cycle.
- ✦ 2 limit switches for operation, torque switches and floating control provided as standard.
- ✦ Relative humidity: 30 to 95%
- ✦ Ambient Temperature: -30°C to +70°C / -22°F to +158°F.



Model	Type	Motor Power		Weight		Speed	Manual Override	Flange Type	Shaft (A)		Depth of Shaft (B)		
		N.m	in.lb	W	kg	lb		(sec/90°)	ISO 5211	mm	inch	mm	inch
VT-OMX-A		50	445	10	3	7	27	N/A	F07	17	0.669	21	0.787
VT-OMX-AM		50	445	10	3	7	27	Lever	F07	17	0.669	21	0.787
VT-OMX-1		35	310	10	2	4	12		F03 / F05	14	0.551	18	0.669
VT-OMX-2		90	800	40	18	40	17	Handwheel	F07	22	0.866	35	1.181
VT-OMX-3		150	1330	40	18	40	26		F07	22	0.866	35	1.181
VT-OMX-4		400	3540	80	32	71	19		F10	36	1.417	53	1.889
VT-OMX-5		500	4430	80	32	71	26		F10	36	1.417	53	1.889
VT-OMX-6		650	5755	80	32	71	34		F10	36	1.417	53	1.889
VT-OMX-7	1000	8855	120	46	101	50	F12 / F14		36	1.417	55	1.968	
VT-OMX-8	1500	13280	120	46	101	51	F12 / F14	36	1.417	55	1.968		

## 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	IIC, IIB, IIIA	T130°C	-30°C ~ +70°C (-22°F ~ +158°F)

## OPTIONS AND ACCESSORIES

### SPACE HEATER



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.

### MODULATING CONTROLLER

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

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



VT-OM-1, VT-OM-A, VT-OM-A-M



VT-OM-2 VT-OM-13,  
VT-OM-F, VT-OM-G

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

### TORQUE SWITCHES



This optional accessory can be provide over-load protection. It is available for VT-OM-2 to VT-OM-13 actuators and must be ordered with actuator.

### ADDITIONAL LIMIT SWITCHES

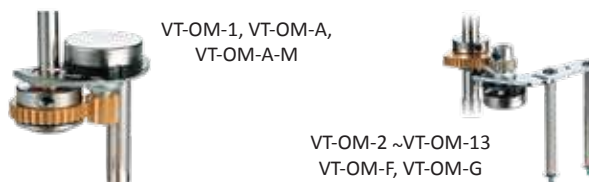


VT-OM-1, VT-OM-A,  
VT-OM-A-M

VT-OM-2 ~ VT-OM-13 VT-BM-2,  
VT-OM-F, VT-OM-G

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.

### POTENTIOMETER UNIT



VT-OM-1, VT-OM-A,  
VT-OM-A-M

VT-OM-2 ~VT-OM-13  
VT-OM-F, VT-OM-G

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



VT-OM-1, VT-OM-A, VT-OM-A-M



VT-OM-2~VT-OM-13, VT-OM-F, VT-OM-G

This optional accessory can provide various output signals for position indicator and etc. Output Signal : 0-20mA, 4-20mA, 0-5V, 0-10V, 2-10V

## OPTIONS AND ACCESSORIES

### WIRING BOX



VT-OM-1, VT-OM-A, VT-OM-A-M      VT-OM-2~VT-OM-13, VT-OM-F, VT-OM-G

This optional accessory can be connected all wires by the user without removing actuator cover.

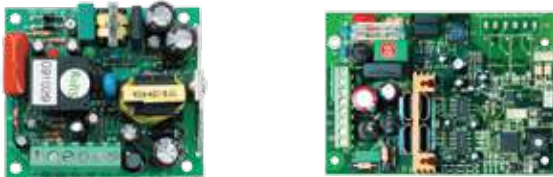
### LOCAL CONTROL UNIT



VT-OM-1, VT-OM-A, VT-OM-A-M      VT-OM-2 VT-OM-13, VT-OM-F, VT-OM-G

This optional accessory can be used in field control. It provides Local/Remote selection switches and Open/ Close selection switches.

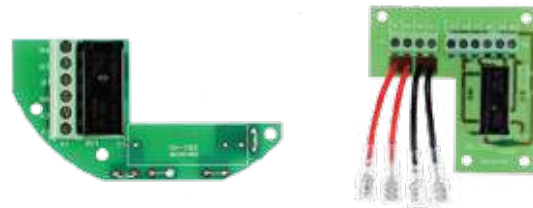
### EXTENDED DUTY CYCLE (IEC STANDARD)



VT-OM-1, VT-OM-A, VT-OM-A-M: 75% Duty Cycle      VT-OM-2~VT-OM-8: 75% Duty Cycle  
VT-OM-9~VT-OM-13: 50% Duty Cycle

This optional accessory is allows for higher duty cycle.

### COUPLING WIRING



VT-OM-1, VT-OM-A, VT-OM-A-M      VT-OM-2~VT-OM-13  
VT-OM-F, VT-OM-G

This optional accessory is recommended when a set of control wire or switch needs to control two or more actuators at the same time.

### Adjustable Speed Board

This optional accessory can adjust the actuator speed (running time) from standard to 30s, 60s, 90s and so on (Max. 200s, 300s, or 600s) according to user's need. The fastest speed is the standard speed. It is available for VT-OM-2 to VT-OM-13 AC 110/220V, 1-PH actuators.

### Chain Wheel

This optional accessory can convert the hand-wheel override to a chain driven override in application of actuator mounted at a distance above the floor. It is available VT-OM-2 to VT-OM-13, VT-OM-F, VT-OM-G actuators.



## OTHER OPTIONS

### Motor Insulation Class

Standard: F Class  
Optional: H Class

### Enclosure Material

Optional: SS316  
Enclosure: VT-OM1 to VT-OM6

### Communication Protocol

Modbus RTU RS485

### IP Rating

IP68 7 meter / 72 hours

### Conduit Entries

Standard: 1/2" PS  
Optional: 3/4" PF  
12" NPT  
M20

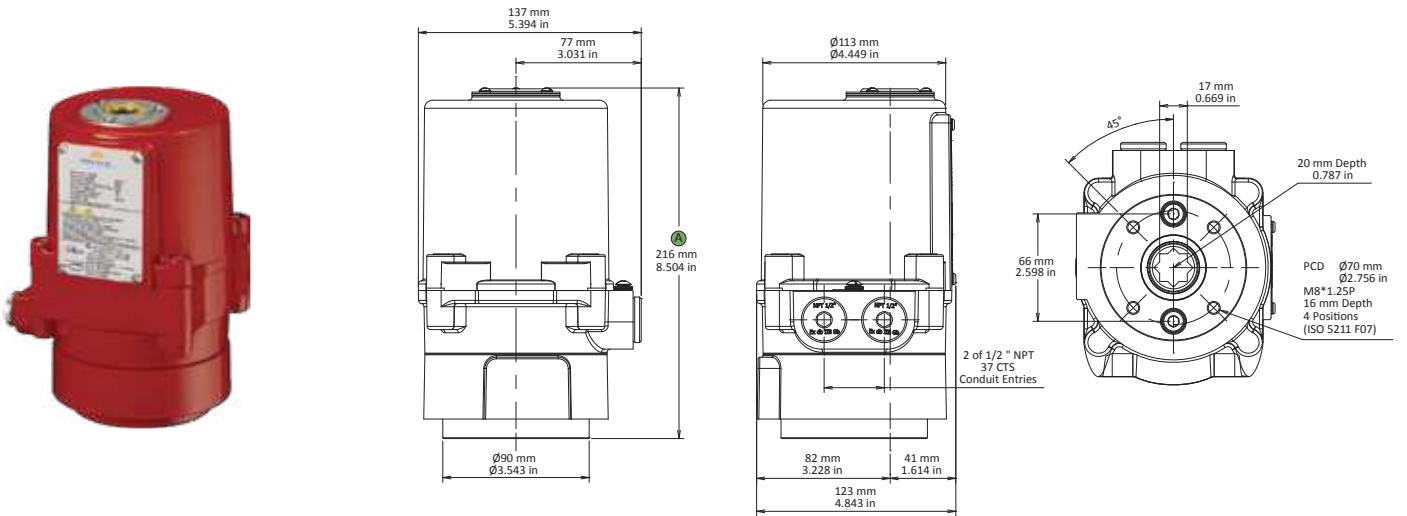
### Optional Voltages

125VDC  
575VAC/3PH  
208VAC/3PH

### Extended Travel

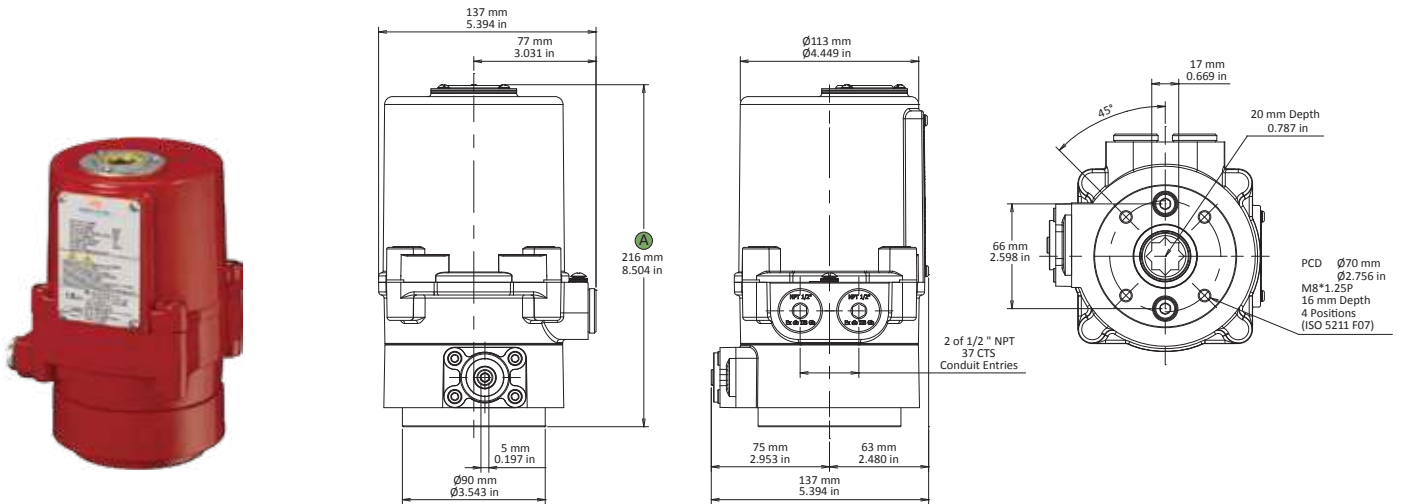
Standard: 0°~90°  
Optional: 91°~270°  
Available: VT-OM-1 ~VT-OM-8, VT-OM-F, VT-OM-G

## ACTUATOR DIMENSION (mm/in)



VT - OMX - A

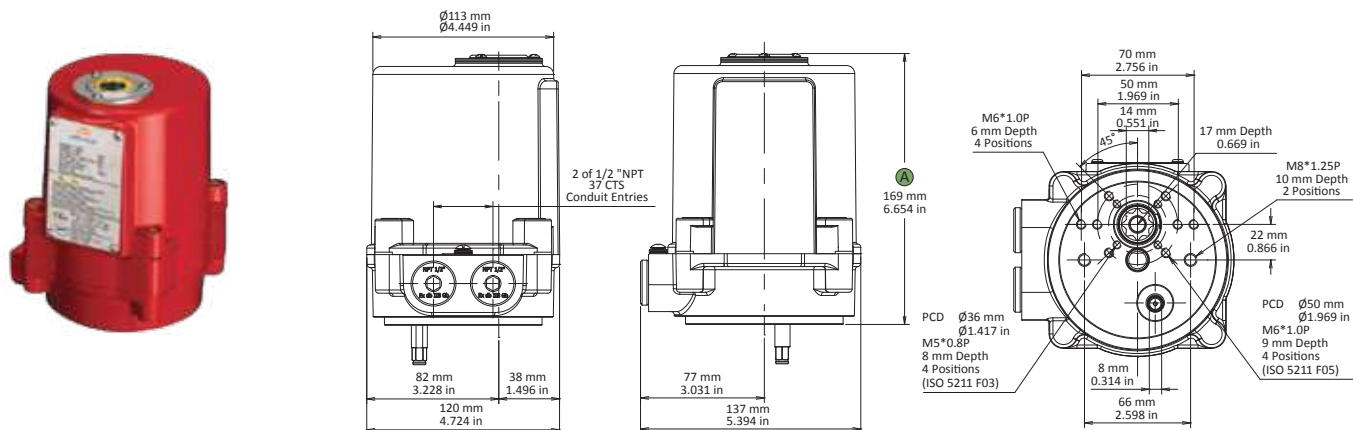
✦ Apply to modulating control models,  $\varnothing 248$  mm (9.764 in)



VT - OMX - AM

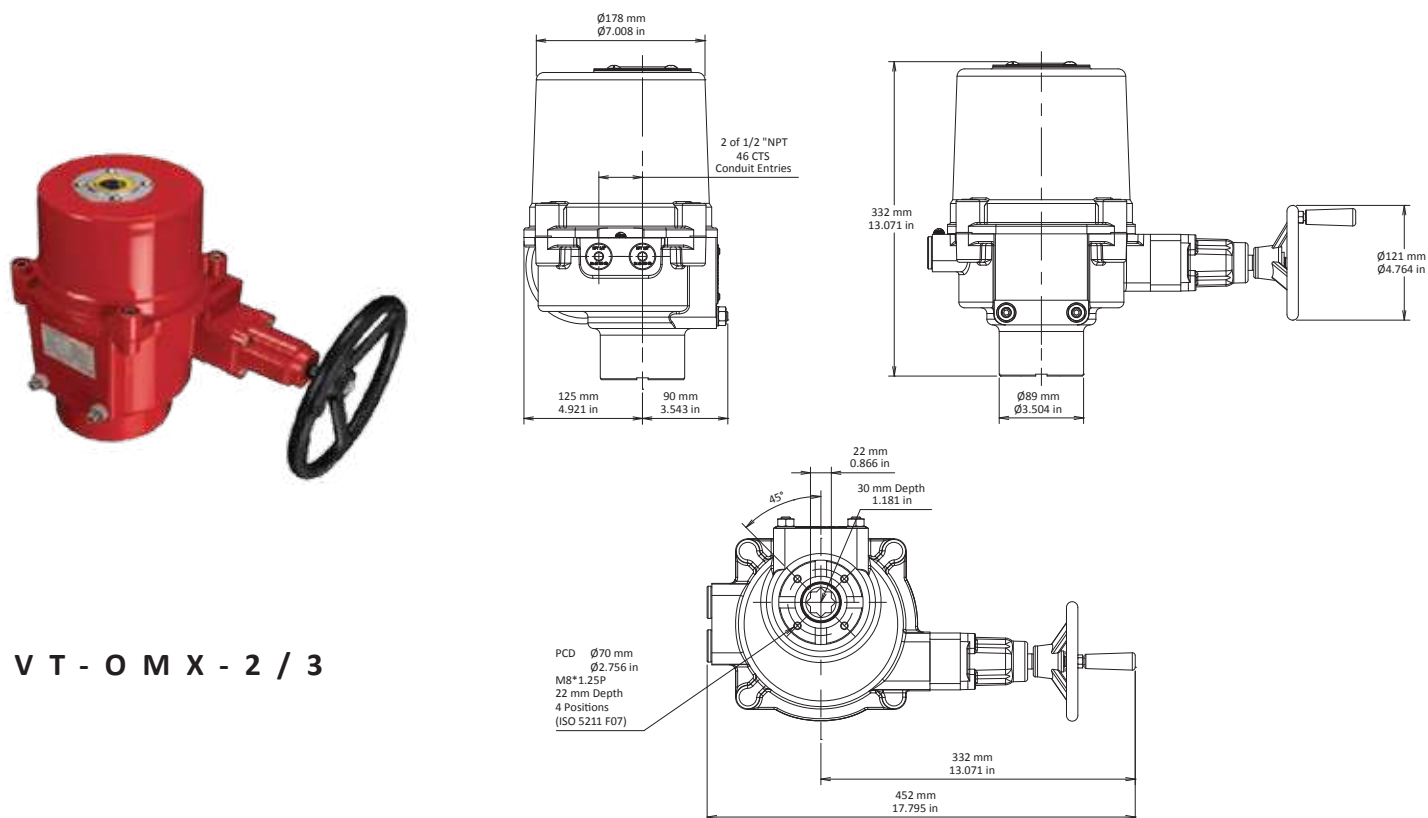
✦ Apply to modulating control models,  $\varnothing 248$  mm (9.764 in)

## ACTUATOR DIMENSION (mm/in)



VT - O M X - 1

✦ Apply to modulating control models,  $\text{Ø}248 \text{ mm}$  ( $9.764 \text{ in}$ )



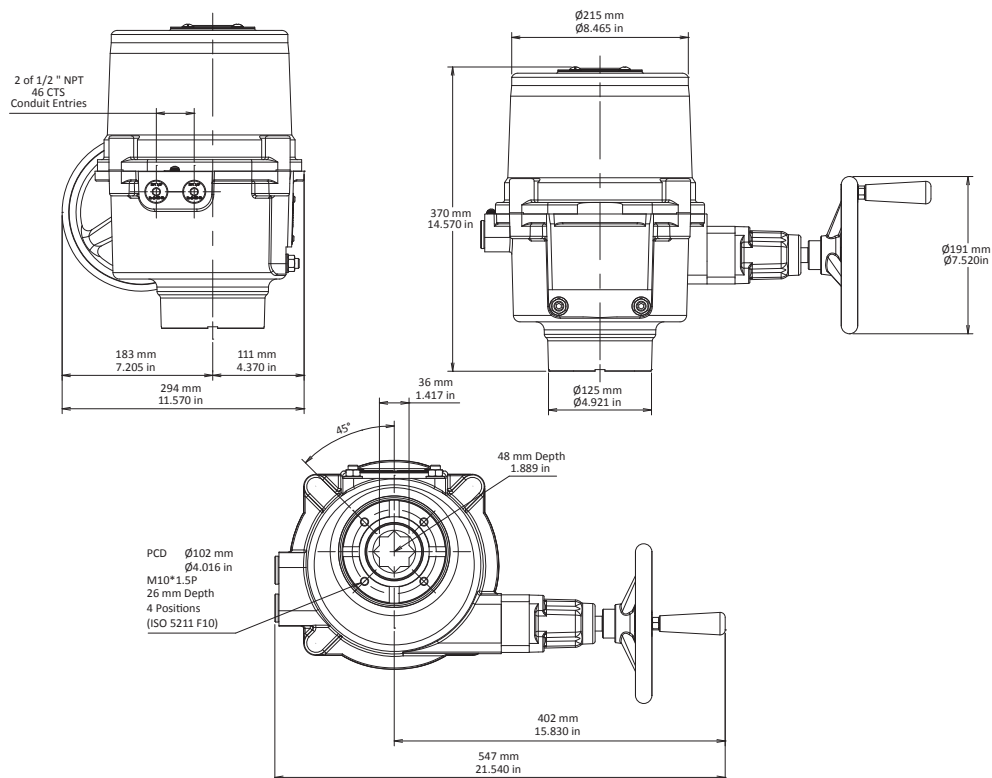
VT - O M X - 2 / 3



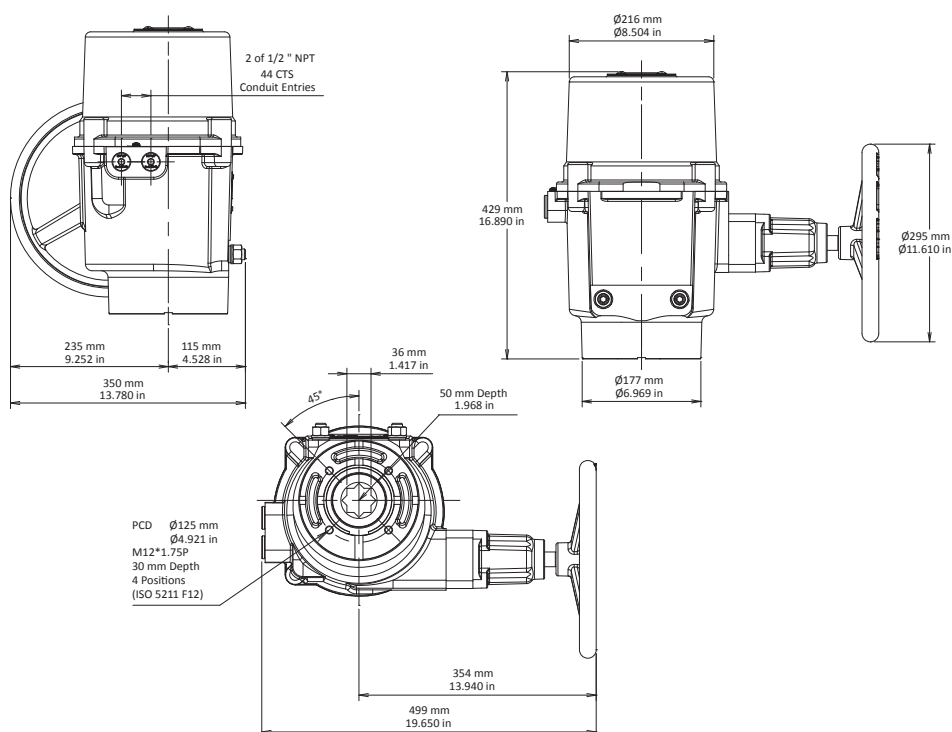
## ACTUATOR DIMENSION (mm/in)



VT-OMX-4/5/6



VT-OMX-7/8



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