



## **Limitorque® LQI Compact Quarter-Turn Electric Actuators**



*Experience In Motion*

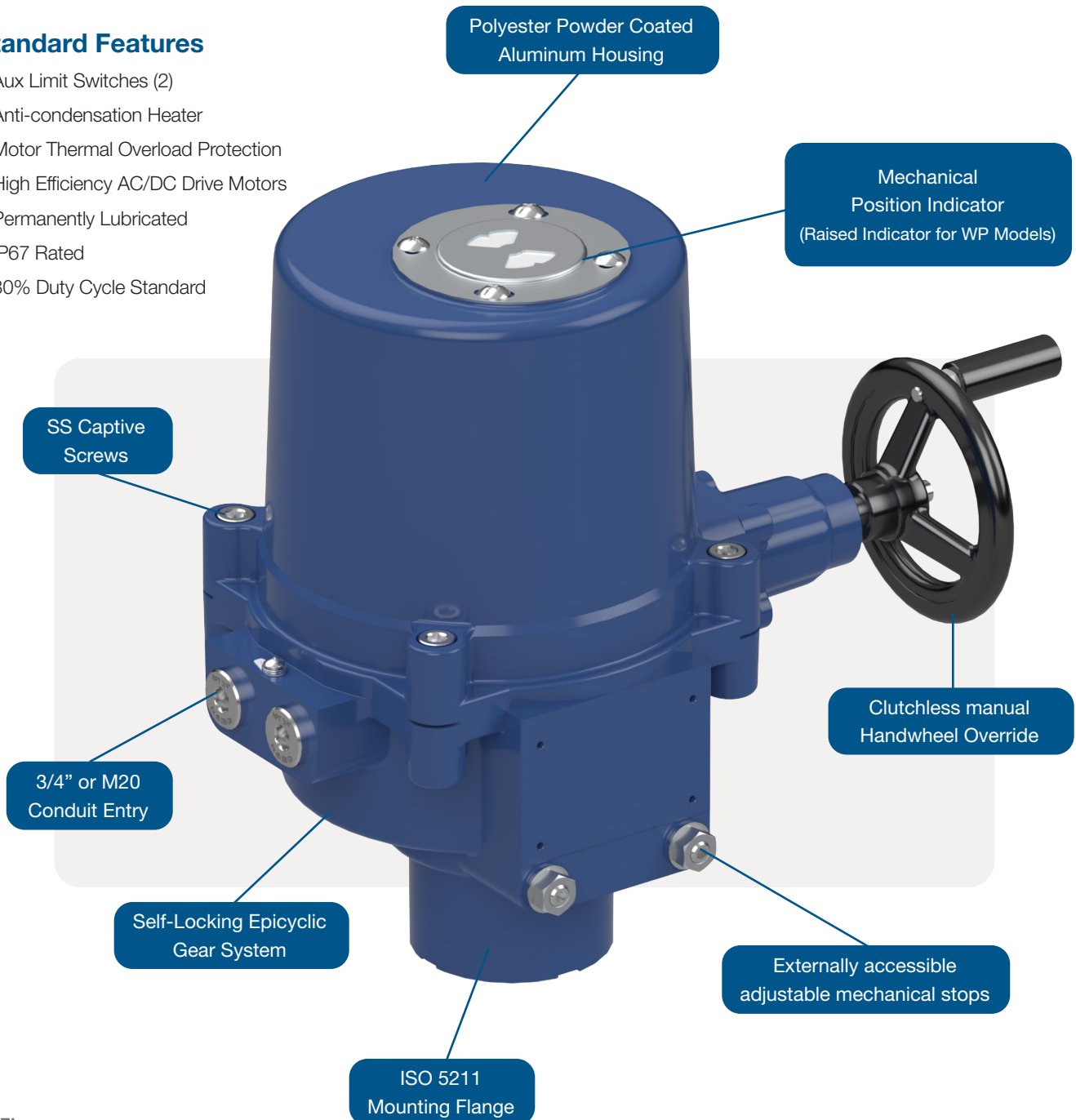
## Product Overview

The LQI compact, quarter-turn electric actuators offer superior reliability and performance as well as lower Total Cost of Ownership (TCO). They provide broad application versatility and are highly customizable for meeting exacting customer needs. LQI actuators are ideal for applications that require a simplistic, cost-effective, quarter-turn actuator that has a variety of control options, torque and limit switches, and discrete position feedback capabilities. The actuators are compatible with a wide range of quarter turn valves, and also can be used to drive dampers in a broad range of power, oil and gas, chemical, water and general industry applications.

## Product Features

### Standard Features

- Aux Limit Switches (2)
- Anti-condensation Heater
- Motor Thermal Overload Protection
- High Efficiency AC/DC Drive Motors
- Permanently Lubricated
- IP67 Rated
- 30% Duty Cycle Standard



## Product Options

Options	Description	WP	EX
<b>Extended Duty</b>	<ul style="list-style-type: none"> <li>Up to 75% on select units (consult factory)</li> </ul>	•	•
<b>Pot</b>	<ul style="list-style-type: none"> <li>Two resistances are available for selection: 1k ohm or 5k ohm</li> </ul>	•	•
<b>Torque Switches</b>	<ul style="list-style-type: none"> <li>Non-adjustable torque overload protection</li> <li>Available with or without auxillary dry-contacts</li> <li>LQI F/G/H/2-13</li> </ul>	•	•
<b>Modulating</b>	<ul style="list-style-type: none"> <li>Includes pot and analog input/output board</li> <li>Analog input: 4-20 mA, 1-5 V and 2-10 V</li> <li>Analog output: 4-20 mA and 2-10 V</li> </ul>	•	•
<b>Analog Output</b>	<ul style="list-style-type: none"> <li>Analog output: 0-20 mA, 4-20 mA, 0-5 V, 0-10 V, 1-5 V and 2-10 V</li> </ul>	•	•
<b>Modbus</b>	<ul style="list-style-type: none"> <li>Modbus RTU RS485</li> <li>LQI F/G/H/2-6, 110-120 V 1 PH, 30% duty</li> <li>LQI F/G/H/2-8, 220-240 V 1 PH, 30% duty</li> <li>LQI A/AM/H/1-8, 110-120 V, 220-240 V 1 PH, 75% duty</li> <li>LQI 9-13, 110-120 V, 220-240 V AC / 1 PH, 50% duty</li> <li>LQI 1/A/AM, 24 V, 75% duty</li> </ul>	•	
<b>Control Stations</b>	<ul style="list-style-type: none"> <li>Junction box available for external connections</li> <li>IP67/NEMA type 4X local control station for Local / Remote and Open / Stop / Close control</li> <li>LCS available with LQI A/AM/1-13</li> </ul>	•	
<b>Paint</b>	<ul style="list-style-type: none"> <li>Optional C5 paint system for corrosive environments</li> </ul>	•	
<b>Ingress Protection</b>	<ul style="list-style-type: none"> <li>IP68, 7 meters / 72 hrs</li> <li>IEC 60529</li> <li>-30°C to +65°C (-22°F to +149°F)</li> </ul>	•	•

### Local Control Unit (LCU)

- Two rotary selector switches are provided, Local / Remote and Open / Stop / Close. In Local mode, the valves are directly being controlled in the field and can be operated to close, stop or open by using Open / Stop / Close selector switch.
- IP67, NEMA type 4X
- For LQI 1, LQI A, and LQI AM, LCU is only available for floating control units.
- For LQI 2 to LQI 13, three phase power supply units with modulating control must be optioned with LCU.

### Junction Box

- Junction box allows external electrical connection to be done without removing actuator cover.



# Explosion-Proof Certifications

## ATEX Hazardous Areas Certification for European Union

Directive	Marking	Ambient Temperature	WP	EX
ATEX II 2 GD	Ex db IIB T4 Gb	-30°C to +70°C (-22°F to +158°F)		•
ATEX II 2 GD	Ex tb IIIC T130°C Db	-30°C to +70°C (-22°F to +158°F)		•
Standards EN IEC 60079-0, EN 60079-1, EN 60079-31				

## IECEx Hazardous Areas Certification for International Market

Marking	Ambient Temperature	WP	EX
Ex db IIB T4 Gb	-30°C to +70°C (-22°F to +158°F)		•
Ex tb IIIC T130°C Db	-30°C to +70°C (-22°F to +158°F)		•
Standards IEC 60079-0, IEC 60079-1, IEC60079-31			

## CSA Hazardous Areas Certification for North America

Zone System								
Code	Hazard Class	Permitted Zone	Equipment Protection Level (EPL)	Group (Gas / Dust)	Temperature Classification	Ambient Temperature	WP	EX
AEx / Ex	I	1	db	IIA, IIB	T4	-30°C to +70°C (-22°F to +158°F)		•
AEx / Ex	II	21	tb	IIIA, IIIB, IIIC	T130°C	-30°C to +70°C (-22°F to +158°F)		•
Standards CAN / CSA-C22.2 No. 0:20 CAN / CSA-C22.2 No. 60079-0, CAN / CSA-C22.2 No. 60079-1, CAN / CSA-C22.2 No. 60079-31, ANSI / UL 60079-0, ANSI / UL 60079-1, ANSI / UL 60079-31								
Division System								
Hazard Class	Permitted Division	Group (Gas / Dust)	Temperature Classification	Ambient Temperature	WP	EX		
I	1	C, D	T4	-30°C to +70°C (-22°F to +158°F)		•		
II	1	E, F, G	T130°C	-30°C to +70°C (-22°F to +158°F)		•		
Standards CAN / CSA-C22.2 No. 0:10 CSA C22.2 No. 30-M1986, CSA C22.2 No. 25-17, FM 3600, FM 3615, FM 3616								



# Technical Information

## Weather-Proof

Model	Torque		Weight		Nom. Motor Power	Running Time*	Manual Override	Flange Type	Drive Output (A)	Drive Output Depth (B)
	Nm	in-lb	kg	lb	W	(Sec / 90°)		ISO 5211	mm	mm
LQI 1	35	310	2	4.4	10	12	Lever	F03 / F05	14	17
LQI A	50	445	3	6.6	10	27	N/A	F05 / F07	17	20
LQI AM	50	445	3	6.6	10	10	Lever	F05 / F07	17	20
LQI F	65	575	11	24.3	60	6	Handwheel	F07 / F10	22	30
LQI 2	90	800	10.5	23.1	40	17		F07 / F10	22	30
LQI G	120	1,065	11	24.3	60	8		F07 / F10	22	30
LQI 3	150	1,330	10.5	23.1	40	26		F07 / F10	22	30
LQI H	300	2,655	15	33.1	80	24		F07 / F10	22	30
LQI 4	400	3,540	20	44.1	80	19		F10 / F12	36	40
LQI 5	500	4,430	20	44.1	80	26		F10 / F12	36	40
LQI 6	650	5,755	20	44.1	80	34		F10 / F12	36	40
LQI 7	1,000	8,855	36	79.4	120	50		F12 or F14	35	60
LQI 8	1,500	13,280	36	79.4	120	51		F12 or F14	35	60
LQI 9	2,000	17,710	68.5	151	180	62		F14 or F16	75	100
LQI 10	2,500	22,140	68.5	151	180	62		F14 or F16	75	100
LQI 11	3,000	26,565	68.5	151	180	62		F14 or F16	75	100
LQI 12	3,500	31,000	68.5	151	220	62	F14 or F16	75	100	
LQI 13	4,500	40,000	102.5	226	220	88	F16 or F25	72	110	

\* The running time is based on 110 V AC @ 60Hz, 30% duty cycle, On-Off / floating control.

## Explosion-Proof

Model	Torque		Weight		Nom. Motor Power	Running Time*	Manual Override	Flange Type	Drive Output (A)	Drive Output Depth (B)
	Nm	in-lb	kg	lb	W	(Sec / 90°)		ISO 5211	mm	mm
LQI 1	35	310	3.5	8	10	11	Lever	F03 / F05	14	17
LQI A	50	445	4.5	10	10	21	N/A	F07	17	20
LQI AM	50	445	4.5	10	10	21	Lever	F07	17	20
LQI 2	90	800	17	37.5	40	18	Handwheel	F07	22	30
LQI 3	150	1,330	17	37.5	40	28		F07	22	30
LQI 4	400	3,540	31.5	69.5	80	20		F10	36	48
LQI 5	500	4,430	31.5	69.5	80	27		F10	36	48
LQI 6	650	5,755	31.5	69.5	80	36		F10	36	48
LQI 7	1,000	8,855	47	104	120	52		F12 or F14	36	50
LQI 8	1,500	13,280	47	104	120	54		F12 or F14	36	50

\* The running time is based on 110 V AC @ 60Hz, 30% duty cycle, On-Off / floating control.

# Product Order Matrix

Model	Supply Voltage	Control Type	Duty	Enclosure	Override	Pot	Torque Switches	Additional Box	Control Options	Conduit	Paint
LQI 1	(0) 12 V DC	(F) Floating	(3) 30%	(7) IP67 (WP)	(M) Standard <sup>(2)</sup>	(0) None	(0) None	(0) None	(0) None	(1) 3/4" NPT	(3) C3
LQI A	(1) 12 V AC	(M) Modulating	(5) 50% (WP)	(8) IP68 (WP)		(1) 1K Pot	(1) Switches	(C) CU-IP67 (WP)	(1) Modbus RTU (WP)	(2) <sup>1</sup> 1/2" NPT	(4) C4/C5 (WP)
LQI AM	(2) 24 V AC		(7) 75%	(E) Ex		(5) 5K Pot	(4) Switches + Aux	(J) Junction Box (WP)	(2) Analog In/Out	(3) M20	
LQI F	(3) 24 V DC								(3) Analog Out		
LQI 2	(4) 110-120 1 PH										
LQI G	(5) 220-240 1 PH										
LQI 3	(6) 220-240 3 PH (WP)										
LQI H	(7) 380-415 3 PH (WP)										
LQI 4	(8) 440-480 3 PH (WP)										
LQI 5											
LQI 6											
LQI 7											
LQI 8											
LQI 9											
LQI 10											
LQI 11											
LQI 12											
LQI 13											

<sup>1</sup> Only NPT option for sizes LQI A, LQI AM, and LQI 1

### Supply Voltage

Model	12 V		24 V		1-Phase		3-Phase*		
	DC	AC	DC	AC	110 - 120 V	220 - 240 V	220 - 240 V	380 - 415 V	440 - 480 V
LQI 1	•	•	•	•	•	•			
LQI A, LQI AM	•		•	•	•	•			
LQI F, LQI G				•	•	•	•	•	•
LQI H	•		•	•	•	•	•	•	•
LQI 2 to LQI 10	•		•	•	•	•	•	•	•
LQI 11 to LQI 13			•	•	•	•	•	•	•

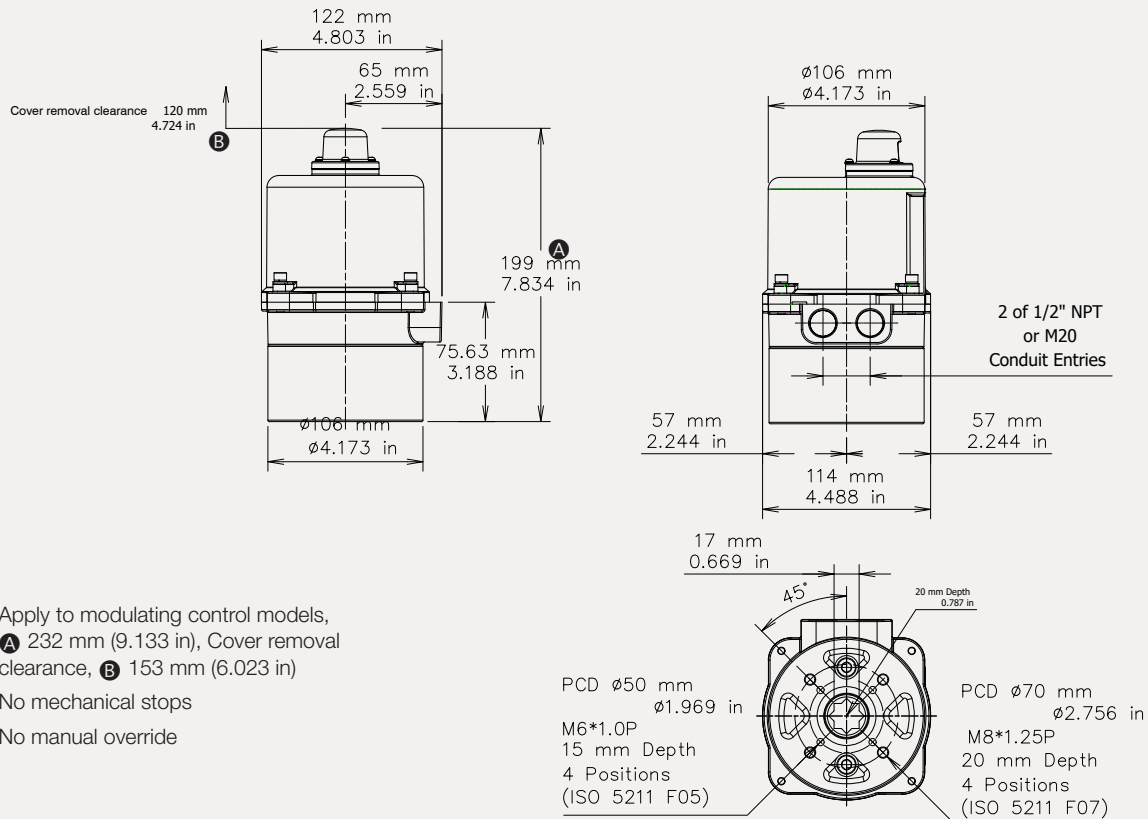
\* Only available in Weather-Proof Models

### Notes

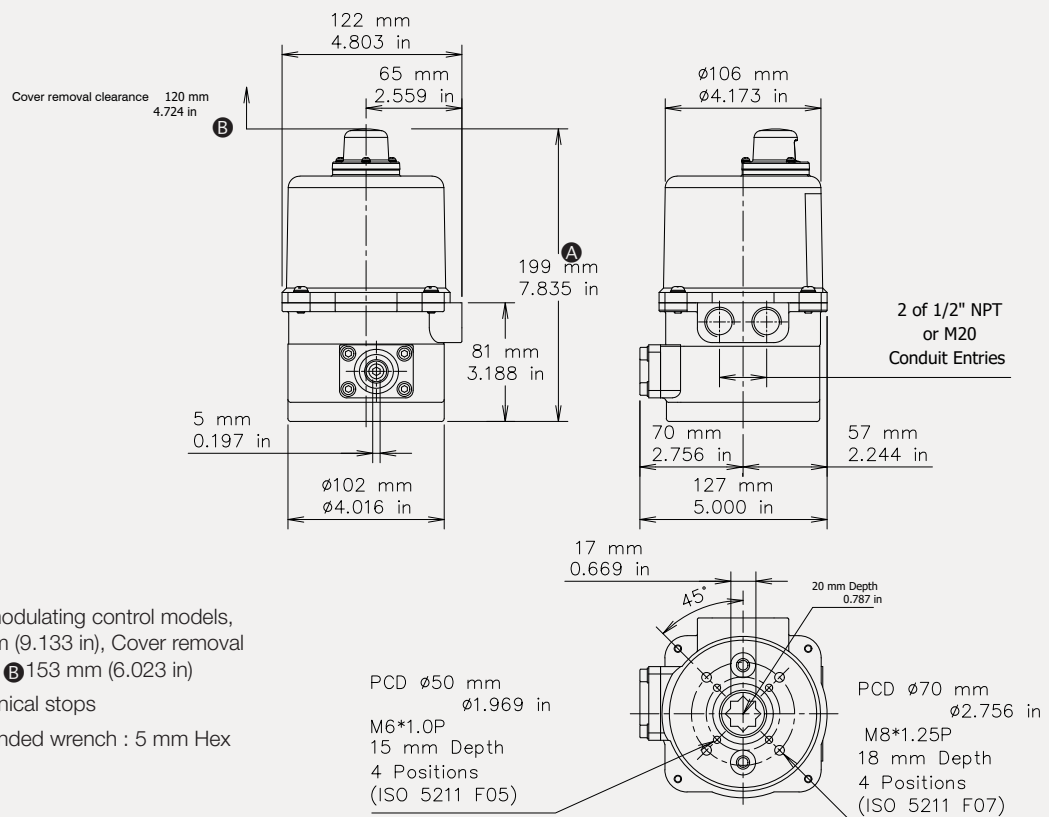
- (WP) = Non Explosion-Proof  
(EX) = Explosion-Proof
- Manual Override for LQI 1 and LQI B is a lever. There is no override for LQI A
- Standard 4 LS (2 Control, 2 Aux)
- Standard Heater Included
- 50% Duty Cycle Sizes 9-13 Only

# Weather-Proof Outline Dimensions

## LQI A

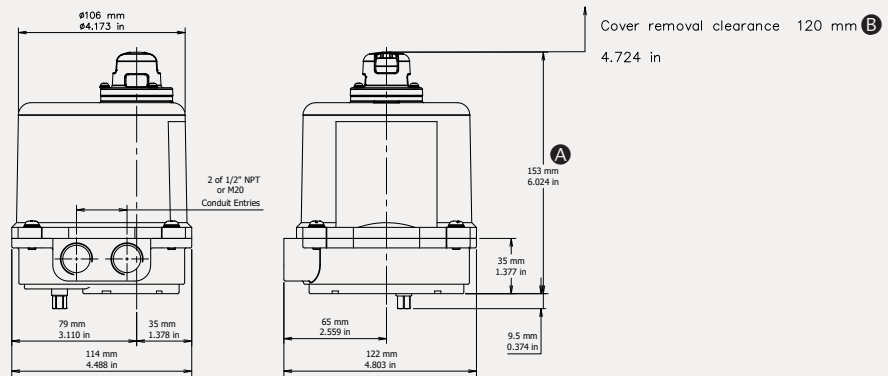


## LQI AM

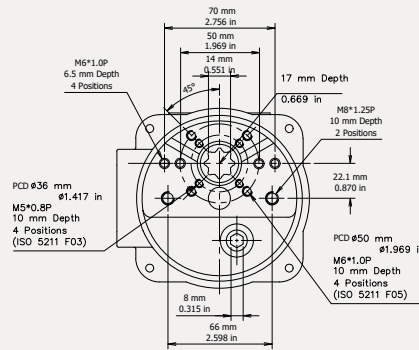


# Weather-Proof Outline Dimensions

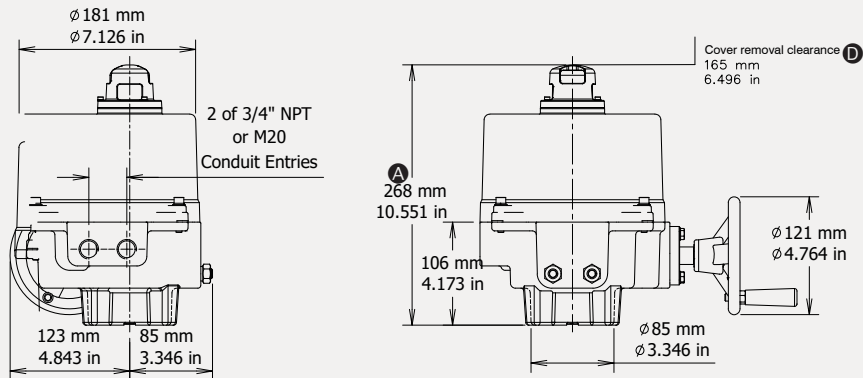
## LQI 1



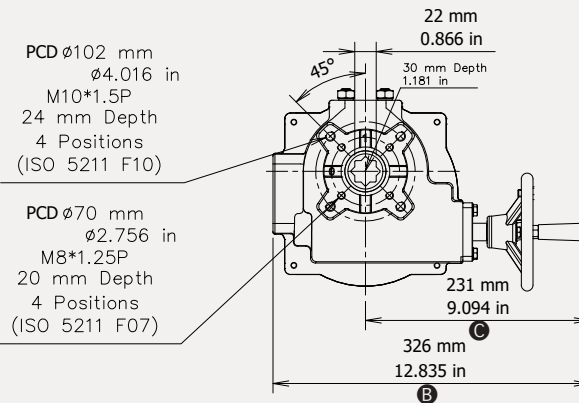
- Apply to modulating control models, **A** 186 mm (7.323 in), Cover removal clearance, **B** 153 mm (6.023 in)
- No mechanical stops
- Recommended wrench : 8 mm Open-end wrench



## LQI 2/3

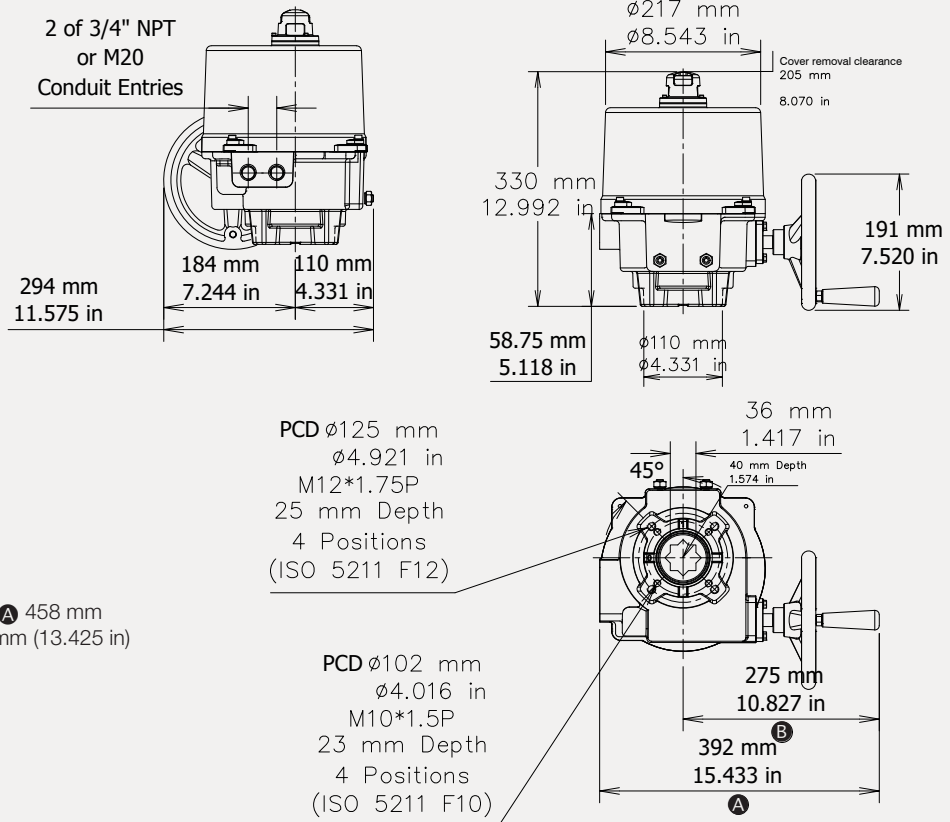


- Apply to DC models or 75% duty cycle, **A** 302 mm (11.890 in), Cover removal clearance, **D** 200 mm (in)
- With torque switch, **B** 363 mm (14.291 in), **C** 268 mm (10.551 in)

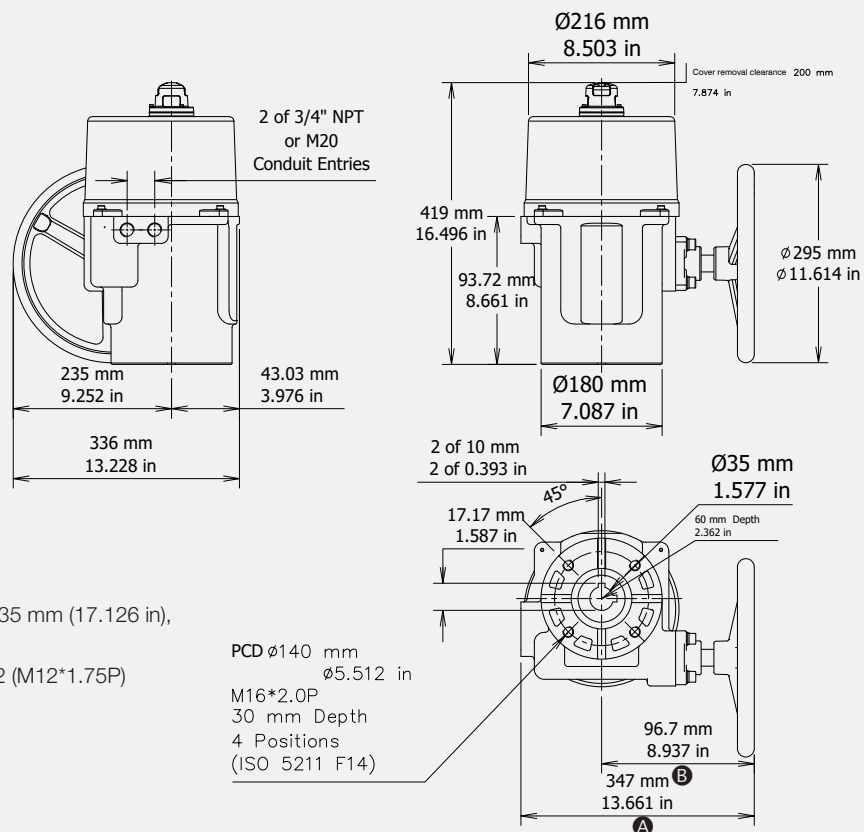


# Weather-Proof Outline Dimensions

## LQI 4/5/6

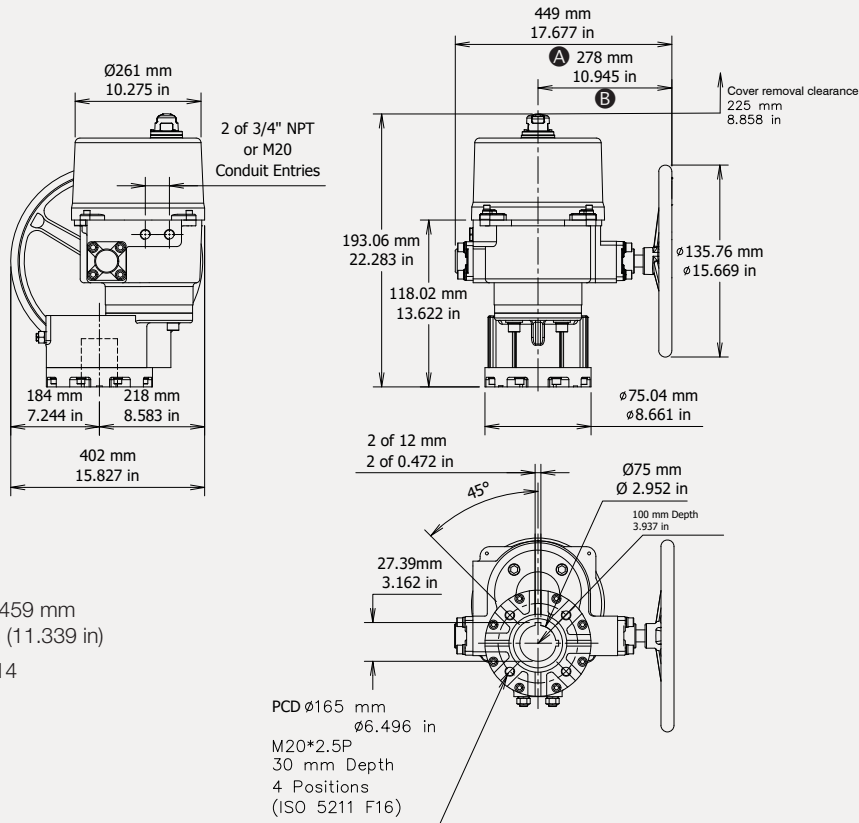


## LQI 7/8



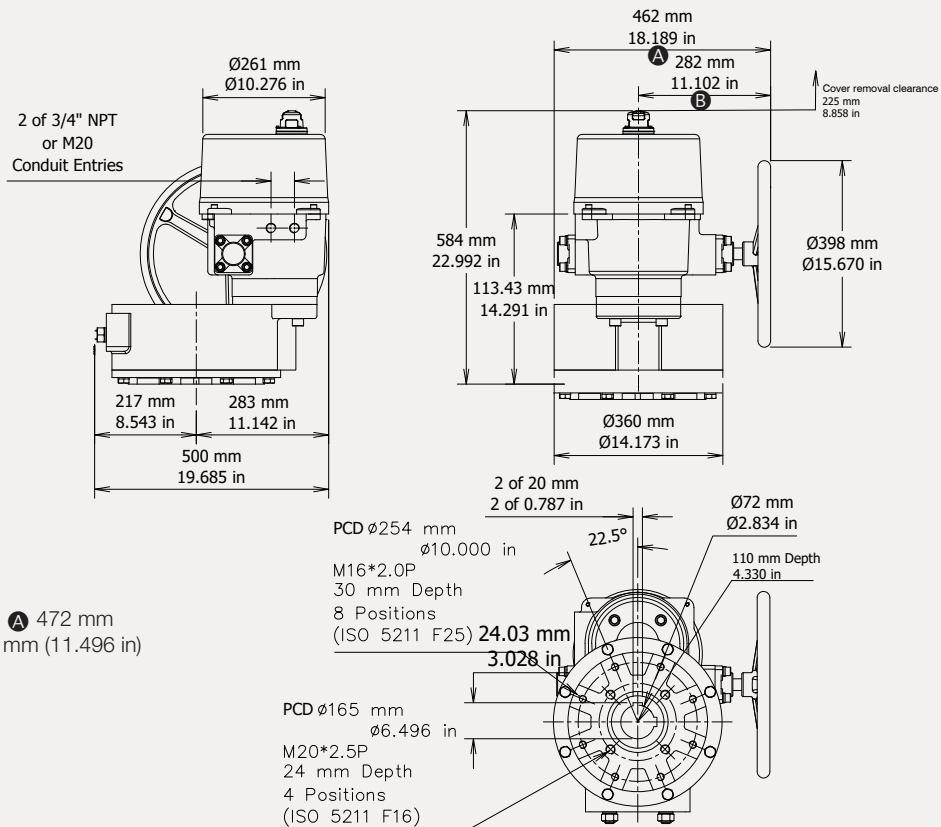
# Weather-Proof Outline Dimensions

## LQI 9/10/11/12



- With torque switch, **A** 459 mm (18.071 in), **B** 288 mm (11.339 in)
- Optional flange size : F14 (M16\*2.0P)

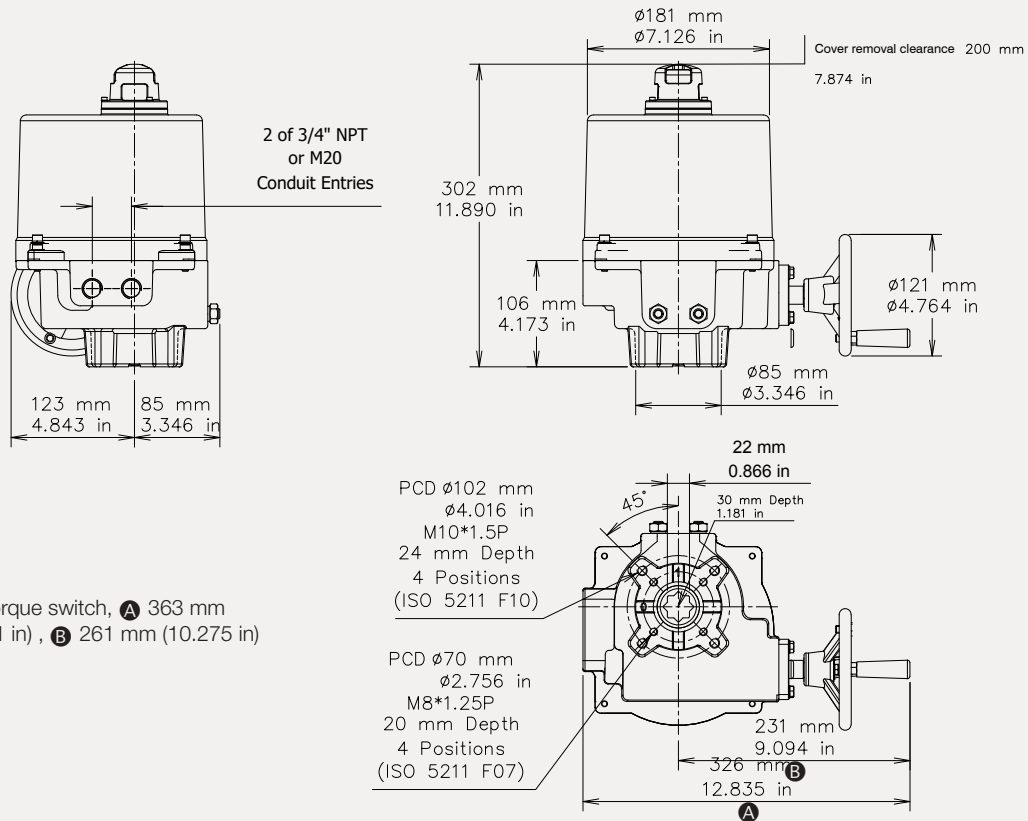
## LQI 13



- With torque switch, **A** 472 mm (18.583 in), **B** 292 mm (11.496 in)

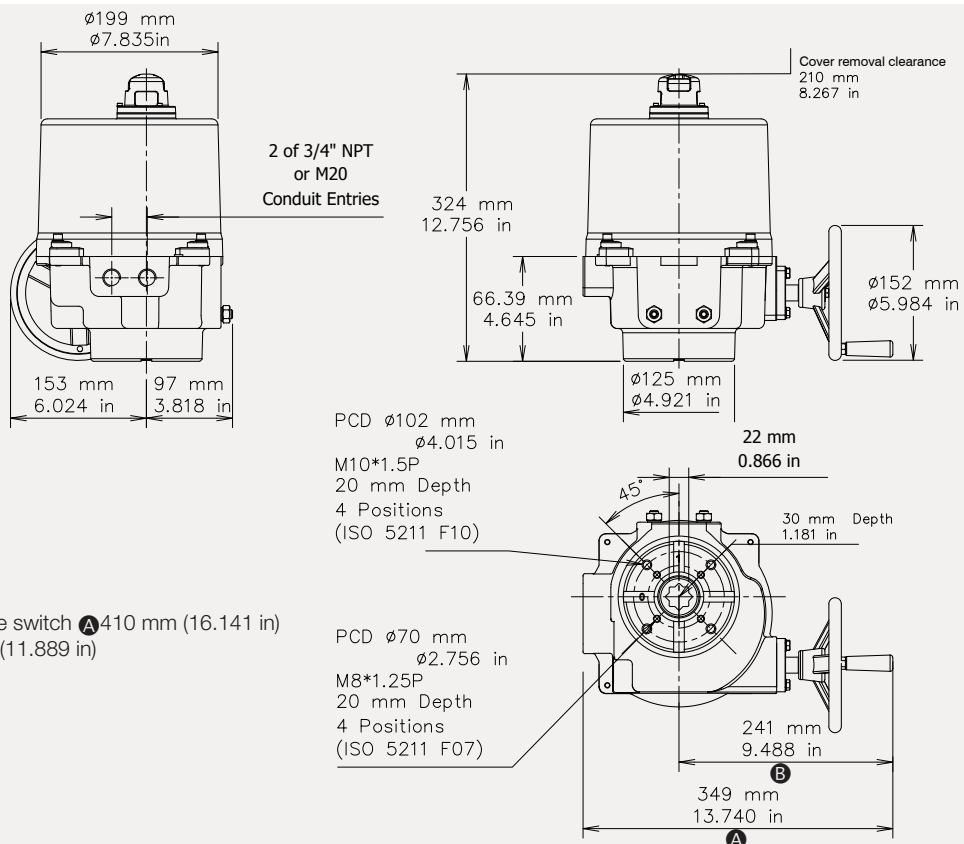
# Weather-Proof Outline Dimensions

## LQI F/G



- With torque switch, **A** 363 mm (14.291 in), **B** 261 mm (10.275 in)

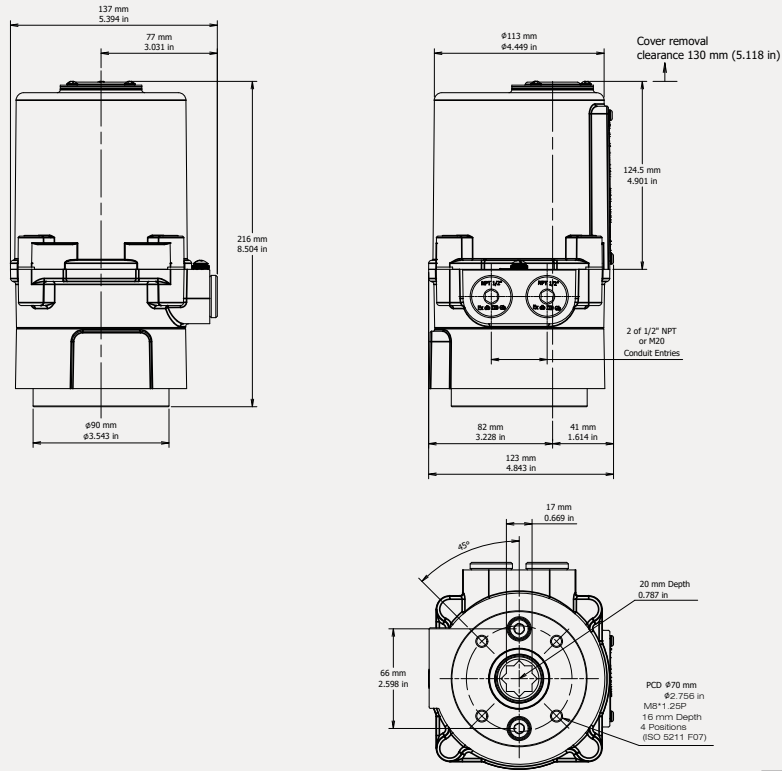
## LQI H



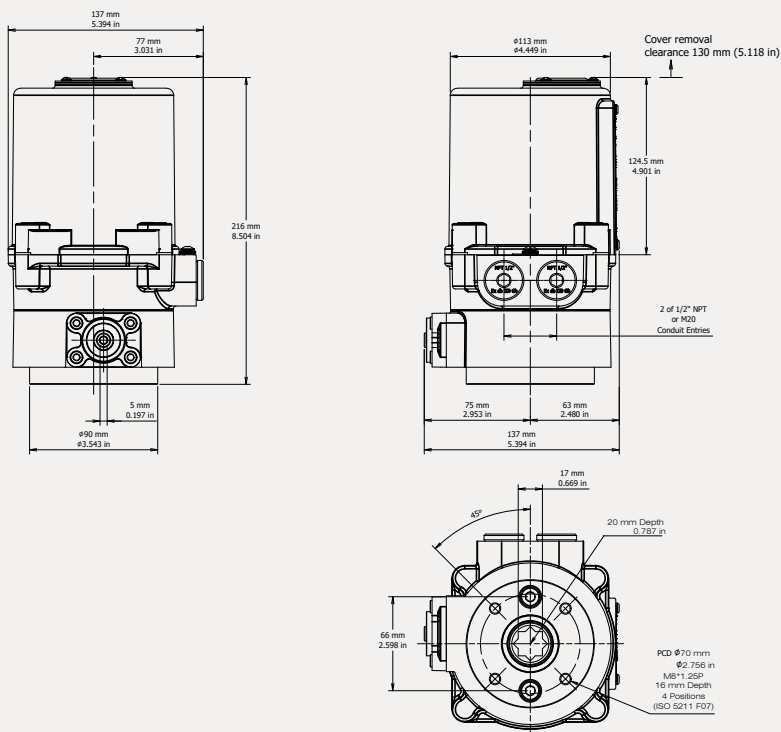
- With torque switch **A** 410 mm (16.141 in)  
**B** 302 mm (11.889 in)

# Explosion-Proof Outline Dimensions

## LQI A

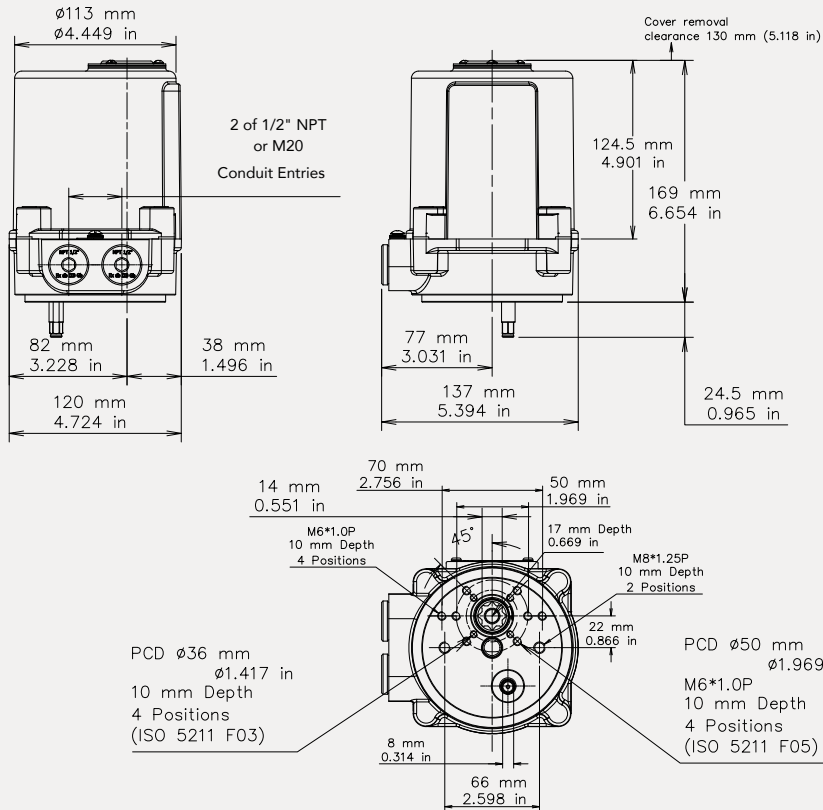


## LQI AM

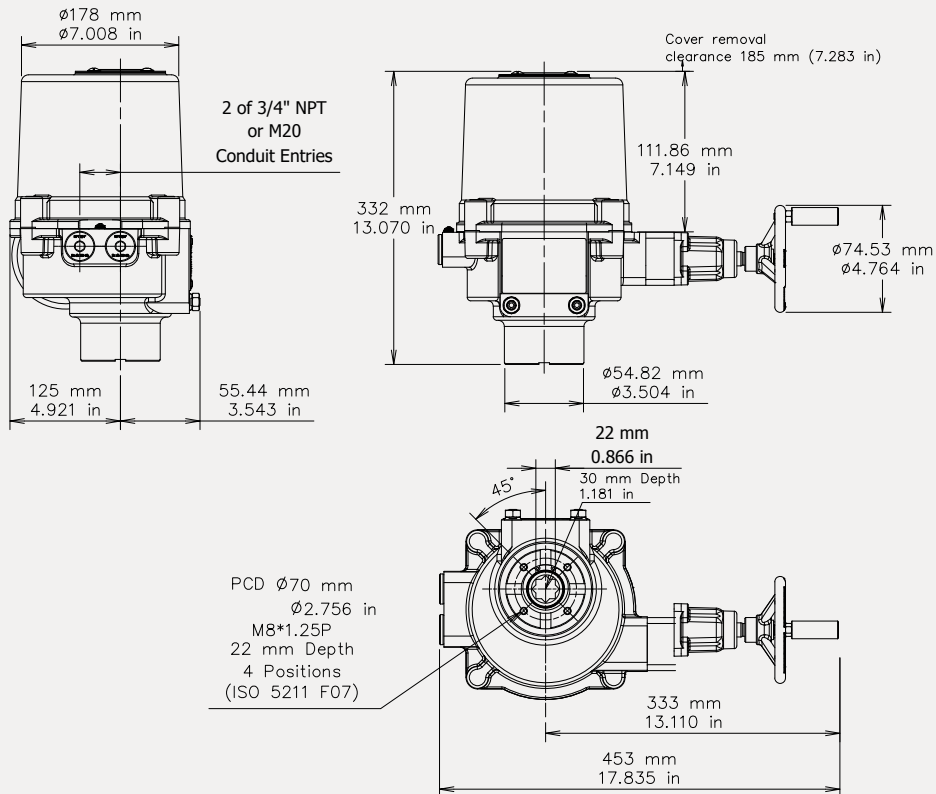


# Explosion-Proof Outline Dimensions

## LQI 1

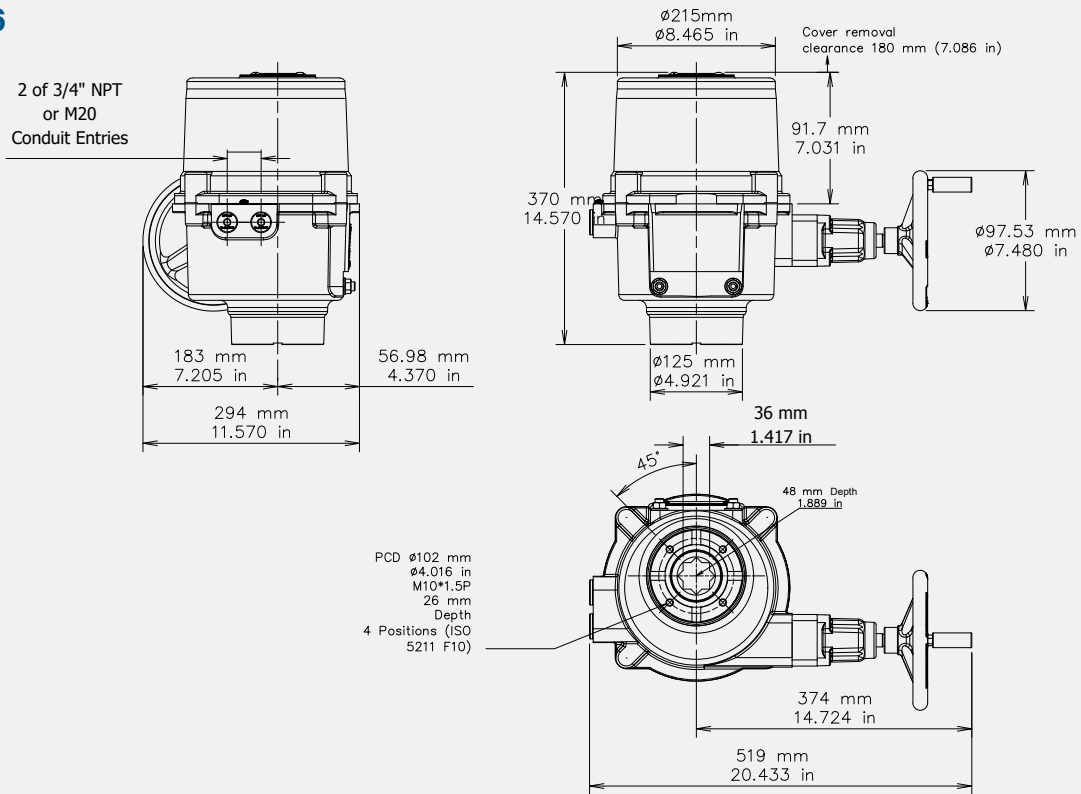


## LQI 2/3

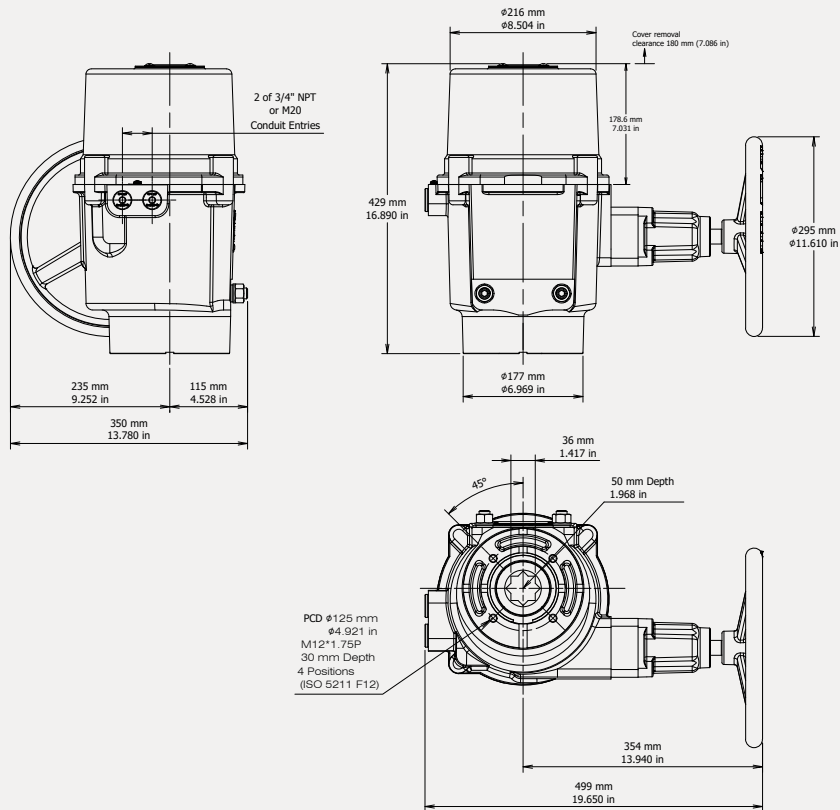


# Explosion-Proof Outline Dimensions

## LQI 4/5/6



## LQI 7/8





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