



### BX-Series Explosion Proof Electric Actuator

The quarter-turn electric BX-series explosion-proof actuator is an alternative to the rack and pinion actuator, utilized when an air supply isn't available. It is also used when flame-proof and combustible dust-proof enclosures are specified.

#### Certifications

- CSA for hazardous locations
- AEx/Ex
- UKCA II 2GD
- ATEX II 2GD
- RoHS
- REACH

#### Features

- Self-locking gear system
- Mechanical position indication
- Built-in thermal protection
- Clutch-less manual over-ride (for safe operation, the handwheel does not rotate during operation)
- Standard anti-condensation heater to prevent the freezing of lubricants and keep interior dry to prevent damage from moisture (heater not recommended if ambient temperature is over **68°F** or **35°C**)
- Enclosure features
  - Aluminum alloy, polyester powder coated, corrosion protection C3 according to ISO 12944-6
  - NEMA 4X and IP68 (waterproof and dustproof enclosure 7m, 72hrs)
- Gear train features
  - High alloy steel gear trains with self-locking to avoid backlash
  - Gear trains are factory lubricated for life
- Motor features
  - Insulation class F
  - Built-in thermal protection prevents motor burnout
    - AC motor: 257±9°F (125±5°C)
    - DC motor: 194 ± 9°F (90 ± 5°C)



#### Specifications

- Standard connections: ISO 5211 mounting flange
- Working temperature range: **-22°F** to **158°F** (**-30°C** to **70°C**)
- Working relative humidity range: 30% to 95%
- Options
  - Heater thermostat
    - Can switch the anti-condensation heater off when the temperature inside the actuator is higher than **77±9°F** (**25±5°C**)
  - Auxiliary limit switches
    - Actuators come standard with two limit switches (LS1 for fully-open and LS2 for fully-closed positioning)
    - Two auxiliary limit switches are optional for fully-open and fully-closed position feedback
  - Modulating control
    - A proportional control unit
    - Analog signal in/out: 4-20mA, 1-5V, and 2-10V
    - Analog signal output: 4-20mA and 2-10V
  - Potentiometer unit
    - Recommended to use with a floating control actuator to output signal for position indicator
    - Two resistors, 1K ohm or 5K ohm are available for selection
  - Current position transmitter
    - Can provide 4-20mA output signal for position indication

## BX-Series Explosion Proof Electric Actuator - Part Number Key

BX-Series Electric Actuator Part Number Key Example: BXOM-1B-11		Series	Model	Voltage	-	Option 1	Option 2
		BX	OM-1	B	-	1	1
<b>Series</b>	<b>Code</b>	←		←	←	←	←
BX	BX						
<b>Model</b>	<b>Code</b>						
OM-1	OM-1						
OM-A	OM-A						
OM-M	OM-M						
OM-2	OM-2						
OM-3	OM-3						
OM-4	OM-4						
OM-5	OM-5						
OM-6	OM-6						
<b>Voltage</b>	<b>Code</b>	←		←	←	←	←
115 VAC	B						
12 VDC	C						
24 VDC/AC	D						
220 VAC	F						
<b>Option 1</b>	<b>Code</b>	←		←	←	←	←
None	1						
4-20 mA input/output modulating controller	3						
Current position transmitter	4						
Potentiometer	5						
Two extra travel cams and switches	7						
1-5V input/2-10V output modulating controller	A						
2-10V input/output modulating controller	B						
75% duty cycle <sup>1</sup>	C						
Heater thermostat	E						
No heater	F						
<b>Option 2<sup>2</sup></b>	<b>Code</b>						
None	1						
4-20 mA input/output modulating controller	3						
Current position transmitter	4						
Potentiometer	5						
Two extra travel cams and switches	7						
1-5V input/2-10V output modulating controller	A						
2-10V input/output modulating controller	B						
75% duty cycle <sup>1</sup>	C						
Heater thermostat	E						
No heater	F						

<sup>1</sup>Standard for 24V

<sup>2</sup>If 2 options selected, list lower code first

NOTE: Do not duplicate options selected from Option 1 and Option 2. Some options are not available to combine.

**BX-Series Explosion-Proof Electric Actuator - Standard Mounting Specifications**

Model	Mounting Flange	Square		Depth of Square	
	ISO 5211	mm	in	mm	in
OM-A	F07	17	0.67	20	0.78
OM-1	F03/F05	14	0.55	17	0.67
OM-2 and OM-3	F07	22	0.87	30	1.18
OM-4, OM-5, and OM-6	F10	36	1.38	40	1.57

**Hazardous Area Enclosures**

**TS Taiwan Hazardous Areas Certification**

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

In accordance with IEC 60079-0, IEC 60079-1, IEC60079-31.

**CNEx China Hazardous Areas Certification**

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

In accordance with GB/T3836.1, GB/t3836.2, GB/T3836.31.

**ATEX Hazardous Areas Certification for European Union**

Directive	Marking	Ambient Temperature
ATEX II2GD	Ex db IIB T4 Gb	-22°F ~ 158°F (-30°C ~ 70°C)
ATEX II 2GD	Ex tb IIIC T130°C Db	-22°F ~ 158°F (-30°C ~ 70°C)

In accordance with IEC 60079-0, IEC 60079-1, IEC60079-31.

**IECEx Hazardous Areas Certification for International Market**

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

In accordance with IEC 60079-0, IEC 60079-1, IEC60079-31.

## CSA Hazardous Locations Certification for North America

### Zone System

Code	Class	Permitted Zone	Type of Protection	Group	Temperature Class	Ambient Temperature
AEx/Ex	1	1	db	IIB, IIA	T4	-22°F ~ 158°F (-30°C ~ 70°C)
AEx/Ex	11	21	tb	IIC, IIB, IIA	T130°C	-22°F ~ 158°F (-30°C ~ 70°C)

In accordance with 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, UL 60079-0, UL 60079-1, UL 60079-31.

### Division System

Hazard Class	Permitted Division	Group	Temperature Class	Ambient Temperature
I	1	C, D	T4	-22°F ~ 158°F (-30°C ~ 70°C)
II	1	E, F, G	T130°C	-22°F ~ 158°F (-30°C ~ 70°C)

In accordance with CAN/CSA-C22.2 No. 0-20, CSA C22.2 No. 30-M1986, CSA C22.2 No. 25-17, FM 3600, FM 3615, FM 3616.

### UKCA Hazardous Area Certification

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

In accordance with EN 60079-0, EN 60079-1, EN 60079-31.

### JPEX Hazardous Areas Certification for Japan

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

In accordance with JNIOOSH-TR-46-1, JNIOOSH-TR-46-2, JNIOOSH-TR-46-9.

## Torque, Weight, and Override Specifications Chart

Model	Maximum Torque		Weight		Manual Override
	N-m	in-lbs	kg	lb	
OM-A	50	443	4.5	10	-
OM-1	35	310	3.5	8	lever
OM-2	90	797	17	37.5	hand-wheel
OM-3	150	1328	17	37.5	
OM-4	400	3542	31	68.5	
OM-5	500	4427	31	68.5	
OM-6	650	5756	31	68.5	

**BX-Series Explosion-Proof Electric Actuator - Electrical Data**

**12VAC/DC, Floating Control, 30% and 75% Duty Cycle**

Model	Motor Power	Running Current			Running Time			Lock Current		
		DC	60 Hz	50 Hz	DC	60 Hz	50 Hz	DC	60 Hz	50 Hz
	Watt	Amp	Amp	Amp	Sec/90°	Sec/90°	Sec/90°	Amp	Amp	Amp
OM-1	10	2.9	-	-	22	-	-	3.1	-	-
OM-A	10	2.5	-	-	34	-	-	3.1	-	-
OM-2	40	4.4	-	-	15	-	-	17.5	-	-
OM-3	40	5.1	-	-	24	-	-	17.5	-	-
OM-4	80	14.1	-	-	21	-	-	40.6	-	-
OM-5	80	14.5	-	-	29	-	-	40.6	-	-
OM-6	80	21.8	-	-	35	-	-	40.6	-	-

**24VAC/DC, Floating Control, 75% Duty Cycle**

Model	Motor Power	Running Current			Running Time			Lock Current		
		DC	60 Hz	50 Hz	DC	60 Hz	50 Hz	DC	60 Hz	50 Hz
	Watt	Amp	Amp	Amp	Sec/90°	Sec/90°	Sec/90°	Amp	Amp	Amp
OM-1	10	1.5	1.9	1.6	11	14	14	2.6	2.5	2.5
OM-A	10	1.3	1.6	1.6	21	24	25	2.6	2.5	2.5
OM-2	40	1.9	3.4	3.4	19	15	15	14.1	10.4	10.4
OM-3	40	2.7	3.6	3.9	30	24	24	14.1	10.4	10.4
OM-4	80	7.4	10.7	10.3	22	20	22	36.4	27.3	27.3
OM-5	80	8.1	10.5	10.4	30	27	28	36.4	27.3	27.3
OM-6	80	12.5	10.3	10.3	42	34	34	36.4	27.3	27.3

**24VAC/DC, Modulating Control, 75% Duty Cycle**

Model	Motor Power	Running Current			Running Time			Lock Current		
		DC	60 Hz	50 Hz	DC	60 Hz	50 Hz	DC	60 Hz	50 Hz
	Watt	Amp	Amp	Amp	Sec/90°	Sec/90°	Sec/90°	Amp	Amp	Amp
OM-1	10	1.6	2.8	2.8	15	14	15	0.4	2.8	2.8
OM-A	10	1.2	2.5	2.4	26	23	24	0.4	2.8	2.8
OM-2	40	1.9	3.4	3.4	19	15	15	14.1	10.4	10.4
OM-3	40	2.7	3.6	3.9	30	24	24	14.1	10.4	10.4
OM-4	80	7.4	10.7	10.3	22	20	22	36.4	27.3	27.3
OM-5	80	8.1	10.5	10.4	30	27	28	36.4	27.3	27.3
OM-6	80	12.5	10.3	10.3	42	34	34	36.4	27.3	27.3

## BX-Series Explosion-Proof Electric Actuator - Electrical Data

### 110-120 VAC, Floating Control, 75% Duty Cycle

Model	Motor Power	Running Current		Running Time		Lock Current	
		60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz
	Watt	Amp	Amp	Sec/90°	Sec/90°	Amp	Amp
OM-1	10	0.6	0.6	12	12	2.5	2.3
OM-A	10	0.5	0.5	21	21	2.5	2.3
OM-2	40	0.5	0.5	16	16	3.6	3.7
OM-3	40	0.6	0.6	26	25	3.6	3.7
OM-4	80	3.7	3.8	15	15	12.7	11.7
OM-5	80	3.6	3.6	21	20	12.7	11.7
OM-6	80	4.8	5.2	29	27	12.7	11.7

### 110-120 VAC, Modulating Control, 75% Duty Cycle

Model	Motor Power	Running Current		Running Time		Lock Current	
		60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz
	Watt	Amp	Amp	Sec/90°	Sec/90°	Amp	Amp
OM-1	10	0.6	0.5	12	12	0.7	0.7
OM-A	10	0.5	0.5	22	22	0.7	0.7
OM-2	40	0.5	0.5	16	16	3.6	3.7
OM-3	40	0.6	0.6	26	25	3.6	3.7
OM-4	80	3.7	3.8	15	15	12.7	11.7
OM-5	80	3.6	3.6	21	20	12.7	11.7
OM-6	80	4.8	5.2	29	27	12.7	11.7

### 110-120 VAC, Floating Control, 30% Duty Cycle

Model	Motor Power	Running Current		Running Time		Lock Current	
		60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz
	Watt	Amp	Amp	Sec/90°	Sec/90°	Amp	Amp
OM-1	10	0.7	0.8	11	14	0.7	0.7
OM-A	10	0.7	0.8	21	27	0.7	0.8
OM-2	40	0.9	1.2	18	22	1.4	1.5
OM-3	40	0.9	1.2	28	34	1.4	1.5
OM-4	80	2.1	2.3	20	25	5.5	6.0
OM-5	80	2.2	2.3	27	33	5.5	6.0
OM-6	80	2.7	2.4	36	42	5.5	6.0



**BX-Series Explosion-Proof Electric Actuator - Electrical Data**

**110-120 VAC, Modulating Control, 30% Duty Cycle**

Model	Motor Power	Running Current		Running Time		Lock Current	
		60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz
	Watt	Amp	Amp	Sec/90°	Sec/90°	Amp	Amp
OM-2	40	0.9	1.2	18	22	1.4	1.5
OM-3	40	0.9	1.2	28	34	1.4	1.5
OM-4	80	2.1	2.3	20	25	5.5	6.0
OM-5	80	2.2	2.3	27	33	5.5	6.0
OM-6	80	2.7	2.4	36	42	5.5	6.0

**220-240 VAC, Floating Control, 75% Duty Cycle**

Model	Motor Power	Running Current		Running Time		Lock Current	
		60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz
	Watt	Amp	Amp	Sec/90°	Sec/90°	Amp	Amp
OM-1	10	0.4	0.4	11	11	0.6	0.6
OM-A	10	0.3	0.3	20	20	0.6	0.6
OM-2	40	0.3	0.3	25	24	2.7	2.5
OM-3	40	0.3	0.3	25	24	2.7	2.5
OM-4	80	2.1	2.2	14	14	7.0	7.7
OM-5	80	1.9	1.9	19	19	7.0	7.7
OM-6	80	2.0	2.3	24	25	7.0	7.7

**220-240 VAC, Modulating Control, 75% Duty Cycle**

Model	Motor Power	Running Current		Running Time		Lock Current	
		60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz
	Watt	Amp	Amp	Sec/90°	Sec/90°	Amp	Amp
OM-1	10	0.3	0.3	12	12	0.4	0.4
OM-A	10	0.3	0.3	22	22	0.4	0.4
OM-2	40	0.3	0.3	16	15	2.7	2.5
OM-3	40	0.3	0.3	25	24	2.7	2.5
OM-4	80	2.1	2.2	14	14	7.0	7.7
OM-5	80	1.9	1.9	19	19	7.0	7.7
OM-6	80	2.0	2.3	24	25	7.0	7.7



## BX-Series Explosion-Proof Electric Actuator - Electrical Data

### 220-240 VAC, Floating Control, 30% Duty Cycle

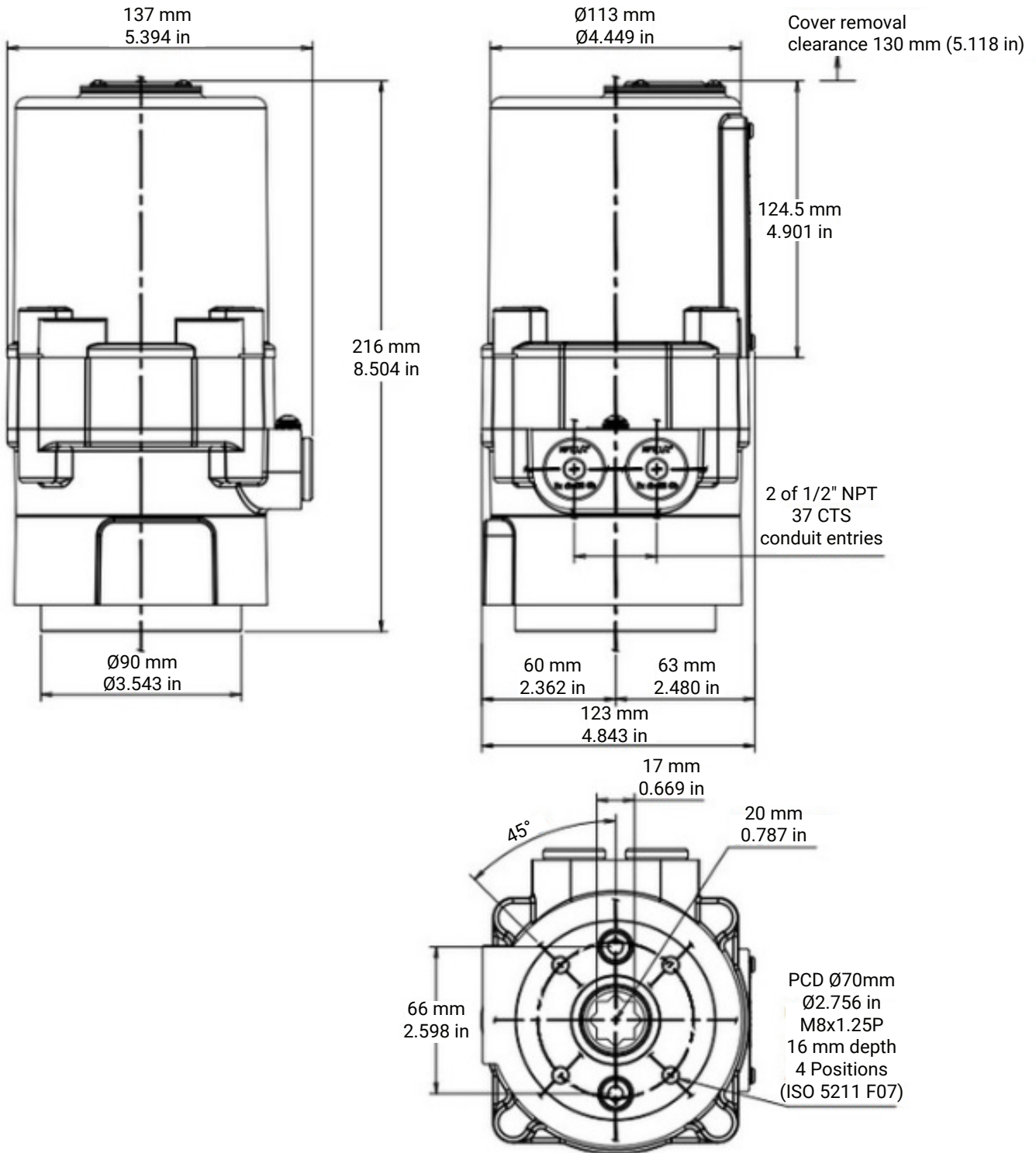
Model	Motor Power	Running Current		Running Time		Lock Current	
		60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz
	Watt	Amp	Amp	Sec/90°	Sec/90°	Amp	Amp
OM-1	10	0.3	0.3	11	13	0.3	0.3
OM-A	10	0.3	0.3	20	25	0.3	0.3
OM-2	40	0.4	0.5	18	22	0.7	0.8
OM-3	40	0.4	0.5	28	34	0.7	0.8
OM-4	80	0.9	1.3	20	24	2.8	3.0
OM-5	80	1.1	1.3	27	33	2.8	3.0
OM-6	80	1.1	1.3	33	41	2.8	3.0

### 220-240 VAC, Modulating Control, 30% Duty Cycle

Model	Motor Power	Running Current		Running Time		Lock Current	
		60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz
	Watt	Amp	Amp	Sec/90°	Sec/90°	Amp	Amp
OM-2	40	0.4	0.5	18	22	0.7	0.8
OM-3	40	0.4	0.5	28	34	0.7	0.8
OM-4	80	0.9	1.3	20	24	2.8	3.0
OM-5	80	1.1	1.3	27	33	2.8	3.0
OM-6	80	1.1	1.3	33	41	2.8	3.0

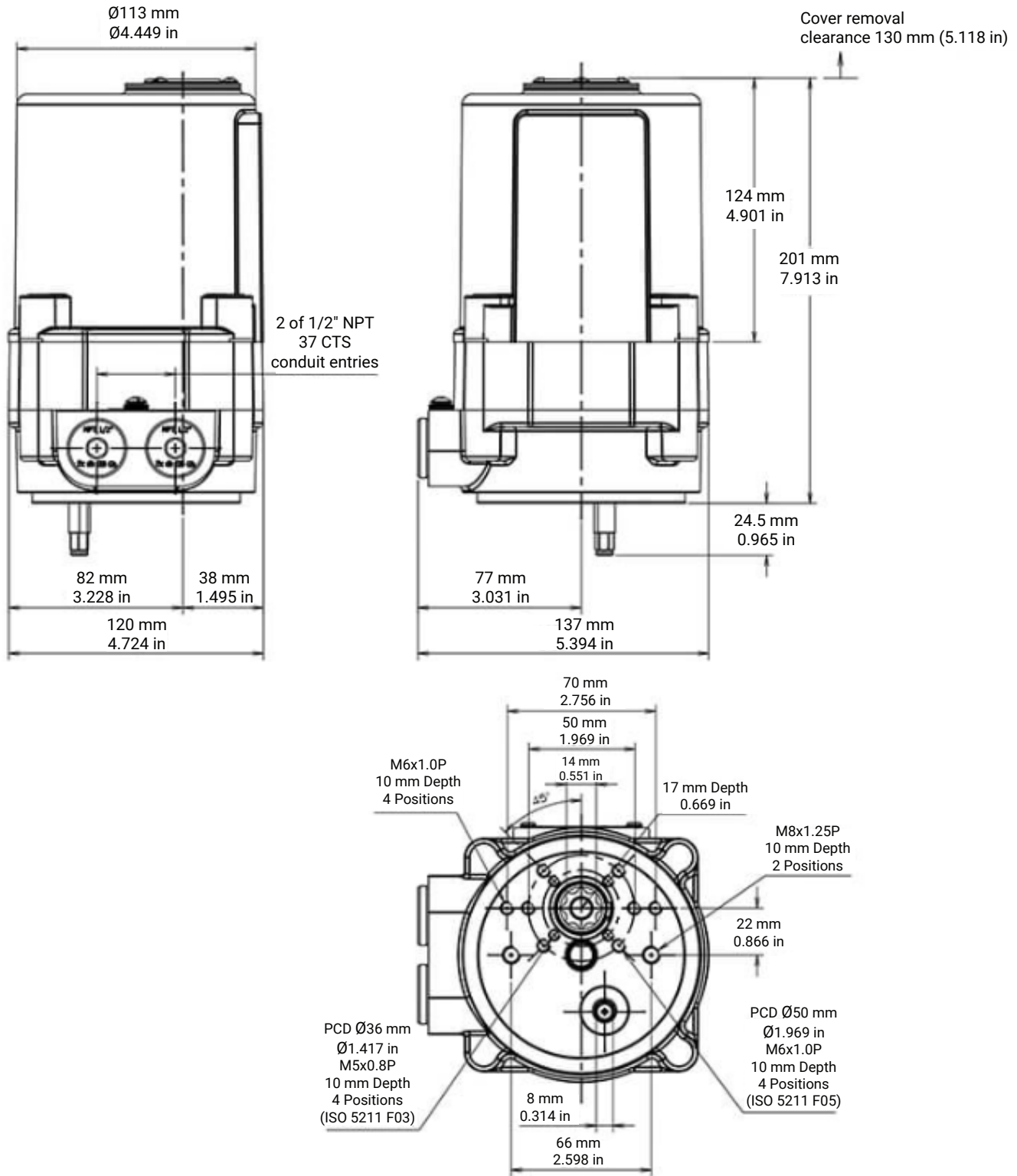
### BX-Series Explosion-Proof Electric Actuator - Dimensions

#### OM-A



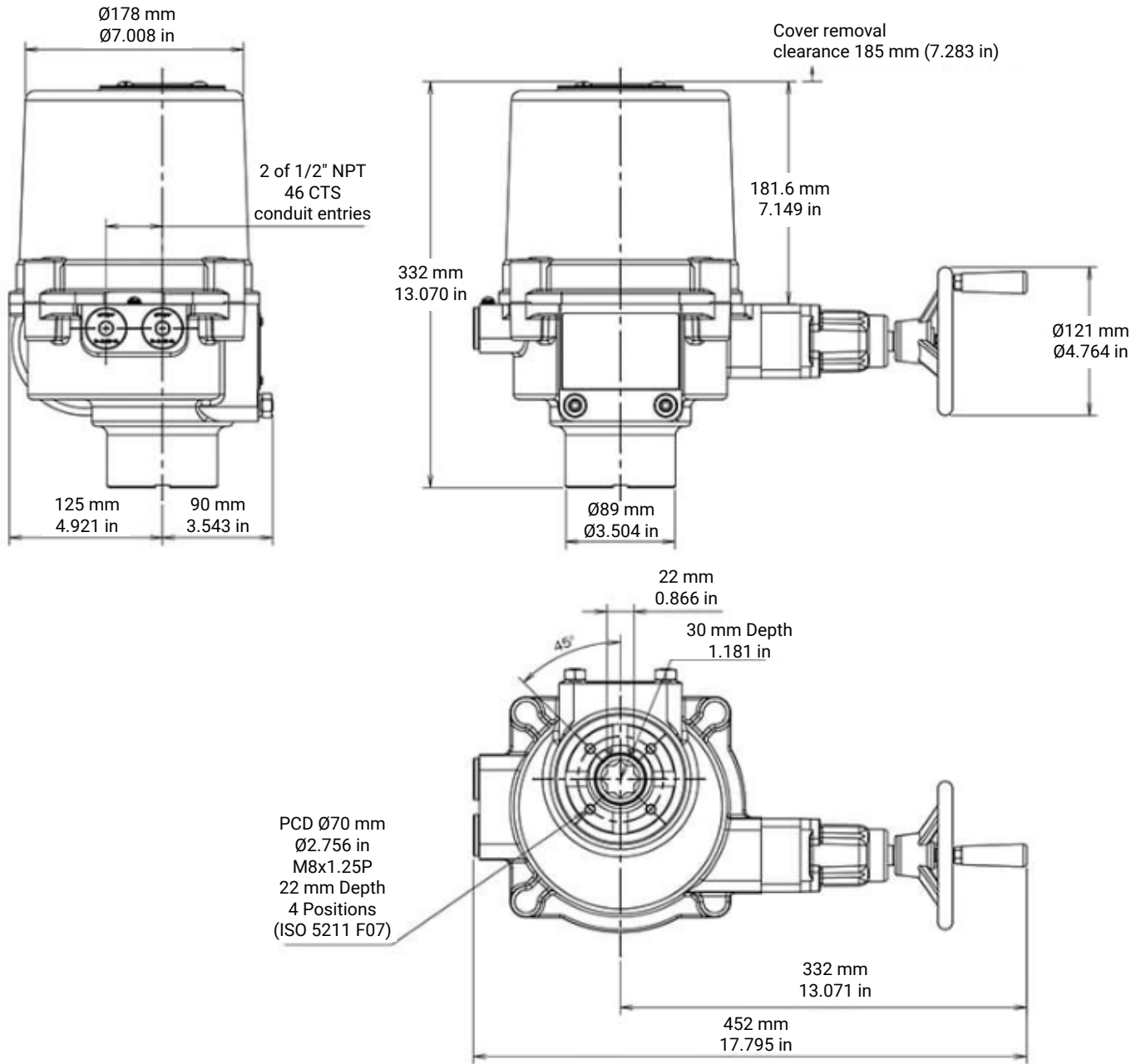
## BX-Series Explosion-Proof Electric Actuator - Dimensions

### OM-1



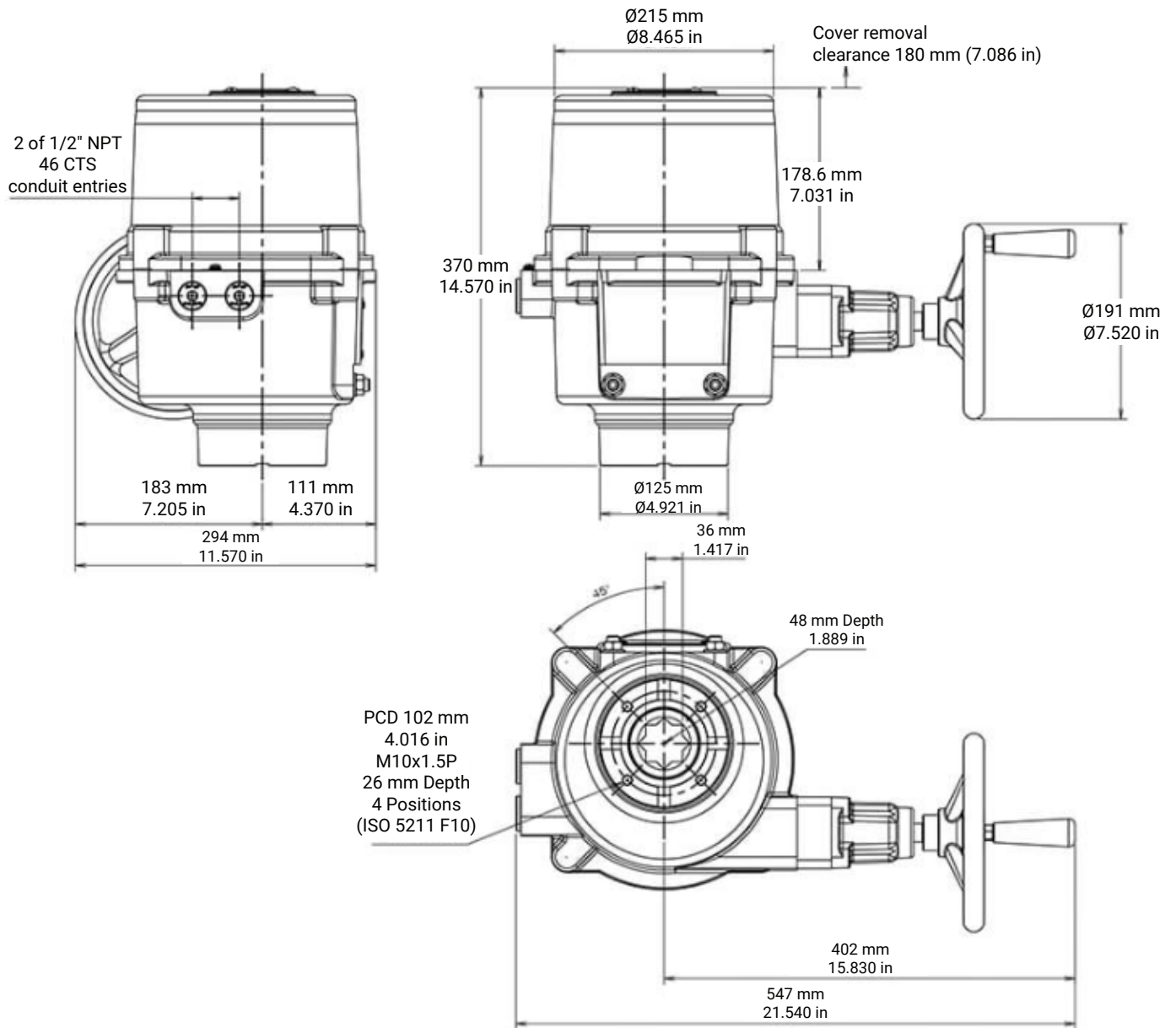
## BX-Series Explosion-Proof Electric Actuator - Dimensions

### OM-2 and OM-3



## BX-Series Explosion-Proof Electric Actuator - Dimensions

### OM-4, OM-5, and OM-6





## Limited Warranty

DIXON VALVE & COUPLING COMPANY, LLC (herein called "Dixon") warrants the products described herein and manufactured by Dixon to be free from defects in material and workmanship for a period of one (1) year from date of shipment by Dixon under normal use and service. Its sole obligation under this warranty being limited to repairing or replacing, as hereinafter provided, at its option any product found to Dixon's satisfaction to be defective upon examination by it, provided that such product shall be returned for inspection to Dixon's factory within three (3) months after discovery of the defect. The repair or replacement of defective products will be made without charge for parts or labor. This warranty shall not apply to: (a) parts or products not manufactured by Dixon, the warranty of such items being limited to the actual warranty extended to Dixon by its supplier; (b) any product that has been subject to abuse, negligence, accident, or misapplication; (c) any product altered or repaired by others than Dixon; and (d) normal maintenance services and the replacement of service items (such as washers, gaskets, and lubricants) made in connection with such services. To the extent permitted by law, this limited warranty shall extend only to the buyer and any other person reasonably expected to use or consume the goods who is injured in person by any breach of the warranty. No action may be brought against Dixon for an alleged breach of warranty unless such action is instituted within one (1) year from the date the cause of action accrues. This limited warranty shall be construed and enforced to the fullest extent allowable by applicable law.

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NOTE: Because of the health hazards associated with contamination and lead content in drinking water systems, Dixon couplings, unless otherwise specifically approved, are not recommended for potable water service and should not be used in applications where drinking water will contact the wetted surfaces of the coupling.

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**"WARNING:** This product contains lead, a chemical known to the State of California to cause cancer and birth defects or other reproductive harm."

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