



2020 CATALOG

Electric Actuators

Rev.14-11/19

INDELAC
CONTROLS, INC.



SIMPLIFIED MODEL NUMBER GUIDE

	Part No.	XX	XX	XX	XX	-XX	XX
		1	2	3	4	5	6
1. Series / Torque							
2. Enclosure's Nema Rating							
3. Motor Voltage Code							
4. ISO 5211 Mounting							
5. Cycle Time / 90°							
6. Options							

Notes: Multiple Selections Possible

Example:



ML4BF07-30P1VP

ML	4	B	F07	-30	P1VP
1	2	3	4	5	6

M Series
1,000 In-Lbs Torque
Nema 4
115Vac
ISO 5211 F07 Mounting
30 seconds / 90°
Power Off Motor Break
4-20mA Positioner

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R SERIES

100 IN-LBS, NEMA 4



The R series ultra-compact electric rotary actuator was specifically designed for small ball valve and damper applications.

SPECIFICATIONS:

TORQUE	100 In-Lb (11.3 Nm)	
CYCLE TIME	2.5 Sec./90	115Vac & 230Vac
	2.9 Sec./90	12Vdc, 24Vdc, 24Vac motor (75%)
DUTY CYCLE	25% standard on 115Vac and 230Vac	
	75% standard on 12Vdc, 24Vdc and 24Vac	
MOTOR	Permanent split capacitor (for AC) with thermal overload protection	



CURRENT RATINGS FL= Full Load, LR= Lock Rotor

115 Vac (Std.)		24 Vac		24 Vdc		12 Vdc		208 Vac/1Ph/60Hz		230 Vac/1Ph/60Hz	
FL	LR	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR
0.40	0.55	0.40	2.40	0.40	2.40	0.60	2.90	0.36	0.72	0.33	0.38

The motor's LR amps must be taken into account when sizing the input power supply and fuses. Slow blow fuses are recommended

CERTIFICATIONS	CSA	Master Contract 178618
CANADIAN	CSA C22.2 No. 139-10 Electrically Operated Valves 3 rd Edition, Class 3221 02 - Valves – General Purpose	
Actuators		
UNITED STATES	UL 429 Electrically Operated Valves 7th Edition, Class 3221 82 - Valves – Actuators General Purpose Actuators certified to US Standards	
APPROVED VOLTAGES	12Vdc, 115Vac & 230Vac	
APPROVED TEMP.	-4F (-20C) to 104F (40C)	
APPROVED OPTIONS	Power off Brake, Spring Friction Brake, One or Two Auxiliary Switches (For complete list of options, see option grid in catalog page 33)	
COATING	Thermally bonded polyester powder	
INDICATOR	Visual	Dome style
	Electric	Feedback from limit switches, same as operating voltage
SWITCHES	Snap action	SPDT, 15A @ 250Vac
LUBRICATION	Grease	Permanent, little or no maintenance required
WEIGHT	Pound	7 (lb)
	Kilogram	3.2 (kg)
MOUNTING	Universal	
MOUNTING PAD	ISO 5211 F03 (9mm star drive), F04 (11mm star drive) AND F03/04 (11mm star drive with F03 bolt circle)	

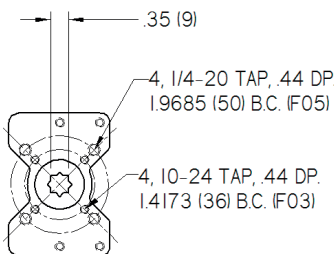
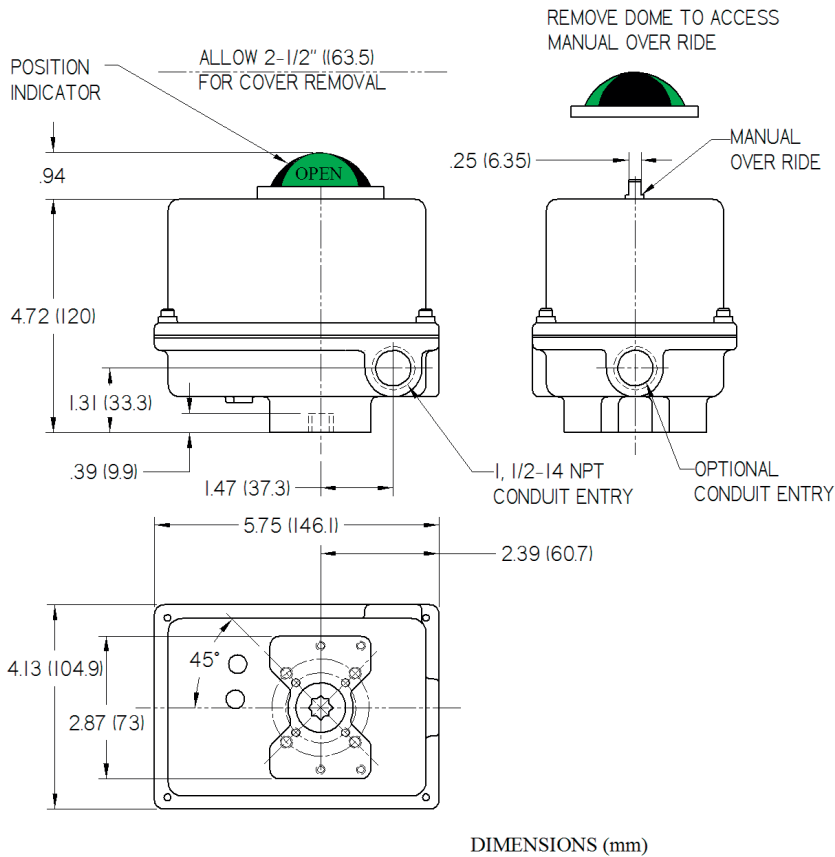


R SERIES

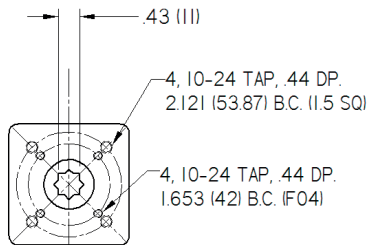
100 IN-LBS, NEMA 4

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ELECTRIC ACTUATORS AND CONTROLS

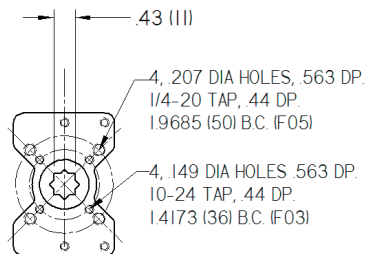
TEMPERATURE	-40F (-40C) to 150F (65.6C), heater & thermostat required 0F and below Optional double heater for application up to -76F (-60C)
OVERRIDE	Manual, non-declutching Declutching manual override not available DC voltage cannot be manually operated



**ISO 5211 F03
STANDARD**



ISO 5211 F04



ISO 5211 F03/04



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The RXP model of the R series compact electric rotary actuator is designed for use in hazardous locations.

SPECIFICATIONS:

TORQUE	100 In-Lb (11.3 Nm)	
CYCLE TIME	2.5 Sec./90	115Vac & 230Vac
	2.9 Sec./90	12Vdc, 24Vdc, 24Vac motor (75%)
DUTY CYCLE	25% standard on 115Vac and 230Vac	
	75% standard on 12Vdc, 24Vdc and 24Vac	
MOTOR	Permanent split capacitor (for AC) with thermal overload protection	
CURRENT RATINGS	FL= Full Load, LR= Lock Rotor	

115 Vac (Std.)		24 Vac		24 Vdc		12 Vdc		208 Vac/1Ph/60Hz		230 Vac/1Ph/60Hz	
FL	LR	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR
0.40	0.55	0.40	2.40	0.40	2.40	0.60	2.90	0.36	0.72	0.33	0.38

The motor's LR amps must be taken into account when sizing the input power supply and fuses. Slow blow fuses are recommended

CERTIFICATIONS	CSA	Master Contract 178618
CLASSIFICATION	Class I Groups C and D, Divisions 1 & 2; Class II Groups E, F & G, Divisions 1 and 2	
CANADIAN	CSA Std. C22.2 No. 139-1982 – Electrically Operated Valves, CSA Std. C22.2 No. 25-1966 – Enclosures for use in Class II, Groups E, F & G Hazardous Locations CSA Std. C22.2 No. 30-M 1986 – Explosion Proof Enclosures for use in Class I Hazardous Locations	
UNITED STATES	UL Std. No. 29, 5 th Edition 1999 – Electrically Operated Valves	
	UL Std. No. 1203, 3 rd Edition 2000 – Explosion Proof and Dust-Ignition-Proof Electric Equipment for use in Hazardous (Classified) Locations	
APPROVED VOLTAGES	12Vdc, 24Vdc, 115Vac & 230Vac	
APPROVED ENCLOSURES	NEMA Type 4X, Type 7 and IP66	
APPROVED TEMP.	-4F (-20C) to 104F (40C)	
APPROVED OPTIONS	Power off Brake, One or Two Auxiliary Switches, 1K, 5K & 10K Potentiometers, Heater, Heater with Thermostat and Three Position (For complete list of options, see option grid in catalog page 33)	
COATING	Thermally bonded polyester powder	
INDICATOR	Visual	Dome style
	Electric	Feedback from limit switches, same as operating voltage
SWITCHES	Snap action	SPDT, 15A @ 250Vac
LUBRICATION	Grease	Permanent, little or no maintenance required
WEIGHT	Pound	7 (lb)
	Kilogram	3.2 (kg)
MOUNTING	Universal	

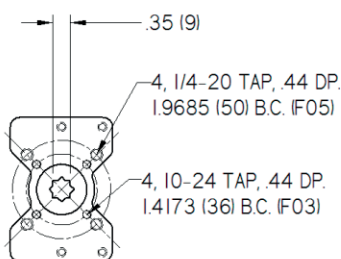
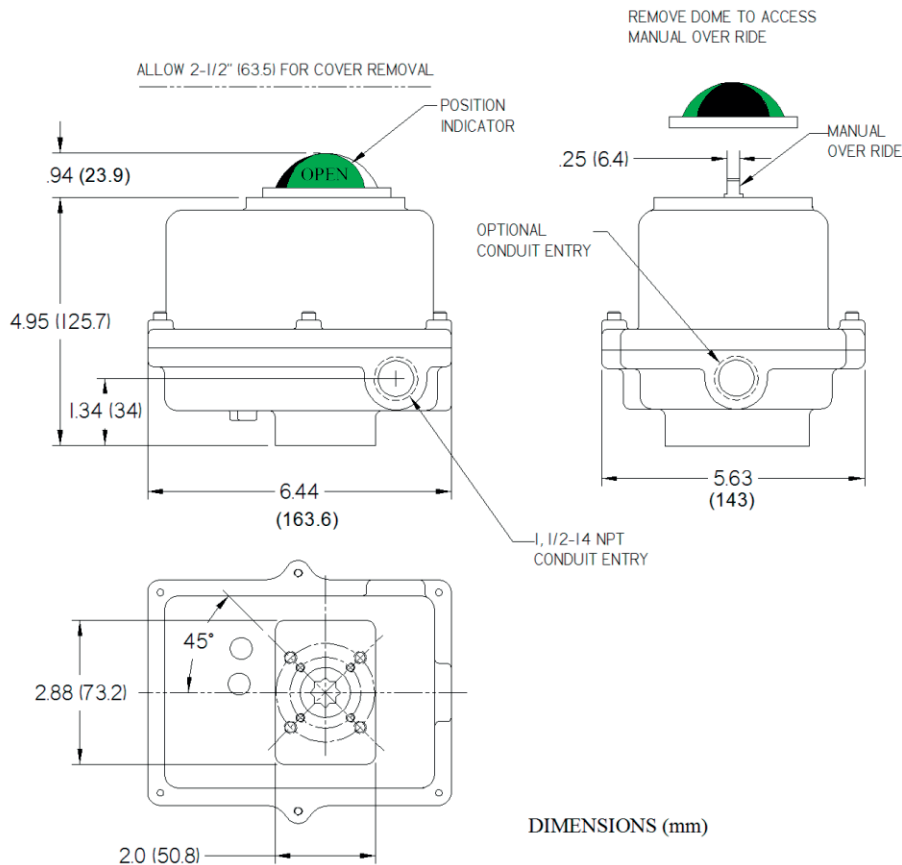


RXP

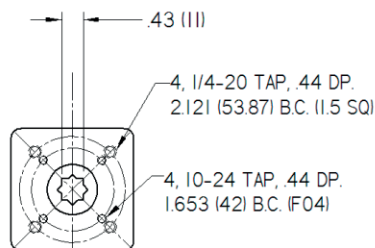
100 IN-LBS, NEMA 7

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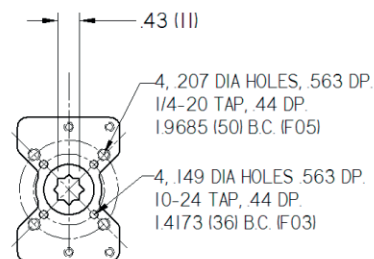
MOUNTING PAD	ISO 5211 F03 (9mm star drive), F04 (11mm star drive) or F03/04 (11mm star drive with F03 bolt circle)
TEMPERATURE	-40F (-40C) to 150F (65.6C), heater & thermostat required 0F and below Optional double heater for application up to -76F (-60C)
OVERRIDE	Manual, non-declutching Declutching manual override not available DC voltage cannot be manually operated



**ISO 5211 F03
STANDARD**



ISO 5211 F04



ISO 5211 F03/04



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SD & SDX SERIES

200 & 300 IN-LBS, NEMA 4



The SD & SDX are specifically designed for valve sizes from 3/4" to 2" and dampers that do not exceed the rated torque of the actuator.

SPECIFICATIONS:

TORQUE	SD	200 In-Lb (22.6 Nm)
	SDX	300 In-Lb (33.9 Nm)
CYCLE TIME	5 Sec./90	12Vdc, 24Vdc, 24Vac, 115Vac & 230Vac
	11 Sec./90	115Vac extended duty motor (75%)
DUTY CYCLE	25% standard on 115Vac and 230Vac 75% standard on 12Vdc, 24Vdc and 24Vac, optional on 115Vac extended duty motor	
MOTOR	Permanent split capacitor (for AC) with thermal overload protection	



CURRENT RATINGS FL= Full Load, LR= Lock Rotor

115 Vac (Std.)		115 Vac Extended Duty		24 Vac		24 Vdc		12 Vdc		208 Vac/1Ph/60Hz		230 Vac/1Ph/60Hz	
FL	LR	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR
0.38	0.75	0.38	0.75	0.70	3.20	0.70	3.20	1.30	4.20	0.28	0.35	0.25	0.35

The motor's LR amps must be taken into account when sizing the input power supply and fuses. Slow blow fuses are recommended

CERTIFICATIONS	CSA	Master Contract 178618
CANADIAN	CSA C22.2 No. 139-10 Electrically Operated Valves 3 rd Edition, Class 3221 02 - Valves – General Purpose Actuators	
UNITED STATES	UL 429 Electrically Operated Valves 7th Edition, Class 3221 82 - Valves – Actuators General Purpose Actuators certified to US Standards	
APPROVED VOLTAGES	12Vdc, 24Vdc & 115Vac	
APPROVED TEMP.	-4F (-20C) to 104F (40C)	
APPROVED OPTIONS	Motor brake, spring friction brake, one auxiliary switch and two auxiliary switches (For complete list of options, see option grid in catalog page 33)	
COATING	Thermally bonded polyester powder	
INDICATOR	Visual	Dome style
	Electric	Feedback from limit switches, same as operating voltage
SWITCHES	Snap action	SPDT, 15A @ 250Vac
LUBRICATION	Grease	Permanent, little or no maintenance required
WEIGHT	Pound	10 (lb)
	Kilogram	4.54 (kg)
MOUNTING	Universal	
MOUNTING PAD	ISO 5211 F03, F05 & F07 with 14mm star drive	



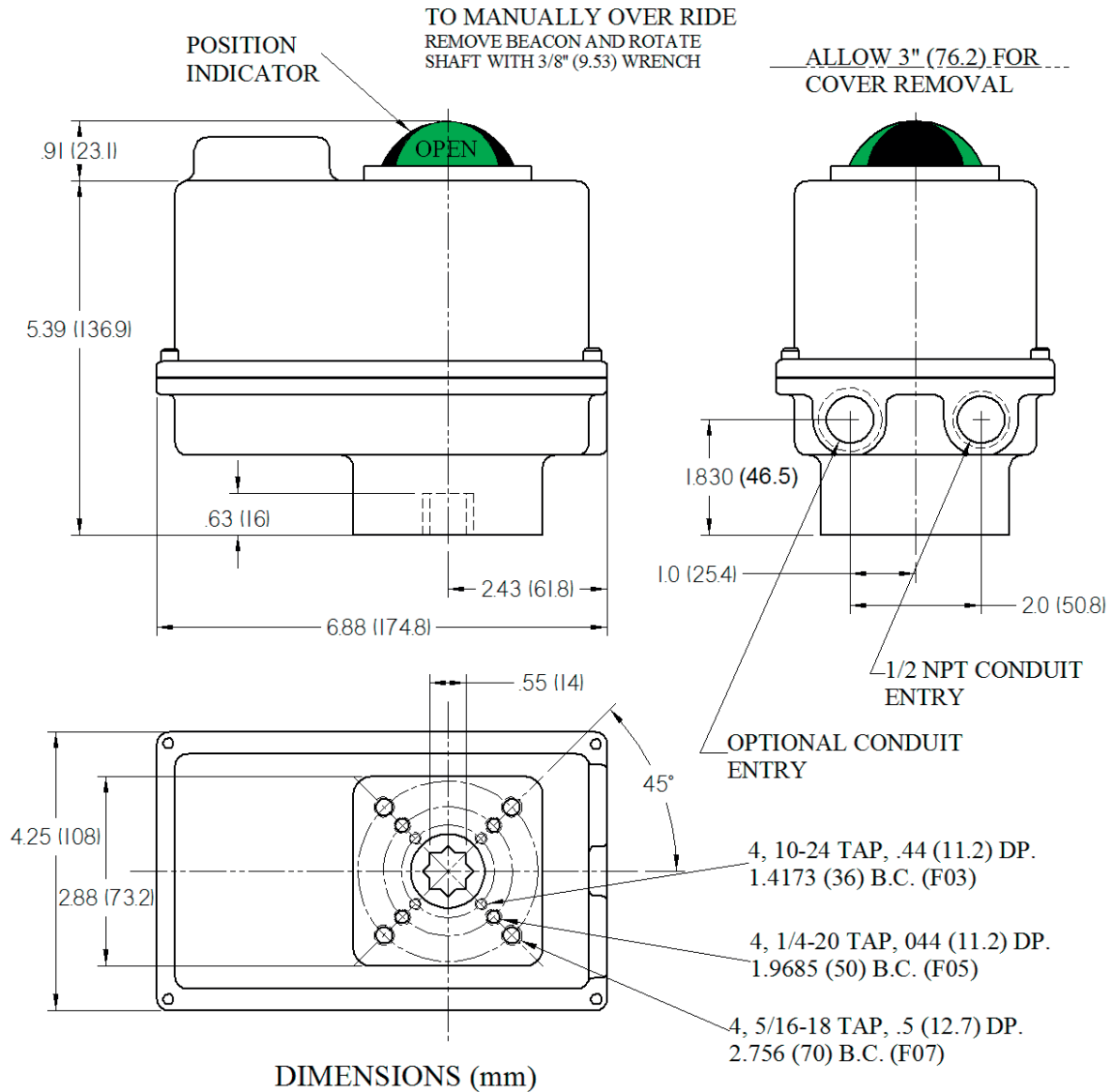
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SD & SDX SERIES

200 & 300 IN-LBS, NEMA 4

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TEMPERATURE	-40F (-40C) to 150F (65.6C), heater & thermostat required 0F and below Optional double heater for application up to -76F (-60C)
OVERRIDE	Manual, non-declutching Declutching manual override optional DC voltage and 75% duty cycle motor must be declutching



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SR & SX SERIES

200 & 300 IN-LBS, NEMA 4 & 7



The SR & SX rotary electric actuators were designed for applications within 200 & 300 in-lbs of torque used in hazardous locations. They can also be used in general purpose locations when more space is needed inside the enclosure for optional equipment such as analog (4-20mA and 0-10Vdc) control, timers or speed control.

SPECIFICATIONS:

TORQUE SR 200 In-Lb (22.6 Nm)
 SX 300 In-Lb (33.9 Nm)

CYCLE TIME 5 Sec./90 12Vdc, 24Vdc, 24Vac, 115Vac & 230Vac
 11 Sec./90 115Vac extended duty motor (75%)

DUTY CYCLE 25% standard on 115Vac and 230Vac
 75% standard on 12Vdc, 24Vdc and 24Vac, optional on 115Vac extended duty motor

MOTOR Permanent split capacitor (for AC) with thermal overload protection

CURRENT RATINGS FL= Full Load, LR= Lock Rotor

115 Vac (Std.)		115 Vac Extended Duty		24 Vac		24 Vdc		12 Vdc		208 Vac/1Ph/60Hz		230 Vac/1Ph/60Hz	
FL	LR	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR
0.38	0.75	0.38	0.75	0.70	3.20	0.70	3.20	1.30	4.20	0.28	0.35	0.25	0.35

The motor's LR amps must be taken into account when sizing the input power supply and fuses. Slow blow fuses are recommended

CERTIFICATION CSA Master Contract 178618
 LOCATION Hazardous - Class I, Division 1 & 2, Groups C & D; Class II Division 1 & 2, Groups E, F & G
 CANADIAN CSA C322802 – Valves – Actuators – For Hazardous Locations CAN/CSA – C22.2 No. 139-1982; CAN/CSA –
 C22.2 No. 25-1966; CAN/CSA- C22.2 No. 30-M1986
 UNITED STATES Class C322882 - Valves – Actuators – For Hazardous Locations - Certified to US Standards. ANSI/UL 429,
 Seventh Ed. – 2013; ANSI/UL 1203 Third Ed. - 2000

CERTIFIED VOLTAGES 12Vdc, 24Vdc & 115Vac
 APPROVED TEMP. -4F (-20C) to 104F (40C)
 CERTIFIED OPTIONS Enclosure Type 4, 7 & 9, One, Two or Three Auxiliary Switches, Push Knob Declutching Manual Override, Motor
 Brake for 12Vdc, 24Vdc & 115Vac, all Feedback Potentiometer options, Modulating Controls LRC, VP, VQ, VP0 &
 VQ0, Visual Position Indication D, DI, D3L, D3T, TX, TX0 & TQ, Additional Conduit Entry, Heater and Heater with
 Thermostat (For complete list of options, see option grid in catalog page 33)

COATING Thermally bonded polyester powder

INDICATOR Visual Optional
 Electric Feedback from limit switches, same as operating voltage

SWITCHES Snap action SPDT, 15A @ 250Vac

LUBRICATION Grease Permanent, little or no maintenance required

WEIGHT Pound 15 (lb)
 Kilogram *, \$ (kg)

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ALLOW 4" (101.6) FOR COVER REMOVAL

DIMENSIONS (mm)

6.47 (164.3)

1.45 (36.8)

.63 (16)

8.53 (216.7)

2.31 (58.7)

1/2 N.P.T. CONDUIT ENTRY

9.41 (239)

7.78 (197.6)

3.2 (81.3)

.55 (14) STAR

3.12 (79.4)

.66 (220)

4, 1/4-20 TAP .44 (11.2) DP.
1.969 (50) B.C. (F05)

OPTIONAL MANUAL OVERRIDE AND POSITION INDICATOR

**OPTION #1
DECLUTCHING WITH
PUSH KNOB**

1.28 (32.5)

.5 (12.7)

POSITION INDICATOR

**OPTION #2
ROTATE
THROUGH GEARS**



M SERIES

400, 675, 1000 & 1500 IN/LBS,
NEMA 4



The M series rotary electric actuator was designed for small and medium size valve and damper applications. This industrial grade reversing actuator has been manufactured for over thirty years and has achieved an impeccable reputation for reliability in applications requiring repeated superior performance year after year.

SPECIFICATIONS:

TORQUE	MS	400 In-Lb (45.2 Nm)
	MR	675 In-Lb (76.3 Nm)
	ML	1000 In-Lb (113Nm)
	MH	1500 In-Lb (169.5Nm)

CYCLE TIME	MS	10 Sec./90	12Vdc, 24Vdc, 24Vac, 115Vac & 230Vac
	MS	23 Sec./90	115Vac extended duty motor (75%)
	MR & ML	15 Sec./90	12Vdc, 24Vdc, 24Vac, 115Vac & 230Vac
	MR & ML	40 Sec./90	115Vac extended duty motor (75%)
	MH	30 Sec./90	12Vdc, 24Vdc, 24Vac, 115Vac & 230Vac
	MH	75 Sec./90	115Vac extended duty motor (75%)

DUTY CYCLE	25% standard on 115Vac and 230Vac
	75% standard on 12Vdc, 24Vdc and 24Vac, 115Vac extended duty motor, optional

MOTOR	Permanent split capacitor (for AC) with thermal overload protection
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CURRENT RATINGS	FL= Full Load, LR= Lock Rotor
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	115 Vac (Std.)		115 Vac Extended Duty		24 Vac		24 Vdc		12 Vdc		208 Vac/1Ph/60Hz		230 Vac/1Ph/60Hz	
	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR
MS & MR	0.38	0.75	0.38	0.75	0.90	3.20	0.90	3.20	1.70	4.20	0.21	0.42	0.18	0.38
ML & MH	0.38	0.75	0.38	0.75	1.10	3.20	1.10	3.20	2.20	4.20	0.21	0.42	0.18	0.38

The motor's LR amps must be taken into account when sizing the input power supply and fuses. Slow blow fuses are recommended

CERTIFICATION	CSA	Master Contract 178618
CLASSIFICATION	3221 02 – Valves – Actuators; 3221 82 – Valves – Actuators Certified to US Standards	
CANADIAN	C22.2 No. 139-1982 (Reaffirmed 2000) – Electrically Operated Valves	
	C22.2 No. 94-M91 (Reaffirmed 2001) – Special Purpose Enclosures	
UNITED STATES	UL 429, 5 th Edition (8 Oct 2004) – Electrically Operated Valves	
	UL 50, 11 th Edition (12 Sep 2003) – Enclosures for Electrical Equipment	
APPROVED VOLTAGES	115Vac	
APPROVED ENCLOSURE	Type 4	
APPROVED TEMP.	-4F (-20C) to 104F (40C)	
APPROVED OPTIONS	One or Two Auxiliary Switches, Declutching Manual Override with Hand Wheel, Friction Brake, Power On Brake and Power Off Brake for 115Vac (For complete list of options, see option grid in catalog page 33)	
COATING	Thermally bonded polyester powder	
POSITION INDICATOR	Visual	Dome Indicator
	Electric	Feedback from limit switches, same as operating voltage
SWITCHES	Snap action	SPDT, 15A @ 250Vac

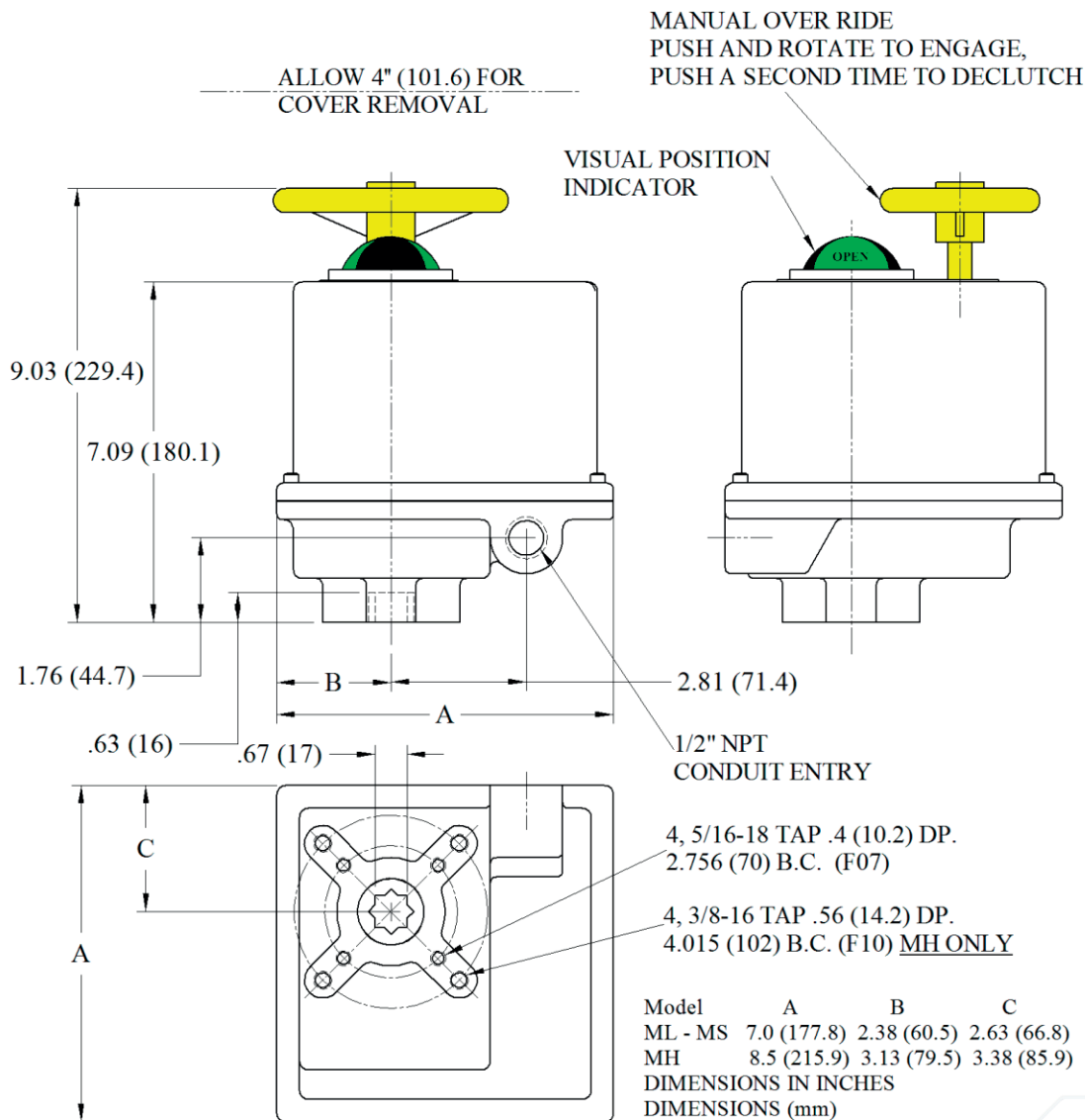


M SERIES

400, 675, 1000 & 1500 IN/LBS,
NEMA 4

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LUBRICATION	Grease	Permanent, little or no maintenance required
WEIGHT	Pound Kilogram	MS, MR & ML – 16 (lb) MS, MR & ML – 7.26 (kg) MH – 22 (lb) MH – 10 (kg)
MOUNTING	Universal	
MOUNTING PAD	ISO 5211 F07 with 17mm star drive (And F10 bolt circle on MH only)	
TEMPERATURE	-40F (-40C) to 150F (65.6C), heater & thermostat required 0F and below Optional double heater for application up to -76F (-60C)	
OVERRIDE	Manual, Declutching Hand Wheel	



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M SERIES

400, 675, 1000 & 1500 IN/LBS,
NEMA 7

ICI's M series rotary electric actuator was designed for quarter turn valve and damper applications requiring from 400 up to 1,500 in-lbs torque. This industrial grade reversing actuator has been manufactured for over twenty-five years and has achieved an impeccable reputation for reliability in applications requiring repeated superior performance year after year. This machine has a hardened steel spur gear drive train guaranteeing high efficiency, quiet operation and long trouble free life.

SPECIFICATIONS:

TORQUE	MS	400 In-Lb (45.2 Nm)	
	MR	675 In-Lb (76.3 Nm)	
	ML	1000 In-Lb (113Nm)	
	MH	1500 In-Lb (169.5Nm)	
CYCLE TIME	MS	10 Sec./90	12Vdc, 24Vdc, 24Vac, 115Vac & 230Vac
	MS	23 Sec./90	115Vac extended duty motor (75%)
	MR & ML	15 Sec./90	12Vdc, 24Vdc, 24Vac, 115Vac & 230Vac
	MR & ML	40 Sec./90	115Vac extended duty motor (75%)
	MH	30 Sec./90	12Vdc, 24Vdc, 24Vac, 115Vac & 230Vac
	MH	75 Sec./90	115Vac extended duty motor (75%)
DUTY CYCLE	25% standard on 115Vac and 230Vac		
	75% standard on 12Vdc, 24Vdc and 24Vac, 115Vac extended duty motor, optional		
MOTOR	Permanent split capacitor (for AC) with thermal overload protection		



CURRENT RATINGS FL= Full Load, LR= Lock Rotor

	115 Vac (Std.)		115 Vac Extended Duty		24 Vac		24 Vdc		12 Vdc		208 Vac/1Ph/60Hz		230 Vac/1Ph/60Hz	
	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR
MS & MR	0.38	0.75	0.38	0.75	0.90	3.20	0.90	3.20	1.70	4.20	0.21	0.42	0.18	0.38
ML & MH	0.38	0.75	0.38	0.75	1.10	3.20	1.10	3.20	2.20	4.20	0.21	0.42	0.18	0.38

The motor's LR amps must be taken into account when sizing the input power supply and fuses. Slow blow fuses are recommended

CERTIFICATION	CSA	Master Contract 178618
CLASSIFICATION	Class I, Division 1 & 2, Groups C & D; Class II Division 1 & 2, Groups E, F & G	
CANADIAN	CSA C322802 – Valves – Actuators – For Hazardous Locations, CAN/CSA – C22.2 No. 139-1982; CAN/CSA – C22.2 No. 25-1966; CAN/CSA- C22.2 No. 30-M1986	

APPROVED VOLTAGES	12Vdc, 24Vdc & 115Vac
APPROVED ENCLOSURES	Enclosure Type 4, 7 & 9
APPROVED TEMP.	-4F (-20C) to 104F (40C)
APPROVED OPTIONS	One, Two or Three Auxiliary Switches, Decutching Manual Override with Hand Wheel, Motor Brake for 12Vdc, 24Vdc & 115Vac, all Feedback Potentiometer options, Modulating Controls LRC, VP, VQ, VP0 & VQ0, Visual Position Indication D, DI, D3L, D3T, TX, TX0 & TQ, Additional Conduit Entry, Heater and Heater with Thermostat (For complete list of options, see option grid in catalog page 33)

COATING	Thermally bonded polyester powder	
POSITION INDICATOR	Visual	Dome Indicator
	Electric	Feedback from limit switches, same as operating voltage

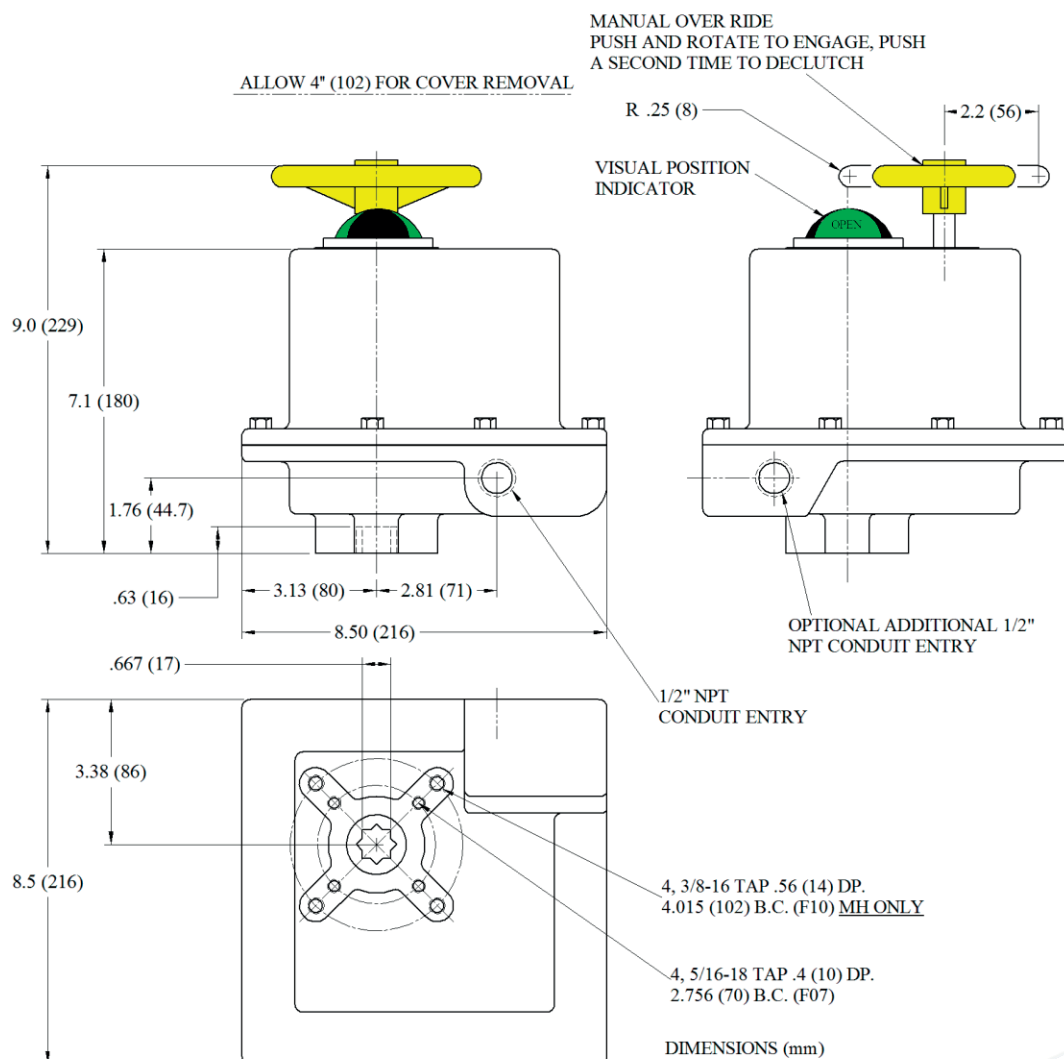


M SERIES

400, 675, 1000 & 1500 IN/LBS,
NEMA 7

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ELECTRIC ACTUATORS AND CONTROLS

SWITCHES	Snap action	SPDT, 15A @ 250Vac
LUBRICATION	Grease	Permanent, little or no maintenance required
WEIGHT	Pound	MS, MR & ML – 21 (lb) MH – 22 (lb)
	Kilogram	MS, MR & ML – 9.52 (kg) MH – 10 (kg)
MOUNTING	Universal	
MOUNTING PAD	ISO 5211 F07 with 17mm star drive (And F10 bolt circle on MH only)	
TEMPERATURE	-40F (-40C) to 150F (65.6C), heater & thermostat required 0F and below Optional double heater for application up to -76F (-60C)	
OVERRIDE	Manual, Declutching Hand Wheel	



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L SERIES

700, 1200, 2000 & 3840 IN-LBS,
NEMA 4 AND/OR 7

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ELECTRIC ACTUATORS AND CONTROLS

ICI's L series rotary electric actuator was designed for valve and damper applications requiring from 700 up to 3,840 in-lbs of torque. This industrial grade reversing actuator has been manufactured since 1991 and is well known for its dependability in harsh applications where reliability is of the utmost importance.

SPECIFICATIONS:

TORQUE	LA-5	700 In-Lb (79 Nm)
	LA-12	2000 In-Lb (226 Nm)
	LX-5	1200 In-Lb (135.6 Nm)
	LX-14	3840 In-Lb (433.9 Nm)
CYCLE TIME	LA-5	5 Sec./90
	LA-12	12 Sec./90
	LX-5	5 Sec./90
	LX-14	14 Sec./90
DUTY CYCLE	12Vdc, 24Vdc, 24Vac & 115Vac 100%	
	230Vac-1Ph 30 minute continuous run	
	230Vac-3Ph & 460Vac-3Ph 30 minute continuous run (NEMA 4 only)	
MOTOR	Permanent split capacitor (for AC) with thermal overload protection	

CURRENT RATINGS FL= Full Load, LR= Lock Rotor

	115 Vac (Std.)		24 Vac		24 Vdc		12 Vdc		208 Vac/1Ph/60Hz*		230 Vac/1Ph/60Hz	
	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR
LA	1.20	2.90	3.70	25.00	3.70	25.00	6.90	48.00	1.54	2.50	1.40	2.00
LX	1.20	2.90	5.00	25.00	5.00	25.00	10.00	48.00	1.54	2.50	1.40	2.00

The motor's LR amps must be taken into account when sizing the input power supply and fuses. Slow blow fuses are recommended

* Reduce actuator torque 10% for sizing purposes

CERTIFICATION	CSA	Master Contract 178618
CLASSIFICATION	Class I, Division 1 & 2, Groups C & D; Class II Division 1 & 2, Groups E, F & G	
CANADIAN	CSA C3228 02 – Valves – Actuators – For Hazardous Locations,	
	CSA C3229 82 – Valves – Actuators – For Hazardous Locations – Certified to US Standards	
	CSA – C22.2 No. 0-M1991; CSA – C22.2 No. 139-1982; CSA – C22.2 No. 0.4-04; CSA – C22.2 No. 25-1966; CSA – C22.2 No. 94-M91; CSA- C22.2 No. 30-M1986; UL 1002, 6th Ed.; UL 429, 5th Ed.; UL 50 11th Ed.	
APPROVED VOLTAGES	115Vac	
APPROVED ENCLOSURES	Enclosure Type 4, 4X, 7 & 4-7	
APPROVED TEMP.	-4F (-20C) to 104F (40C)	
APPROVED OPTIONS	One or Two, Declutching Manual Override with Hand Wheel, Motor Brake for 115Vac, Visual Position Indicator, Special Mounting Pad Configurations and Mechanical Stop (For complete list of options, see option grid in catalog page 33)	
COATING	Thermally bonded polyester powder	
POSITION INDICATOR	Visual	Dome Indicator
	Electric	Feedback from limit switches, same as operating voltage
SWITCHES	Snap action	SPDT, 15A @ 250Vac



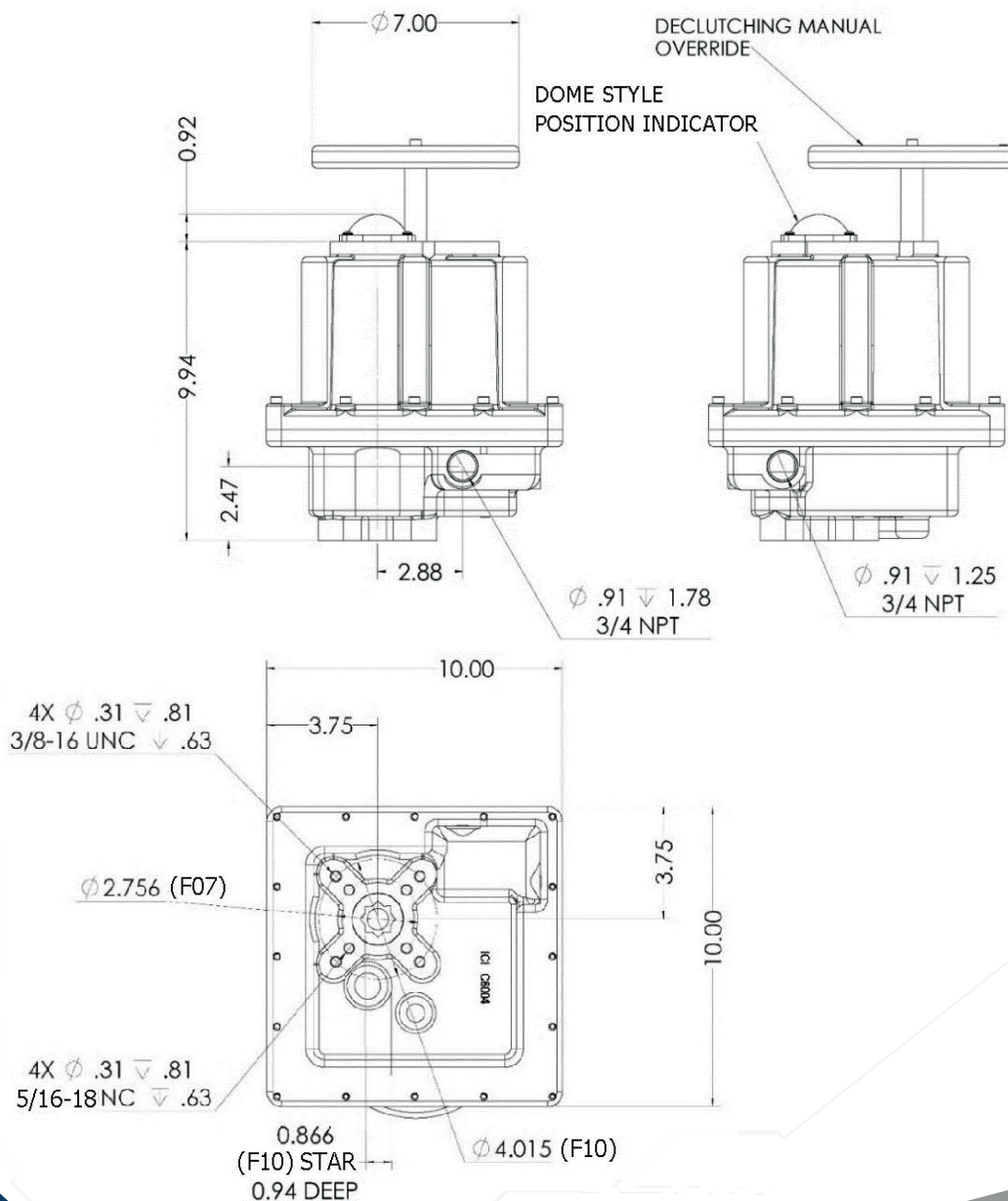
INDELAC CONTROLS, INC
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L SERIES

700, 1200, 2000 & 3840 IN-LBS,
NEMA 4 AND/OR 7

INDELAC
CONTROLS, INC.
ELECTRIC ACTUATORS AND CONTROLS

LUBRICATION	Grease	Permanent, little or no maintenance required
WEIGHT	Pound Kilogram	40 (lb) 18.1 (kg)
MOUNTING	Universal	
MOUNTING PAD	ISO 5211 F07 & F10 with F10 22mm Star Female Drive	
TEMPERATURE	-40F (-40C) to 150F (65.6C), heater & thermostat required 0F and below Optional double heater for application up to -76F (-60C)	
OVERRIDE	Manual, Declutching Hand Wheel	



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K SERIES

FROM 5,000 TO 27,300 IN-LBS,
NEMA 4 AND/OR 7



The K series of heavy-duty reversing actuators were developed in 1995 and meet AWWA standards. ICI's K series rotary electric actuator is a machine that was designed to automate quarter turn equipment requiring up to 27,300 In-Lbs of torque. The K series actuators are equipped with a combination of spur gear / worm gear drive train providing efficient and quiet operation, resistance to back driving and long maintenance free service.

SPECIFICATIONS:

TORQUE	5K	5000 In-Lb (565 Nm)
	7K	7020 In-Lb (793 Nm)
	12K	11500 In-Lb (1302 Nm)
	14K	14040 In-Lb (1586 Nm)
	19K	19020 In-Lb (2149 Nm)
	27K	27300 In-Lb (3084 Nm)
CYCLE TIME	5K & 7K	38 Sec. / 90; 12Vdc = 45 Sec. / 90; 24Vdc = 21 sec. / 90
	12K & 14K	58 Sec. / 90; 24Vdc = 43 sec. / 90
	19K	114 Sec. / 90; 12Vdc = 45 Sec. / 90; 24Vdc = 59 sec. / 90
	27K	136 Sec. / 90
DUTY CYCLE	12Vdc, 24Vdc, 24Vac 100%	
	115Vac - 1Ph 30 minute continuous run	
	230Vac - 1Ph 30 minute continuous run	
	230Vac - 3Ph & 460Vac-3Ph 30 minute continuous run	
MOTOR	Permanent split capacitor (for AC) with thermal overload protection	



CURRENT RATINGS FL= Full Load, LR= Lock Rotor

	115 Vac (Std.)		24 Vac		24 Vdc		12 Vdc		208 Vac/1Ph/60Hz*		230 Vac/1Ph/60Hz		230 Vac/3Ph		460 Vac/3Ph	
	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR
5K & 7K	2.5	4.0	14.0	32.6	14.0	32.6	16.5	38.5	1.5	2.2	1.4	2.0	1.7	3.8	0.6	2.0
12K	2.5	4.0	CF	CF	CF	CF	CF	CF	1.5	2.2	1.4	2.0	1.7	3.8	0.6	2.0
14K	5.4	15.0	CF	CF	CF	CF	CF	CF	1.3	4.4	1.2	4.0	1.0	4.1	5.4	15.0
19K & 27K	5.4	15.0	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF

The motor's LR amps must be taken into account when sizing the input power supply and fuses. Slow blow fuses are recommended
* Reduce actuator torque 10% for sizing purposes

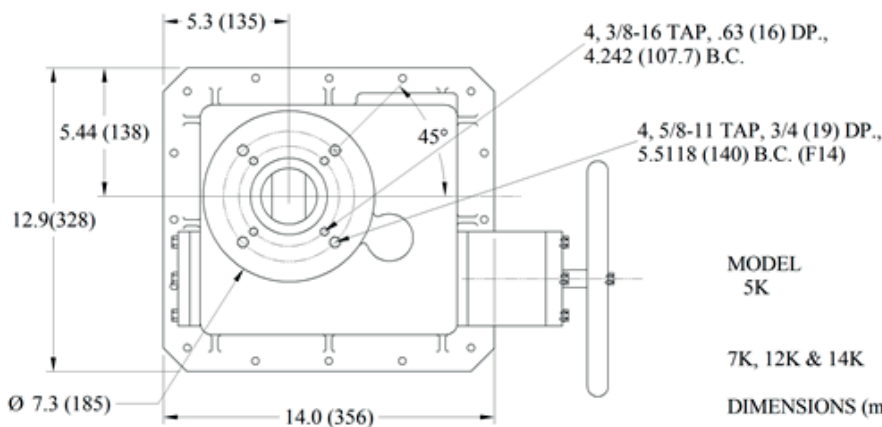
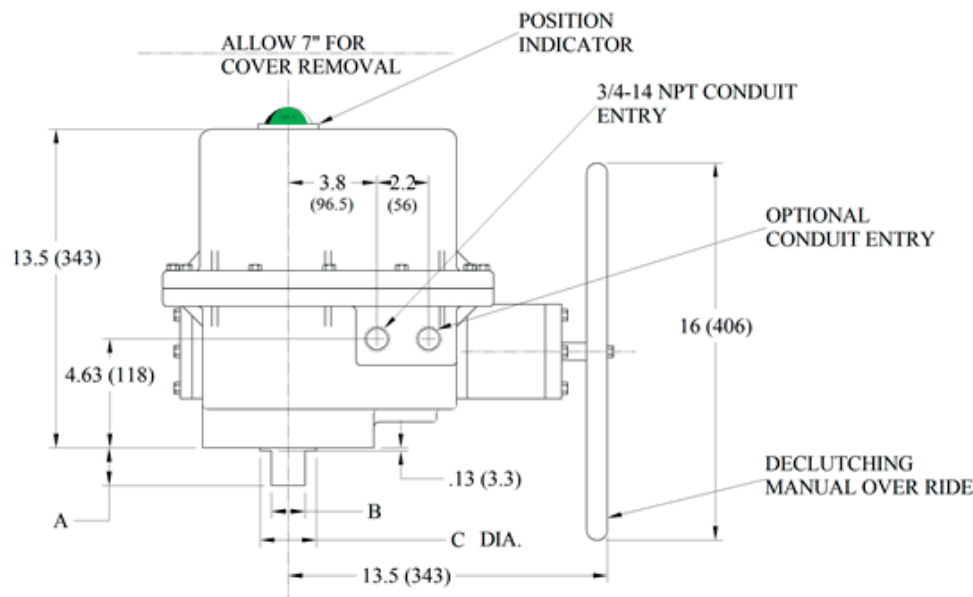
CERTIFICATIONS	None - General Purpose Actuators Designed to meet NEMA 4 Standards with optional NEMA enclosure types 4X, 9 and 7 available Designed to meet AWWA C540 standards	
COATING	Thermally bonded polyester powder	
POSITION INDICATOR	Visual Electric	Dome Indicator Feedback from limit switches, same as operating voltage
SWITCHES	Snap action	SPDT, 15A @ 250Vac
TORQUE SENSOR	Mechanical, set for torque at full load amp draw	



FROM 5,000 TO 27,300 IN-LBS,
NEMA 4 AND/OR 7

INDELAC
CONTROLS, INC.
ELECTRIC ACTUATORS AND CONTROLS

LUBRICATION	Grease	Permanent, little or no maintenance required
WEIGHT	5K up to 14K 19K & 27K	110 Pounds (50 kg) 195 Pounds (88.5 kg)
MOUNTING	Universal	
MOUNTING PAD	5K 7K to 14K 19K 27K	ISO 5211 F14 & 4.242" Bolt Circle with 22.2mm Double "D" Male Drive ISO 5211 F14 & 4.242" Bolt Circle with 36.1mm Double "D" Male Drive ISO 5211 F14 Bolt Circle with 36mm Double "D" Male Drive 7.50" Bolt Circle with 2.375" Bore & 0.625" Keyway
TEMPERATURE	-40F (-40C) to 150F (65.6C), heater & thermostat required 0F and below Optional double heater for application up to -76F (-60C)	
OVERRIDE	Manual, Declutching Hand Wheel	



MODEL	A	B	C
5K	1.19 (30)	.875 (22.2)	1.13 (28)
7K, 12K & 14K	1.60 (41.6)	1.42 (36.1)	2.38 (60.5)
DIMENSIONS (mm)			

19K and 27K technical drawing on next page

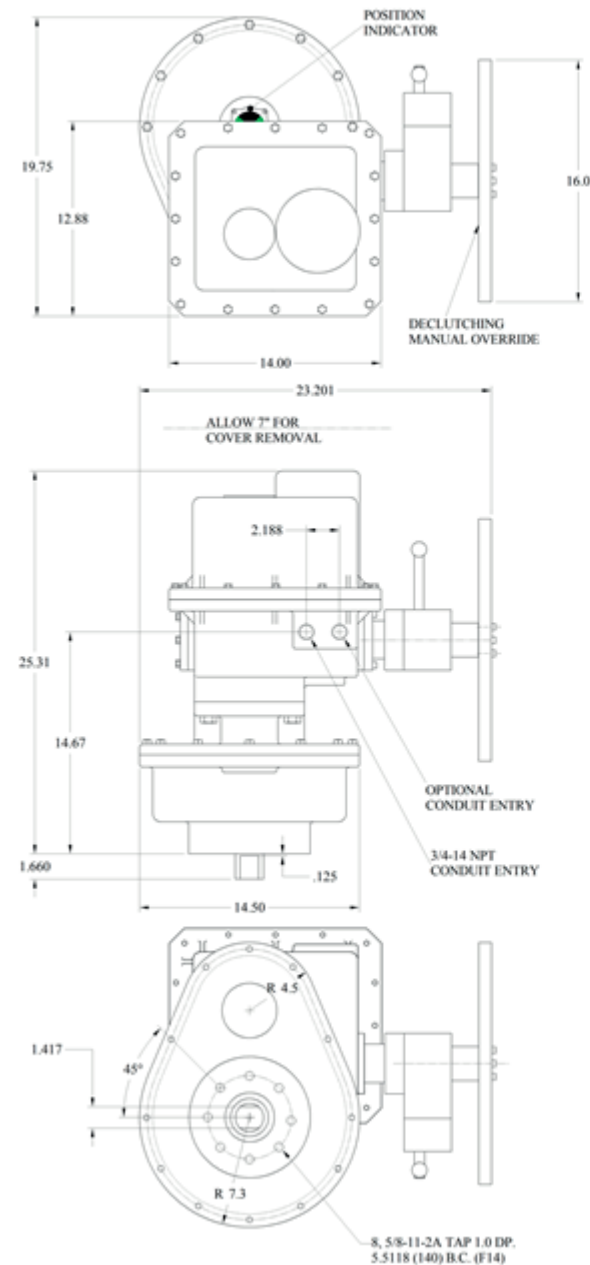


K SERIES

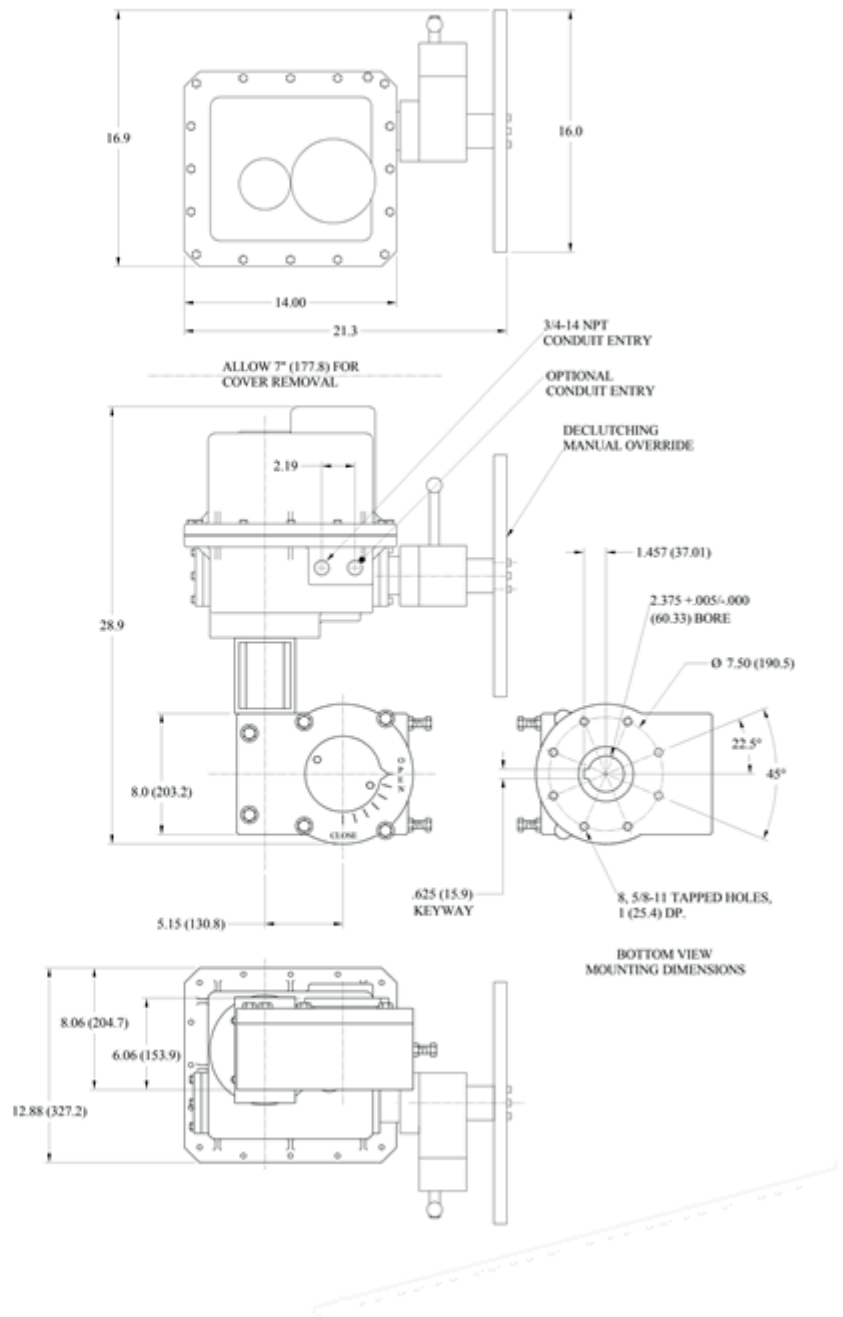
FROM 5,000 TO 27,300 IN-LBS,
NEMA 4 AND/OR 7

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19K TECHNICAL DRAWING:



27K TECHNICAL DRAWING:



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MULTI-TURN ACTUATORS

200 TO 7,020 IN-LBS –
NEMA 4 AND/OR 7



Indelac offers a multi-turn feature that can be installed in many of our standard quarter turn electric actuators converting them into gate and globe valve control actuators. All motors used are meeting AWWA requirements.

75% Duty Cycle					
Model	Torque		Output Speed (RPM)		Max. Number of Turns
	In-Lb	Nm	50Hz	60Hz	
SR	200	33.9	0.96	1.20	20
SX	300	33.9	0.96	1.20	20
MS	400	45.2	0.60	0.75	20
MR	675	76.3	0.40	0.50	20
ML	1,000	76.3	0.40	0.50	20
MH	1,500	169	0.10	0.13	20
LA-5	700	79.1	2.40	3.00	26
LA-12	2,000	226	0.91	1.14	26
LX-5	1,200	135	2.40	3.00	26
LX-14	3,840	434	0.84	1.05	26
5K	5,000	565	0.31	0.39	26
7K	7,020	793	0.31	0.39	26

For options availability please reference the chart below:

Series	2 Aux. Limit Switches	Manual Override	Power Off Brake	4-20mA Positioner	Heater	Thermostat
S	✓	✓ (Push Knob)	✓		✓	✓
M	✓	Hand Wheel Std.	✓	✓	✓	✓
L	✓	Hand Wheel Std.	✓	✓	✓	✓
K	✓	Hand Wheel Std.	✓	✓	✓	✓



ES2


200 IN-LBS, NEMA 4 AND/OR 7



Indelac's ES2 spring return electric actuators are light duty, quarter turn rotary actuators. These high quality, American made actuators have been designed for use as a fail-safe solution in the industrial valve and damper automation industry. They are recommended for applications requiring system protection from unforeseen power failures.

SPECIFICATIONS:

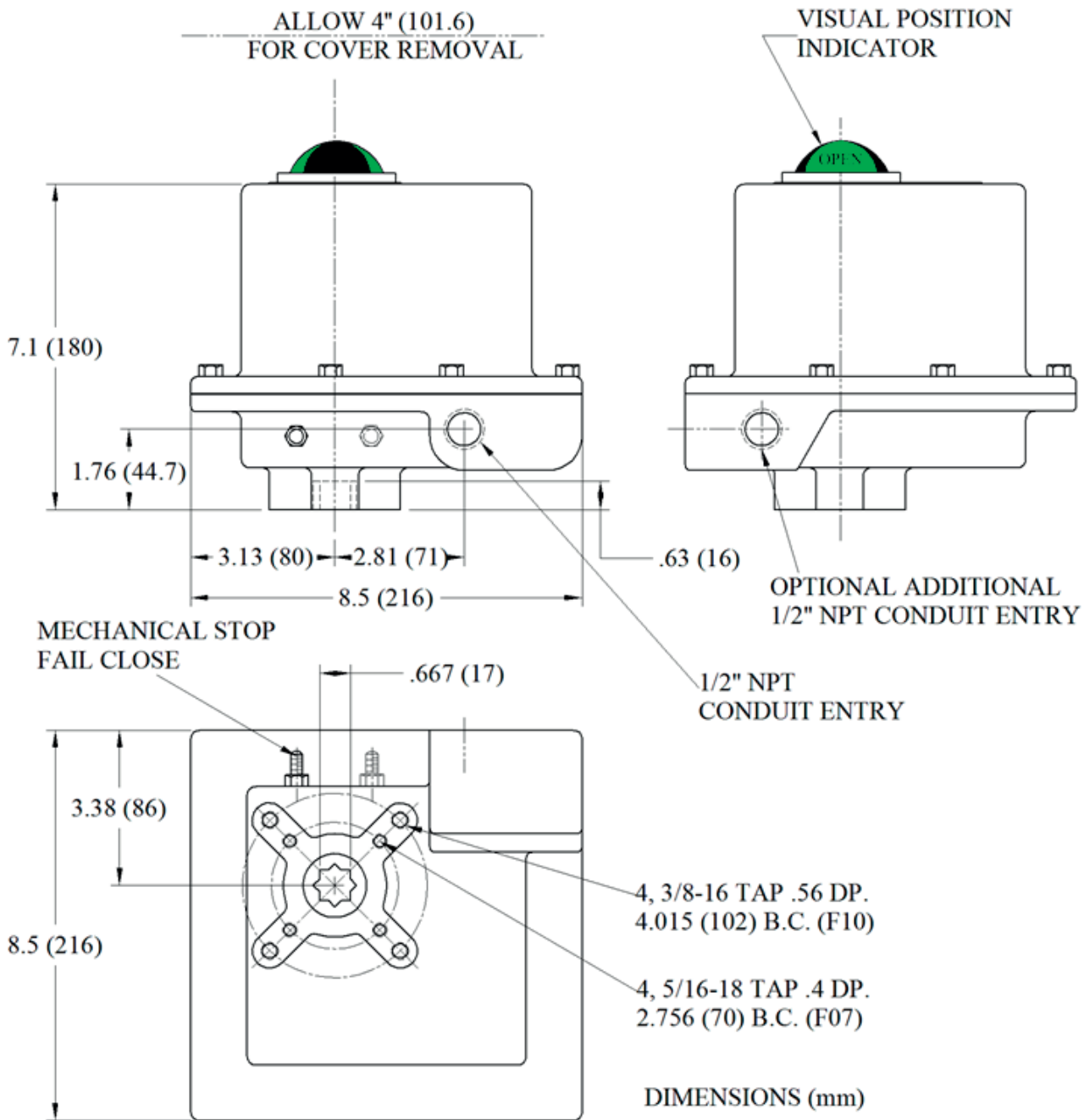
TORQUE	200 In-Lb (22.6 Nm) spring end	
CYCLE TIME	10 sec. / 90° electric, 2 sec. / 90° spring	
DUTY CYCLE	25%	
MOTOR	<u>115Vac ONLY</u> permanent split capacitor with thermal overload protection	
CURRENT RATINGS	.38 FL (Full Load) Amps, .75 LR (Lock Rotor) Amps The motor's LR amps must be taken into account when sizing the input power supply and fuses. Slow blow fuses are recommended	
MOTOR BRAKE	Power ON	
CERTIFICATIONS	None - General Purpose Actuators Designed to meet NEMA 4 Standards with optional NEMA enclosure types 4X, 9 and 7 available	
COATING	Thermally bonded polyester powder	
INDICATOR	Visual Electric	Dome Indicator Feedback from limit switches, same as operating voltage
SWITCHES	Snap action	SPDT, 15A @ 250Vac
LUBRICATION	Grease	Permanent, little or no maintenance required
WEIGHT	Pound Kilogram	22 (lb) 10 (kg)
MOUNTING	Universal	
MOUNTING PAD	ISO 5211 F07 & F10 with 17mm star drive	
TEMPERATURE	-40F (-40C) to 150F (65.6C), heater & thermostat required 0F and below Optional double heater for application up to -76F (-60C)	
MAX. CYCLES	1,900 power OPEN and power CLOSE, spring fail is to be reserved <u>for emergency use only</u> *	
<i>* Allowing this actuator to spring fail as a part of normal operation will severely limit the life expectancy of the product and waives the product warranty</i>		





ES2

200 IN-LBS, NEMA 4 AND/OR 7



AS SERIES

400, 600 & 1,000 in-lbs,
NEMA 4 and/or 7

Indelac's AS Series spring return actuators are heavy duty, quarter turn rotary actuators. These high quality, American made actuators have been designed for use as a fail-safe solution in the industrial valve and damper automation industry. They are recommended for applications requiring system protection from unforeseen power failures.

SPECIFICATIONS:

TORQUE	Start	End	
	AS4	600 In-Lb (67.8 Nm)	400 In-Lb (45.2 Nm)
	AS6	800 In-Lb (90.4 Nm)	600 In-Lb (67.8 Nm)
	AS10	1,200 In-Lb (135.6 Nm)	1,000 In-Lb (113 Nm)

CYCLE TIME 12 sec. / 90° electric, 2 sec. / 90° spring

DUTY CYCLE 25%

MOTOR Permanent split capacitor with thermal overload protection

CURRENT RATINGS FL= Full Load, LR= Lock Rotor

115 Vac (Std.)		208 Vac/1Ph/60Hz		230 Vac/1Ph/60Hz	
FL	LR	FL	LR	FL	LR
1.60	2.90	1.20	2.20	1.03	2.00

The motor's LR amps must be taken into account when sizing the input power supply and fuses. Slow blow fuses are recommended

MOTOR BRAKE Power ON

CERTIFICATIONS None - General Purpose Actuators
Designed to meet NEMA 4 Standards with optional NEMA enclosure types 4X, 9 and 7 available

COATING Thermally bonded polyester powder

INDICATOR Visual Electric Optional Feedback from limit switches, same as operating voltage

SWITCHES Snap action SPDT, 15A @ 250Vac

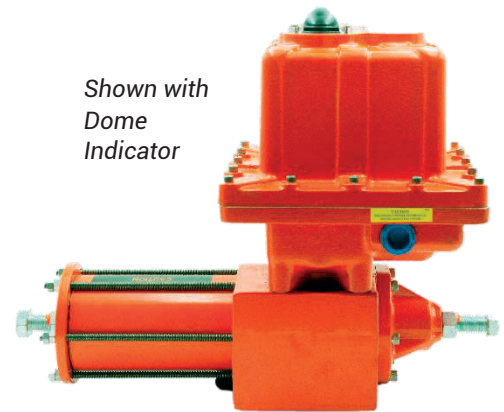
LUBRICATION Grease Permanent, little or no maintenance required

WEIGHT Pound AS4 & AS6 – 68 (lb) AS10 – 78 (lb)
Kilogram AS4 & AS6 – 30.8 (kg) AS10 – 35.4 (kg)

MOUNTING Universal

MOUNTING PAD AS4 & AS6 ISO 5211 F07 with .66" Square Male Drive
AS10 ISO 5211 F10 with 1.00" Square Male Drive

TEMPERATURE -40F (-40C) to 150F (65.6C), heater & thermostat required 0F and below
Optional double heater for application up to -76F (-60C)



*Shown with
Dome
Indicator*

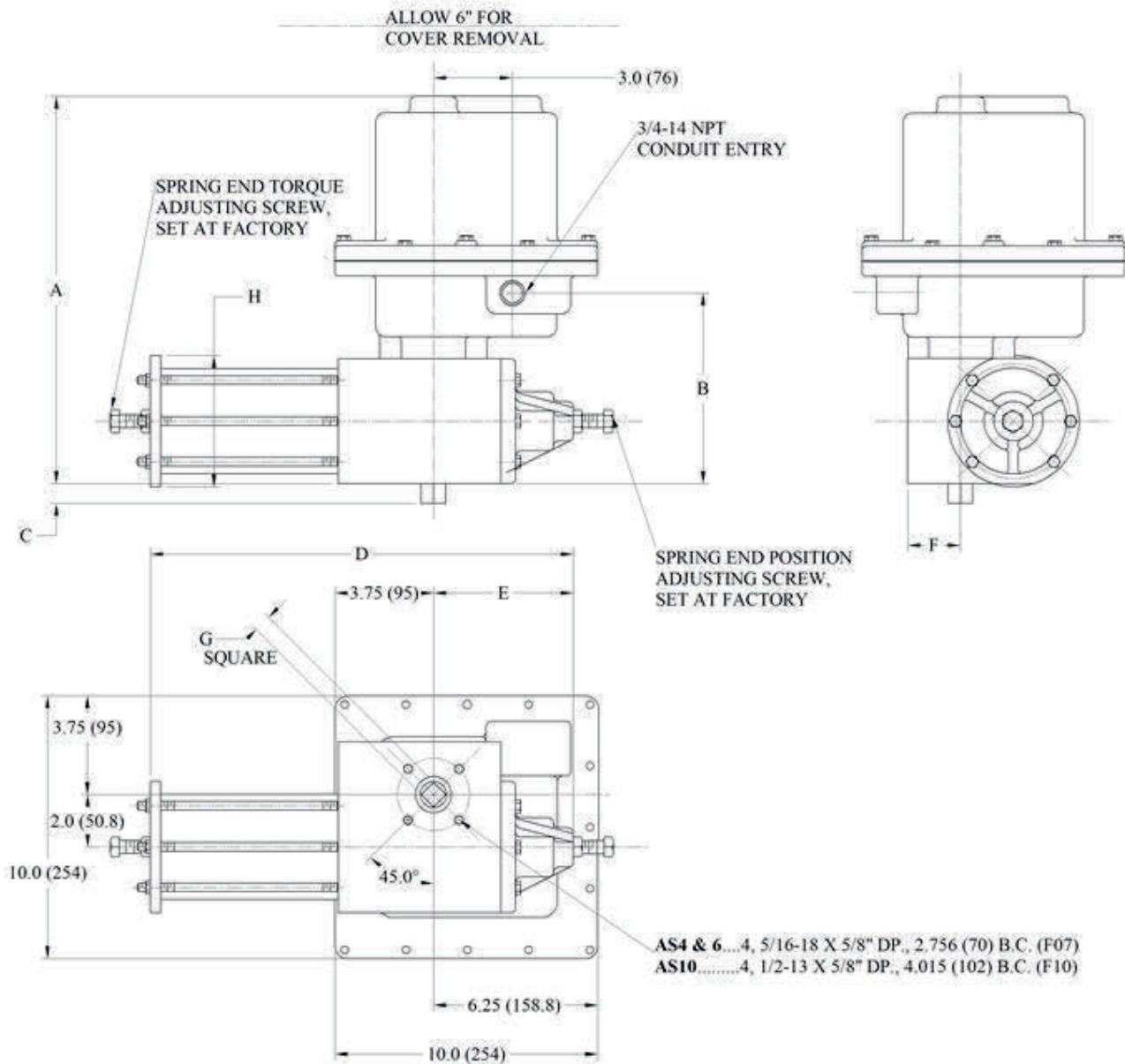


AS SERIES

400, 600 & 1,000 in-lbs,
NEMA 4 and/or 7

INDELAC
CONTROLS, INC.
ELECTRIC ACTUATORS AND CONTROLS

MAX. CYCLES 25 power OPEN and power CLOSE cycles per day, spring fail is to be reserved for emergency use only *
* Allowing this actuator to spring fail as a part of normal operation will severely limit the life expectancy of the product and waives the product warranty



DIMENSIONS IN INCHES								
MODEL	A	B	C	D	E	F	G	H
AS4 & 6	14.69 (373)	4.69 (119)	.75 (19)	15.66 (397.8)	5.06 (128.5)	2.0 (50.8)	.660 (16.76)	5.0 (127)
AS10	15.06 (382.5) (mm)	4.88 (124)	1.0 (25.4)	17.0 (431.8)	5.88 (149.4)	2.5 (63.5)	1.0 (25.4)	6.0 (152.4)



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ASC SERIES

400, 600, 1,000 & 1,200 in-lbs,
NEMA 4 and/or 7

INDELAC
CONTROLS, INC.
ELECTRIC ACTUATORS AND CONTROLS

The ASC Series spring return actuators are compatible with DC voltages and can be used for modulating applications requiring system protection from unforeseen power failures.

SPECIFICATIONS:

TORQUE	Start	End	
	ASC4 600 In-Lb (67.8 Nm)	400 In-Lb (45.2 Nm)	
	ASC6 800 In-Lb (90.4 Nm)	600 In-Lb (67.8 Nm)	
	ASC10 1,200 In-Lb (135.6 Nm)	1,000 In-Lb (113 Nm)	
	ASC12 1,400 In-Lb (158.2 Nm)	1,200 In-Lb (135.6 Nm)	

CYCLE TIME 12 sec. / 90° electric, 2 sec. / 90° spring

DUTY CYCLE ASC 4 up to ASC 10 75%
ASC12 30 minute continuous run

MOTOR Permanent split capacitor with thermal overload protection

CURRENT RATINGS FL= Full Load, LR= Lock Rotor

	115 Vac (Std.)		24 Vac		24 Vdc		12 Vdc		208 Vac/1Ph/60Hz		230 Vac/1Ph/60Hz	
	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR	FL	LR
ASC4-10	1.60	2.90	3.70	25.00	3.70	25.00	6.90	48.00	1.20	2.20	1.03	2.00
ASC12	2.80	4.10	5.00	25.00	5.00	25.00	10.00	48.00	1.20	2.20	1.03	2.00

The motor's LR amps must be taken into account when sizing the input power supply and fuses. Slow blow fuses are recommended

MOTOR BRAKE Power ON

CLUTCH Electro-magnetic

CERTIFICATIONS None - General Purpose Actuators
Designed to meet NEMA 4 Standards with optional NEMA enclosure types 4X, 9 and 7 available

COATING Thermally bonded polyester powder

INDICATOR Visual Optional
Electric Feedback from limit switches, same as operating voltage

SWITCHES Snap action SPDT, 15A @ 250Vac

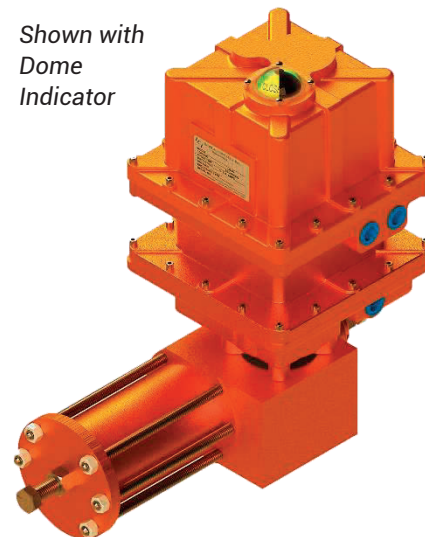
LUBRICATION Grease Permanent, little or no maintenance required

WEIGHT Pound 110 (lb)
Kilogram 49.9 (kg)

MOUNTING Universal

MOUNTING PAD ACS4 & ASC6 ISO 5211 F07 with .66" Square Male Drive
ASC10 & ASC12 ISO 5211 F10 with 1.00" Square Male Drive

Shown with
Dome
Indicator



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ASC SERIES

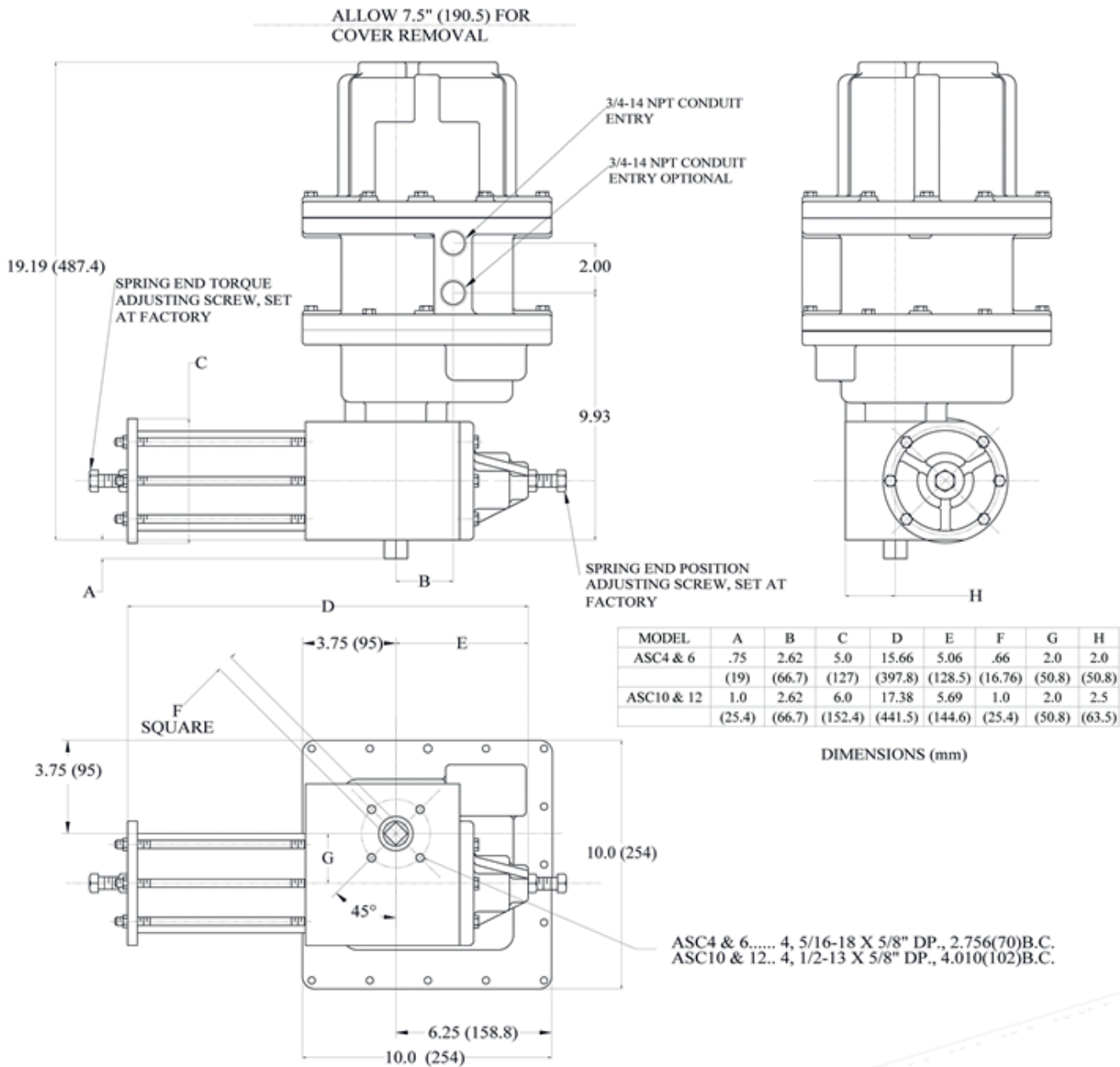
400, 600, 1,000 & 1,200 in-lbs,
NEMA 4 and/or 7

INDELAC
CONTROLS, INC.
ELECTRIC ACTUATORS AND CONTROLS

TEMPERATURE -40F (-40C) to 150F (65.6C), heater & thermostat required 0F and below
Optional double heater for application up to -76F (-60C)

MAX. CYCLES MODULATING 300 per hour
ON/OFF 17 per day
Spring fail is to be reserved for emergency use only *

* Allowing this actuator to spring fail as a part of normal operation will severely limit the life expectancy of the product and waives the product warranty



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SNS-400 TO 1500

SAFE & SECURE SERIES ACTUATOR WITH BATTERY BACKUP, NEMA 4 AND/OR 7

INDELAC
CONTROLS, INC.
ELECTRIC ACTUATORS AND CONTROLS

The Safe & Secure Series is a compact powerful solution for critical applications. Equipped with an internal battery this unit is field adjustable to fail closed, fail open, or continue standard operations, always leaving you in control during sudden loss of utility power and/or control signal.

SPECIFICATIONS:

TORQUE SNS4 400 In-Lb (45.2 Nm)
 SNS6 675 In-Lb (76.3 Nm)
 SNS10 1,000 In-Lb (113 Nm)
 SNS15 1,500 In-Lb (169.5 Nm)

CYCLE TIME SNS4 10 sec. / 90°
 SNS6/10 15 sec. / 90°
 SNS15 30 sec. / 90°

DUTY CYCLE 100%

MOTOR Brush type 12Vdc (for all input voltages)

CURRENT RATINGS FL= Full Load, LR= Lock Rotor

	12 Vdc		24 Vac/Vdc		115 Vac		230 Vac	
	FL	LR	FL	LR	FL	LR	FL	LR
SNS4	1.65	4.20	0.83	2.10	0.20	0.44	0.09	0.22
SNS6	1.50	4.20	0.75	2.10	0.16	0.44	0.08	0.22
SNS10	2.20	4.20	1.10	2.10	0.23	0.44	0.12	0.22
SNS15	2.30	4.20	1.15	2.10	0.24	0.44	0.12	0.22

The motor's LR amps must be taken into account when sizing the input power supply and fuses. Slow blow fuses are recommended

BATTERY 12 Volt 0.8 AHr, Rechargeable Sealed Lead Acid Battery, Minimum 4 Years Life in Stand-By Use at 68°F

RUN TIMES/CYCLES	Max. Torque	Time to complete 90° rotation (in sec.)	# of Cycles	Total Run Time (in min.)
SNS4	400	9	30	150
SNS6	675	15	30	150
SNS10	1000	18	6	30
SNS15	1500	30	5	25

Testing was done at the maximum torque for each valve. If the torque is less than the maximum, the run time/cycles will increase. All cycles are based on – 90° motion, 5 minute delay, then repeat

CHARGER Trickle charger drawing 1 to 1.3A during battery recharge and 50mA to maintain to full charge

CERTIFICATIONS None - General Purpose Actuators
Designed to meet NEMA 4 Standards with optional NEMA enclosure types 4X, 9 and 7 available.

COATING Thermally bonded polyester powder



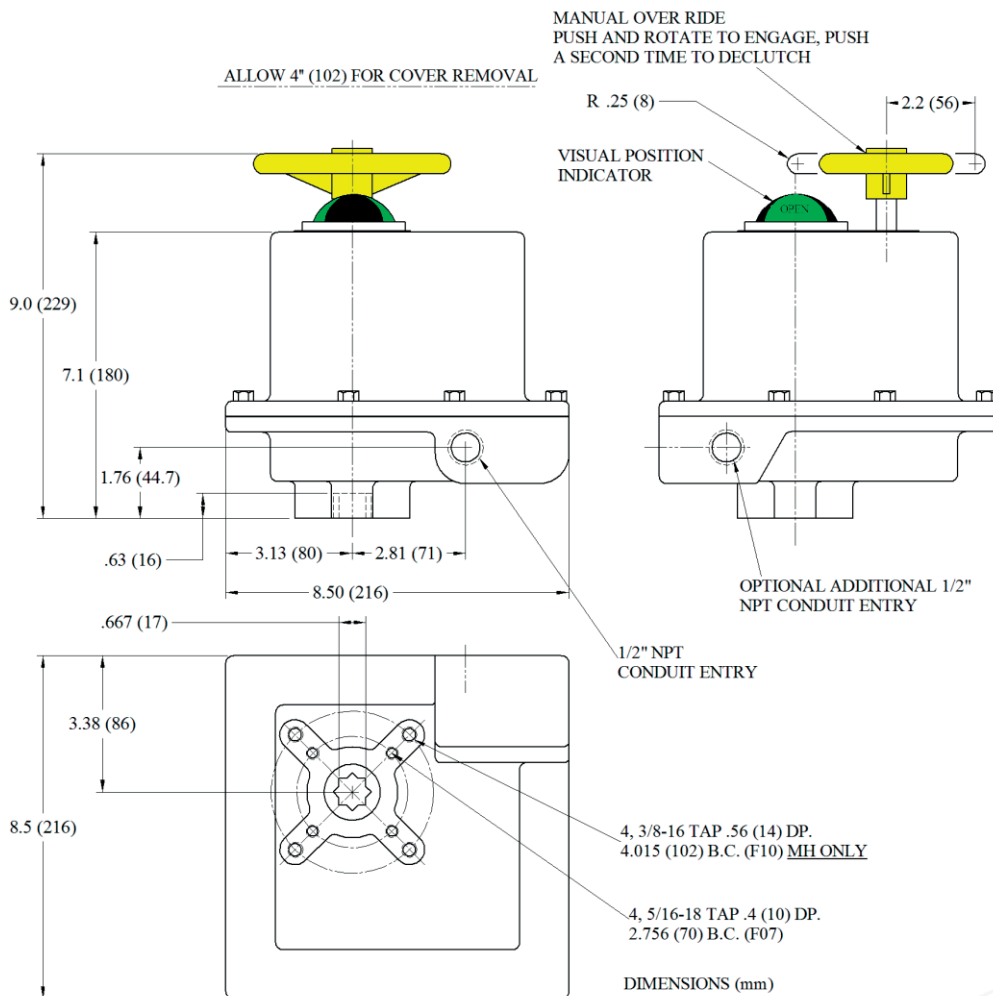
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SNS-400 TO 1500

SAFE & SECURE SERIES ACTUATOR WITH BATTERY BACKUP, NEMA 4 AND/OR 7

INDELAC
CONTROLS, INC.
ELECTRIC ACTUATORS AND CONTROLS

POSITION INDICATOR	Visual Electric	Dome Indicator Feedback from limit switches, same as operating voltage
SWITCHES	Snap action	SPDT, 15A @ 250Vac
LUBRICATION	Grease	Permanent, little or no maintenance required
WEIGHT	Pound Kilogram	22 (lb) 10 (kg)
MOUNTING	Universal	
MOUNTING PAD	ISO 5211 F07 & F10 with 17mm star drive	
TEMPERATURE	-40F (-40C) to 150F (65.6C), heater & thermostat required 0F and below Optional double heater for application up to -76F (-60C)	
OVERRIDE	Manual, Declutching Hand Wheel	



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SNS-2000 & 2800

SAFE & SECURE SERIES ACTUATOR WITH BATTERY BACKUP, NEMA 4 AND/OR 7

INDELAC
CONTROLS, INC.
ELECTRIC ACTUATORS AND CONTROLS

The Safe & Secure Series is a compact powerful solution for critical applications. Equipped with an internal battery this unit is field adjustable to fail closed, fail open, or continue standard operations, always leaving you in control during sudden loss of utility power and/or control signal.

SPECIFICATIONS:

TORQUE	SNS20	2000 In-Lb (226 Nm)
	SNS28	2800 In-Lb (317 Nm)
CYCLE TIME	SNS20	12sec. / 90°
	SNS28	14 sec. / 90°
DUTY CYCLE	100%	
MOTOR	Brush type 12Vdc (for all input voltages)	

CURRENT RATINGS FL= Full Load, LR= Lock Rotor

	12 Vdc		24 Vac/Vdc		115 Vac		230 Vac	
	FL	LR	FL	LR	FL	LR	FL	LR
SNS20	5.50	48.00	2.75	24.00	0.60	5.00	0.30	2.50
SNS28	9.00	48.00	4.50	24.00	1.00	5.00	0.50	2.50

The motor's LR amps must be taken into account when sizing the input power supply and fuses. Slow blow fuses are recommended

BATTERY 12 Volt 0.8 AHr, Rechargeable Sealed Lead Acid Battery, Minimum 4 Years Life in Stand-By Use at 68°F

RUN TIMES/CYCLES	Max. Torque	Time to complete 90° rotation (in sec.)	# of Cycles	Total Run Time (in min.)
SNS20	2000	12	1	N/A
SNS28	2800	14	1	N/A

Testing was done at the maximum torque for each valve. If the torque is less than the maximum, the run time/cycles will increase. All cycles are based on – 90° motion, 5 minute delay, then repeat

CHARGER Trickle charger drawing 1 to 1.3A during battery recharge and 50mA to maintain to full charge

CERTIFICATIONS None - General Purpose Actuators
Designed to meet NEMA 4 Standards with optional NEMA enclosure types 4X, 9 and 7 available.

COATING Thermally bonded polyester powder

POSITION INDICATOR Visual Dome Indicator
Electric Feedback from limit switches, same as operating voltage

SWITCHES Snap action SPDT, 15A @ 250Vac

LUBRICATION Grease Permanent, little or no maintenance required

WEIGHT Pound 40 (lb)
Kilogram 18.1 (kg)



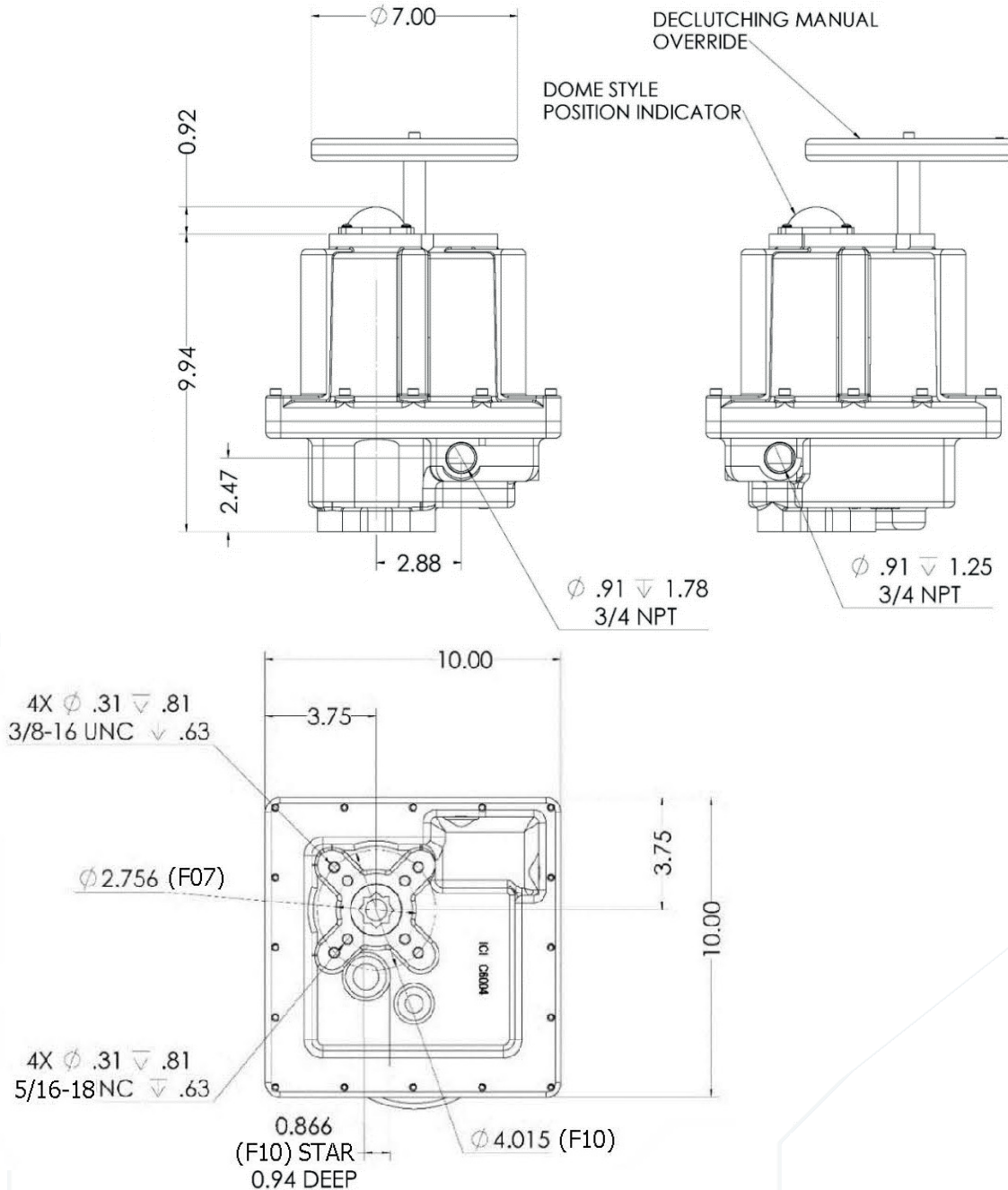
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SNS-2000 & 2800

SAFE & SECURE SERIES ACTUATOR WITH BATTERY BACKUP, NEMA 4 AND/OR 7

INDELAC
CONTROLS, INC.
ELECTRIC ACTUATORS AND CONTROLS

MOUNTING	Universal
MOUNTING PAD	ISO 5211 F07 & F10 with F10 22mm Star Female Drive
TEMPERATURE	-40F (-40C) to 150F (65.6C), heater & thermostat required 0F and below Optional double heater for application up to -76F (-60C)
OVERRIDE	Manual, Declutching Hand Wheel



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OPTIONS GRID

FOR ALL ACTUATOR SERIES

Indelac Controls, Inc. offers vast selections of optional equipment, making it possible to utilize our electric actuators in nearly any control environment conceivable. Depending on the options selected, multiple options may NOT fit into the actuator enclosure. Call Indelac Sales Team for best fit of options & configurations.

Available		Non-Available									
OPTIONS		Electric Quarter-Turn						Spring Return			Safe & Secure Series (SNS)
		R	SD	S	M	L	K	ES2	AS	ASC	
Enclosure	NEMA 4	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.
	NEMA 4X										
	NEMA 4 HP										
	NEMA 6										
	NEMA 7										
	NEMA 4 & 7										
	NEMA 4X & 7										
Motor Voltage	115 Vac	Std.	Std.	Std.	Std.			Std.	Std.	Std.	
	115 Vac Extended Duty					Std.	Std.				Std.
	24 Vac										
	24 Vdc										
	12 Vdc										
	208 Vac/1Ph/60Hz										
	230 Vac/1Ph/60Hz										
	230 Vac/3Ph										
	460 Vac/3Ph										
	380 Vac/3Ph										
Coating	Polyester Powder	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.
	Epoxy Coating										
	Anodize										
	Chromium Conversion w/ UV										
Auxiliary Switches	One										
	Two										
	Three										
	Four										
	Double Pole, Double Throw										
Manual Override	Push Knob, NEMA 4										
	Hand Wheel, NEMA 4				Std.	Std.	Std.				Std.
	Push Knob, NEMA 7										
	Hand Wheel, NEMA 7				Std.	Std.	Std.				Std.
Brakes, Power On								Std.	Std.	Std.	
Brakes, Power Off											



OPTIONS GRID

FOR ALL ACTUATOR SERIES

OPTIONS		Electric Quarter-Turn						Spring Return			Safe & Secure Series (SNS)
		R	SD	S	M	L	K	ES2	AS	ASC	
Potentiometer	1K, Single Turn, Std.										
	1R, 0-135 Ohm										
	1K, Ten Turn										
	5K, Single Turn										
	10K, Single Turn										
	10K, Single Turn (dual)										
Positioner	4-20mA										
	4-20mA High Res.										
	0-10 Vdc										
	0-135 Ohm										
	MODBUS High Res.										
Speed Control											
Timer											
Multi-Position	Three Position										
	Four Position										
Position Indicator	Dome Style Visual Indicator	Std.	Std.		Std.	Std.	Std.	Std.			Std.
	3 Position Dome Style Indicator										
	Light Indication NEMA 4										
	Light Indication NEMA 7										
	4-20mA Transmitter										
	4-20mA Transmitter High Res.										
	0-10 Vdc Transmitter										
Power Supply	For TX & T10										
Additional Conduit Entry	1/2 NPT, NEMA 4										
	1/2 NPT, NEMA 7										
	3/4 NPT										
Special Mounting Pad	Metric tapped mounting holes										
	Special bolt pattern or drive										
	Special shaft, Slot										
Mechanical Stop								Std.	Std.	Std.	
Temperature & Condensation Controls	Breather										
	Heater										
	Heater & Thermostat										
	Desiccant Dry Kit										
	Weather Pack Cord										
Multi-Turn	Without Manual Over Ride										
	With Manual Over Ride										
Reversing Contractor	DC motors										
	3Phase motors										
Transformer	3Phase motors										
Torque Sensor	115 Vac						Std.				
Two Wire Control											



REFERENCE TOOLS

POWDER COATING SPECIFICATIONS:

Coating used on all ICI actuators



	Epoxy	Hybrid	Aromatic Urethane	Aliphatic Urethane	TGIC Polyester	Polyester Wrinkle	Non-TGIC Polyester
Hardness	Green	Blue	Orange	Orange	Blue	Blue	Blue
Flexibility	Green	Green	Green	Green	Green	Green	Green
Overbake Stability	Orange	Blue	Orange	Green	Green	Orange	Blue
Exterior Durability	Red	Red	Orange	Green	Green	Green	Green
Corrosion Protection	Green	Blue	Orange	Orange	Blue	Orange	Orange
Chemical Resistance	Green	Orange	Orange	Orange	Blue	Orange	Orange
Ease of Application	Blue	Green	Green	Green	Green	Green	Green

Not Good

Fair

Good

Very Good

Best

NEMA ENCLOSURE TYPE RATINGS:

TYPE 1: General purpose intended for indoor use to prevent accidental contact with enclosed equipment.

TYPE 4: Water and dust tight intended for indoor or outdoor use to protect enclosed equipment from splashing water, seeping of, falling or hose directed water and severe external condensation.

TYPE 4X: Water and dust tight with same provisions as Type 4 enclosure but also are corrosion resistant.

TYPE 6: Water and dust tight sleet resistant intended for indoor or outdoor use where occasional submersion may be encountered with a static head of no more than 6 feet for no longer than 30 minutes.

TYPE 7: Class I, Division 1 and 2, Groups A, B, C or D intended for indoor hazardous locations. Division 1: Hazardous vapors are present. Division 2: Hazardous contained but may not be present. Groups A, B, C & D classifies different gases and vapors.

TYPE 9: Class II, Division 1 and 2, Groups E, F or G intended for indoor hazardous locations. Division 1: Air suspended dust. Division 2: Surface accumulated non-air suspended. Groups E, F & G classifies different dust types.

IP Code	Min. NEMA Rating
IP65	4, 4X
IP67	6
IP68	6P

TORQUE CONVERSION TABLE:

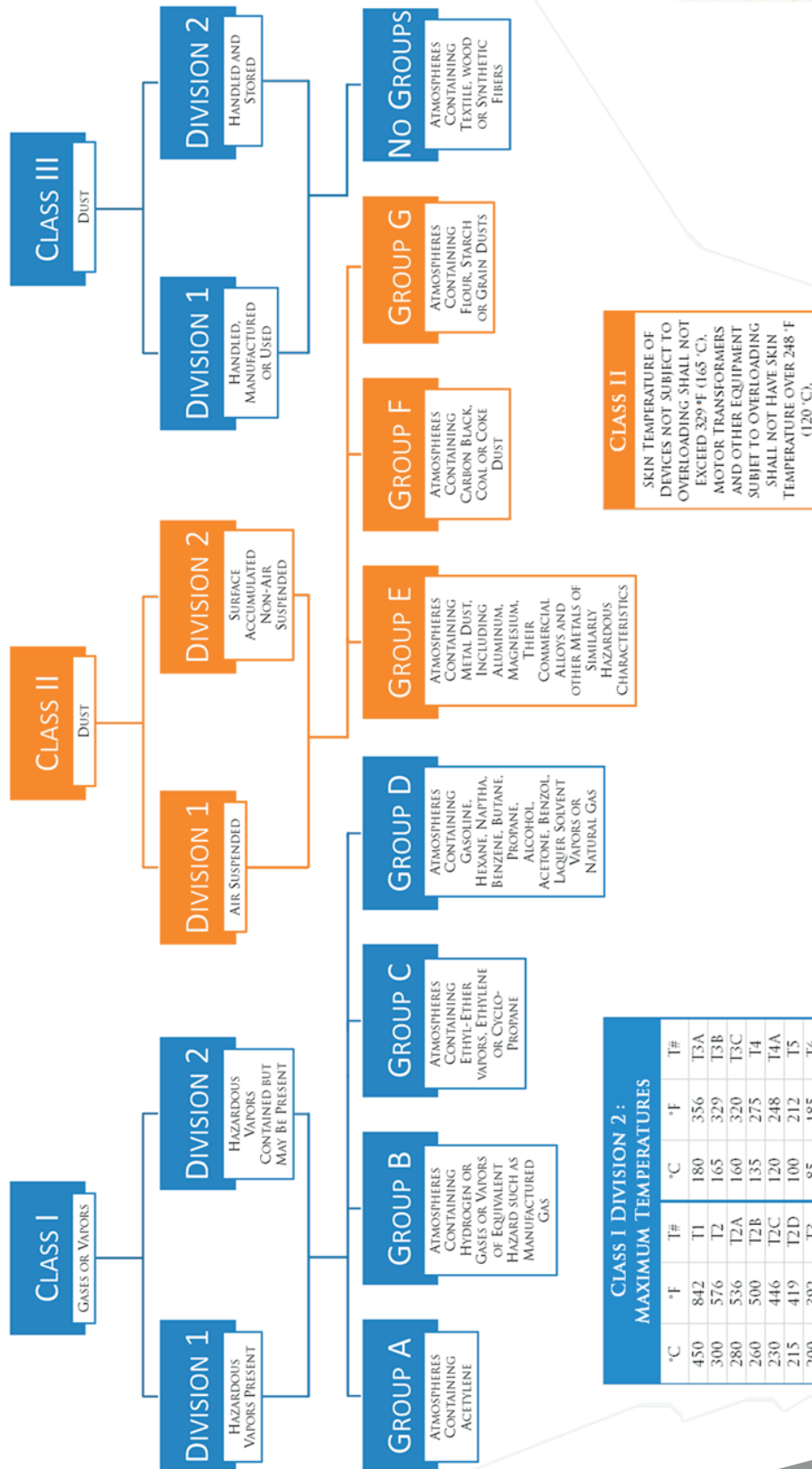
Nm = Ft-Lb x 1.36

In-Lb = Ft-Lb x 12

Ft-Lb	In-Lb	Nm
1	12	1.36
5	60	6.8
10	120	13.6
20	240	27.2
40	480	54.4
80	960	108.8
100	1200	136
200	2400	272
400	4800	544
600	7200	816
800	9600	1088
1000	12000	1360
1200	14400	1632
1500	18000	2040
1800	21600	2448
2000	24000	2720
2200	26400	2992
2500	30000	3400

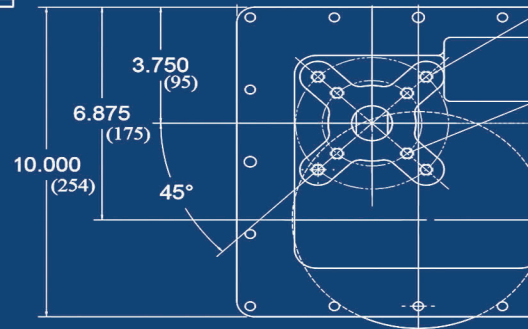
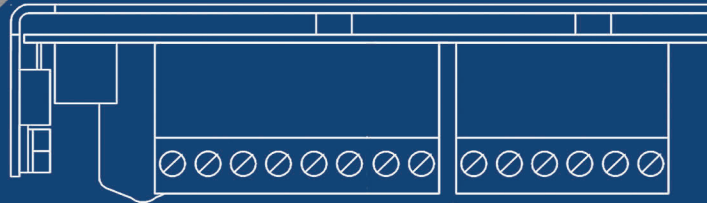
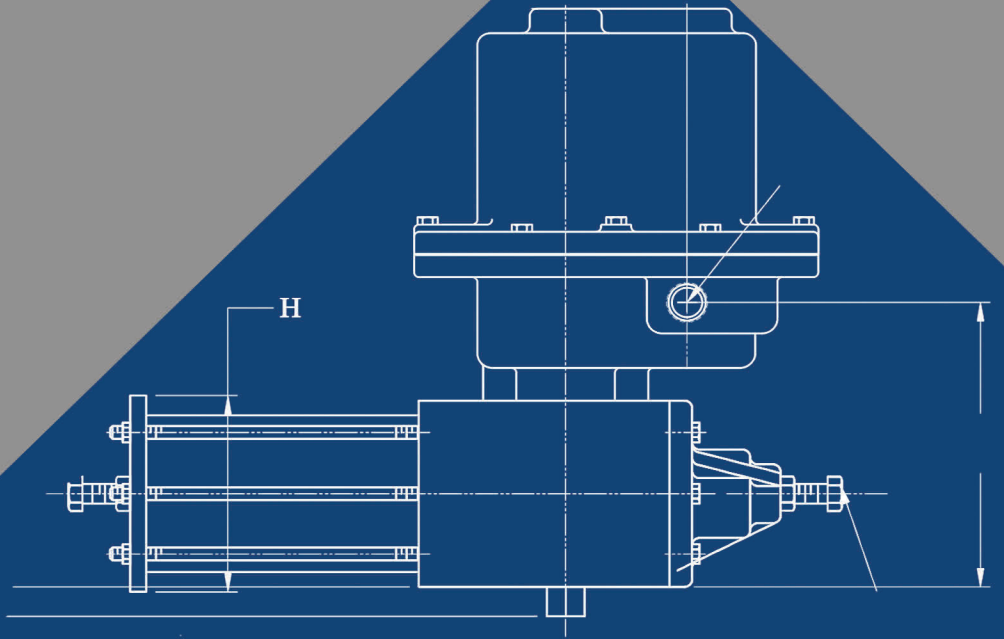


HAZARDOUS CLASSIFICATIONS



INDELAC

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