

AWWA
C540-93



WE Series Weatherproof
CSA Approved TYPE 4 & 4X



KE Series
Weatherproof IP67

XE Series Explosion Proof
ATEX/IECEX Certified
Ex d IIB T4 Gb



XC Series
CSA Explosion Proof
CSA Approved TYPE 4, 4X, 6 & 7



ATEX II 2 G
Ex d IIB T4 Gb



C 258948 US
TYPE 4, 4X, 6 & 7

XC Series



CSA Certification

Class I, Division 1 & 2, Groups C, D; T4
Ex d IIB, Gb T4

Class I, Zone 1, AEx d IIB Gb T4
TYPE 4, 4X, 6 & 7, IP66/IP67

Standard Features

- Visual position indicator
- Torque switches (XC-01350 – XC-25900)
- Anti-condensation heater and thermostat
- Two auxiliary limit switches
- Self-locking gear train
- Manual handwheel with torque from 690 in-lbs to 25900 in-lbs
- Available motor voltages: 12VDC, 24VDC, 24VAC, 120VAC & 220VAC
- Optional proportional control
- Various inputs with feedback available

See **How To Order XC Series** on page 4

Triac XC Series Actuators

The Triac XC Series Actuators are CSA Certified Type 4, 4X, 6 & 7 for hazardous locations and meet UL 1203 standard. The actuators are rugged and reliable with powder coated anodized aluminum housing for use in Oil, Gas, Chemical & Power Gen applications. The XC Series is the perfect match for resilient or high-performance butterfly valves and dampers because of the self-locking, double reduction worm drive and torque switches. The XC Series is also ideal for ball, plug or any rotary valve requiring automation in a hazardous location.

Actuator Model	Output Torque				90° Cycle Time (sec)				Full Load Amps (FLA)				Locked Rotor Amps (LRA)				Duty Cycle*				Hand-wheel Turns	Lbs		
	In-Lbs				60Hz	60Hz	60Hz/DC	DC	60Hz	60Hz	60Hz/DC	DC	60Hz	60Hz	60Hz/DC	DC	S4 (IEC 60034-1)							
XC	110 VAC	220 VAC	24V AC/DC	12 VDC	110 VAC	220 VAC	24V AC/DC	12 VDC	110 VAC	220 VAC	24V AC/DC	12 VDC	110 VAC	220 VAC	24V AC/DC	12 VDC	110 VAC	220 VAC	24V AC/DC	12 VDC	110 VAC	220 VAC	24V AC/DC	12 VDC
-00690	690	690	620	350	20	20	17	11	1.2	0.6	5	13.5	1.4	0.7	12.8	21.7	40%	40%	30%	30%	10	16.4		
-00860	860	790	700	440	20	20	20	11	1.2	0.6	6.3	13.5	1.4	0.7	12.8	21.7	40%	40%	30%	30%	10	16.4		
-01350	1350	1350	1350	-	21	23	22	-	2	1	6	-	2.5	1.2	16.9	-	70%	35%	40%	-	11	36.7		
-01700	1700	1590	1410	-	21	23	22	-	2.3	1.1	7.4	-	2.5	1.2	16.9	-	70%	35%	40%	-	11	36.7		
-02640	2640	2300	2120	-	26	26	32	-	2.3	1.3	8.9	-	2.9	1.4	30.8	-	70%	40%	35%	-	13.5	48.6		
-04400	3980	3980	-	-	29	29	-	-	4.5	1.9	-	-	5	2.4	-	-	30%	30%	-	-	13.5	50.8		
-05200	5200	5200	-	-	29	29	-	-	4.5	2	-	-	5	2.4	-	-	30%	30%	-	-	13.5	50.8		
-06900	6900	6900	-	-	31	34	-	-	5.1	2.4	-	-	7.3	3.8	-	-	30%	30%	-	-	16.5	64		
-10500	9600	8300	-	-	31	34	-	-	5.4	3.4	-	-	7.3	3.8	-	-	30%	30%	-	-	16.5	64		
-17500	17500	17500	-	-	93	93	-	-	5.8	2.4	-	-	7.3	3.8	-	-	30%	30%	-	-	49.5	167		
-25900	25900	25900	-	-	93	93	-	-	6.3	3.4	-	-	7.3	3.8	-	-	30%	30%	-	-	49.5	167		

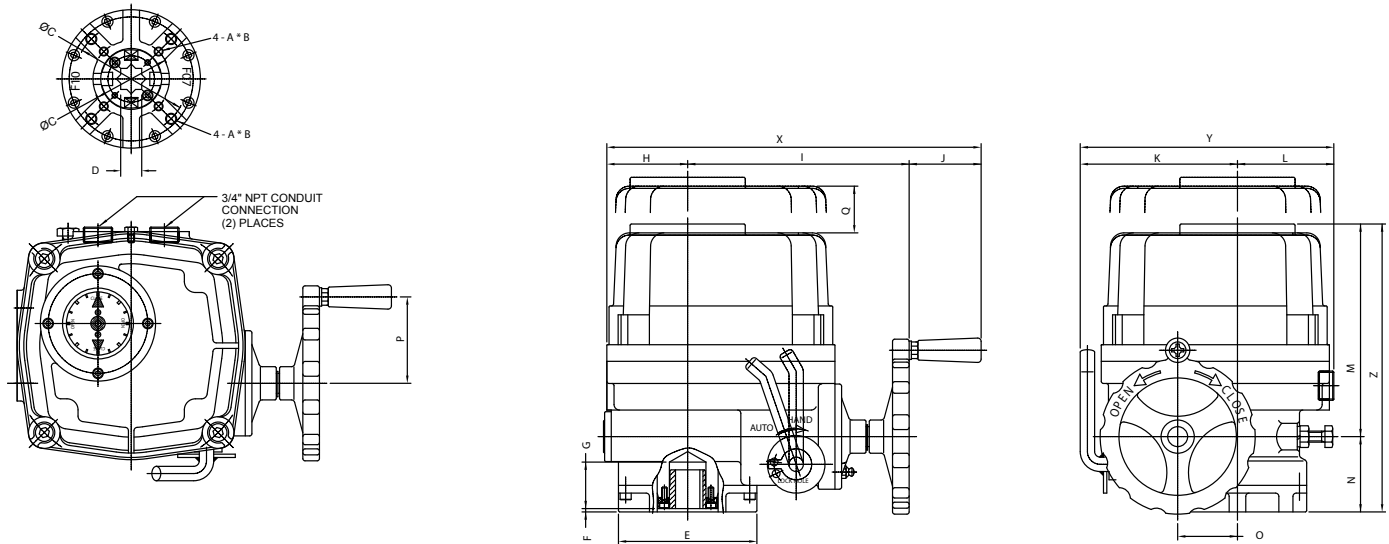
*DUTY CYCLE: FULL LOAD WITH 158°F AMBIENT TEMP

XC Series

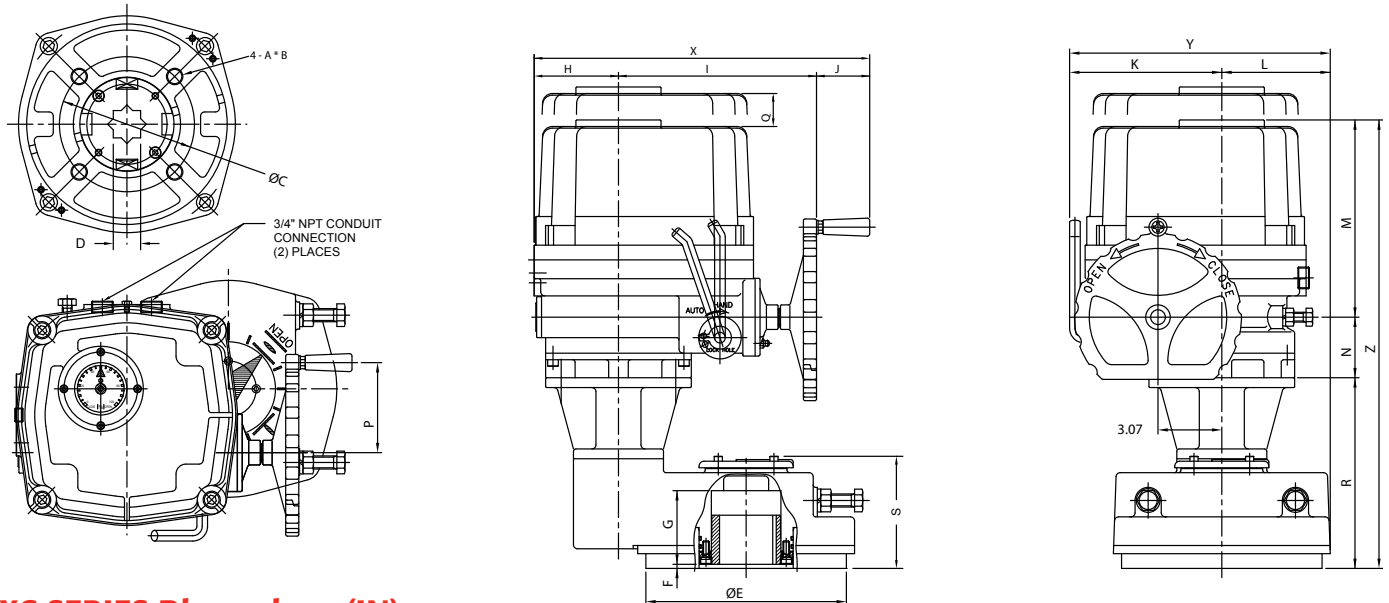
ELECTRIC ACTUATORS

Dimensional Drawings

XC-00690, 00860, 01350, 01700, 02640, 04400, 05200, 06900, 10500



XC-17500, 25900



XC SERIES Dimensions (IN)

Model XC	ISO 5211	A	B	C	D sq	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	X	Y	Z
-00690	F07	M8	0.47	2.756	0.669	3.46	0.12	1.26	1.97	6.18	2.01	3.94	2.76	7.10	2.09	1.57	2.36	4.72	-	-	10.16	6.69	9.78
-00860	F07	M8	0.47	2.756	0.669	3.46	0.12	1.26	1.97	6.18	2.01	3.94	2.76	7.10	2.09	1.57	2.36	4.72	-	-	10.16	6.69	9.78
-01350	F07/F10	M8/M10	0.47/0.59	2.756/4.016	0.748	4.92	0.12	1.65	2.87	7.87	2.56	5.59	3.43	8.09	2.68	2.13	3.07	6.30	-	-	13.31	9.02	11.08
-01700	F07/F10	M8/M10	0.47/0.59	2.756/4.016	0.748	4.92	0.12	1.65	2.87	7.87	2.56	5.59	3.43	8.09	2.68	2.13	3.07	6.30	-	-	13.31	9.02	11.08
-02640	F10/F12	M10/M12	0.59/0.71	4.016/4.921	1.063	5.83	0.12	1.93	3.23	8.70	2.56	6.30	3.90	9.23	2.72	2.56	3.07	7.09	-	-	14.49	10.20	11.95
-04400	F10/F12	M10/M12	0.59/0.71	4.016/4.921	1.063	5.83	0.12	1.93	3.23	8.70	2.56	6.30	3.90	9.23	2.72	2.56	3.07	7.09	-	-	14.49	10.20	12.50
-05200	F10/F12	M10/M12	0.59/0.71	4.016/4.921	1.063	5.83	0.12	1.93	3.23	8.70	2.56	6.30	3.90	9.23	2.72	2.56	3.07	7.09	-	-	14.49	10.20	12.50
-06900	F14	M16	0.95	5.512	1.417	7.01	0.12	2.24	4.06	9.53	2.56	7.32	4.37	10.02	2.91	3.07	4.33	8.27	-	-	16.14	11.69	13.52
-10500	F14	M16	0.95	5.512	1.417	7.01	0.12	2.24	4.06	9.53	2.56	7.32	4.37	10.02	2.91	3.07	4.33	8.27	-	-	16.14	11.69	13.52
-17500	F16	M20	1.18	6.496	1.417	9.65	0.20	3.54	4.06	9.53	2.56	7.32	5.24	10.02	2.91	3.07	4.33	8.27	9.17	5.24	16.14	12.56	22.70
-25900	F16	M20	1.18	6.496	1.417	9.65	0.20	3.54	4.06	9.53	2.56	7.32	5.24	10.02	2.91	3.07	4.33	8.27	9.17	5.24	16.14	12.56	22.70

How to order XC Series

TRIAAC® XC Series

CSA Approved Explosion Proof Actuators

Part Number Reference

Model	
XC	Explosion Proof, CSA Class I, Division 1 & 2, Groups C, D; T4 Type 4, 4X, 6 & 7, IP66/IP67 Ex d IIB, Gb T4 Class I, Zone 1, AEx d IIB Gb T4

Control	
Blank	(2) Position Control (Open / Close)
D	TDC Modulating Card (Provides 450 points of resolution)

Actuator Size	Output Torque			
	110 VAC	220 VAC	24V AC/DC	12 VDC
-00690	690	690	620	350
-00860	860	790	700	440
-01350	1350	1350	1350	-
-01700	1700	1590	1410	-
-02640	2640	2300	2120	-
-04400	3980	3980	-	-
-05200	5200	5200	-	-
-06900	6900	6900	-	-
-10500	9600	8300	-	-
-17500	17500	17500	-	-
-25900	25900	25900	-	-



Motor	
X	110VAC/1PH
A	24V AC/DC (N/A for sizes 04400 - 25900)
B	12VDC (Size 00690 only)
C	24VDC (N/A for sizes 04400 - 25900) Requires additional relays for customer supplied wiring
D	24VAC/1PH (N/A for sizes 04400 - 25900)
E	220VAC/1PH

Miscellaneous Options		Note: Add all miscellaneous options to end of part number
Blank	No options	
T	4-20mA Transmitter	
Y	180° Operation	

NOTE: Class 1, Division 2 areas require a certified seal-off fitting during installation



Example

XC-01350X - (Triac Explosion Proof Electric Actuator, 1350 In-Lbs (150Nm), 21 Second Operation, 110VAC/1PH, 50-60Hz, 2 FLA, Two Position Control, ISO Mounting, 10 Watts Compartment Heater & Thermostat, (2) Auxiliary Limit Switches with Independent Cams, (2) Torque Switches, Diecast Anodized Aluminum Polyester Coated Construction, Class F Extended Duty Fan Motor, Manual Override, (2) 3/4" NPT Conduit Connections, F07/F10 ISO Mounting Pad, 19MM (0.748) Star Output Drive, cCSAus Approved Class I, Division 1 & 2, Groups C, D; T4, Ex d IIB Gb T4, Class I, Zone 1, AEx d IIB Gb T4, Type 4, 4X, 6, 7, IP66, IP67, Ambient Temp = -20°C to +60°C; Color - Silver)

A-T Controls reserves the right to change product designs and technical/dimensional specifications without notice. See website for updates.

KE Series

ELECTRIC ACTUATORS



Standard Features

- *Convex lens* visual position indicator makes it easier to observe without water collecting on the surface of the indicator
- Anti-condensation heater and thermostat
- Two auxiliary limit switches
- Self-locking gear train
- Manual override with wrench
- Available motor voltages: 12VDC, 24VDC, 120VAC & 220VAC
- Optional 4-20mA & 0-10 VDC proportional control

Triac KE Series Actuators

The Triac KE Series electric actuators are the perfect match for resilient or high-performance butterfly valves and dampers because of the self-locking worm drive. The KE Series actuators are used to control rotary valves, such as butterfly valves, ball valves, plug valves, etc. Widely used in applications such as petroleum, chemical, water treatment, ship, paper, power stations, heating supply, building automation, light industry etc.

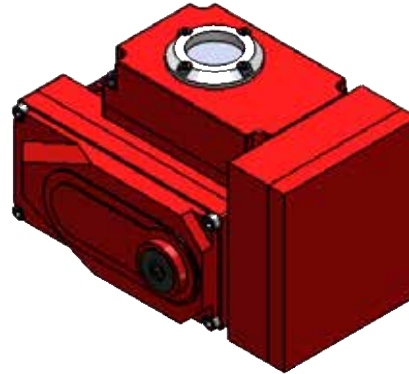
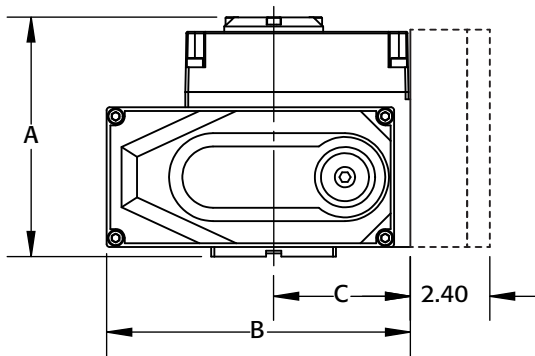
* Coming 2nd Oct 2016 *



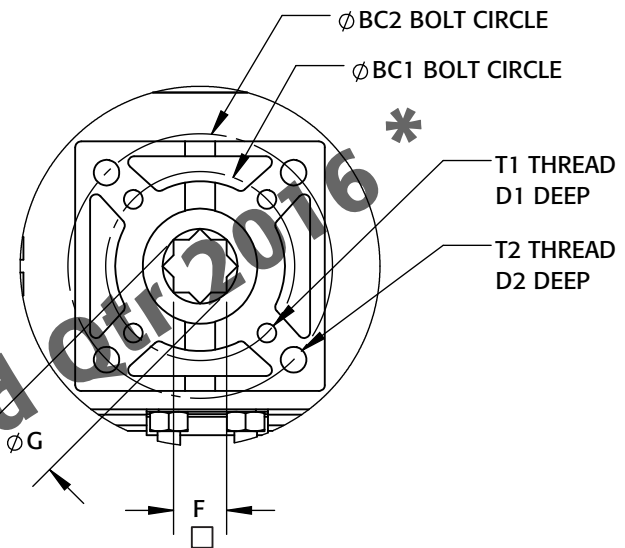
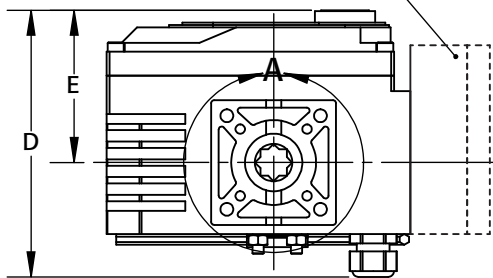
*Unique low profile actuator,
ideal for tight spaces*

Dimensional Drawing

KE-440 to -3500



OPTIONAL MODULATING CONTROL MODULE



KE SERIES Dimensions (IN)

Model	Mounting Pad					ISO 5211	F	G	BC1	BC2	T1	D1	T2	D2
	A	B	C	D	E									
KE-440	5.31	7.37	3.19	6.30	3.48	F05/F07	0.669 x 0.89 Deep	0.94	1.969	2.756	M6 x 1	0.4	M8 x 1.25	0.5
KE-880	6.65	11.32	5.07	8.29	4.47	F10/F12	1.063 x 1.28 Deep	1.50	4.016	4.921	M10 x 1.5	0.6	M12 x 1.75	0.7
KE-1700	6.65	11.32	5.07	8.29	4.47	F10/F12	1.063 x 1.28 Deep	1.50	4.016	4.921	M10 x 1.5	0.6	M12 x 1.75	0.7
KE-3500	6.65	11.32	5.07	8.29	4.47	F10/F12	1.063 x 1.28 Deep	1.50	4.016	4.921	M10 x 1.5	0.6	M12 x 1.75	0.7

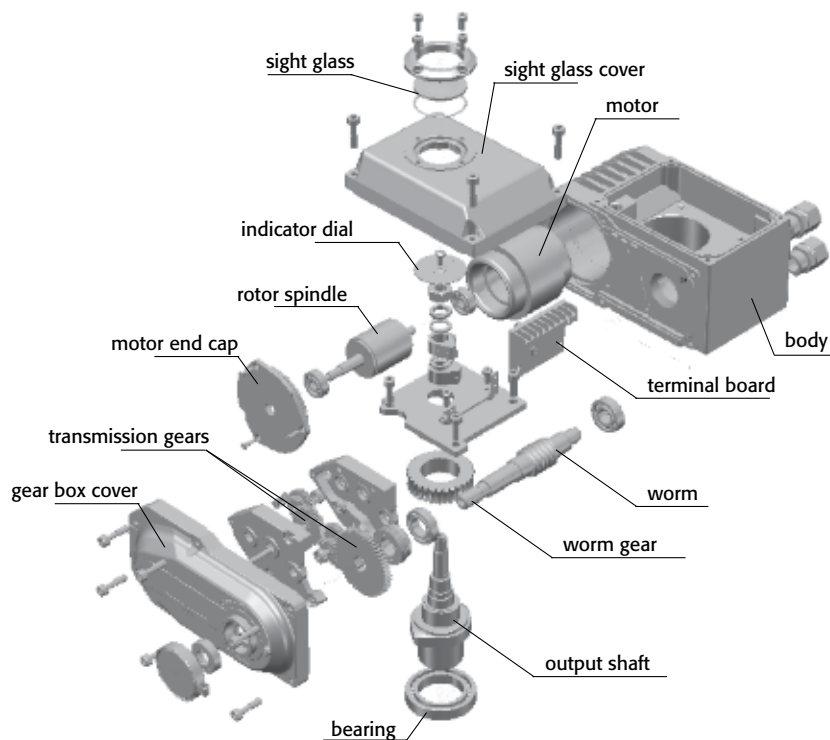
KE Motor Technical Data

Actuator Model	Output Torque		90° Cycle Time (sec)				Rated Current				Lbs
			AC		DC		DC		1 Phase		
	In-Lbs	Nm	50 Hz	60 Hz	12V	24V	12V	24V	110VAC	220VAC	
KE-440	440	50	15	15	12	12	2.4	1.5	0.8	0.45	12
KE-880	880	100	20	20	N/A	15	N/A	3.5	0.65	0.35	21
KE-1700	1700	200	20	20	N/A	15	N/A	5.2	1.2	0.6	21
KE-3500	3500	400	20	20	N/A	15	N/A	6.2	1.2	0.6	21

KE Series

ELECTRIC ACTUATORS

KE Series Actuators



Convex lens visual position indicator



4-20mA/0-10 VDC Modulating Control Module

TRIAC® KE Series Electric Actuator Part Number Reference

Model			
KE	Weather-Proof IP67 Electric Actuator		
Control			
Blank	(2) Position Control (Open / Close)		
M	Standard Modulating Control Card (4-20mA / 0-10 VDC Input/Output)		
Actuator Sizes (KE)			
Size	Motor		
440	440 In-Lbs	X	110/120VAC/1PH <i>Place holder - Omit when at end of part number</i>
880	880 In-Lbs	B	12VDC
1700	1700 In-Lbs	C	24VDC
3500	3500 In-Lbs	E	220VAC/1PH

Example

KEM-880

Triac Worm Drive Electric Actuator, Weather-Proof IP67, 880 In-Lbs Torque Output, 13 Sec Cycle Speed, 110VAC/1PH, 0.75 Rated Amps, Modulating Control, (2) Auxiliary Limit Switches, Heater & Thermostat, Diecast Aluminum Powder Coated Construction, Manual Override with Wrench, (2) 1/2" NPT Conduit Entries, F05, F07, F10 Mounting Pad, 0.669 (17MM) Star Output Drive

A-T Controls reserves the right to change product designs and technical/dimensional specifications without notice.



WE-350

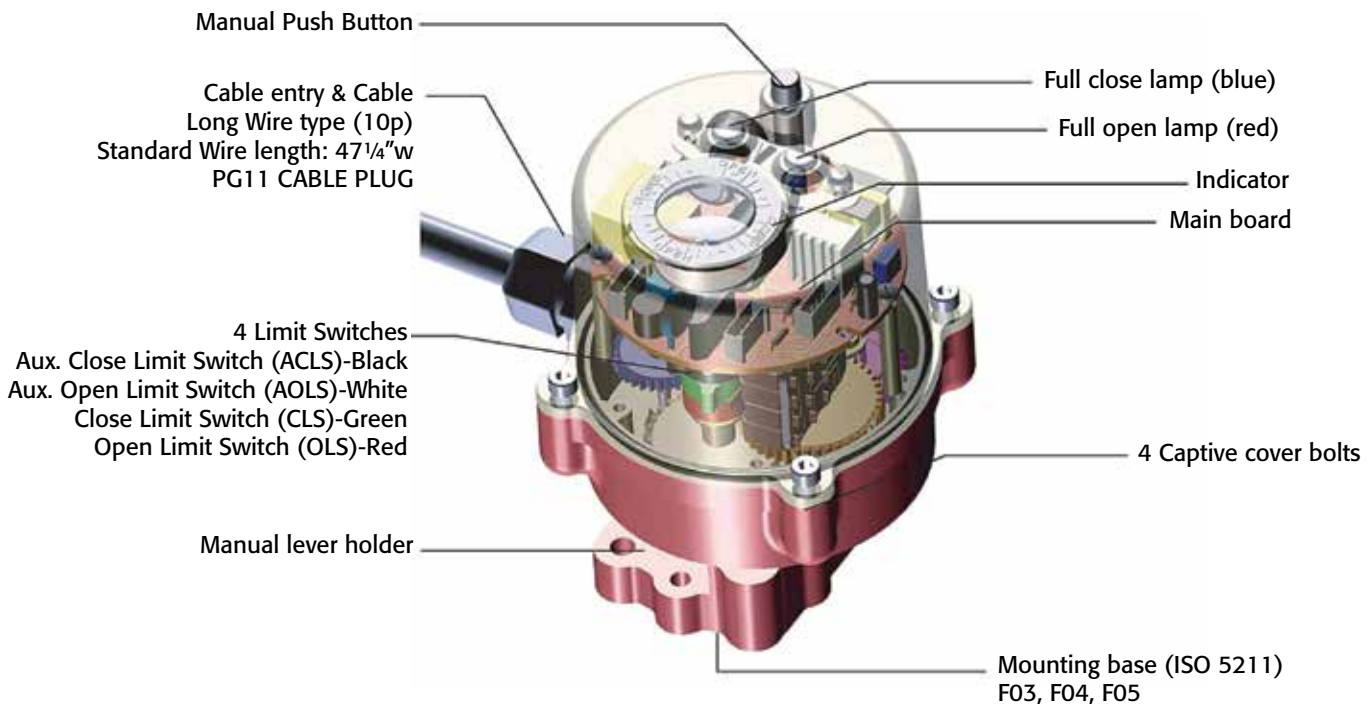
The WE-350 Electric Actuator is specifically designed to operate small size ball valves (1" and less), dampers and other quarter-turn devices.

Features

- Compact and light weight
- High resistance to corrosion due to hard anodizing on inside and outside with polyester powder coating on external surface
- Multi-voltage (85-265VAC/1PH, 24VDC)
- Standard space heater (0.5W)
- Weather proof (IP67)
- Push Button and Manual lever
- Wide, easy mounting base standard to ISO 5211 (F03/F04/F05)
- Standard four limit switches - (2) aux limit switches
- Captive cover bolts
- Mechanical position indicator & LED lamp indicators (Open/Close)



Construction



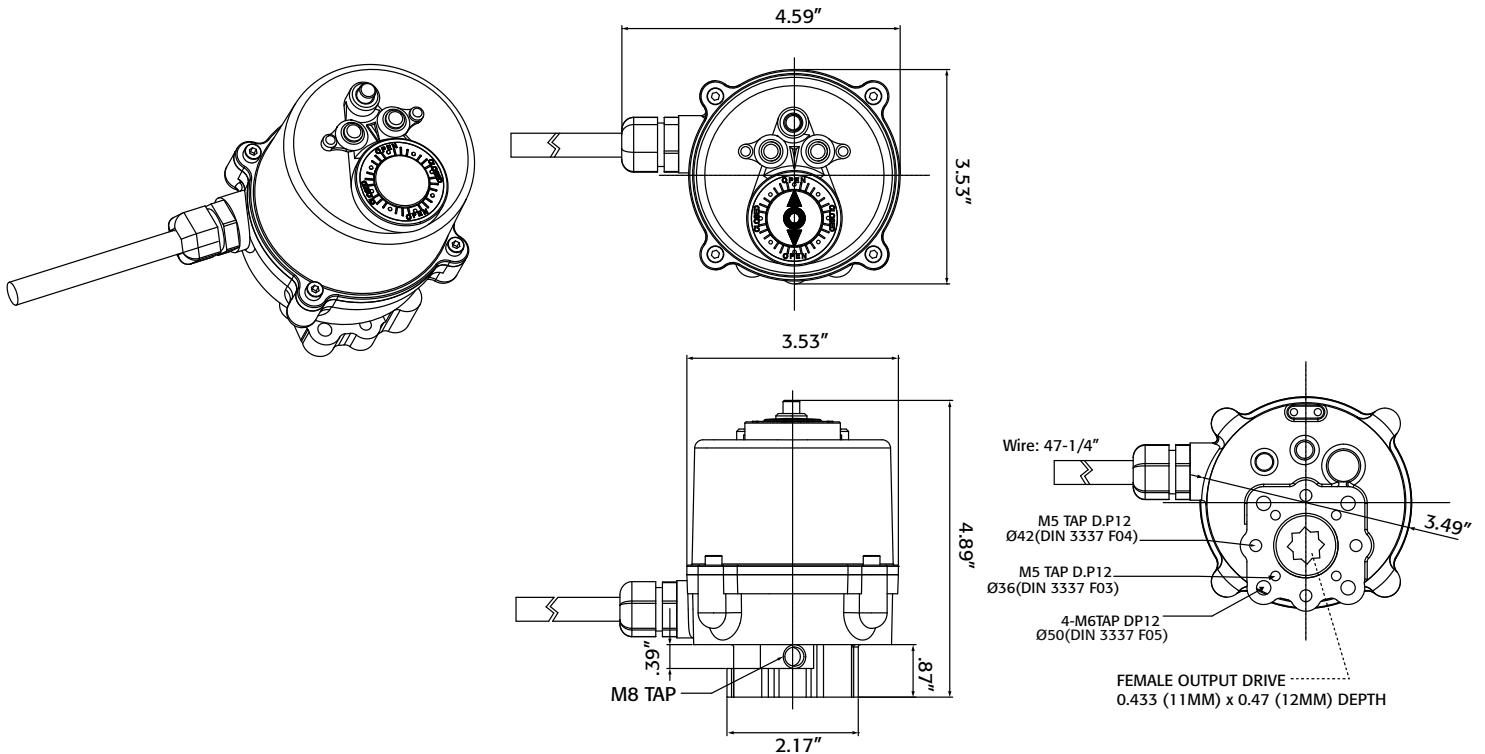
WE-350

ELECTRIC ACTUATORS

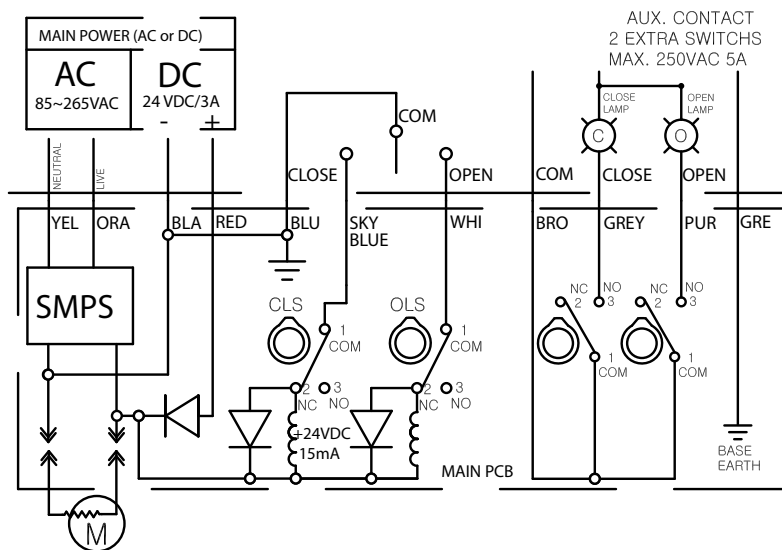
Performance

Type (Model)	Maximum Output Torque	Operating Time 60/50 Hz	Mounting Size	Supplying Power & Rating Current (A) 60/50Hz, 1 Phase			Duty Cycle IEC34-1	Manual Level Angle	Weight
	In-Lbs.	90°		ISO 5211	110VAC	220VAC			24VDC
WE-350	354	12 sec.	F03/F04/F05	.12	.06	.46	70%	90°	2.65
WE-350HS	270	6.5 sec.		.065	.033	.25			

Dimensions



Wiring Connection

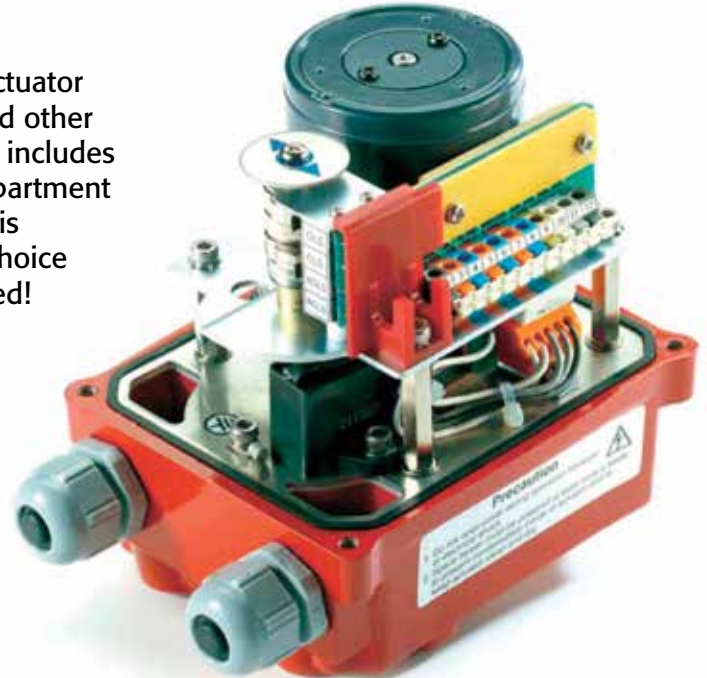


WE-500

The WE-500 Electric Actuator is a compact design actuator used for small ball valves (2" and less), dampers and other quarter-turn devices. The actuator is TYPE 4, 4X and includes a visual indicator, two auxiliary switches and a compartment heater. A convenient wrench manual override shaft is standard on the WE-500. This actuator is the clear choice when a compact, efficient electric actuator is required!

Features

- Compact and light due to high grade aluminum alloy housing.
- High resistance to corrosion due to hard anodizing on inside and outside with polyester powder coating on external surface
- Output torque: 530 In-lbs.
- The actuator motor is a reversible, high torque and low current design.
- Weatherproof (IP67, Type 4, 4X)



Standard Configuration

- Manual override
- Wide, easy mounting base standard to ISO 5211 (F03/F05/F07)
- Standard four limit switches. Two for operation, 2 auxiliary dry contacts
- Captive cover bolts
- Space heater
- Limit switches for tight, easy setting
- Terminal block (11P)
- Standard color : Red



Optional Configuration

Position Indication Unit (Potentiometer kit)

High resolution potentiometer with precisely machined gearing directly engaged with drive shaft provides continuous monitoring of position of valve and actuator.



TMC3 Electronic Modulating Card

- Auto Calibration for Easy Setup
- 10 Bit Microprocessor controller for precise positioning and control
- 4-20mA, 1-5mA, 0-10 VDC, 1-5 VDC, 0-135 Ohm or Command Signal Potentiometer
- TMC3 can be programmed to Fail in Place, Fail CW, or Fail CCW on loss of command signal
- Characterized Control options: Linear, Quick Opening (Square Root), or Equal Percentage (Square)
- OnBoard 4-20 mA transmitter (standard)



AC/DC 24V Control Unit Dip Switch

Mode	1	2
DC	ON	OFF
AC	OFF	ON



(setting shown here applies to WE-500A only)

WE-500

ELECTRIC ACTUATORS

Performance

Type (Model)	Maximum Output Torque In-Lbs.	Operating Time 60/50 Hz 90°	Mounting Size ISO 5211 F03/F05/F07	Full Load Amps			Locked Rotor Amps			Duty Cycle S2	Number of Handle Turns N	Weight Lbs.
				AC 1PH. 50/60Hz		AC/DC	AC 1PH. 50/60Hz		AC/DC			
				110V	220V	24V	110V	220V	24V			
WE-500	530	12/14	F03/F05/F07	0.4	0.2	0.8	0.5	0.25	2.5	70%	8	6.61

Standard Specification

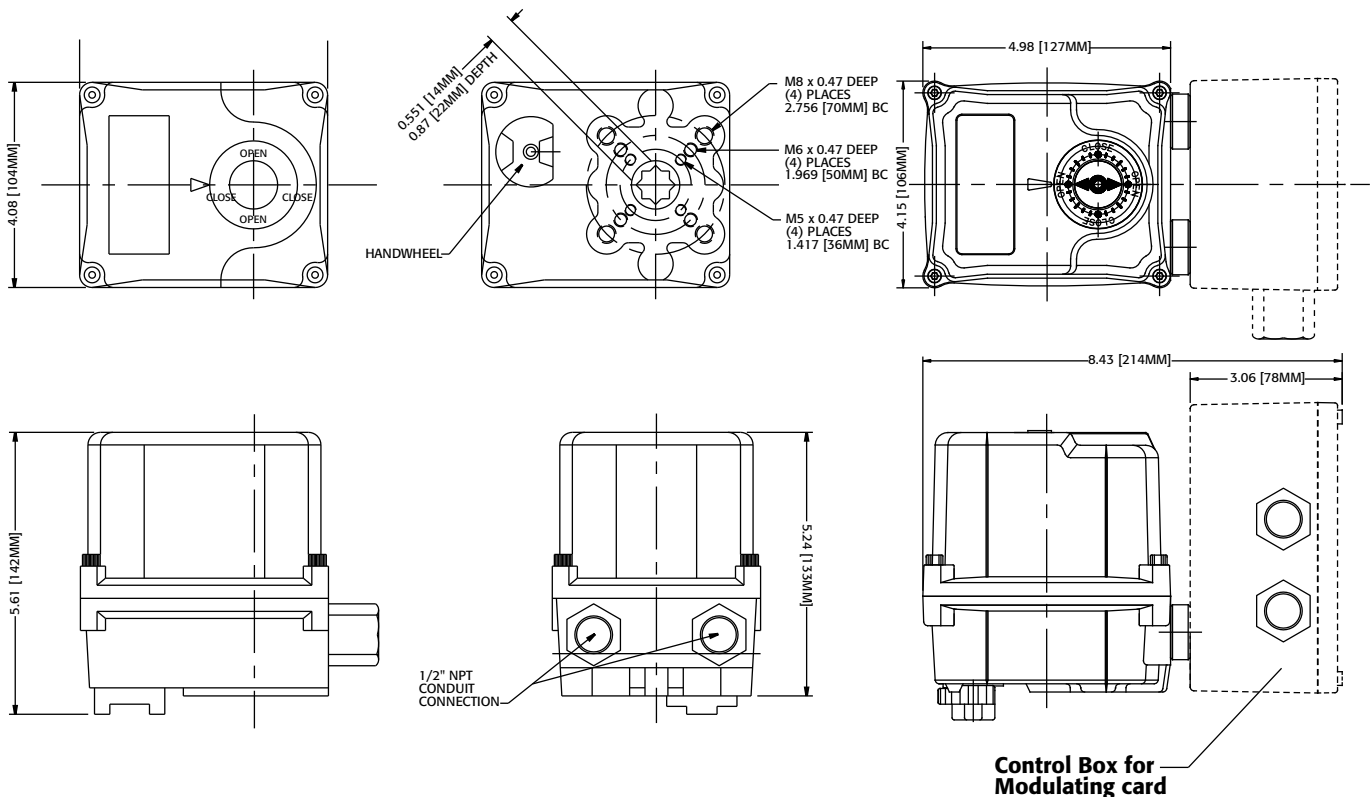
Enclosure..... Weatherproof enclosure IP67, Type 4, 4X
Power Supply..... 110/220V AC 1PH, 50/60Hz, ± 10%, 24V AC/DC
Duty cycle..... 70%
Motor..... Class F Reversible motor
Limit switches..... Open/Close, SPDT, 5A 125 VAC, 3A 250 VAC, 0.4A 125 VDC, 0.2A 250 VDC
Additional limit switches..... Open/Close, SPDT, 5A 125V VAC, 3A 250 VAC, 0.4A 125 VDC, 0.2A 250 VDC
Space heater..... 2W (110/220V AC) Anti-condensation
Manual override..... Drive Nut (hexagon design)
Cable conduit..... Two 1/2" NPT
Movement angle..... 320° ± 10°
Ambient temperature..... -4°F - 158°F (optional -40°F Low Temp Kit)
External coating..... Polyester powder coating

Options Specification

Potentiometer unit (1K)
 (TMC) Electronic Modulating Card
 4-20mA, 1-5mA, 0-10 VDC, 1-5 VDC,
 0-135 Ohm Command Signal
 Current position transmitter
 (Output 4~20mA DC)
 Multi(24VAC/DC)
 DC motor (24VDC)
 Local control unit

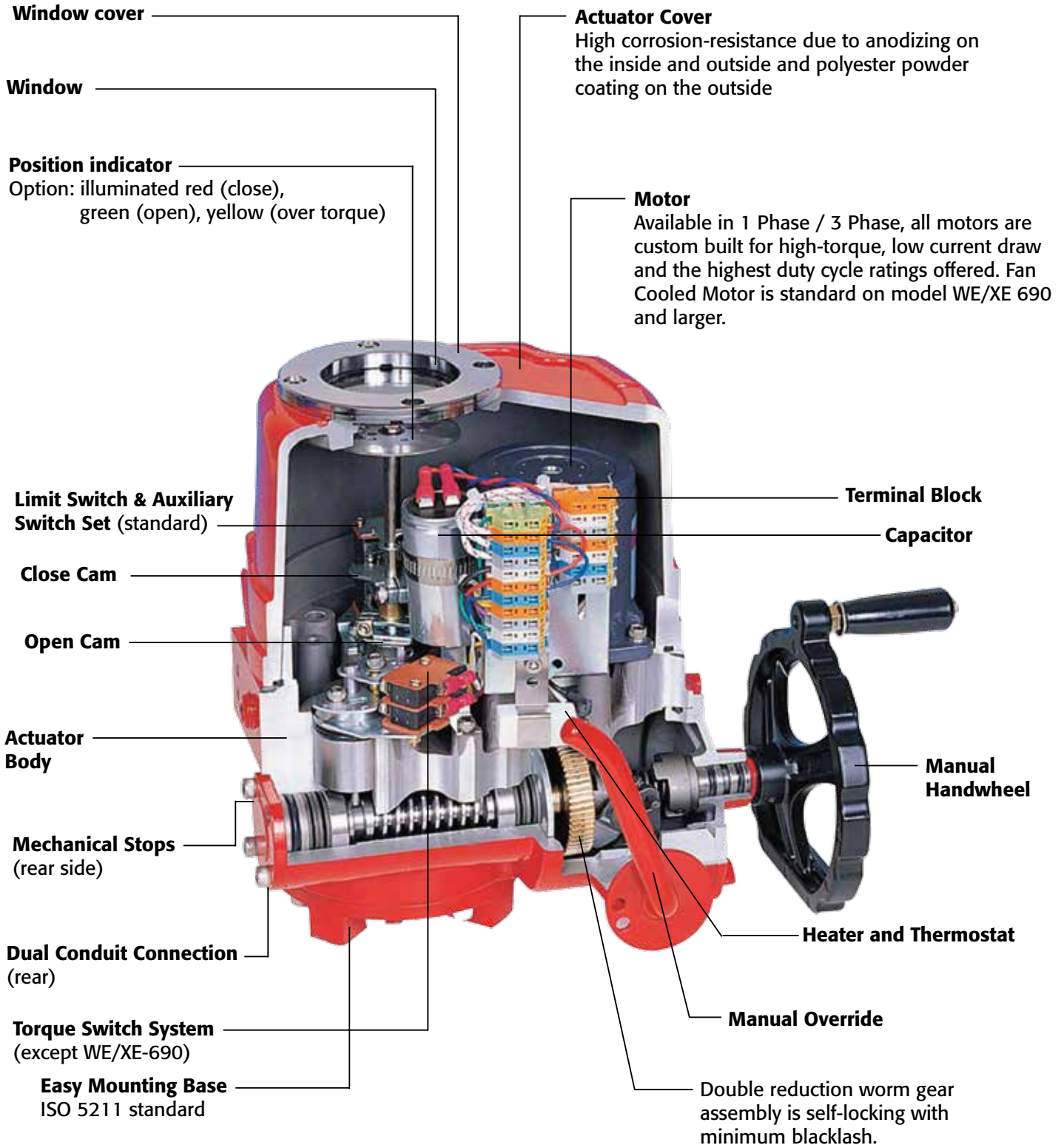
- remote/local/stop
- open/close

Dimensions



WE/XE Series

Electric Actuators WE/XE Features



WE/XE Series

ELECTRIC ACTUATORS

WE/XE-690 thru WE/XE-25900



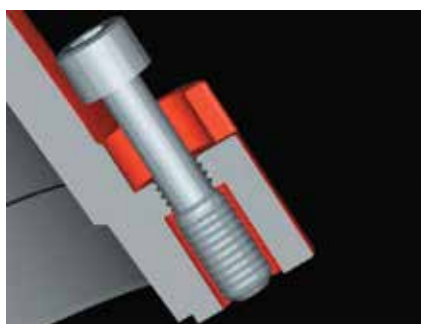
Terminal block

- Extra terminals for customer's convenience
- Spring Loaded Terminal Strip provides secure connection



Heater

- Ceramic housing with thermostat to eliminate condensation (7-10 watt Standard)
- Optional High Wattage Heater for Low Temp applications to -40°F



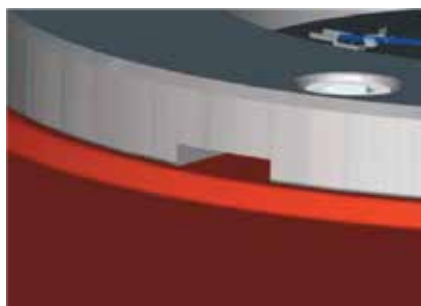
Captive cover bolt

- Cover bolts are specially designed to prevent loosening during maintenance or installation
- All external bolts are stainless steel for rust prevention



Indicator sustained by spring

- Direction of visual indicator is set by factory
- To change its direction, simply grip the indicator plate and rotate to the new position
- Spring beneath the indicator plate sustains the set position
- No need to loosen screw and tighten it again



Slot on window cover for draining water

- A drain slot is provided to eliminate water buildup on window

WE/XE Series

WE/XE Series



WE CSA Approved, Type 4 & 4X



XE ATEX/IECEX Ex d IIB T4 Gb, IP67



SE Type 4, 4X & 6, IP68

Actuator Models	Output Torque	90° Cycle Time (sec)	Motor Size	Full Load Amps					Locked Rotor Amps					Duty Cycle	Handwheel Turns	Weight
				AC/DC	1 Phase		3 Phase		AC/DC	1 Phase		3 Phase				
WE / XE	In-Lbs.	60 / 50 Hz	Watts	24V	110V/60Hz	220V/60Hz	380V	440V	24V	110V/60Hz	220V/60Hz	380V	440V	IEC 34-1 S4	N	Lbs.
-690	690	13 / 16	15	5	1.2	0.6	N/A	N/A	12.8	1.4	0.7	N/A	N/A	70%	10	16.4
-1350	1350	21 / 25	40	6	2	1	0.28	0.36	16.9	2.5	1.2	0.75	0.66	70%	11	36.7
-1700	1700	21 / 25	40	7.4	2.3	1.1	0.28	0.36	16.9	2.5	1.2	0.75	0.66	70%	11	36.7
-2640	2640	26 / 31	40	8.9	2.3	1.3	0.27	0.34	30.8	2.9	1.4	1	0.87	70%	13.5	48.6
-4400	4400	26 / 31	90	N/A	4.5	1.9	0.42	0.47	N/A	5	2.4	1.73	1.5	70%	13.5	50.8
-5200	5200	26 / 31	90	N/A	4.5	2	0.42	0.47	N/A	5	2.4	1.73	1.5	70%	13.5	50.8
-6900	6900	31 / 37	180	N/A	5.1	2.4	0.61	0.67	N/A	7.3	3.8	2.73	2.38	50%	16.5	64
-10500	10500	31 / 37	180	N/A	5.4	3.4	0.61	0.67	N/A	7.3	3.8	2.73	2.38	50%	16.5	64
-17500	17500	95 / 112	180	N/A	5.8	2.4	0.61	0.67	N/A	7.3	3.8	2.73	2.38	50%	49.5	167
-25900	25900	95 / 112	180	N/A	6.3	3.4	0.61	0.67	N/A	7.3	3.8	2.73	2.38	50%	49.5	167


Standard Specifications

- Enclosure**.....Weatherproof enclosure, (WE: IP67, CSA Type 4, 4X) (SE: IP68, Type 4, 4X & 6)
- AWWA**.....Conforms to AWWA C540-93 requirements
- Power supply**.....12/24VDC, 24/110/220VAC 1PH, 220/380/440/460/480VAC, 3 Phase, 50/60Hz, ±10%
- Duty cycle**.....1800 start/hour at full load at 158°F
- Motor**.....Class F Reversible Induction motor
- Limit switches**.....Open / Close, SPDT, 16A 1/2HP 125/250VAC, 0.6A 125VDC, 0.3A 250VDC
- Additional limit switches**.....Open / Close, SPDT, 16A 1/2HP 125/250VAC, 0.6A 125VDC, 0.3A 250VDC
- Torque switches**.....Open / Close, SPDT, 16A 1/2HP 125/250VAC, 0.6A 125VDC, 0.3A 250VDC (except WE/XE-690)
- Stall protection**.....Built-in thermal protection, Open 302°F (150°C) / Close 207°F (97°C)
- Travel angle**.....0 to 90° ± 10° / 0 to 270° ± 10°
- Indicator**.....Continuous position indicator
- Manual override**.....Declutching mechanism
- Self locking**.....Provided by double worm gearing
- Mechanical stopper**.....Open / Close (external adjustable screws)
- Space heater**.....7-10W Anti-condensation
- Cable Conduit**.....Two 3/4" NPT
- Lubrication**.....Grease moly (EP type)
- Terminal block**.....Spring loaded lever push type
- Materials**.....Steel, Aluminium alloy, Al bronze, Polycarbonate
- Ambient temperature**.....-4°F — 158°F (optional -40°F Low Temp Kit)
- Ambient humidity**.....90% RH Max. (non-condensing)
- Anti-Vibration**.....XYZ 10g, 0.2~34Hz, 30 minutes
- External coating**.....Anodizing treatment before dry powder, Polyester

WE & XE Series

ELECTRIC ACTUATORS

Options Specifications

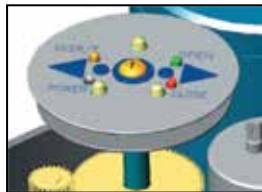
Explosion-Proof enclosure II 2 G, Ex d IIB T4 Gb	ATEX/IECEX certification, XE only	
Submersible enclosure (IP68 10M 72HR)	SE/XE Series	
Potentiometer unit (1K ~10K)	WE/XE Series	
Proportional control unit (input, output 0~10V DC, 4~20mA DC)	WE/XE Series	
Semi-Integral control unit (Local/Remote Selector Switches)	except WE-690 & XE Series	
Intelligent Digital control unit (Local/Remote Selector Switches)	except WE-690 & XE Series	
Current position transmitter (output 4-20mA DC)	WE/XE Series	
Rotation 120°, 180°, 270° turn	except WE/XE-17500, 25900	
DC motor (24V DC)	WE/XE-690C—WE/XE-2640C	
AC/DC 24V control	WE/XE-690A—WE/XE-2640A	
Signal lamp unit (red-close, green-open, yellow-over torque)		
Fire Proofing Actuator 1050° ±5°C/50 min	Consult factory	
Fire Proofing Actuator 250° ±5°C/150 min	Consult factory	

XE Explosion Proof Enclosure

- ATEX Certification



Removable Drive Bushing



Signal LED Unit
Large indicator with monitoring lamps (Over torque, open and close)

High Speed Electric Actuators

Model	Output Torque (In-Lbs)	Speed (60Hz)	Torque Switch Setting (In-Lbs)
WE-690*HS2	290	4.5 seconds	N/A
WE-690*HS1	400	7.0 seconds	N/A
WE-1350*HS2	840	7.0 seconds	1,350
WE-1350*HS1	1,200	10.5 seconds	1,350
WE-2640*HS2	1,390	8.5 seconds	2,640
WE-2640*HS1	2,050	13.0 seconds	2,640
WE-4400*HS2	2,350	8.5 seconds	4,400
WE-4400*HS1	3,500	13.0 seconds	4,400
WE-6900*HS2	4,500	10.5 seconds	6,900
WE-10500*HS1	6,700	15.5 seconds	10,500
WE-17500*HS2	12,000	31.0 seconds	17,500
WE-25900*HS1	18,000	47.0 seconds	25,900

Motor specifications remain the same.
*Must specify voltage - see part number matrix on back cover.

Wiring Diagram References

Model	Description	Drawing
WE-500	115 VAC/1 Phase, Two Position	SE 1010
WE-500A	24 VAC/24 VDC, Two Position	SE 1168/SE 1130
WEM-500	115 VAC/1 Phase, Modulating with TMC3 Servo Card	SE 1085
WE-690	115 VAC/1 Phase, Two Position	SE 1032
WEM-690	115 VAC/1 Phase, Modulating with TMC3 Servo Card	SE 1235
WE/XE-1350 thru 25900	115 VAC/1 Phase, Two Position	SE 1080
WE/XE-1350A thru 2640A	24 VAC/24 VDC, Two Position	SE 1221/SE 1220
WEM/XEM-1350 thru 25900	115 VAC/1 Phase, Modulating with TMC3 Servo Card	SE 1052
Digital Control Unit	3 Phase/Modulating	SE 1222
Digital Control Unit	3 Phase/Two Position	SE 1301
Semi-Integral Unit	1 Phase/Proportional	SE 1176
Semi-Integral Unit	1 Phase/Two Position	SE 1097

» See www.atcontrols.com to download specific wiring diagrams (Download > Sort by Document Type > Electric Schematic)

Modulating Options for WE-500 thru 25900

Modulating Cards



TMC3 Electronic Modulating Card (120/220VAC)

- Auto Calibration for Easy Setup
- 10 Bit Microprocessor controller for precise positioning and control
- 4-20mA, 1-5mA, 0-10 VDC, 1-5 VDC, 0-135 Ohm or Command Signal Potentiometer
- TMC3 Can be programmed to Fail in Place, Fail CW, or Fail CCW on loss of command signal
- Characterized Control-Linear, quick opening (Square root), or Equal Percentage (Square)
- OnBoard 4-20 mA transmitter (standard)



TDC Electronic Modulating Card (12/24VDC, 24/120/220 VAC)

- 450 Point Resolution, 16 Bit Micro Processor
- Auto Calibration
- Adaptive Control Feature (continuously adjusts for load and actuator conditions and positions to $\pm 0.1^\circ$)
- Dynamic Breaking
- 4-20mA, 1-5V, 0-5V, 0-10V
- Programmed to Fail in place, Fail CW, or Fail CCW on loss of command signal
- 4-20mA Feedback Transmitter (Optional)

EPC Electronic AS-i Network Card

- AS-i Version 2.1
- 120 VAC or 24VDC Power
- Emergency Override-Normal Operation is overridden when actuator is driven to either CW or CCW position on command
- Built in Emergency Position Command (EPC) overrides normal operation and automatically operates the valve into either the open or closed position (normally this is the closed position) as defined in the user specifications
- Signal Sentinel continuously monitors the EPC system offering additional failsafe backup in the event of an unexpected local event



Boiler Feedwater Application

- **WEL** Control signal 4-20mA, specify these parts: LRC-100, POT-102 & Extended Bracket.
- **WES** Control signal 0-135 ohm, specify these parts: TDC-100, XMA-108, POT-102 & Extended Bracket

Other Network Cards Available Upon Request

Special Application

Intelligent Digital Control Unit

- Light, compact and integral design
- Wide range of electric power application (220VAC~480VAC/3 Phase)
- Built-in auto phase discriminator (easy and convenient wiring)
- Digital indicator with number, bar graph, menu and (3) LED lamps
- Separate terminal chamber (Reliable against water, vibration, temperature, etc.)
- Easy application for WE-Series Actuators
- Various options available



Semi-Integral Control Unit

- Light, compact and integrated design (IMS, Local/Remote control)
- Wide range of electric power application (115VAC~480VAC/1 Phase or 3 Phase)
- Phase protection monitoring by LED in case of reverse wiring
- Easy application for WE-Series Actuators
- Various options available

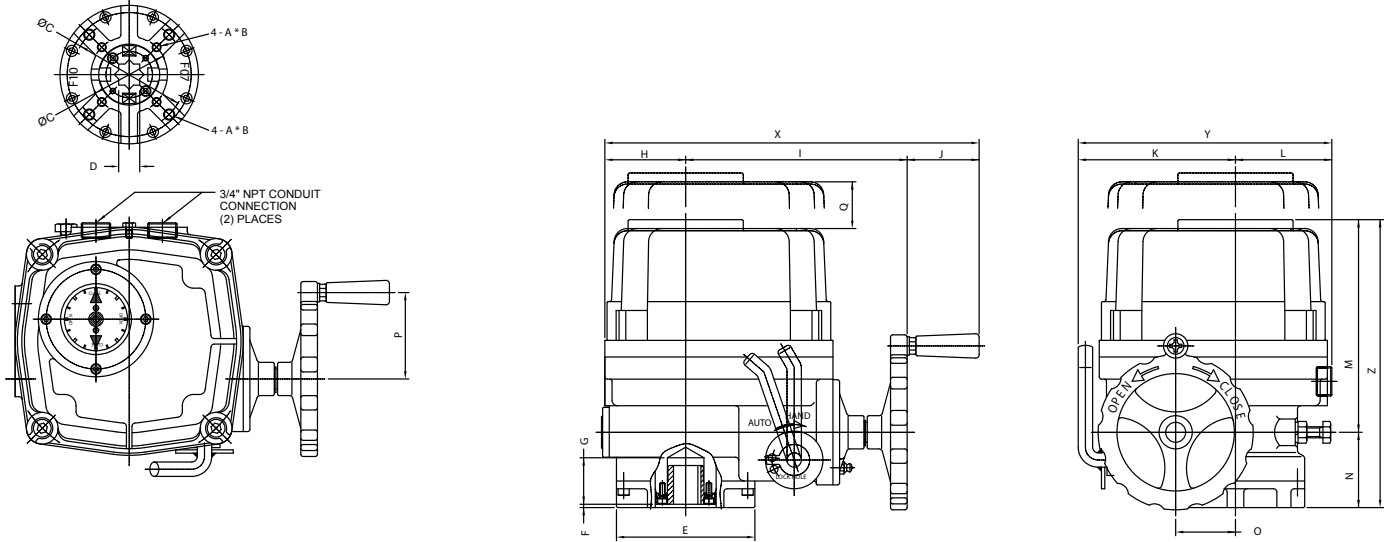


LED lamp signal	
White	○ :Power
Blue	● :Remote
Yellow	● :Fault
Red	● :Open/Opening
Green	● :Close/Closing

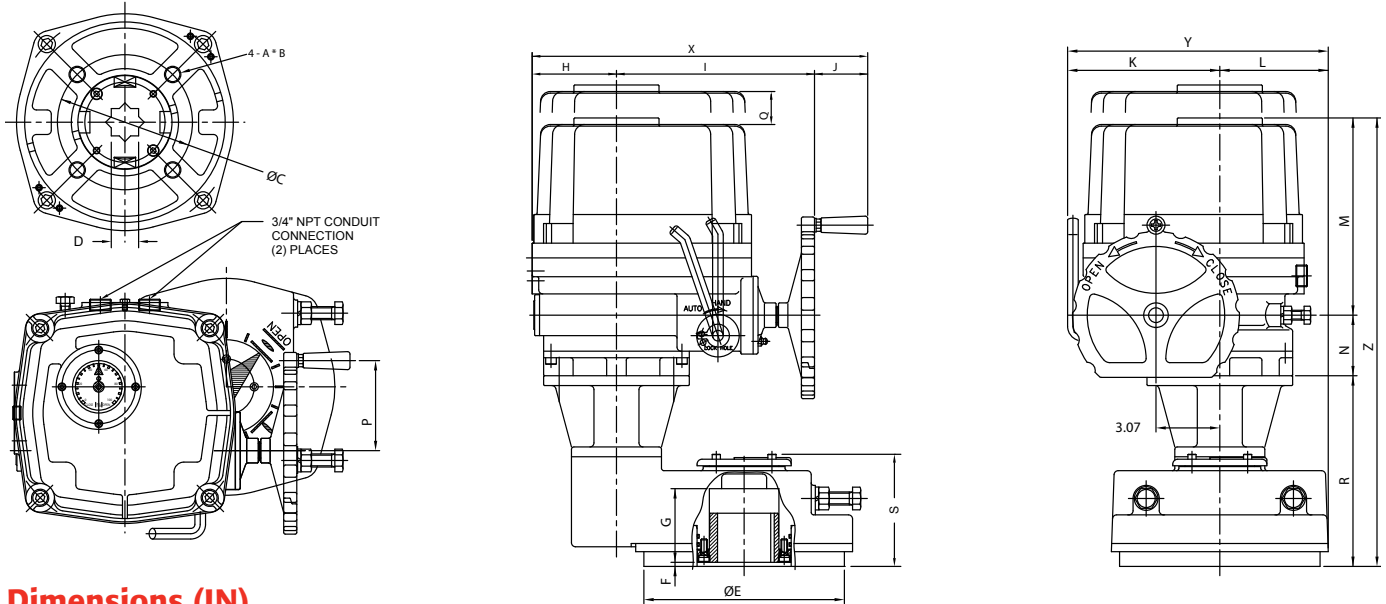
WE & XE Series

Dimensional Drawing

WE/XE-690, 1350, 1700, 2640, 4400, 5200, 6900, 10500



WE/XE-17500, 25900



Dimensions (IN)

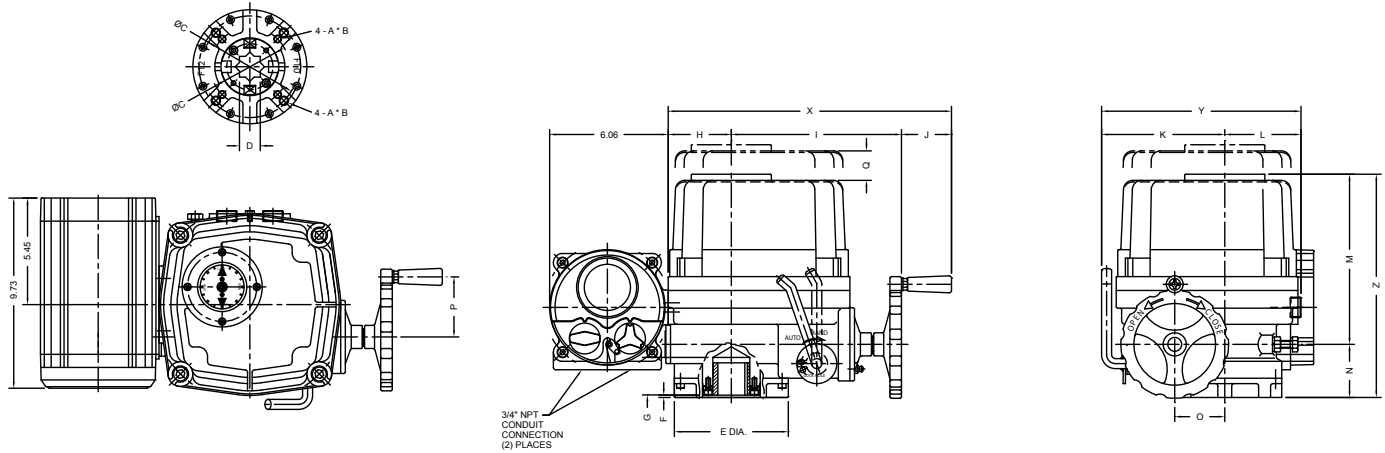
Model WE/XE	ISO 5211	A	B	C	D sq	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	X	Y	Z
-690	F07	M8	0.47	2.756	0.669	3.46	0.12	1.26	1.97	6.18	2.01	3.94	2.76	6.57	2.09	1.57	2.36	4.72	-	-	10.16	6.69	9.25
-1350	F07/F10	M8/M10	0.47/0.59	2.756/4.016	0.748	4.92	0.12	1.65	2.87	7.87	2.56	5.59	3.43	7.56	2.68	2.13	3.07	6.30	-	-	13.31	9.02	10.55
-1700	F07/F10	M8/M10	0.47/0.59	2.756/4.016	0.748	4.92	0.12	1.65	2.87	7.87	2.56	5.59	3.43	7.56	2.68	2.13	3.07	6.30	-	-	13.31	9.02	10.55
-2640	F10/F12	M10/M12	0.59/0.71	4.016/4.921	1.063	5.83	0.12	1.93	3.23	8.70	2.56	6.30	3.90	8.70	2.72	2.56	3.07	7.09	-	-	14.49	10.20	11.42
-4400	F10/F12	M10/M12	0.59/0.71	4.016/4.921	1.063	5.83	0.12	1.93	3.23	8.70	2.56	6.30	3.90	8.70	2.72	2.56	3.07	7.09	-	-	14.49	10.20	11.97
-5200	F10/F12	M10/M12	0.59/0.71	4.016/4.921	1.063	5.83	0.12	1.93	3.23	8.70	2.56	6.30	3.90	8.70	2.72	2.56	3.07	7.09	-	-	14.49	10.20	11.97
-6900	F14	M16	0.95	5.512	1.417	7.01	0.12	2.24	4.06	9.53	2.56	7.32	4.37	9.49	2.91	3.07	4.33	8.27	-	-	16.14	11.69	12.99
-10500	F14	M16	0.95	5.512	1.417	7.01	0.12	2.24	4.06	9.53	2.56	7.32	4.37	9.49	2.91	3.07	4.33	8.27	-	-	16.14	11.69	12.99
-17500	F16	M20	1.18	6.496	1.417	9.65	0.20	3.54	4.06	9.53	2.56	7.32	5.24	9.49	2.91	3.07	4.33	8.27	9.17	5.24	16.14	12.56	22.17
-25900	F16	M20	1.18	6.496	1.417	9.65	0.20	3.54	4.06	9.53	2.56	7.32	5.24	9.49	2.91	3.07	4.33	8.27	9.17	5.24	16.14	12.56	22.17

WE Series

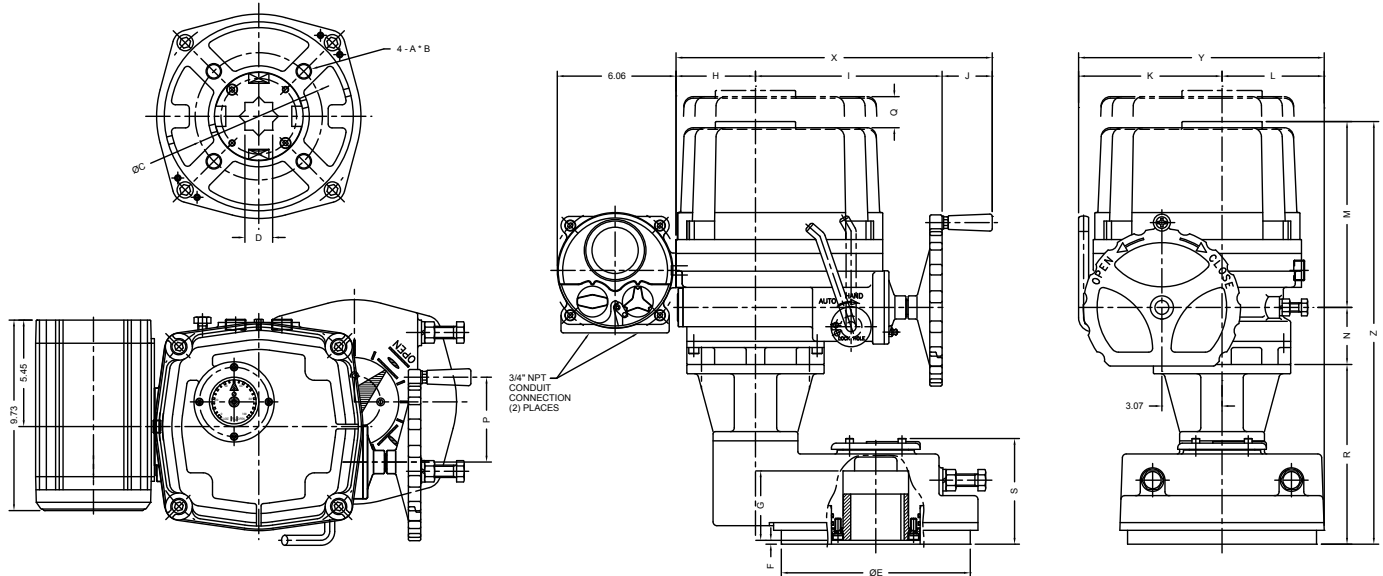
ELECTRIC ACTUATORS

Dimensional Drawing

WE-1350, 1700, 2640, 4400, 5200, 6900, 10500 *Intelligent Digital Control Unit*



WE-17500, 25900 *Intelligent Digital Control Unit*

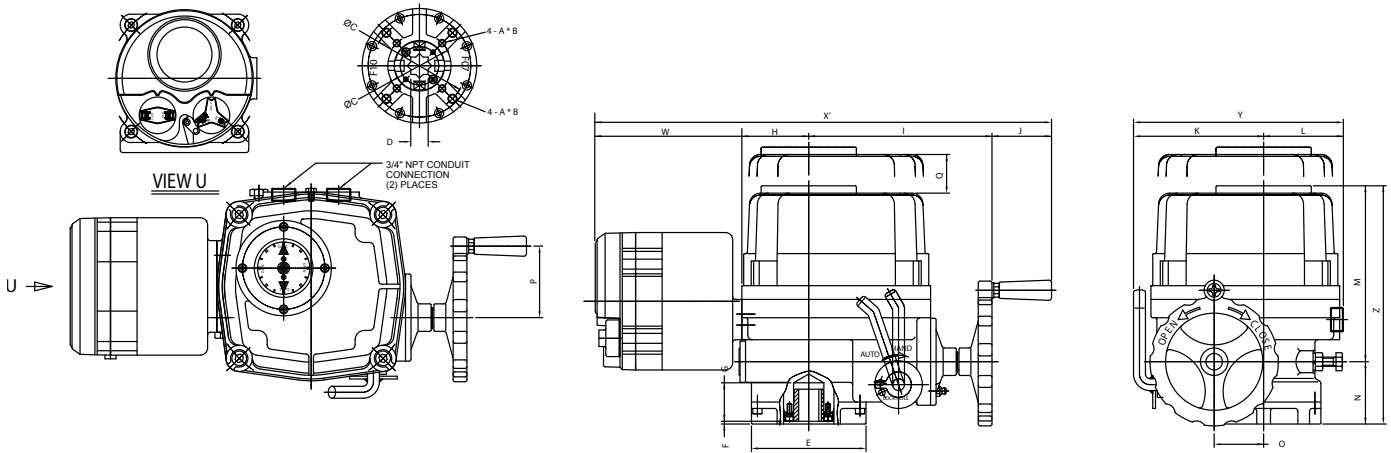


Dimensions (IN)

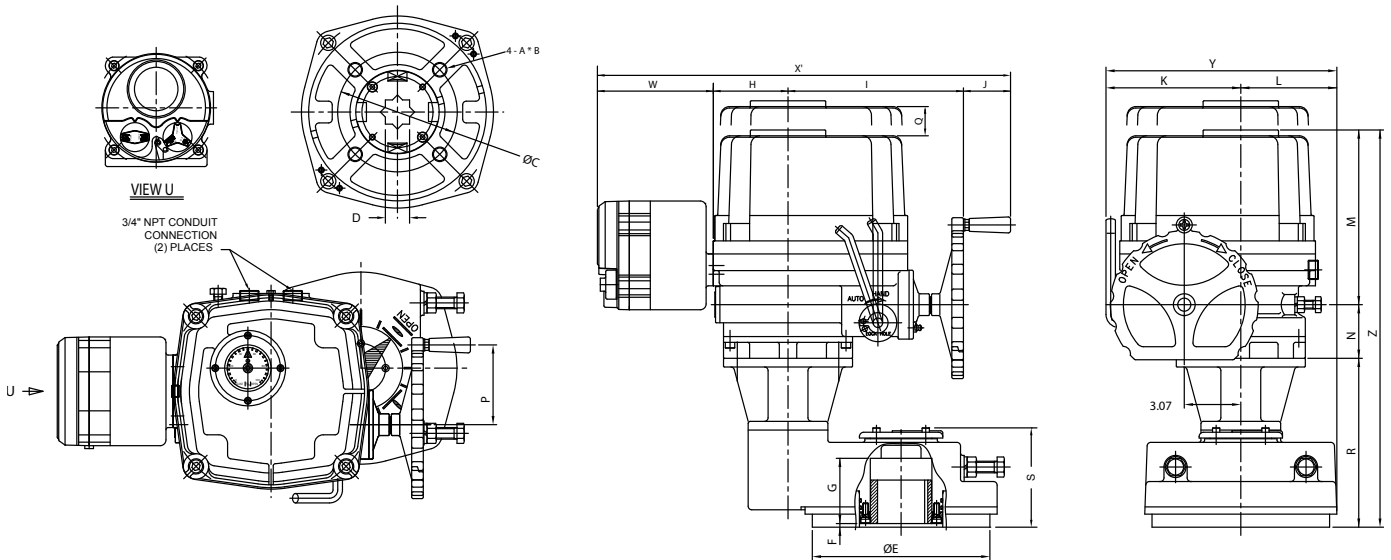
Model WE	ISO 5211	A	B	C	D sq	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	X	Y	Z
-1350	F07/F10	M8/M10	0.47/0.59	2.756/4.016	0.748	4.92	0.12	1.65	2.87	7.87	2.56	5.59	3.43	7.56	2.68	2.13	3.07	6.30	-	-	13.31	9.02	10.55
-1700	F07/F10	M8/M10	0.47/0.59	2.756/4.016	0.748	4.92	0.12	1.65	2.87	7.87	2.56	5.59	3.43	7.56	2.68	2.13	3.07	6.30	-	-	13.31	9.02	10.55
-2640	F10/F12	M10/M12	0.59/0.71	4.016/4.921	1.063	5.83	0.12	1.93	3.23	8.70	2.56	6.30	3.90	8.70	2.72	2.56	3.07	7.09	-	-	14.49	10.20	11.42
-4400	F10/F12	M10/M12	0.59/0.71	4.016/4.921	1.063	5.83	0.12	1.93	3.23	8.70	2.56	6.30	3.90	8.70	2.72	2.56	3.07	7.09	-	-	14.49	10.20	11.97
-5200	F10/F12	M10/M12	0.59/0.71	4.016/4.921	1.063	5.83	0.12	1.93	3.23	8.70	2.56	6.30	3.90	8.70	2.72	2.56	3.07	7.09	-	-	14.49	10.20	11.97
-6900	F14	M16	0.95	5.512	1.417	7.01	0.12	2.24	4.06	9.53	2.56	7.32	4.37	9.49	2.91	3.07	4.33	8.27	-	-	16.14	11.69	12.99
-10500	F14	M16	0.95	5.512	1.417	7.01	0.12	2.24	4.06	9.53	2.56	7.32	4.37	9.49	2.91	3.07	4.33	8.27	-	-	16.14	11.69	12.99
-17500	F16	M20	1.18	6.496	1.417	9.65	0.20	3.54	4.06	9.53	2.56	7.32	5.24	9.49	2.91	3.07	4.33	8.27	9.17	5.24	16.14	12.56	22.17
-25900	F16	M20	1.18	6.496	1.417	9.65	0.20	3.54	4.06	9.53	2.56	7.32	5.24	9.49	2.91	3.07	4.33	8.27	9.17	5.24	16.14	12.56	22.17

Dimensional Drawing

WE-1350, 1700, 2640, 4400, 5200, 6900, 10500 *Semi-integral Control Unit*



WE-17500, 25900 *Semi-integral Control Unit*



Dimensions (IN)

Model WE	ISO 5211	A	B	C	D sq	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	X	Y	Z
-690	F07	M8	0.47	2.756	0.669	3.46	0.12	1.26	1.97	6.18	2.01	3.94	2.76	6.57	2.09	1.57	2.36	4.72	-	-	10.16	6.69	9.25
-1350	F07/F10	M8/M10	0.47/0.59	2.756/4.016	0.748	4.92	0.12	1.65	2.87	7.87	2.56	5.59	3.43	7.56	2.68	2.13	3.07	6.30	-	-	13.31	9.02	10.55
-1700	F07/F10	M8/M10	0.47/0.59	2.756/4.016	0.748	4.92	0.12	1.65	2.87	7.87	2.56	5.59	3.43	7.56	2.68	2.13	3.07	6.30	-	-	13.31	9.02	10.55
-2640	F10/F12	M10/M12	0.59/0.71	4.016/4.921	1.063	5.83	0.12	1.93	3.23	8.70	2.56	6.30	3.90	8.70	2.72	2.56	3.07	7.09	-	-	14.49	10.20	11.42
-4400	F10/F12	M10/M12	0.59/0.71	4.016/4.921	1.063	5.83	0.12	1.93	3.23	8.70	2.56	6.30	3.90	8.70	2.72	2.56	3.07	7.09	-	-	14.49	10.20	11.97
-5200	F10/F12	M10/M12	0.59/0.71	4.016/4.921	1.063	5.83	0.12	1.93	3.23	8.70	2.56	6.30	3.90	8.70	2.72	2.56	3.07	7.09	-	-	14.49	10.20	11.97
-6900	F14	M16	0.95	5.512	1.417	7.01	0.12	2.24	4.06	9.53	2.56	7.32	4.37	9.49	2.91	3.07	4.33	8.27	-	-	16.14	11.69	12.99
-10500	F14	M16	0.95	5.512	1.417	7.01	0.12	2.24	4.06	9.53	2.56	7.32	4.37	9.49	2.91	3.07	4.33	8.27	-	-	16.14	11.69	12.99
-17500	F16	M20	1.18	6.496	1.417	9.65	0.20	3.54	4.06	9.53	2.56	7.32	5.24	9.49	2.91	3.07	4.33	8.27	9.17	5.24	16.14	12.56	22.17
-25900	F16	M20	1.18	6.496	1.417	9.65	0.20	3.54	4.06	9.53	2.56	7.32	5.24	9.49	2.91	3.07	4.33	8.27	9.17	5.24	16.14	12.56	22.17

See wiring drawings reference on page 11 or call factory for special requests.

WE-53000 & WE-80000

ELECTRIC ACTUATORS

Technical Information

Actuator Model	Output Torque	90° Cycle Time	Mounting Size	Rated Current(A) 60Hz			Motor Insulation Class	Maximum Bore Size (mm)		Duty Cycle	Number of Handwheel Turns	Weight
				1 Phase	3 Phase	440V		Key (ø)	Square (□)			
WE-53000	53000	149 sec.	ISO 5211	220V	380V	440V	AC 1PH 50/60Hz	Key (ø)	Square (□)	S2	39	335
WE-80000	80000			F23/30	3.15	1.8						

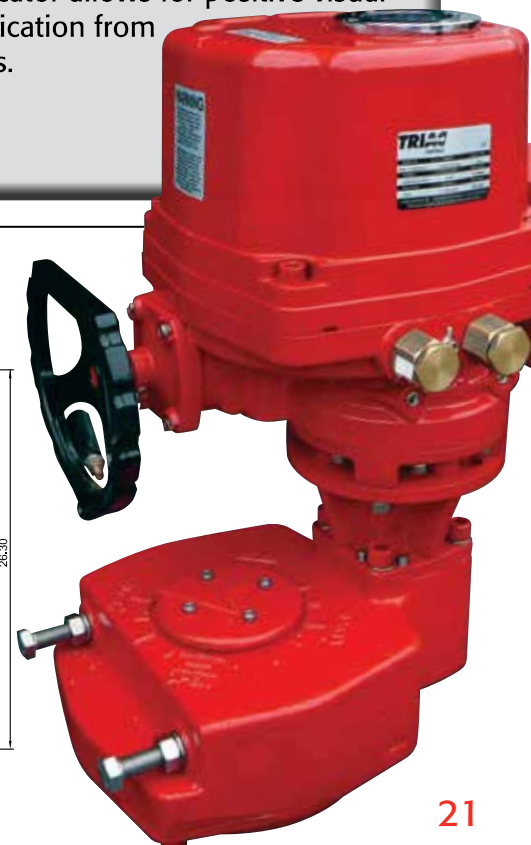
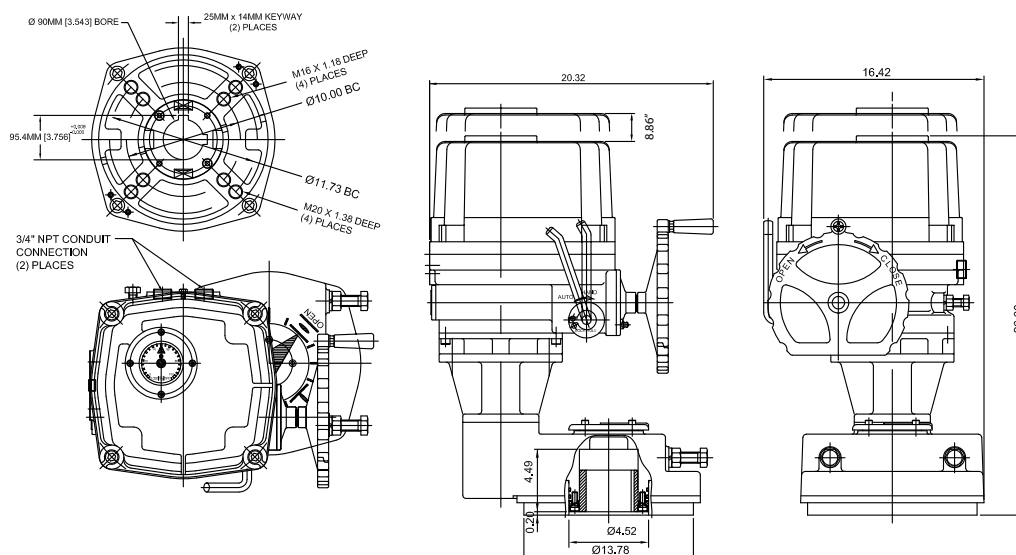
Standard Specification

Enclosure	Weatherproof enclosure IP67, Type 4, 4X & 6, O-ring Sealed
Power Supply	220VAC/1PH/60Hz, 380/440/VAC/3Ph/60Hz ± 10%, 24VDC
Duty Cycle	30%
Motor	Squirrel Cage induction motor
Aux. Limit Switches	2 each for Open/Close, SPDT, 250 VAC, 10A Rating
Torque Switches	1 each for Open/Close, SPDT, 250 VAC, 10A Rating
Space Heater	5W (220VAC) Anti-condensation
Manual Override	Declutchable
Cable Conduit	Two 3/4" NPT
Movement Angle	90° ± 5°
Ambient Temperature	-4°F to 158°F (optional -40°F Low Temp Kit)
Ambient Humidity	90% RH Max (Non-Condensing)
Position Indicator	Continuous mechanical indicator with arrow
Self Locking	Provided by double worm gearing (no brake)
Mechanical Stopper	1 for each travel end (open/close), external & adjustable
Stall Protection / Set Temp	Built in thermal protection, Open 302°F (150°C) / Close 207°F (97°C)
Terminal Block	Spring loaded lever push type
Eternal Coating	Polyester powder coating
Lubrication	EP type grease
Anti-Vibration	XYZ 10g, 0.2~34Hz, 30 minutes

Features

- Compact, robust and lightweight construction covers a wide range of torques up to 80000 In-lbs.
- Polyester powder coated exterior and hard anodized aluminum interior provides excellent protection from the most severe industrial environments.
- Double worm gear design prevents any valve movement from dynamic forces within the pipeline.
- Standard ISO 5211 mounting configuration for direct mount.
- Declutchable manual override with hand wheel.
- Mechanical torque switches prevent motor and gear set damage during excessive torque scenarios.
- Large visual indicator allows for positive visual position identification from greater distances.
- Digitized control components.

Dimensions



How to order WE/XE Series

TRIAC® WE / XE Series Part Number Reference

Model	
WE	Weather Proof, IP67, TYPE 4, 4X, 6
XE	Explosion Proof Design, ATEX & IECEx Ex d IIB T4 Gb, IP67
FE	Fire Proof Unit (1050°F for 50 Min)
SE	Submersible unit (IP68, 10 meters for 72 Hours)

Control	
Blank	(2) Position Control (Open / Close)
M	Standard Modulating Control Card (TMC3)
D	TDC-100 Modulating Card (Provides 450 points of resolution) (TDC-400 on 42VDC motor voltage)
P	Profibus DP
R	Modbus (RS485)
L	Boiler Feed (4-20mA)
S	Boiler Feed (0-135ohm)



Actuator	
Size	
-350	350 In-Lbs
-350HS	270 In-Lbs
-500	500 In-Lbs
-690	690 In-Lbs
-1350	1350 In-Lbs
-1700	1700 In-Lbs
-2640	2640 In-Lbs
-4400	4400 In-Lbs
-5200	5200 In-Lbs
-6900	6900 In-Lbs
-10500	10500 In-Lbs
-17500	17500 In-Lbs
-25900	25900 In-Lbs
-53000	53000 In-Lbs
-80000	80000 In-Lbs

Motor		
X	115VAC/1PH	Place holder only - Omit when at end of part number
A	24V AC/DC	(N/A 4400 - 25900)
B	12VDC	
C	24VDC*	(N/A 4400 - 25900)
*Requires additional relays for customer supplied wiring		
D	24VAC/1PH	(N/A 4400 - 25900)
E	220VAC/1PH	
F	220VAC/3PH	(N/A 500, 690)
G	380VAC/3PH	(N/A 500, 690)
H	440VAC/3PH	(N/A 500, 690)
J	460VAC/3PH	(N/A 500, 690)
K	480VAC/3PH	(N/A 500, 690)

Options		
X	No options	Place holder only - Omit when at end of part number
2	ADM-100 Control Board	- 24 VDC On/Off
B	Semi-integral Control Unit	(N/A 500, 690)
C	Intelligent Digital Control Unit	(N/A 500, 690)
D	Local / Remote Control Switches	(Only 500, 690)
E	Electronic Speed Control Module	- 115 VAC only
F	2 Wire Control & Speed Control	- 115 VAC only
G	End of travel time delay	(same in both directions)
HS1/HS2	See High Speed Options	
R	2 Wire Control, Relay	- 115 VAC control voltage
S	2 Wire Control, Relay	- 24 VAC control voltage
T	2 Wire Control, Relay	- 24 VDC control voltage

Miscellaneous Options Note: Add all miscellaneous options to end of part number		
Blank	No options	
T	4-20mA Transmitter	
N	1000 Ohm Potentiometer	
O	5000 Ohm Potentiometer	
P	10K Ohm Potentiometer	
X	120° Operation	(N/A 17500 or 25900)
Y	180° Operation	(N/A 17500 or 25900)
Z	270° Operation	(N/A 17500 or 25900)
L	-40°F Low Temp Kit	
I	Position Indicator Lamps (Open, Close, Torque)	(N/A 500, 690)
S	(2) additional limit switches (6 total)	(N/A 500, 690)
Floor Drive Mounting Configuration - See Floor Drive Catalog		



Examples

WEM-1350
(Weather Proof Housing, Modulating Control, model size 1350, 115VAC / 1PH)

WEM-1350XXT
(Weather Proof Housing, Modulating Control, model size 1350, 115VAC / 1PH, 4-20mA Transmitter)

A-T Controls reserves the right to change product designs and technical/dimensional specifications without notice.

Specials and Applied Solutions

ELECTRIC ACTUATORS

While you have come to know A-T Controls for superior service in automated valves and day-to-day automation and controls, we specialize in offering solutions to your more unique and difficult applications. Listed below are some of the electric specials and solutions oriented products and services we offer.



Electric Floor Damper Drive



Butterfly Valve Tee Assemblies

See these catalogs for additional offerings included in the TRIAC® Electric Actuator product line:





A-T Controls, Inc.

9955 International Blvd. PHONE (513) 247-5465
Cincinnati, Ohio 45246 FAX (513) 247-5462
www.atcontrols.com sales@atcontrols.com