Stainless Steel Flow Control Equipment for the
Food, Beverage, Dairy, Cosmetics, Biotechnology,
Pharmaceutical and Electronics Processing Industries

www.toplineonline.com
Electrically Actuated Ball & Butterfly Valves

Top Line TE Series electric actuators provide unsurpassed quality, reliability and value to your automated system

FEATURES

- Multiple voltages available: 24VAC, 24VDC, and 115VAC single phase to fit your process needs
- Nema 4, 4X & IP67 lightweight polyester powder coated aluminum housing
- External manual override so you won’t need to worry in a power failure
- Four limit switches – two for operation / two auxiliary dry contacts
- Anti-condensation space heater for reduced downtime and increased reliability
- Visual position indicator for your convenience
- Captive cover bolts for your convenience

Optional Features:

- Integral modulating card for full PLC control
- Position Indication (Potentiometer) for continuous position monitoring
Electric Actuators

WE Series Weatherproof
CSA Approved TYPE 4 & 4X
350-80,000 In-lbs. torque

XE Series Explosion Proof
ATEX Certified E Ex d IIB T4
690-25,900 In-lbs. torque

AWWA C540-93
**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 (AC85-265V/1PH, 24VDC)
- Standard space heater (0.5W)
- Weather proof (IP67)
- Push Button and Manual lever
- Wide, easy mounting base standard to ISO5211 (F03/F04/F05)
- Standard four limit switches
- Captive cover bolts
- Mechanical position indicator & LED lamp indicators (Open/Close)

**Construction**

![Diagram of WE-350 Electric Actuator]

- Manual Push Button
- Cable entry & Cable
  - Long Wire type (10p)
  - Standard Wire length: 47¾"w
  - PG11 CABLE PLUG
- Full close lamp (blue)
- Full open lamp (red)
- Indicator
- Main board
- 4 Limit Switches
  - Add CLOSE L/M S/W (White)
  - Add OPEN L/M S/W (Black)
  - CLOSE L/M S/W (Green)
  - OPEN L/M S/W (Red)
- 4 Captive cover bolts
- Manual lever holder
- Mounting base (ISO 5211) F03, F04, F05
**Performance**

<table>
<thead>
<tr>
<th>Type</th>
<th>Maximum Output Torque</th>
<th>Operating Time 60/50 Hz</th>
<th>Mounting Size</th>
<th>Electric Motor Stop</th>
<th>Suppling Power &amp; Rating Current (A) 60/50Hz, 1 Phase</th>
<th>Duty Cycle</th>
<th>Manual Level Angle</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>WE-350</td>
<td>354</td>
<td>12 sec.</td>
<td>ISO5211</td>
<td>A</td>
<td>110VAC 220VAC 24VDC</td>
<td>S4</td>
<td>50%</td>
<td>2.65</td>
</tr>
<tr>
<td>WE-350HS</td>
<td>270</td>
<td>6.5 sec.</td>
<td></td>
<td>F03, F04, F05</td>
<td>.12 .06 .46</td>
<td></td>
<td>90°</td>
<td></td>
</tr>
</tbody>
</table>

**Dimensions**

ENCLOSURE: IP67 (NEMA 4, 4X)
TORQUE: 354 In-lbs
OPERATION TIME: 10sec
POSITION SWITCH: 4 SPDT SWITCH
CABLE ENTRY: PG 11 x 1
MOUNTING FLANGE: F03/F04/F05
acc to DIN/ISO5211

**Wiring Connection**

MAIN POWER (AC or DC)

AC 85~265VAC
DC 24VDC/3A

SMPS

MAIN PCB

AC

DC

COM OPENCLOSE

SMPS

COM

CLOSE OPEN

24VDC 15mA

MAIN PCB

AUX, CONTACT 2 EXTRA SWITCHES MAX. 250VAC 5A

OPEN

COM

OPEN

COM

CLOSE OPEN

COM

CLOSE OPEN

COM
WE-500

The WE-500 Electric Actuator is an extremely rugged 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, NEMA 4, 4X)

Standard Configuration

- Manual override
- Wide, easy mounting base standard to ISO5211 (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, PIU)

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

<table>
<thead>
<tr>
<th>Mode</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>AC</td>
<td>OFF</td>
<td>ON</td>
</tr>
</tbody>
</table>
ELECTRIC ACTUATORS

Performance

<table>
<thead>
<tr>
<th>Type (Model)</th>
<th>Maximum Output Torque</th>
<th>Operating Time 60/50 Hz</th>
<th>Mounting Size</th>
<th>Full Load Amps</th>
<th>Locked Rotor Amps</th>
<th>Duty Cycle</th>
<th>Number of Handle Turns</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>WE-500</td>
<td>530</td>
<td>12/14</td>
<td>F03/F05/F07</td>
<td>0.4</td>
<td>0.2</td>
<td>0.8</td>
<td>0.5</td>
<td>0.25</td>
</tr>
</tbody>
</table>

Standard Specification

- **Enclosure**: Weatherproof enclosure IP67, NEMA 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 1252 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

- **Butterfly Valves**
- **Ball Valves**
- **Damper Valves**
- **Plug Valves**
Electric Actuators WE/XE

Window cover
Window

Position indicator
Option: illuminated red (close), green (open), yellow (over torque)

Actuator Cover
High corrosion-resistance due to anodizing on the inside and outside and polyester powder coating on the outside

Motor
Available in 1 Phase / 3 Phase, all motors are custom built for high-torque, low current draw and the highest duty cycle ratings offered. Fan Cooled Motor standard on model WE/XE 690 and larger

Limit Switch & Auxiliary Switch Set (standard)

Close Cam
Open Cam

Actuator Body

Mechanical Stops (rear side)

Dual Conduit Connection (rear)

Terminal Block
Capacitor

Torque Switch System

Easy Mounting Base standard to ISO5211

Manual Handwheel

Heater and Thermostat

Manual Override

Double reduction worm gear assembly is self locking with minimum backlash
**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°C

**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 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 NEMA 4, 4X & 6

XE NEMA 4, 4X, 6 & 7

SE NEMA 4, 4X, 6 & 9 IP68

### Standard Specifications

**Enclosure**
Weatherproof enclosure, IP67, TYPE 4, 4X, 6

**AWWA**
Conforms to AWWA C540-93 requirements

**Power supply**
110/220V AC 1PH, 220/380/440/460/480VAC, 3 Phase, 50/60Hz, ±10%

**Control power supply**
110/220V AC 1PH, 50/60Hz, ±10%

**Duty cycle (on-off)**
70% Max 1800 start/hour

**Duty cycle (modulating)**
70% Max 1800 start/hour

**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

**Stall protection**
Built-in thermal protection, Open 302°F (150°C) / Close 207°F (97°C)

**Travel angle**
90° ± 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 (110/220V AC) 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° Low Temp Kit)

**Ambient humidity**
90% RH Max. (non-condensing)

**External coating**
Anodizing treatment before Dry powder, Polyester, Munsell no. 5R 3.5/12

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### Actuator Specifications

<table>
<thead>
<tr>
<th>Actuator Model</th>
<th>Output Torque</th>
<th>90° Cycle Time (sec)</th>
<th>Motor Size</th>
<th>Full Load Amps</th>
<th>Locked Rotor Amps</th>
<th>Handwheel Turns</th>
<th>Weight</th>
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<tr>
<td></td>
<td>AC/DC</td>
<td>1 Phase</td>
<td>3 Phase</td>
<td>AC/DC</td>
<td>1 Phase</td>
<td>3 Phase</td>
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<td>Watts</td>
<td>24V</td>
<td>110V/60Hz</td>
<td>220V/60Hz</td>
<td>380V</td>
<td>440V</td>
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<td></td>
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<td>24V</td>
<td>110V/60Hz</td>
<td>220V/60Hz</td>
<td>380V</td>
<td>440V</td>
<td></td>
</tr>
<tr>
<td>WE / XE</td>
<td>In-Lbs.</td>
<td>60 / 50 Hz</td>
<td>Watts</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>-690</td>
<td>690</td>
<td>13 / 16</td>
<td>15</td>
<td>5</td>
<td>1.2</td>
<td>0.6</td>
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<tr>
<td>-1350</td>
<td>1350</td>
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<td>1700</td>
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<td>40</td>
<td>7.4</td>
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<td>2</td>
<td>0.42</td>
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</tr>
<tr>
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<td>6900</td>
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<td>N/A</td>
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<td>2.4</td>
<td>0.61</td>
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<td>-10500</td>
<td>10500</td>
<td>31 / 37</td>
<td>180</td>
<td>N/A</td>
<td>5.4</td>
<td>3.4</td>
<td>0.61</td>
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<td></td>
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<td>0.67</td>
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<tr>
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<td>17500</td>
<td>95 / 112</td>
<td>180</td>
<td>N/A</td>
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<tr>
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<td>25900</td>
<td>95 / 112</td>
<td>180</td>
<td>N/A</td>
<td>6.3</td>
<td>3.4</td>
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</tr>
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</table>

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Rev.20130924
Options Specifications

Explosion-Proof enclosure II 2 G, E Ex d IIB T4, IP67 ................................................................. ATEX certification
Designed to comply with NEMA 7 Explosion Proof
Watertight 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/XE-690
Intelligent Digital control unit (Local/Remote Selector Switches) ............................................. except WE/XE-690
Current position transmitter (output 4-20mA DC) ..................................................................... WE/XE Series
Extension 120°, 180°, 270° turn .................................................................................................. except WE/XE-17500, 25900
Duty Cycle 70% max (in Ambient temperature) ......................................................................... except WE/XE-690
DC motor (24V DC) .................................................................................................................. WE/XE-690C—WE/XE-2640C
AC/DC 24V control ................................................................................................................ WE/XE-690A—WE/XE-2640A
Lever plate actuator .................................................................................................................. except WE/XE-690
Signal lamp unit (red-close, green-open, yellow-over torque)
Fire Proofing Actuator 1050 ±5ºC/50 min ................................................................................ Consult factory
Fire Proofing Actuator 250 ±5ºC/150 min ................................................................................ Consult factory

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

High Speed Electric Actuators

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

Motor specifications remain the same.
Modulating Options for WE-500-25900

Modulating Cards

**TMCS 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 Fall 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**
- 450 Point Resolution, 16 Bit Micro Processor
- Auto Calibration
- Adaptive Control Feature (continuously adjusts for load and actuator conditions and positions to ±0.1°)
- Dynamic Breaking
- 4-20mA, 1-5V, 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 Ch or CCh 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**
- Control signal 4-20mA, specify these parts: LRC-100, POT-102 & Extended Bracket.
- 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 (AC 220V~AC480V/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 (AC 115V~AC480V/1 Phase or 3 Phase)
- Phase protection monitoring by LED in case of reverse wiring
- Easy application for WE-Series Actuators
- Various options available

<table>
<thead>
<tr>
<th>LED lamp signal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>:Power</td>
</tr>
<tr>
<td>Blue</td>
<td>:Remote</td>
</tr>
<tr>
<td>Yellow</td>
<td>:Fault</td>
</tr>
<tr>
<td>Red</td>
<td>:Open/Opening</td>
</tr>
<tr>
<td>Green</td>
<td>:Close/Closing</td>
</tr>
</tbody>
</table>
Dimensional Drawing

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

WE/XE-17500, 25900

Dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>WE/XE</th>
<th>ISO 5211</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D sq</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>O</th>
<th>P</th>
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Units (inches)
Dimensions

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

| 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 | 8.07 | 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 | 8.07 | 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 | 8.07 | 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 | 4.147 | 7.01 | 0.12 | 2.24 | 4.06 | 6.53 | 2.56 | 7.32 | 4.32 | 9.40 | 2.91 | 3.07 | 4.33 | 8.27 | -  | -  | 16.14 | 11.69 | 12.99 |
| -10500   | F14      | M18    | 0.95  | 5.512 | 4.147 | 7.01 | 0.12 | 2.24 | 4.06 | 6.53 | 2.56 | 7.32 | 4.32 | 9.40 | 2.91 | 3.07 | 4.33 | 8.27 | -  | -  | 16.14 | 11.69 | 12.99 |
| -17500   | F16      | M20    | 1.18  | 6.496 | 4.147 | 9.66 | 0.20 | 3.54 | 4.06 | 9.53 | 2.56 | 7.32 | 5.34 | 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 | 4.147 | 9.66 | 0.20 | 3.54 | 4.06 | 9.53 | 2.56 | 7.32 | 5.34 | 9.49 | 2.91 | 3.07 | 4.33 | 8.27 | 9.17 | 5.24 | 16.14 | 12.56 | 22.17 |

**WE-17500, 25900** Intelligent Digital Control Unit

Dimensions

Units (inches)

**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 8.07 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 8.07 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 8.07 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 4.147 7.01 0.12 2.24 4.06 6.53 2.56 7.32 4.32 9.40 2.91 3.07 4.33 8.27 - - 16.14 11.69 12.99

**-10500** F14 M18 0.95 5.512 4.147 7.01 0.12 2.24 4.06 6.53 2.56 7.32 4.32 9.40 2.91 3.07 4.33 8.27 - - 16.14 11.69 12.99

**-17500** F16 M20 1.18 6.496 4.147 9.66 0.20 3.54 4.06 9.53 2.56 7.32 5.34 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 4.147 9.66 0.20 3.54 4.06 9.53 2.56 7.32 5.34 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**

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### Dimensions

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

**Units (inches)**

Wiring drawings are available upon request.
Wiring Connection

**WE/XE-1350 thru 25900**  
Two Position 115 VAC/1 Ph  
SE 1080

**WEM/XEM-1350 thru 25900**  
Proportional 115 VAC/1 Ph  
SE 1052

Wiring drawings are available upon request.
**Wiring Connection**

**Digital Control Unit  3 Phase/Proportional  SE 1222**

**Digital Control Unit  3 Phase/2 Position  SE 1301**
Wiring Connection

Semi-integral Unit  1 Phase/Proportional  SE 1176

Semi-integral Unit  1 Phase/2 Position  SE 1097

---

**NOTE:**

1. A JUMPER MUST BE PLACED BETWEEN 5, 6 & 9 TO OVERDUCE THE STOP INPUT REQUIREMENT.
2. 4-20mA LOOP POWERED ANALOG SIGNAL MUST BE APPLIED TO TERMINALS 23 & 24.
3. NO EXTERNAL VOLTAGE SHOULD BE APPLIED TO TERMINALS 5 THRU 9.

---

**TERMINAL BLOCK**

---

**LIMIT SWITCH CONTACT POSITIONS**

- CLS: CLOSE LIMIT SWITCH
- OLS: OPEN LIMIT SWITCH
- OTS: OPEN TORQUE LIMIT SWITCH
- CTS: CLOSE TORQUE LIMIT SWITCH
- O/C: OPEN/CLOSE POWER RELAY (DC 24V)

---

**TROUBLE SHOOTING**

- SPACE HEATER (10W)
- CON-ROTOR (100W)

---

**MARKS FOR TERMINAL**

- +:
- -: CONTACT ON
- ---: CONTACT OFF

---

**LAMPS**

- WL: WHITE LAMP FOR POWER
- GL: GREEN LAMP FOR CLOSE
- BL: BLUE LAMP FOR REMOTE
- RL: RED LAMP FOR OPEN
- YL: YELLOW LAMP FOR FAULT

---

**RELEYS**

- RY1: REMOTE MONITOR RELAY
- RY2: RUNNING RELAY (SPRING RETURN TYPE)
- RY3: FAULT RELAY

---

**SWITCHES**

- SELECTOR SWITCH
- USER REMOTE CONTROL

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WE-53000 and WE-80000

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 provides direct mounting option to any ISO 5211 valve.
- Weatherproof enclosure with O-ring seal provides NEMA 4, 4X and 6 (IP67) protection.
- 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 indentification from greater distances.
- Digitized control components.

Standard Construction

- Manual override
- External Mechanical Stopper
- Two Conduit entries PF 3/4”
- Removable drive bushing and ISO5211 mounting base
- Standard four limit switches. Two for each travel end (open/close)
- Captive cover bolt
- Space heater
- Limit switches for tight, easy setting
- Spring loaded push type terminal
- Standard color : Red
Technical Information

<table>
<thead>
<tr>
<th>Type (Model)</th>
<th>Maximum Output Torque</th>
<th>Operating Time 60/50 Hz</th>
<th>Mounting Size</th>
<th>Motor Insulation Class</th>
<th>Rated Current(A) 60Hz</th>
<th>Duty Cycle</th>
<th>Number of Handle Turns</th>
<th>Weight</th>
<th>Maximum Bore Size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WE-53000</td>
<td>In-Lbs.</td>
<td>90°</td>
<td>F25/30</td>
<td>ISO5211</td>
<td>2.0</td>
<td>1.8</td>
<td>39 335 120 100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WE-80000</td>
<td>53000</td>
<td>80000</td>
<td>149 sec.</td>
<td></td>
<td>3.15</td>
<td>3.85</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Standard Specification

- **Enclosure**: Weatherproof enclosure IP67, NEMA 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
- **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 PF 3/4" TAP
- **Movement angle**: 90° ± 5°
- **Ambient temperature**: -4°F to 158°F (optional -40° 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
- **External coating**: Polyester powder coating
- ** Lubrication**: EP type grease
- **Anti Vibration**: XYZ 10g, 0.2-34Hz, 30 minutes

Dimensions

- Ø 90MM [3.543] BORE
- 25MM x 14MM KEYWAY (2) PLACES
- Ø10.00 BC
- MAX. X 1.18 DEEP (4) PLACES
- 95.4MM [3.740]
- 3/4" NPT CONDUIT CONNECTION (2) PLACES
## Triac WE / XE Series Part Number Reference

### Model

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WE</td>
<td>Weather Proof, IP67, TYPE 4, 4X, 6</td>
</tr>
<tr>
<td>XE</td>
<td>Explosion Proof Design, ATEX &amp; IECEx Ex d II B T4, IP67</td>
</tr>
<tr>
<td>FE</td>
<td>Fire Proof Unit (1050ºF for 50 Min)</td>
</tr>
<tr>
<td>SE</td>
<td>Submersible unit (IP68, 10 meters for 72 Hours)</td>
</tr>
</tbody>
</table>

### Control

<table>
<thead>
<tr>
<th>Blank</th>
<th>(2) Position Control (Open / Close)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>Standard Modulating Control Card (TMC3)</td>
</tr>
<tr>
<td>D</td>
<td>TDC-100 Modulating Card (Provides 450 points of resolution)</td>
</tr>
<tr>
<td>P</td>
<td>Profibus DP</td>
</tr>
<tr>
<td>R</td>
<td>Modbus (RS485)</td>
</tr>
</tbody>
</table>

### Actuator

<table>
<thead>
<tr>
<th>Size</th>
<th>Motor Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>-350</td>
<td>350 In-Lbs</td>
</tr>
<tr>
<td>-350HS</td>
<td>270 In-Lbs</td>
</tr>
<tr>
<td>-500</td>
<td>500 In-Lbs</td>
</tr>
<tr>
<td>-690</td>
<td>690 In-Lbs</td>
</tr>
<tr>
<td>-1350</td>
<td>1350 In-Lbs</td>
</tr>
<tr>
<td>-1700</td>
<td>1700 In-Lbs</td>
</tr>
<tr>
<td>-2640</td>
<td>2640 In-Lbs</td>
</tr>
<tr>
<td>-4400</td>
<td>4400 In-Lbs</td>
</tr>
<tr>
<td>-5200</td>
<td>5200 In-Lbs</td>
</tr>
<tr>
<td>-6900</td>
<td>6900 In-Lbs</td>
</tr>
<tr>
<td>-10500</td>
<td>10500 In-Lbs</td>
</tr>
<tr>
<td>-17500</td>
<td>17500 In-Lbs</td>
</tr>
<tr>
<td>-25900</td>
<td>25900 In-Lbs</td>
</tr>
<tr>
<td>-53000</td>
<td>53000 In-Lbs</td>
</tr>
<tr>
<td>-80000</td>
<td>80000 In-Lbs</td>
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</table>

#### Motor

<table>
<thead>
<tr>
<th>Size</th>
<th>Motor Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>115VAC/1PH</td>
</tr>
<tr>
<td>A</td>
<td>24V AC/DC</td>
</tr>
<tr>
<td>B</td>
<td>12VDC</td>
</tr>
<tr>
<td>C</td>
<td>24VDC*</td>
</tr>
<tr>
<td>D</td>
<td>24VAC/1PH</td>
</tr>
<tr>
<td>E</td>
<td>220VAC/1PH</td>
</tr>
<tr>
<td>F</td>
<td>220VAC/3PH</td>
</tr>
<tr>
<td>G</td>
<td>380VAC/3PH</td>
</tr>
<tr>
<td>H</td>
<td>440VAC/3PH</td>
</tr>
<tr>
<td>J</td>
<td>460VAC/3PH</td>
</tr>
<tr>
<td>K</td>
<td>480VAC/3PH</td>
</tr>
</tbody>
</table>

*Requires additional relays for customer supplied wiring

<table>
<thead>
<tr>
<th>Size</th>
<th>Motor Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>No options</td>
</tr>
<tr>
<td>2</td>
<td>ADM-100 Control Board - 24 VDC On/Off</td>
</tr>
<tr>
<td>B</td>
<td>Semi-integral Control Unit</td>
</tr>
<tr>
<td>C</td>
<td>Intelligent Digital Control Unit</td>
</tr>
<tr>
<td>D</td>
<td>Local / Remote Control Switches</td>
</tr>
<tr>
<td>E</td>
<td>Electronic Speed Control Module - 115 VAC only</td>
</tr>
<tr>
<td>F</td>
<td>2 Wire Control &amp; Speed Control - 115 VAC only</td>
</tr>
<tr>
<td>G</td>
<td>End of travel time delay (same in both directions)</td>
</tr>
</tbody>
</table>

### Options

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>No options Place holder only - Omit when at end of part number</td>
</tr>
<tr>
<td>2</td>
<td>ADM-100 Control Board - 24 VDC On/Off</td>
</tr>
<tr>
<td>B</td>
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<td>G</td>
<td>End of travel time delay (same in both directions)</td>
</tr>
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</table>

### Miscellaneous Options

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Blank</td>
<td>No options</td>
</tr>
<tr>
<td>T</td>
<td>4-20mA Transmitter</td>
</tr>
<tr>
<td>N</td>
<td>1000 Ohm Potentiometer</td>
</tr>
<tr>
<td>O</td>
<td>5000 Ohm Potentiometer</td>
</tr>
<tr>
<td>P</td>
<td>10K Ohm Potentiometer</td>
</tr>
<tr>
<td>X</td>
<td>120º Operation</td>
</tr>
<tr>
<td>Y</td>
<td>180º Operation</td>
</tr>
<tr>
<td>Z</td>
<td>270º Operation</td>
</tr>
<tr>
<td>L</td>
<td>-40º Low Temp Kit</td>
</tr>
<tr>
<td>I</td>
<td>Position Indicator Lamps (Open, Close, Torque)</td>
</tr>
<tr>
<td>S</td>
<td>(2) additional limit switches (6 total)</td>
</tr>
</tbody>
</table>

### Examples

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

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

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