

# Internal Battery Power Electric Actuator

**VALVE CONTROL LTD**  
ELECTRIC & PNEUMATIC ACTUATORS + VALVE PACKAGES

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The **Internal Battery Power Electric Actuators** provide up to 3000 inch pounds of torque and can be equipped with internal back-up power to allow you to safely shut down your system in the event of an external power loss.

Engineered to supply dependable valve and damper automation, these actuators provide 10 complete cycles under their own internal power!

The back-up powered feature incorporates a rechargeable power pack and a plug-in modular electronics under the actuator cover. Upon external power loss or signal from a sensor, the internal power source automatically activates to drive the actuator to a designated safe position.

The power pack is compact and fits into the standard enclosures for an easy, space-saving upgrade. No hard-wiring or other complex set-up operations are required. Simple and it works!



## Features at a Glance:

- Simple set and go calibration of Zero and Span
- On board pot calibration; no additional instruments required
- All new control and feedback interface (2860 modulating board)
  - Control signal (input) selection via slide switch 4-20 mA or 0-10 VDC
  - Feedback signal (output) selection via slide switch 4-20 mA or 0-10 VDC
  - Signal range can be split, i.e., 4-12 mA or 12-20 mA
  - Control signal fail position via a slide switch; select fail last (in place) or fail Zero (minimum signal position) upon loss of control signal
  - Loss of power position; user can select, via a slide switch, fail to Zero or fail to Span, upon loss of input power
  - Dead band, adjustable from approximately 0.5% to 2.5%
- Extended life power source for modulating back-up actuators
- Simple switch select reverse acting set-up; no wiring changes
- On-board supervisory control; allows the user to safely position the valve or damper via CW and CCW push buttons
- Improved accuracy; >1%
  - Processor provides 256 discrete positions between 0 and 90° F
  - ± 1% accuracy (dead band settings)
- Improved charging circuit; LED indication for charging and for full charged

Improved signal response; responds to 0.5% change in input signal (at minimum dead band)



## Additional Features:

**Dead band** - Input signal sensitivity can be easily adjusted. Minimum setting allows the actuator to respond to small control signal changes; maximum setting the actuator to ignore small control signal changes.

**Stall Protection** - The Control Board provides protection and visual LED Alarm in the event of a jammed valve or damper

In a stall condition, the control board prevents damage by removing power to the motor. The Stall LED will continue to flash until a reverse direction control signal or a manual mode "CW" or "CCW" movement clears the stall condition.

### Fail Mode Settings:

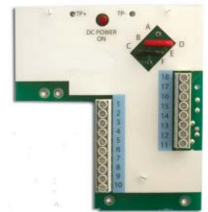
- **Min/Last "Signal Fail Position"** - In the event that the control signal to the actuator is interrupted and external power is still applied, this selector switch on the control Board provides options for the actuator to remain at its LAST (current) position or to drive the actuator to the minimum signal position; either full CW or full CCW.
- **P/B - Single or Multi Cycle** (Back-up Power Option) - At loss of external power, this selector switch provides options to drive the actuator to the designated safe position or to continue to cycle if a control signal is present.
- **"Sleep" and "Wake"** (Back-up Power Option) - "Sleep" mode removes back-up power to the actuator. "Wake" mode allows user to apply back-up power at any time to enable the CW or CCW push buttons to safely position the valve or damper during external power outages.

## ON/OFF and Modulating Back-up Powered Actuators

The back-up powered actuators are based on the proven IBP platform and provide optional internal back-up power to drive the actuator in the event of a loss of external power.

The electronic package consists of two separate plug-in boards; Power Board and either the Board for ON/OFF applications or the Control Board for modulating applications.

The back-up power actuators are available in on/off (two position) or modulating models. A built-in electronic charge circuit, with over-charge protection, ensures the actuator always has enough power to drive when needed.

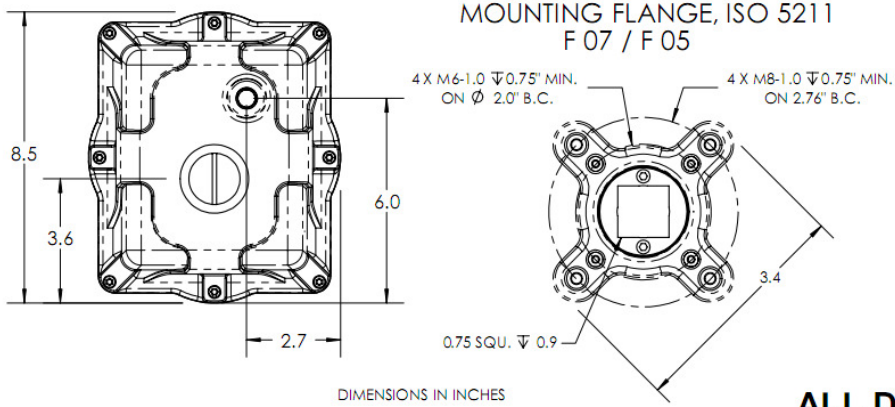


## Specifications:

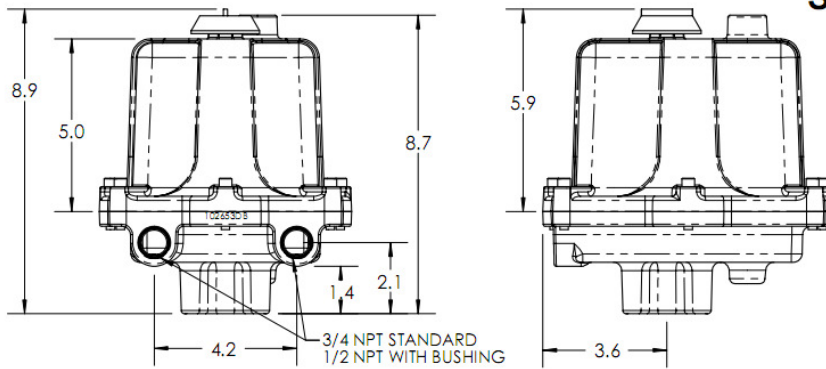
<b>Temperature Range</b>	32° F to 130° F without heater and thermostat; -40° to 130° with heater option							
<b>Conduit Connection</b>	(2) 3/4" NPT in sizes up to 600 inch pounds (2) 3/4" NPT in sizes 1000 inch pounds and above							
<b>Duty Cycle</b>	Continuous up to 1 hour after which duty cycle is 80%							
<b>Voltage</b>	12 VDC: 10.8 to 13.2 VDC 24 VDC: 21.6 to 26.4 VDC 24 VAC: 21.6 to 26.4 VAC 115 VAC: 103.5 to 126.5 VAC, 50 or 60 Hz 230 VAC: 207 to 253 VAC, 50 or 60 Hz							
<b>Limit Switches</b>	(2) Single pole, double throw switches rated for 1/3 HP, 10 amps @ 125/230 VAC							
<b>Motor</b>	Brushed, DC motor with Class B or better insulation; sub-fractional horsepower							
<b>Lubrication</b>	Permanently lubricated gear train and bearings							
<b>Gear Train</b>	Hardened, cut steel spur gears							
<b>Enclosure</b>	Base and cover: die cast aluminium; designed to meet NEMA 4, 4X ,7 and 9 specifications							
<b>Approximate Weight</b>	17 lbs. for sizes up to 600 inch pounds; 31 lbs. for sizes 1000 inch pounds and up							
<b>Power Loss Position</b>	User selectable, fully clockwise or fully counter-clockwise. No wiring changes required.							
<b>Starts Per Minute</b>	30 Max. (1,800 starts per hour)							
Torque (in lbs.)	Speed (per 90° rotation, seconds)	24 VDC only	Duty Cycle (@104° F)	Normal Operating Current Draw (in Amps)				
				12 VDC	24 VDC	24 VAC	115 VAC	230 VAC
150	5	3	80%*	1.9	2.4	1.5	.2	.1
300	10	5	80%	1.9	2.4	1.5	.2	.1
600	15	8	80%	1.9	2.4	1.5	.2	.1
1000	15	15	80%	3.5	1.75	2.0	.4	.2
1500	20	20	80%	3.5	1.75	2.0	.4	.2
2000	25	25	80%	4.8	2.4	2.0	.4	.2
2500	30	30	80%	4.8	2.4	2.0	.4	.2
3000	35	35	80%	4.8	2.4	2.0	.4	.2

\* Continuous duty for one hour, after which duty cycle is 80%.

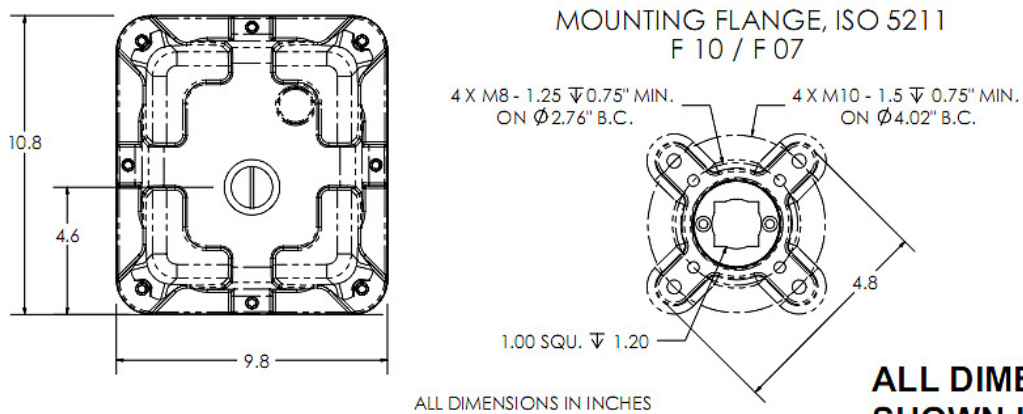
### Dimensions IBP (150-600 lb-in)



**ALL DIMENSIONS ARE SHOWN IN INCHES**



### Dimensions LIBP (1000-3000 lb-in)



**ALL DIMENSIONS ARE SHOWN IN INCHES**

