

# ABZ ELECTRIC ACTUATOR



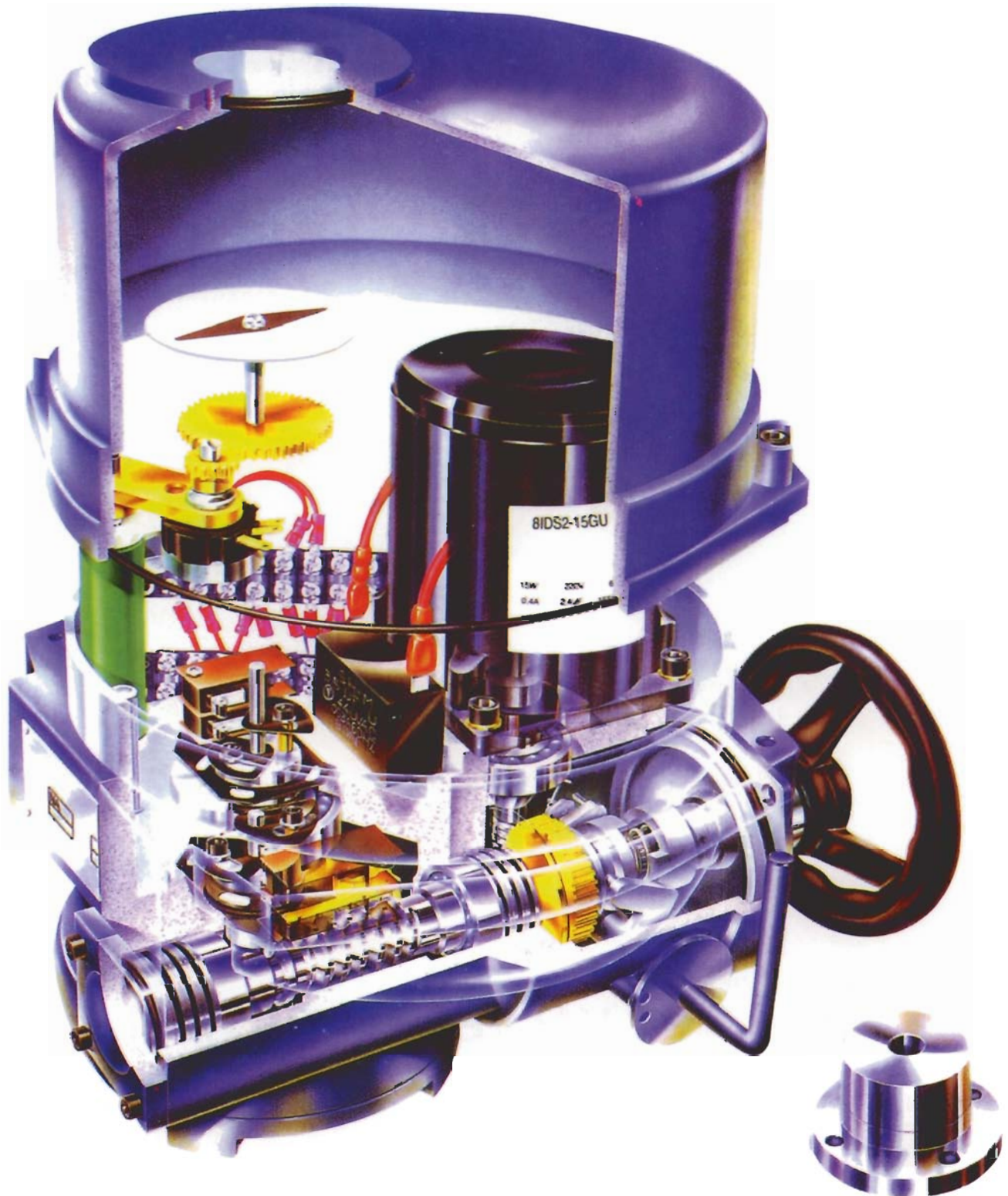
## ABZ VALVES & CONTROLS

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**Full Line of Electric Actuator Accessories Available**



# ABZ Electric Actuators for 90° Rotation





# Features

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## ■ SEALING

Standard enclosure with o-ring sealing is watertight to IEC IP67, NEMA4 and 6. The actuator is available with optional explosion proof enclosure.

## ■ MOTOR

Squirrel cage motor is totally enclosed type, with high stall torque and low inertia force to match seating/unseating of valve. Integral motor thermal protection prevents damage to the single and three phase motors.

## ■ WIRING

Electric wiring of control circuit is standardized for single and three phase power supply in a single module. Multiple terminal contacts are provided for additional requirements such as auxiliary contacts for DCS, interlocking and other options.

## ■ COMPONENT ARRANGEMENT

Mechanical and electrical modules can be removed easily to facilitate assembly, maintenance and modification of electrical requirements. The actuator has sufficient internal space for optional accessories.

## ■ HANDWHEEL

The size of handwheel is designed for safe and efficient manual operation in the event of an emergency.

## ■ MANUAL OVERRIDE

Hand/auto declutching lever for handwheel engagement. The power drive is automatically engaged by motor start.

## ■ ADAPTION

Drive bushing is removable for machining to match the valve stem dimensions. The actuator position on the valve can be selected from 4 positions by means of bolt holes in the drive bushing.

## ■ PERFORMANCE

The precision worm and wormwheel mechanism maximizes torque output with low noise level (Max. 50dB). Additional benefits include minimal backlash and longer life. Various output torques (520 - 21,700 In./Lbs.) will cover a wide range of valves.

## ■ INDICATOR

The indicator is directly mounted on the center shaft to provide positive visual indication of the valve position.

## ■ POTENTIOMETER UNIT (Optional)

A potentiometer can be provided to transmit and remotely indicate valve position.

## ■ HEATER

A 20W heater inside the actuator housing prevents condensation due to temperature and weather changes.

## ■ LIMIT SWITCH

The limit switch is activated by means of a simple and yet reliable cam mechanism mounted and driven by the center shaft. The valve position can be accurately and easily set with the simple adjustable switch mechanism. The set position is permanent and is not affected by over-travel resulting from manual operation.

## ■ TORQUE SWITCH

Cam activated torque switches are easily adjustable to provide over-load protection.

## ■ SELF LOCKING

Rolled steel wormgear on aluminum bronze wormwheel self-locks to prevent valve back-drive on control signal or power failure.



# ***ABZ Electric Actuator for 90° Rotation***

ABZ's Electric Valve Actuators are engineered to provide low cost and high performance electrical automation of quarter turn valves. With 14 years experience in the field on electric actuation of valves, ABZ with the introduction of their ABZ Series Electric Valve Actuator, has improved reliability incorporating all the best features of self-locking gears to withstand backdrive from valves, torque limit switches for over-load protection, hand-auto declutching facilities for manual override, thermal cutout protection for motor, watertight sealing and space heater to combat condensation in the housing.

## **APPLICATION**

ABZ Actuators are designed for automating most types of quarter turn valves; are well suited for nearly all industries; and are ideal for either on/off or modulating service.

## **CHARACTERISTICS**

### **■ Reliable Performance**

- Highly reliable and easily adjustable limit switches are provided along with a torque switch assembly as standard equipment.
- Precision gearing and use of ball bearings maximizes efficiency of power transfer with low noise level (Max. 50dB).
- Self locking at any position by means of wormgears.
- Adjustable mechanical stops give high safety factors at both ends of actuator travel.
- All ABZ Actuators have Hand/Auto declutching handwheel overrides.
- Actuators are "CE" approved.
- Approved explosion proof per 'Exd IIB T4 IP67'.

### **■ Availability of Options**

- Choice of various power supplies by conversion of electrical module.
- Position transmitter.
- Additional auxiliary limit switches.
- Local/Off/Remote selector switch and Local control switches (Open/Stop/Close).
- 90° to 270° rotation
- Explosion proof with watertight enclosure (Exd IIB T4 IP67).
- Proportional control unit.
- Failsafe rechargeable battery pack.



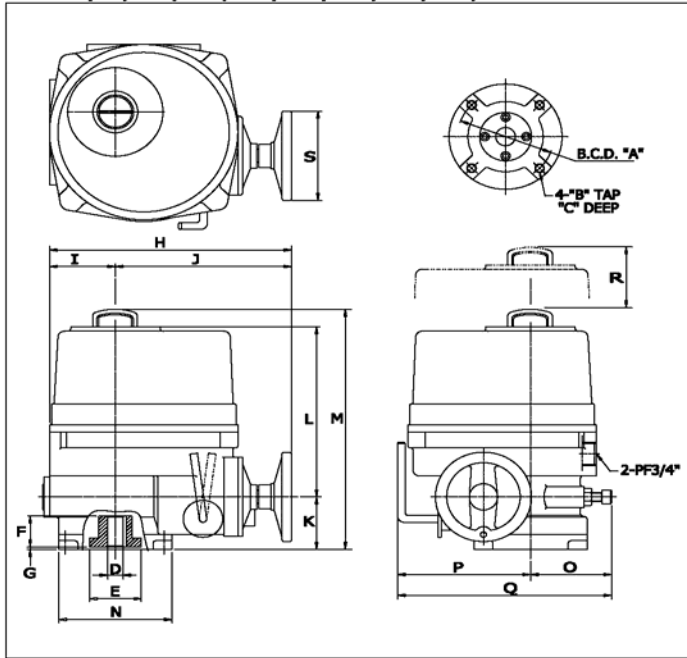
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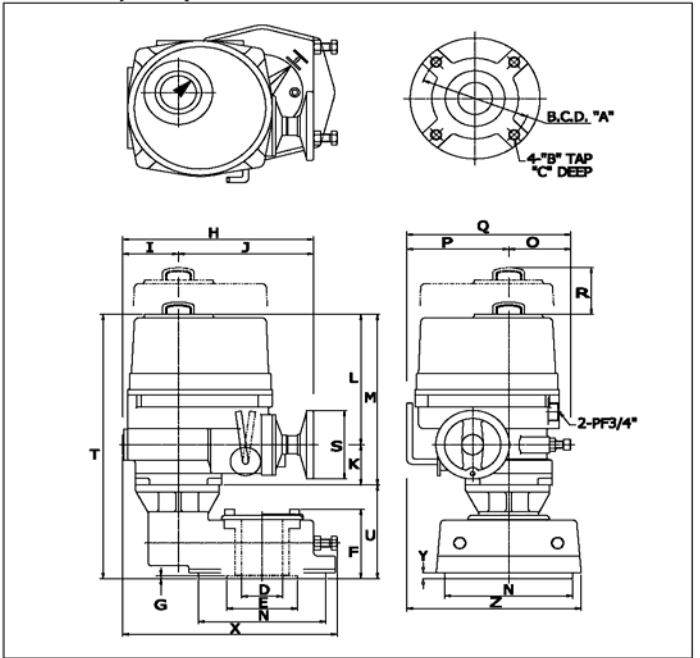


# ABZ ELECTRIC DIMENSIONS

ABZ-6,-9,-15,-19,-28,-38,-50,-60,-80,-100



ABZ-150,-200,-250



MODEL	ABZ-6	ABZ-9	ABZ-15	ABZ-19	ABZ-28	ABZ-38	ABZ-50	ABZ-60	ABZ-80	ABZ-100	ABZ-150	ABZ-200	ABZ-250
A	3.25		3.25			5.00			5.00			6.50	
B	3/8-16		3/8-16			1/2-13			1/2-13			M20	
			1/2-13										
C	0.47		0.59			0.71			0.87			1.18	
D (Max)	0.87		0.87			1.26			1.65			2.95	
E	2.17		2.24			2.95			3.35			3.94	
F	1.69		1.69			2.05			2.32			3.87	
G	0.08		0.08			0.08			0.08			0.28	
H	9.09		10.28			11.22			12.80			12.80	
I	2.21		3.03			3.27			3.90			3.90	
J	6.89		7.25			7.95			8.90			8.90	
K	2.36		2.36			2.76			3.07			3.07	
L	8.39		8.39			9.84			11.14			11.14	
M	10.75		10.75			12.60			14.21			14.21	
N	4.02		4.73			5.71			6.89			10.47	
O	2.68		3.35			3.90			4.57			4.57	
P	4.45		5.47			6.26			7.52			7.52	
Q	7.13		8.82			10.16			12.09			12.09	
R	4.25		4.25			5.12			7.01			7.01	
S	4.02		4.92			4.92			6.69			6.69	
T	N/A		N/A			N/A			N/A			21.89	
U	N/A		N/A			N/A			N/A			7.68	
X	N/A		N/A			N/A			N/A			15.28	
Y	N/A		N/A			N/A			N/A			0.63	
Z	N/A		N/A			N/A			N/A			12.52	



# Performance

TYPE	Max. Output Torque In Lbs.	Operating Time 60/50 hz 90 Deg.	Max. Stem Dia. Inch	Rated Current (Amps)					Number of Handle Turn	Weight Lbs.
				1 Phase		3 Phase				
				110V	220V	220V	380V	440V		
ABZ-6	521	13/16	0.866	1.2	0.45	N/A	N/A	N/A	8.5	24.2
ABZ-9	781	13/16	0.866	1.5	0.55	0.35	0.25	0.4	8.5	24.2
ABZ-15	1302	17/20	0.866	1.9	0.88	0.55	0.4	0.4	10.0	26.5
ABZ-19	1649	17/20	0.866	2.4	0.88	0.55	0.45	0.42	10.5	28.7
ABZ-28	2430	20/24	1.26	2.8	1.0	0.65	0.45	0.45	12.5	37.5
ABZ-38	3298	20/24	1.26	2.6	1.2	0.7	0.5	0.45	12.5	40.0
ABZ-50	4340	20/24	1.26	4.5	1.6	0.9	0.55	0.45	12.5	42.0
ABZ-60	5208	24/29	1.65	4.6	1.9	1.4	0.55	0.5	14.5	48.5
ABZ-80	6944	24/29	1.65	5.1	2.2	1.6	0.9	0.85	14.5	51.0
ABZ-100	8680	24/29	1.65	6.0	2.6	1.9	1.05	0.9	14.5	55.0
ABZ-150	13020	72/86	2.95	4.6	1.9	1.4	0.55	0.5	43.5	150.0
ABZ-200	17360	72/86	2.95	5.1	2.2	1.6	0.9	0.85	43.5	154.0
ABZ-250	21700	72/86	2.95	6.0	2.6	1.9	1.05	0.9	43.5	154.0

## Optional Items

EXP	Explosion & Water Proof Enclosure EXD IIB T4 IP67
HLT	Ambient Temp. 572° F/1 HR.
DCM	24 DC Motor
ALS	Additional 2 Auxiliary Switches
EXT	Travel Angle 120°, 135°, 185°, 270°, 300°
LCU	Local Control Unit Local/Off/Remote Selector Switch Open/Stop/Close Selector Switch
PIU	Potentiometer 1K Ohm
CPT	Current Position Transmitter Output; 4-20mA DC
PCU	Proportional Control Unit Input; 4-20mA, 1-5 VDC, 2-10VDC
RBP	Rechargeable Battery Pack for Power Failure

## Standard Specifications

Enclosure	Watertight IP67, Nema 4 and 6
Temp.	14° to 131° F: to 302° F/1 HR
Power Supply (60Hz/50Hz)	110/220VAC, 1 Phase 220/380/440VAC, 3 Phase
Control Power	110/220VAC, 1 Phase, 60/50Hz
Duty Cycle	75%
Torque Switches	2 Open/Close (Except ABZ-6 & ABZ-9)
Limit Switches	2 Open/Close, 220VAC 15A Rating
Stall Protection	Built-In Thermal Protection Open 302°F Close 206°F
Travel Angle	90° ± 5°
Indicator	Continuous Position Indicator
Manual Override	HAND/AUTO Decutching Mechanism
Self Locking	Provided by means of Worm Gearing
Mechanical Stops	External Adjustable Screws
Space Heater	20W (110/220VAC) Anti-Condensation
Conduit Entries	Two 3/4" NPT.
Lubrication	Grease NLGI Grade 2 (EP Type)
Materials	Steel, Aluminum Alloy, Al Bronze
Surface Treatment	Anodized
External Coating	Dry Powder, Epoxy-Polyester Munsell No. FJ-002