

BQ Series Electric Actuator

Operation Manual



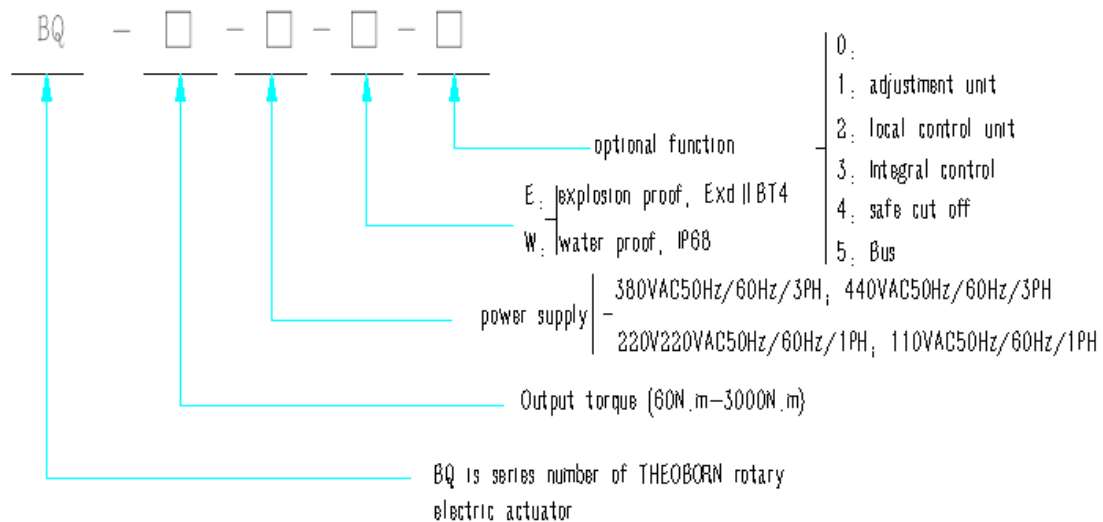
Introduction

BQ Series electric actuator can be used for driving and controlling the butterfly valve, ball valve, plug valve and all kinds of 90 ° rotating valve. The actuator is used for valve opening and closing, it can be either remotely controlled or local controlled. With the advantages of complete functions, reliable performance, advanced control system, convenient in operation and maintenance, etc, BQ series electric actuators are widely used in the fields such as electric power, metallurgy, chemical industry, paper making, coal, water drainage etc.

BQ series electric actuators is intelligent products. It can be added additional function options to meet the requirements of all kinds of industrial process control.

Actuator external coating processing can be adapted to corrosive environment. With explosion-proof structure, it can be applied to IIB level T1 - T4 level explosive mixture of 1, 2, dangerous work environment.

Model Instructions



Technical parameters

Model	BQ010	BQ015	BQ020	BQ030	BQ050	BQ080	BQ100	BQ150	BQ200	BQ300	
Output torque (N.m)	100	150	200	300	500	800	1000	1500	2000	3000	
working system (%)	40	30	30	30	30	30	30	30	30	30	
Operating time (S)	50HZ	22	25	25	30	30	40	40	90	120	120
	60HZ	18	21	21	25	25	35	35	85	115	115

Power supply	110/220V AC 1PH,380/400V AC 3PH 50/60Hz,±10%
control source	110/220V AC 1PH 50/60Hz,±10%
Motor	squirrel-cage induction motor F class
Limit switch	ON/OFF, SPDT,250VAC 10A
Torque switch	ON/OFF, SPDT,250VAC 10A (Except for BQ010)
Thermal protection	Built-in thermal protection, Open 120°C±5°C/Close97°C±5°C
Stroke Angle	90°±5° (0°-270°for option)
Position indicator	Disc with indicator arrow
clutch handle	separable
Self-lock	turbine worm mechanism
Mechanical limit	one for ON and one for OFF , External adjustable
Heater	5W (110/220V AC) anti-condensation
Cable entry	2-G3/4 screw
Lubrication	EP lubricating oil
terminal	Spring terminals
Ambient Temp.	-20°C ~+70°C(except for circuit board option)
Ambient humidity	90%RH Max
insulating strength	1500V AV 1minute
Coating	Dry powder (polyester)

Production Feature

Liquid crystal display

The LCD screen real-time display of the valve opening rotary in digital, and real-time display alarm information according to the working situation. High brightness LED luminous tube indicate the valve open and close limit position.

How to control

The signal of open or close angle can be remote controlled(optional remote control with 4 ~ 20mA current signal).Local control,spin the button to control valve position on site.

Status indicates:

The relay contact output to indicate the limit of valve and fault alarm (optional 4 ~20 mA current output signal indicate the valve opening).

Adjustment without opening cover

Working parameter Settings, position limit test can be done by operating the rotary knob, do not need to open the electrical cover.This design can avoid the

harmful material such as dust, moisture in the environment entering the interior of the actuator,.So that the reliability of the electrical control part are greatly improved.

High intellectualized

The actuator has the functions of man-machine dialogue.Electrical control part adopts the new SOC chip control, which is high intellectualized.

Protection

Aluminium alloy cover and body with surface phosphating treatment has strong corrosion resistance feature.Protection class IP67.

High efficiency low noise

Precision worm gear and worm deceleration institutions, has the features of small gap, high efficiency, low noise (maximum 50 db), long service life.

Self-locking

Worm gear and worm self-locking feature can avoid the actuator inversion in the case of power cuts or fault signal.

The clutch automatic reset

The actuator has a unique mechanical hands/automatic switching mechanism.Pull the clutch handle to manual operation,and once the motor receive electrical signals and start working, the clutch can automatically reset and the actuator back to automatic state.

Handwheel

The design of handwheel can ensure the safety of manual operation, energy saving.

Motor features

In accordance with the requirements of power supply,we adopt single phase or three phase fully enclosed squirrel-cage induction motor, which has big startup torque, small rotational inertia.

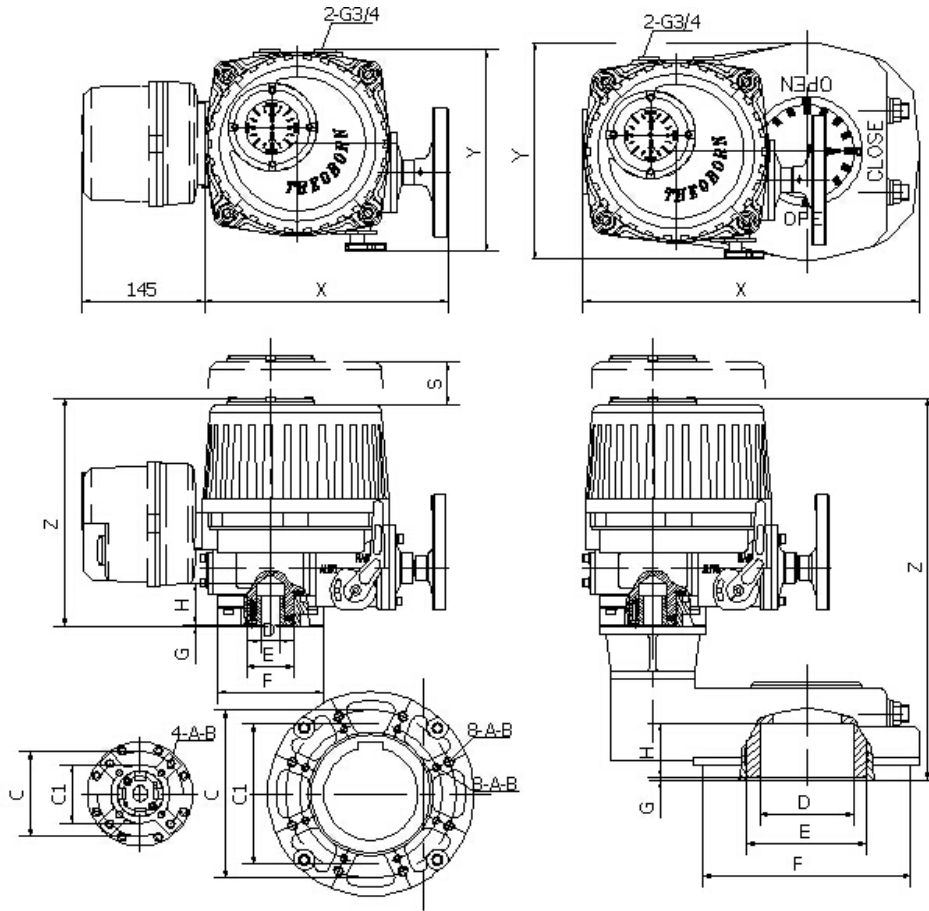
Convenient and fast wiring

Wiring of the actuator adopts plug and socket. Outside wired to the plug, so we can remove the actuator just pull the plug. The plug is waterproof, explosion-proof, which can avoid the rewiring error during maintenance process.

Absolute coding position sensor

Optional encoding position sensor is available for our intelligent quarter-turn actuators,which adopts the non-contact measurement, with high measuring accuracy and long service life.

Structure Dimensions



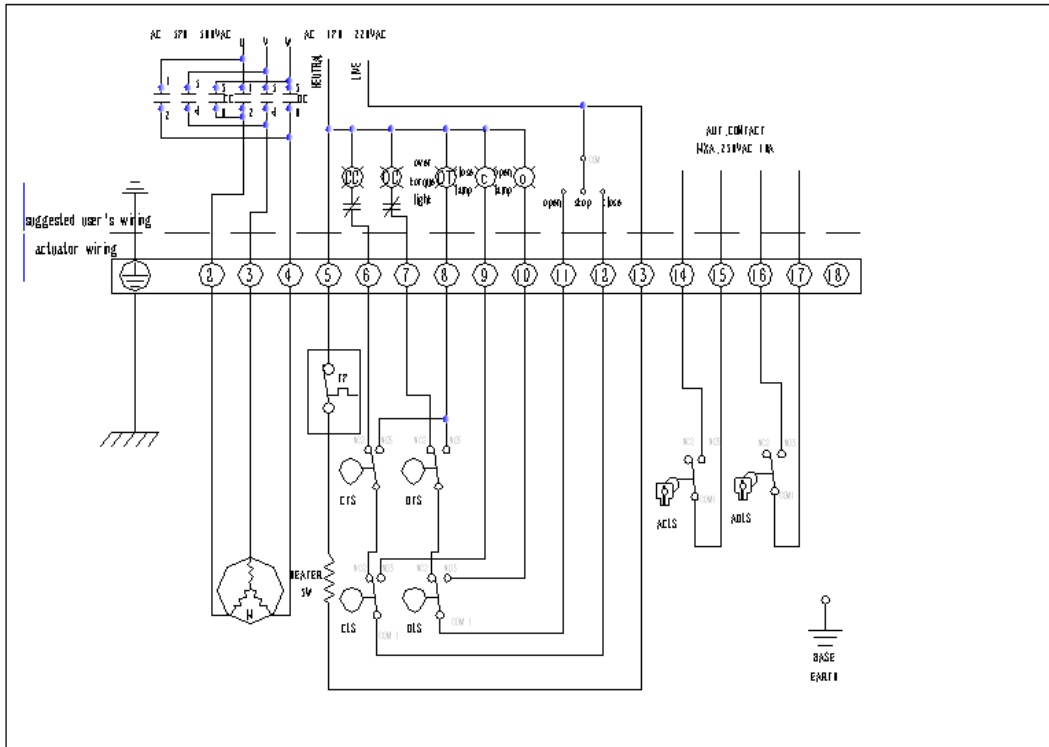
Model	BQ010	BQ015	BQ020	BQ030	BQ050	BQ080	BQ100	BQ150	BQ200	BQ300
Flange (ISO5211)	F07	F07	F07	F10	F10	F12	F12	F16	F16	
		F10	F10	F12	F12	F14	F14			
C1	Ø70	Ø70	Ø70	Ø102	Ø102	Ø125	Ø125	Ø165	Ø165	
C		Ø102	Ø102	Ø125	Ø125	Ø140	Ø140	Ø250	Ø250	
A	M8	M8/M10	M8/M10	M10/M12	M10/M12	M12/M16	M12/M16	M20	M20	
B	14	14/17	14/17	18/20	18/20	20/25	20/25	32	32	
D (round)	Ø22	Ø25	Ø25	Ø40	Ø40	Ø48	Ø48	Ø75	Ø75	
D (square)	□14	□17	□17	□22	□22	□27	□27	□36	□36	
E	Ø50	Ø55	Ø55	Ø75	Ø75	Ø90	Ø90	135	Ø135	
F	Ø90	Ø125	Ø125	Ø150	Ø150	Ø180	Ø180	250	Ø250	
G	2.5							3	3	
H	35	50	60	68	68	90	90	90	90	
S	100	115	145	170	170	170	145	170	170	
X	218	288	304	342	342	398	398	435	435	
Y	162	242	256	286	286	292	292	312	312	
Z	238	275	308	328	328	506	506	531	531	

With the valve selection of reference

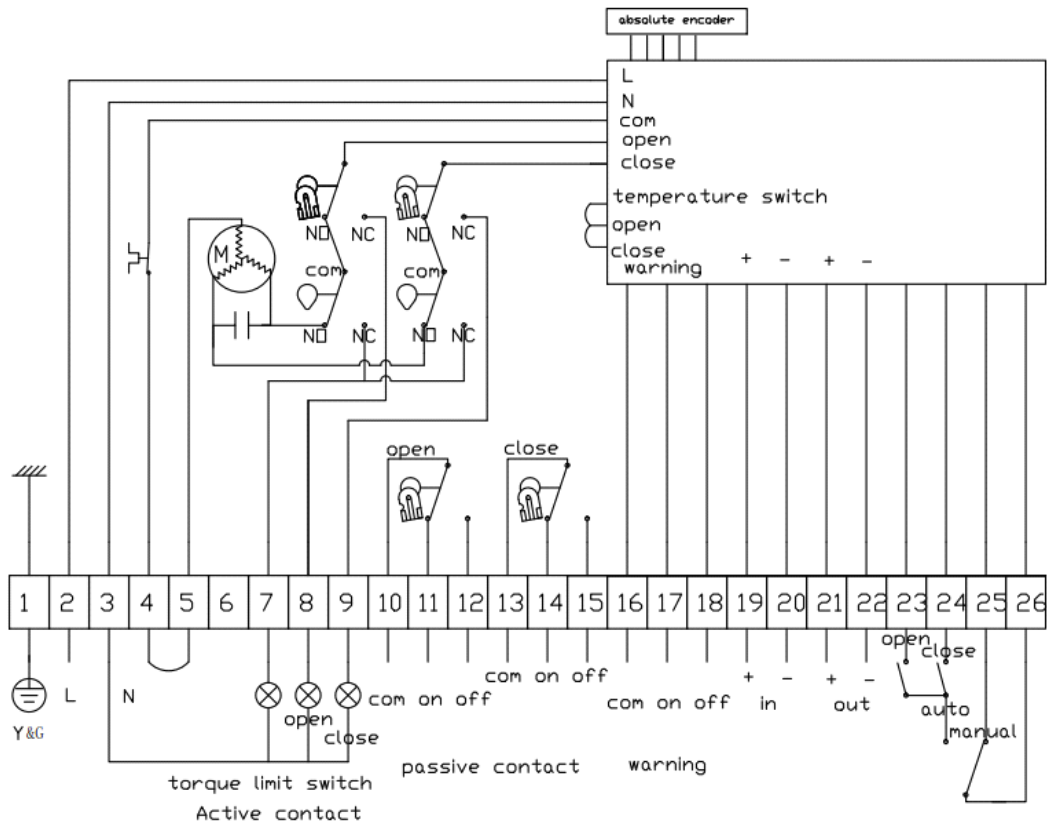
valve	soft seat butterfly valve	ball valve	3 way ball valve
BQ010	DN65-DN100	DN50-DN65	DN32
BQ015	DN125	DN80	DN50
BQ020	DN150	DN100	DN65
BQ030	DN200	DN125	DN80
BQ050	DN250		DN100
BQ080	DN300	DN150	DN125
BQ100	DN350		DN150
BQ150	DN400		DN200
BQ200	DN450	DN250	DN200
BQ300	DN500	DN300	DN250

Actuator selection above is only for reference. Pls pay attention to the actual valve torque, flow characteristics and so on. For special conditions such as high temperature, low temperature, water, poor application under corrosive condition, high vibration, selected actuator, please consult our engineer before sizing actuator.

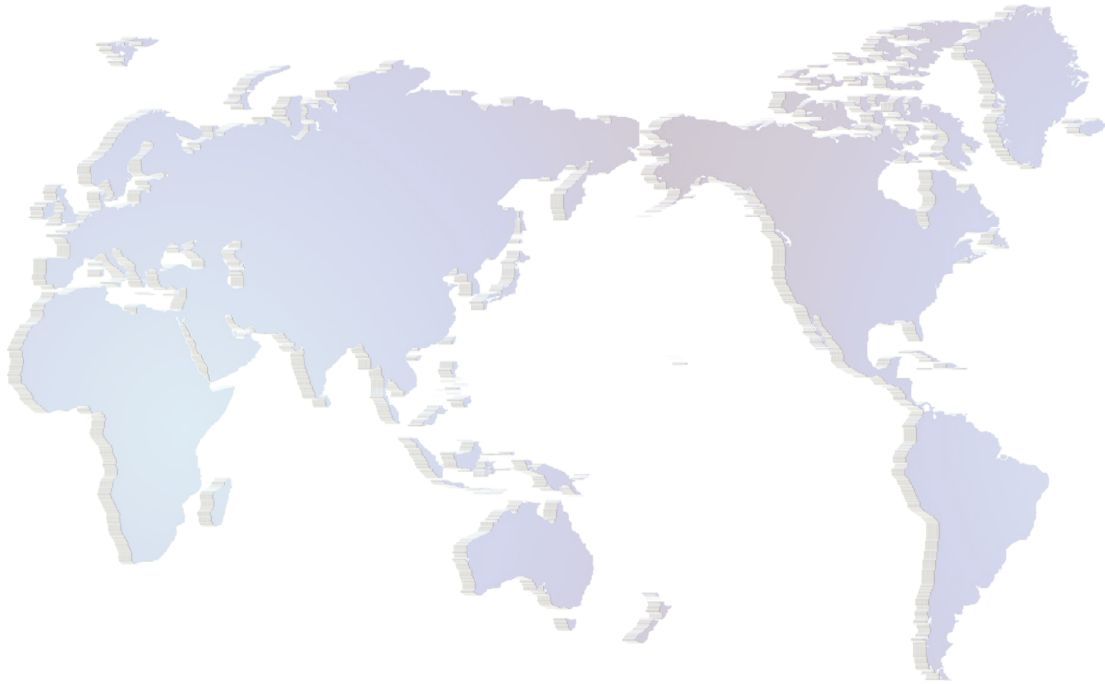
380V/440VAC/50/60Hz 3PH ON/OFF type



BQ Modulating type 110V/220VAC/50/60Hz 1PH



Consider people as boat, consider seriousness as her helm,
and consider wisdom as her sail



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