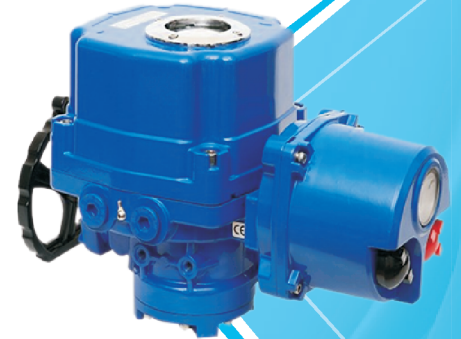


"PHQ" series electric actuator is used for controlling 0° ~ 270° rotation of the valves and other similar products, such as butterfly valve, ball valve, damper, flapper valve, cock valve etc. It widely applies to petroleum, chemical, water treatment, shipping, paper making, power plant, heating, light industry and other industries. Driven by 380V/220V/110VAC power or 24V/110VDC power, inputs 4-20mA or 0-10VDC control signal, moves valve to the right position, and achieves to automatic control, maximum output torque is 6000N·M.



Performance Features

▶ Shell

The shell is made of aluminum alloy, with anodic oxidation treatment and polyester powder coating. It is strong corrosion-resistant and enclosure Ip67, NEMA 4 and 6, IP68 and explosion-proof is optional.

▶ Motor

Asynchronous motor, small, large torque, and small inertia force, F-class insulation rating, with thermal protection to avoid damaging.

▶ Manual Structure

The design of handwheel is safe, reliable, labor-saving, small. Declutch to operate by handwheel if without power, and reset automatically when power on.

▶ Indicator

Installs indicator in the center axis and adopts convex mirror design, no cumulate water, more convenient to observe.

▶ Space heater

It is used for controlling temperature to avoid condensing internal of housing and keep dry.

▶ Limit switch

Mechanical, electronic double limit. Mechanical limit stopper is adjustable, safe and reliable; electronic limit switch is controlled by cam. Set position accurately and conveniently, and not affected by excessive handle.

▶ Torque Switch

(Except OHQ-005/008/010) Providing overload protection to avoid the damage of valve and electric actuator when jammed by cutting power automatically.

▶ Self-locking

Accurate worm and worm gear transfer large torque efficiently, high efficiency, low noise (max. 50 dB), long life, with self-locking, prevent inversion, as stable and reliable transmission parts, no need to refuel.

▶ Anti-offbolt

The bolt attaches to the shell and be not off when remove the shell.

▶ Installation

The installation size meets international standard ISO5211 / DIN3337.

▶ Circuit

Controlling circuit meets the single-phase or three-phase power supply standard, circuit layout is reasonable and compact, terminals meet various of additional functional requirements effectively.

▶ The display of valve position

During the opening or closing movement of actuator, the change of valve position on LCD is displayed with large numbers.

▶ Adjust the phase sequence automatically

Intelligent actuator check and test the phase sequence for 3 phase power supply automatically, users no need to consider about the phase sequence.

Primary Technical Parameter

PHQ series electric actuator technical parameter

Actuator Model	Max Output Torque	60/50Hz Operating Time	Max Drive Shaft Size	Power	Rated Current (A)				Hand wheel Revolution	Weight
					Single Phase		Three Phases			
	N-M	90°	mm	W	110V	220V	380V	440V	N	Kg
PHQ-005	50	18/22	Φ20	20	1.10/0.95	0.55/0.54	0.3/0.3	N/A	10	7.5
PHQ-008	80	18/22	Φ20	20	1.10/0.95	0.55/0.54	0.3/0.3	N/A	10	7.5
PHQ-010	100	18/22	Φ20	20	1.10/0.95	0.55/0.54	0.3/0.3	N/A	10	7.5
PHQ-015	150	21/25	Φ22	40	1.65/1.67	0.88/0.84	0.31/0.31	0.30/0.31	11	17.3
PHQ-020	200	21/25	Φ22	40	1.67/1.67	0.89/0.85	0.31/0.31	0.30/0.31	11	17.3
PHQ-030	300	26/31	Φ35	90	1.85/1.86	0.92/0.92	0.35/0.35	0.34/0.34	13.5	22
PHQ-050	500	26/31	Φ35	90	3.60/3.62	1.55/1.58	0.59/0.59	0.58/0.58	13.5	23
PHQ-060	600	26/31	Φ35	120	3.65/3.62	1.60/2.20	0.60/0.59	0.59/0.58	13.5	23
PHQ-080	800	31/37	Φ45	180	4.10/4.10	2.15/2.20	0.85/0.85	0.79/0.79	16.5	29
PHQ-120	1200	31/37	Φ45	180	4.20/4.10	2.35/2.30	0.87/0.87	0.81/0.81	16.5	29
PHQ-150	1500	78/93	Φ45	180	3.65/3.62	1.60/2.20	0.60/0.59	0.59/0.58	40.5	77
PHQ-200	2000	93/112	Φ45	180	4.10/4.10	2.15/2.20	0.85/0.85	0.79/0.79	49.5	83
PHQ-300	3000	93/112	Φ45	180	4.20/4.10	2.35/2.30	0.87/0.87	0.81/0.81	49.5	83
PHQ-400	4000	155/185	Φ45	180	4.20/4.10	2.35/2.30	0.87/0.87	0.81/0.81	82.5	83
PHQ-500	5000	155/185	Φ45	180	4.20/4.10	2.35/2.30	0.87/0.87	0.81/0.81	82.5	83
PHQ-600	6000	155/185	Φ45	180	4.20/4.10	2.35/2.30	0.87/0.87	0.81/0.81	82.5	83

Standard Technical Parameter

Shell	Enclosure :IP67,NEMA4, Exd II Ct5
Power	Standard:220VAC/1ph Optional:110VAC/1ph, 380V/440V/3ph, 50/60Hz, ±10% 24VDC/110VDC/220VDC
Motor	Asynchronous motor
Limit switch	2×Open/ Close, SPDT,250VAC 10A
Auxiliary limit switch	2×Open/ Close, SPDT,250VAC 10A
Torque switch	Close/Open, each 1, SPDT,250VAC 10A Except OHQ-005/008/010
Travel	90°±10° 0° ~ 270°
Fail safe/Operating temperature	Internal-placed thermal protection, Open 115°C ±5°C/Close 97°C ± 5°C
Indicator	Continuous position indicator
Manual operate	Declutching mechanism, operate by handwheel
Self-locking device	Self-locking by worm and worm gear
Mechanical limit	2 × external adjustable stopper
Space heater	30W(110V/220VAC)
Conduit entry	2 × PF 3/4"
Ambient temperature	-20°C ~ +70°C
Lubrication	Grease moly (EP type)
Material	Steel, Aluminum alloy, Aluminum bronze, Polycarbonate
Ambient humidity	Max 90% RH Non-Condensing
Anti-vibration	X Y Z 10g, 0.2 ~ 34 Hz, 30 minutes
External coating	Dry powder, Epoxy polyester, high anti-corrosion

Option Specification

No.	Option scheme	Remark
1	Explosion-proof actuator (Exd II CT5)	PHQ series
2	Water-proof actuator (IP68, 10M, 250HR)	PHQ series
3	Potentiometer unit (1K-10K)	PHQ series
4	Proportion control unit (control signal 4-20mA DC/1-5V/1-10V)	PHQ series
5	Local control units (local control open/stop/close optional switch, local/remote switch)	PHQ series
6	Travel 120°, 180°, 270°	PHQ series
7	Direct current motor (24VDC)	PHQ series
8	Torque switch (SPDT× 2 250VAC 10A)	Except PHQ-005/008/010
9	Electric current position sensor (output 4-20mA DC)	PHQ series
10	Self-reset when power failure	PHQ series
11	High temperature resistance actuator (-10°C ~ +100°C)	PHQ series
12	Low temperature resistance actuator (-40°C ~ +70°C)	PHQ series
13	Low speed actuator	PHQ series

PHQ EXPLOSION PROOF TYPE ACTUATOR.

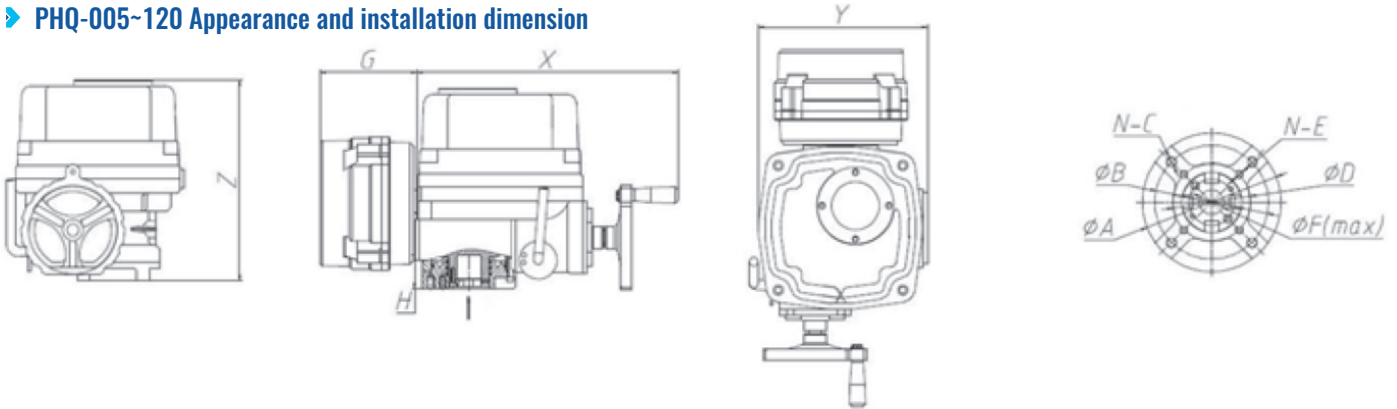
Structure

Electric actuators is make up of the following parts

- » **Housing** : including shell and base
- » **Drive parts** : asynchronous motor
- » **Driving mechanism** : double worm and clutch
- » **Ratio control parts** : separate with the mechanical parts, easy to debug
- » **Torque switch and limit switch parts**
- » **Opening detected and feedback parts.**

General Drawing

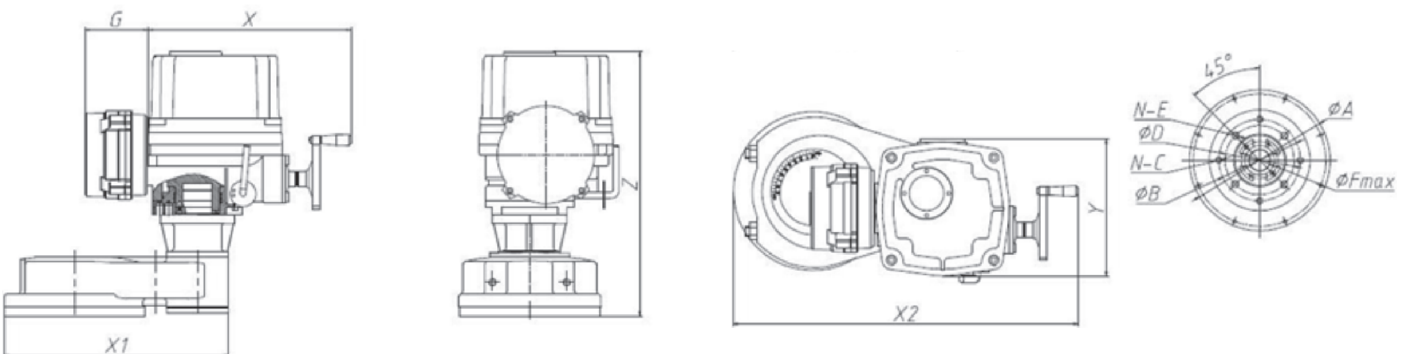
PHQ-005~120 Appearance and installation dimension



All Dimensiona are in mm

Model	X	Y	Z	ΦA	ΦB	N-C	ΦD	N-E	ΦF	G	H
PHQ-005	26	161	236	Φ90	Φ70	4-M8	-	-	Φ20	140	40
PHQ-008	260	161	236	Φ90	Φ70	4-M8	-	-	Φ20	140	40
PHQ-010	260	161	236	Φ90	Φ70	4-M8	-	-	Φ20	140	40
PHQ-015	351	227	270	Φ125	Φ102	4-M10	Φ70	4-M8	Φ22	140	45
PHQ-020	351	227	270	Φ125	Φ102	4-M10	Φ70	4-M8	Φ22	140	45
PHQ-030	367	242	290	Φ150	Φ125	4-M12	Φ102	4-M10	Φ35	140	55
PHQ-050	367	242	290	Φ150	Φ125	4-M12	Φ102	4-M10	Φ35	140	55
PHQ-060	367	242	290	Φ150	Φ125	4-M12	Φ102	4-M10	Φ35	140	55
PHQ-080	410	276	330	Φ180	Φ140	4-M16	Φ140	4-M12	Φ45	140	65
PHQ-120	410	276	330	Φ180	Φ140	4-M16	Φ140	4-M12	Φ45	140	65

PHQ-150~600 Appearance and installation dimension



Picture 2 Unit: mm

All Dimensiona are in mm

Model	X	Y	Z	ΦA	ΦB	N-C	ΦD	N-E	ΦF	G	X1	X2
PHQ-150	410	276	330	Φ285	Φ165	4-M18	Φ140	4-M16	Φ45	140	454	696
PHQ-200	410	276	330	Φ285	Φ165	4-M18	Φ140	4-M16	Φ45	140	454	696
PHQ-300	410	276	330	Φ285	Φ165	4-M18	Φ140	4-M16	Φ45	140	454	696
PHQ-400	410	276	330	Φ285	Φ165	4-M18	Φ140	4-M16	Φ45	140	454	696
PHQ-500	410	276	330	Φ285	Φ165	4-M18	Φ140	4-M16	Φ45	140	454	696
PHQ-600	410	276	330	Φ285	Φ165	4-M18	Φ140	4-M16	Φ45	140	454	696

PHQ EXPLOSION PROOF TYPE ACTUATOR.

▶ ON/ OFF TYPE



▶ MODULATING TYPE



▶ INTEGRAL STARTER TYPE TM

