

From Better to **Great**. 



HL

Quarter-Turn Electric Actuator

Valve & Actuator Solutions



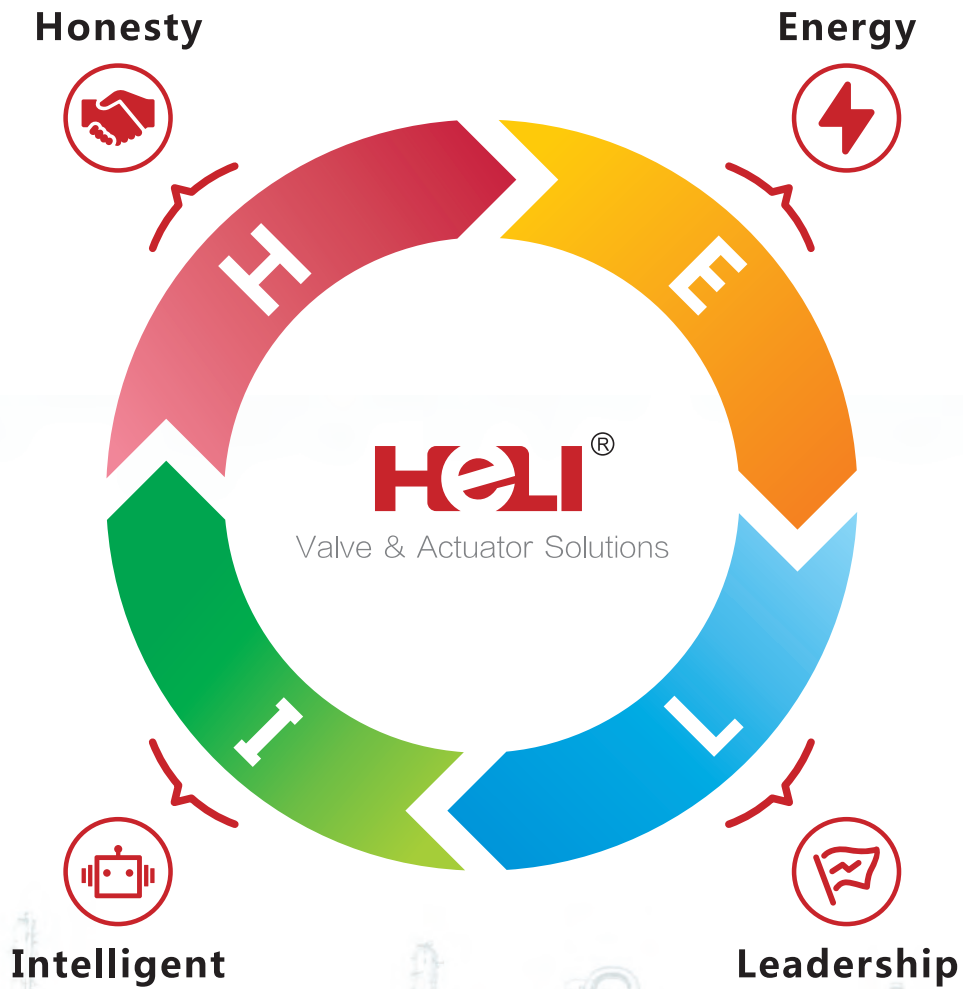
Company Profile

Wenzhou Heli Automatic Meter Co.,Ltd has more than 100 employees,including engineers and technicians accounting for 25%, owning 26 new utility patents and 2 invention patents,having the ISO9001:2015,CE,ROHS,IP67,IP68,SIL,EX certificates.

- 1999,founded the company and researched the HL series electric actuator.
- 2000,launched the HL series quarter-turn electric actuator as the first company in electric actuator industry in Wenzhou city.
- 2003,got the export lisenca with a series of certificates.
- 2004,exported the electric actuator to europe.
- 2008,launched the HLF series damper actuator for HVAC.
- 2009,launched the HAT series quarter-turn pneumatic actuator.
- 2010,launched the LQ series quarter-turn electric actuator with explosion proof.
- 2013,sold out 40000 pieces actuators.
- 2014,launched the new design HEQ series electric actuator with a international company.
- 2016,launched the HEM series for multi-turn electric actuator.
- 2018,sold out 95000 picese electric actuators.
- 2019, reached 15 million dollars of company's sales.
- 2020,built the new factory covering an area of 24000 square meters with developed production lines and facilities,



Company Culture



CONTENTS

● HL Series Advantages And Features	01
● HL-Product structure	03
● HL-Product advantages	05
● HL-Technical specifications	07
● HL-Selection	08
● Wring Drawing	09
● HL-Basic Type Dimension Drawing	10
● HL-05Y2~HL-600Y2 Series Dimension Drawing	11

HL Series Advantages And Features

▶ Control types and structure

- > On-off and modulating provides multiple control types.
- > Local controller with LED lamp option.

▶ Compact & optimized design

- > Super compact design with wide range of torque adapted to customers' requirements from 6N.M to 6000N.M for all quarter-turn electric actuators.

▶ Multi-voltage(AC/DC) & Multi-frequency(50Hz/60Hz)

- > Suitable whatever your location on the globe such as 24/220 VDC or 24/110/220/380/415/440VAC.

▶ Three independent compartments

- > Independent gearbox, electrical compartment and terminal box to avoid the damages caused as the misoperation.

▶ Duty rating & Heavy duty motor

- > Continuous working condition and the heavy duty squirrel caged induction motor to generate high starting torque.

▶ Thermal protection

- > Thermal protection will cut off the circuit to protect the motor if the temperature of motor rise to 125 °C.

▶ Body structure

- > The shape of body like cooling fin with excellent cooling performance to prevent the high temperature of the motor.

▶ Gearbox

- > Gear unit is made of alloy steel with heat treatment, which has the features of high strength and excellent wear resistance.

▶ Wormgear

- > Wormgear unit is made of copper alloy material with excellent wear resistance and high transmission efficiency.

▶ Under voltage working

- > Normal working withstand a more low under voltage.

▶ Mechanical position indicator

- > The tempered glass indicator with the characteristics of anti-aging, high temperature resistance and anti-deformation.
- > Shatterproof polycarbonate dome indicator option, two pieces unique indicator ensures a lifelong visibility.



▶ Allen key attached

- > Declutch-free Allen key for emergency manual operation.

▶ Mounting base

- > Two options for flange according to ISO5211 standard and bare shaft standard.

▶ Enclosure & Painting

- > Weather proof IP67 as standard and watertight IP68 as option.
- > Hard anodized aluminum housing with epoxy polyester powder coating against severe industrial environment.



• New design is safe and convenient to use

1. Waterproof connectors

Standard cable entry and gland with nice seal.

2. Tracking number

To follow the production details.

3. Allen key

Allen key for emergency operation.

4. Thermal slug

Excellent heat dissipation performance, effectively preventing the motor from overheating.

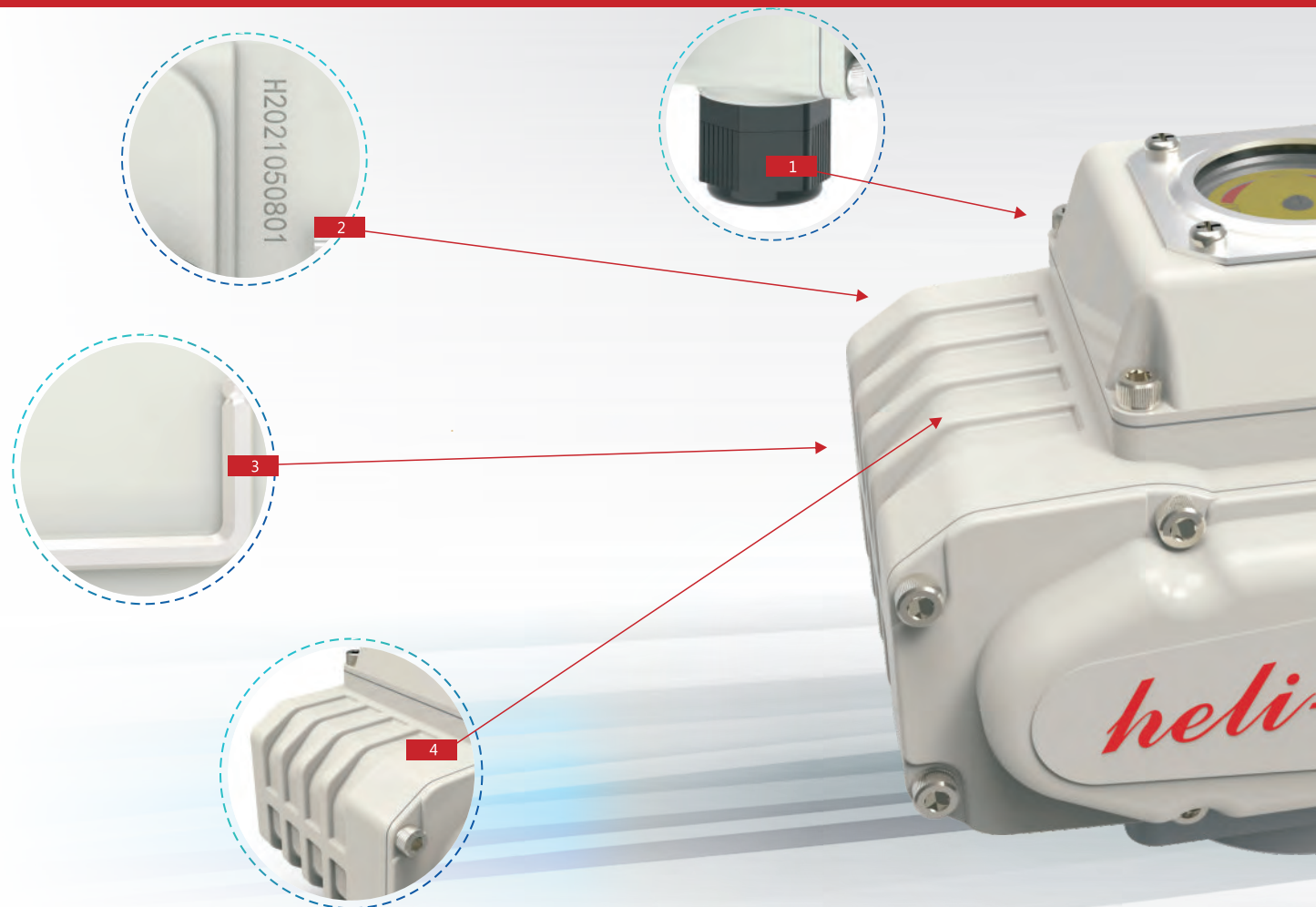
5. Tempered glass indicator

Position indicator with tempered glass.

6. Hexagone screw

Loose cover bolts to prevent loss during maintenance or installation.

HL-Product structure



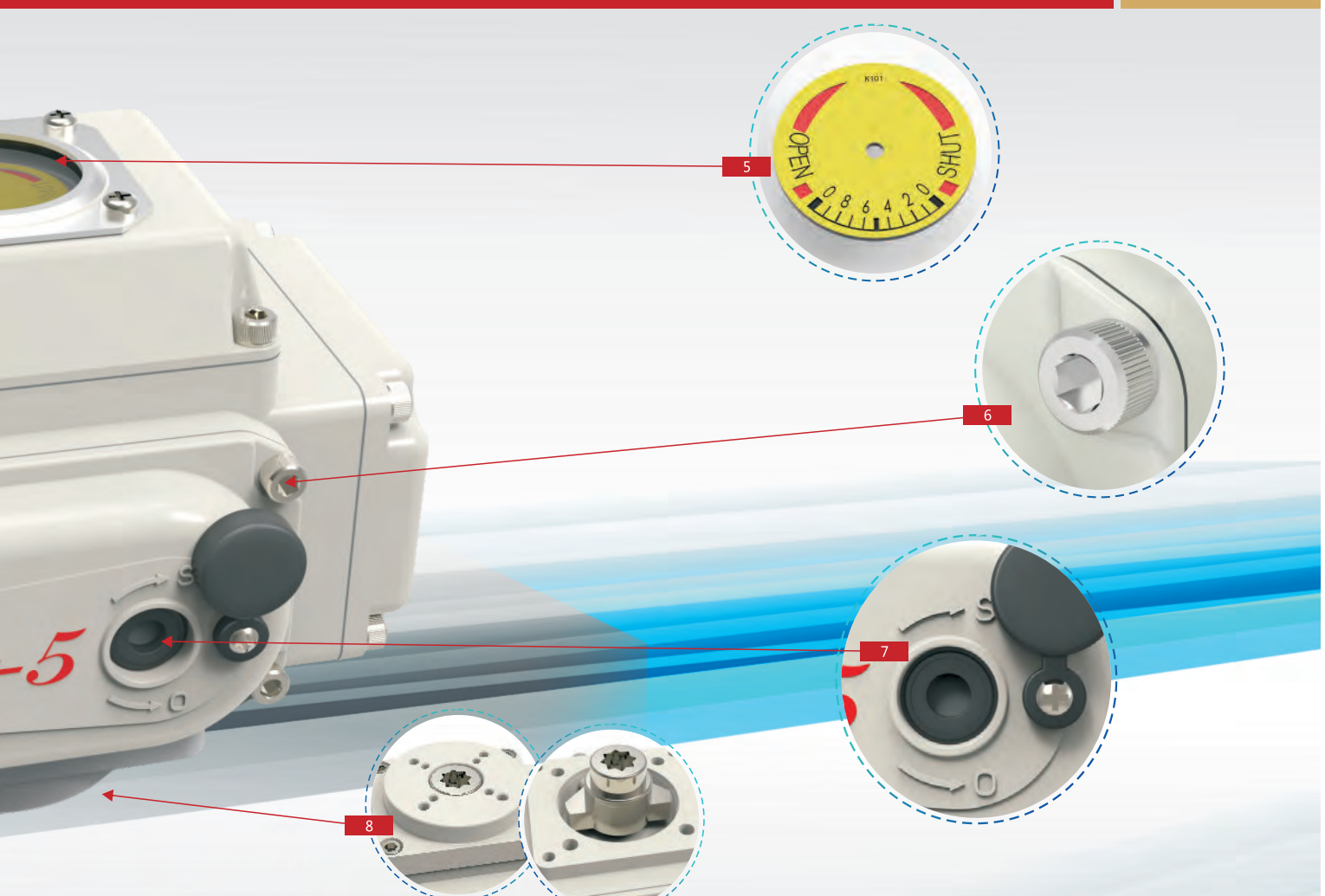
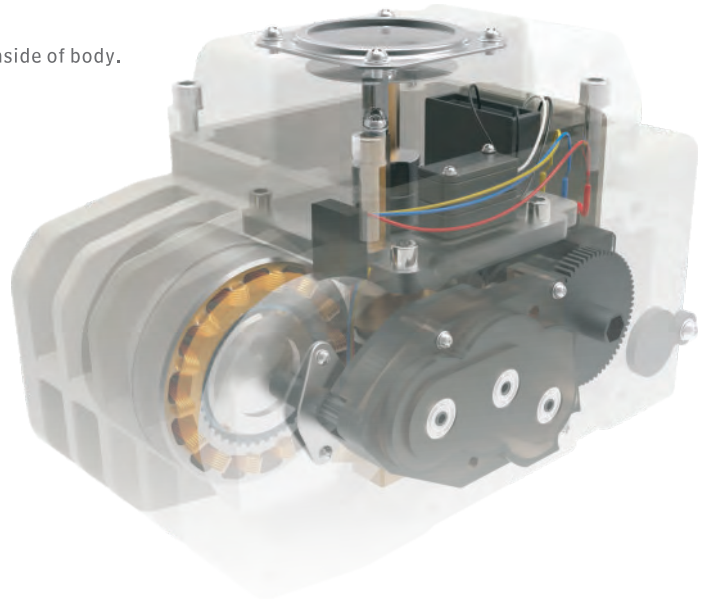
- New design interface, clear and concise operation

7. Manual hole

The hole of allen key with rubber plug against water ingress into the inside of body.

8. Bottom flange

Two options for mounting base, ISO5211 standard and bare shaft standard.



Control the rhythm of flow

Control precision 1%



HL-Product advantages

Note:This product code has been listed in our database. Please maintain this code.

If it is damaged, it will not be returned or maintained. Please understand.

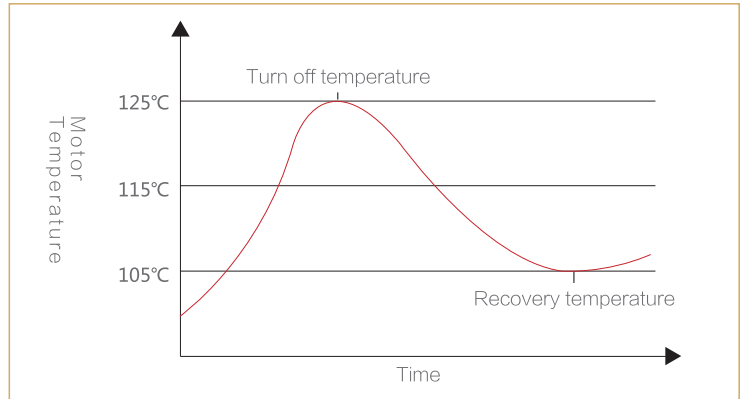
The electric valve actuator design is unique, operation lifetime is ten times than similar products. With excellent quality and elegant appearance, we'll not disappoint to customers.

1. Independent terminal block to prevent misoperation, and products are more stable .
2. Strong function: intelligent type, proportional type, switch type, all kinds of signal output type.
3. Elegant appearance: aluminium alloy cover, reduce electromagnetic interference.
4. Abrasion resistant: output shaft with gear box, avoid connecting space, driving precision is high. Forged with special copper alloy,high strength and resistant.
5. Safety ensure: through AC1800V pressure resistant test,F insulation motor,safety is guaranteed.
6. Simple installation: single phase power supply, external circuit is simple. 3 phase and DC power are also available.
7. Easy to use: free from oil filling, point inspection,waterproof and rust prevention, installing at any angle .
8. Prevention: double limit, overheat protection, overload protection.
9. Variety speed: full trip time 9s, 13s, 15s, 30s, 50s, 100s, 150s(already set).
10. Anti corrosion and rust: stainless steel for holder, coupling,screw.
11. Intelligent CNC: Intelligent control module is assembled inside body, no external positioner is required. Digital setting, highly accurate, auto-diagnosis, multiple functions.

Motor

Due to the working characteristics of the valve, the actuator is required to start at full capacity in the ON, OFF and middle position of the valve. The actuator has a high starting torque. At the same time, due to the flow rate (opening degree) adjustment needs, the motor needs to have a small rotational inertia.

When the actuator is blocked, the temperature of the motor will rise rapidly. When the motor temperature rises to 125°C, the PTC overheating protector will cut off the circuit to protect motor and control system. When the motor temperature drops to 90~105°C, the circuit will resume.

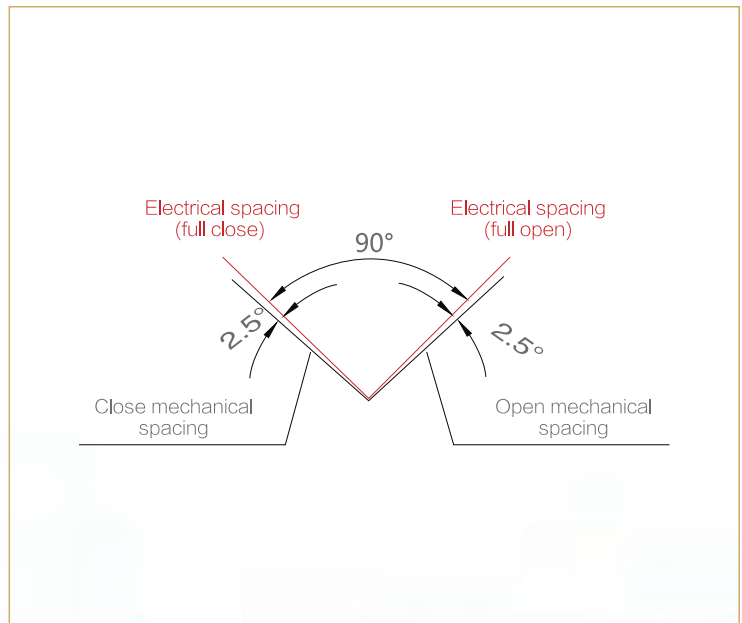


Function of electrical and mechanical limit

Electrical travel limit function: When the actuator reaches the full open, full close limit position or middle position, the electrical limit switch will cut off the circuit and protect the actuator.

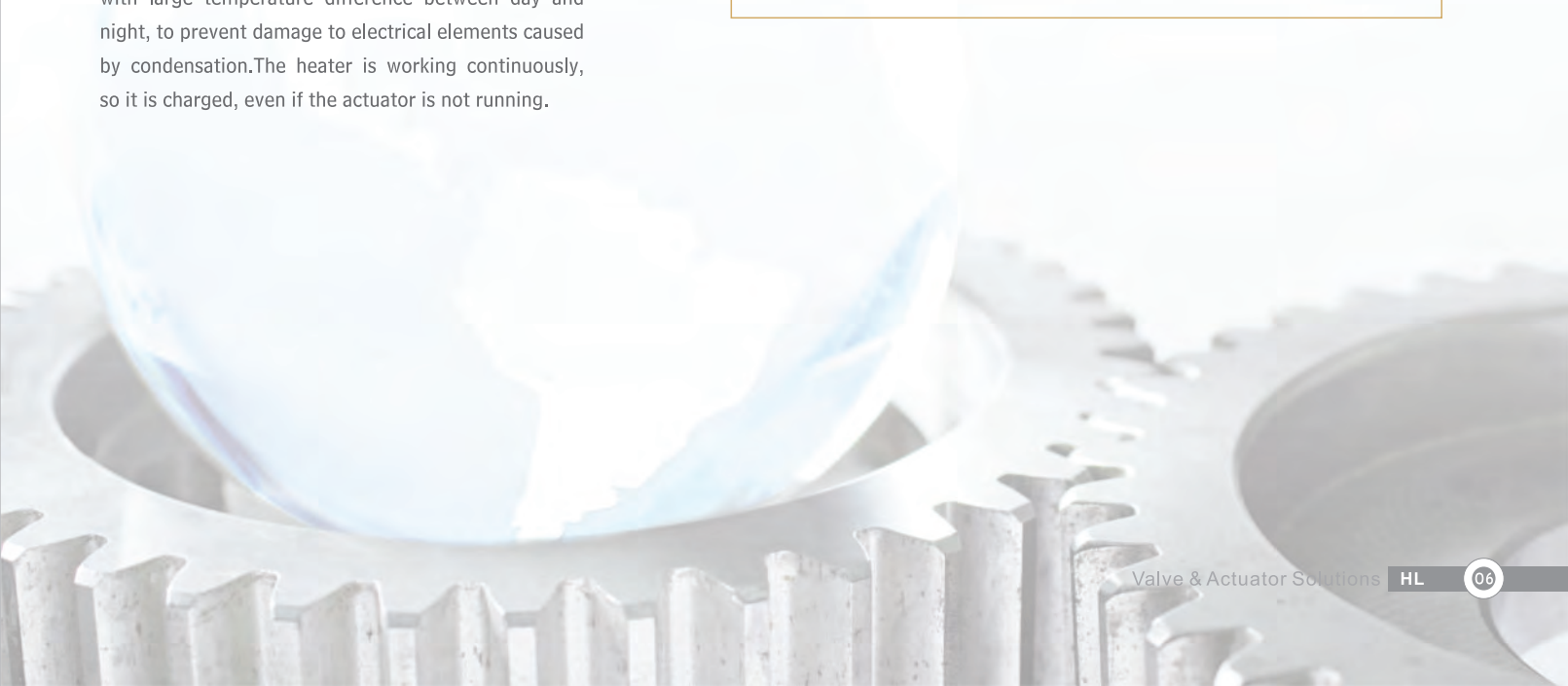
Output shaft mechanical limit function: When the electrical travel limit function fails, the actuator output shaft will be locked by the mechanical limit device to protect the valve from damage.

The figure shows the position relationship between the electrical and mechanical limits.



Space heater function (optional)

The HL series actuator can be configured with electronic heating elements for use in humid places with large temperature difference between day and night, to prevent damage to electrical elements caused by condensation. The heater is working continuously, so it is charged, even if the actuator is not running.



HL-Technical specifications

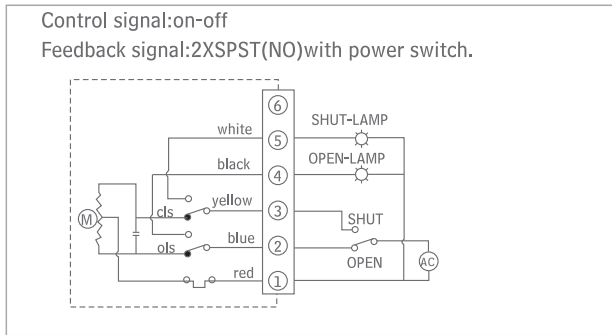
Circuit control	B、S、R、H、A、K、D、T、Z、TM	
Rotary angle	0-90°	
Max angle	110°±2°C	
Dielectric strength	500VAC/1Min 2000VAC/1Min(DC24V/AC24V)	1500VAC/1Min (AC110V/AC220V) (AC380V/AC800V)
Insulation resistance	20MΩ/500VDC (DC24V/AC24V)	100MΩ/500VDC (AC110V/AC220V/AC380V)
Inclosure protection	IP-67(IP68 option)	
Ambient temperature	-25°C-60°C(other temperatures option)	
Mounting orientation	Any orientation	
Housing material	Aluminium alloy die-casting	
Options	Torque switch (HL-10, HL-20, HL-50, HL-300)、 Space heater, Handwheel, Thermal protection	
Color	Grey white(other colors option)	
Manual operation	Allen key can be used when power cut	
Working conditions	It is necessary to install protective devices to protect and prolong the service life of actuators in condition of indoor or outdoor, long-term rain or direct sunlight	
Ambient humidity	5-95% RH relative humidity, no condensation	
Position indicator	Mechanical indicator, other positons could be customized	
Time duty	S4-40%	
Electrical interface	M20*1.5	
Motor level	Level F	
Vibrator	10 to 50Hz 1.5mm Double-amplitude	
Flame rating	1.6mm HB/uL94 Test method	
Running frequency	Continuous operation	
Noise level	Max 65dB(A)	

HL-Selection

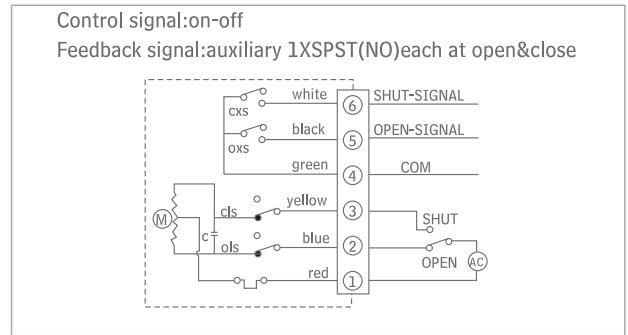
Item	Time & Torque									Weight (Basic type)	
	Voltage	DC12V	DC24V	DC220V	AC24V	AC110V	AC220V	AC380V	AC415V		
HL-05	Rated current	3.8	2	0.21	2.2	0.48	0.24	0.15	0.17	2.2kg	
	Working time/Torque	10S/50Nm			30S/50Nm						
	Working time/Torque(option)	2S/10Nm,6S/30Nm			10S/15Nm,20S/30Nm,6S/10Nm						
	Motor consumption(W)	20			10						
HL-10	Rated current(A)	4.8	2.4	0.32	3	0.64	0.32	0.19	0.21	4kg	
	Working time/Torque	10S/100Nm			30S/100Nm						
	Working time/Torque(option)	5S/50Nm			13S/50Nm,15S/50Nm,20S/60Nm						
	Motor consumption(W)	40			23						
HL-20	Rated current(A)	/	3.8	0.5	5	0.9	0.48	0.25	0.28	7kg	
	Working time/Torque	/	15S/200Nm		30S/200Nm						
	Working time/Torque(option)	/	5S/100Nm		9S/80Nm,15S/100Nm,20S/150Nm,60S/200Nm						
	Motor consumption(W)	40									
HL-50	Rated current(A)	/	8	1.35	8	2	0.92	0.45	0.51	7.8kg	
	Working time/Torque	/	15S/500Nm		30S/500Nm						
	Working time/Torque(option)	/	/	9S/150Nm,15S/250Nm,20S/300Nm,60S/500Nm							
	Motor consumption(W)	90									
HL-100	Rated current(A)	/	9	1.5	9	2.2	1	0.48	0.53	11.2kg	
	Working time/Torque	/	25S/1000Nm		50S/1000Nm			30S/1000Nm			
	Working time/Torque(option)	/	/	15S/300Nm,30S/800Nm				15S/500Nm			
	Motor consumption(W)	100									
HL-200	Rated current(A)	/	/	/	9	2.2	1.2	0.48	0.53	11.8kg	
	Working time/Torque	/	/	/	100S/2000Nm			50S/2000Nm			
	Working time/Torque(option)	/	/	/	/			/			
	Motor consumption(W)	100									
HL-300	Rated current(A)	/	/	/	/	3.9	1.9	0.9	1.06	20kg	
	Working time/Torque	/	/	/	/	60S/3000Nm					
	Working time/Torque(option)	/	/	/	/	/	/	/	/		
	Motor consumption(W)	200									
HL-400	Rated current(A)	/	/	/	/	4.1	2.1	0.9	1.08	31kg	
	Working time/Torque	/	/	/	/	100S/4000Nm,50S/3000Nm					
	Working time/Torque(option)	/	/	/	/	/	/	/	/		
	Motor consumption(W)	200									
HL-600	Rated current(A)	/	/	/	/	4.1	2.1	0.9	1.08	31kg	
	Working time/Torque	/	/	/	/	150S/6000Nm					
	Working time/Torque(option)	/	/	/	/	/	/	/	/		
	Motor consumption(W)	200									

Wiring Drawing

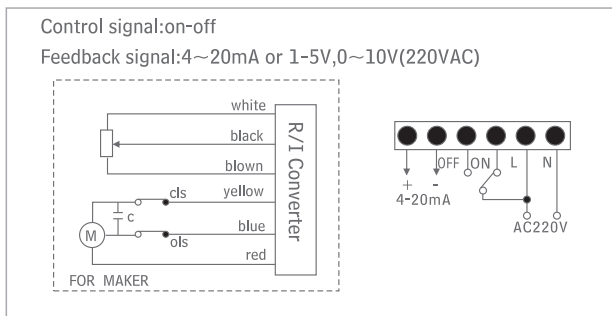
B:ON-OFF (220VAC)



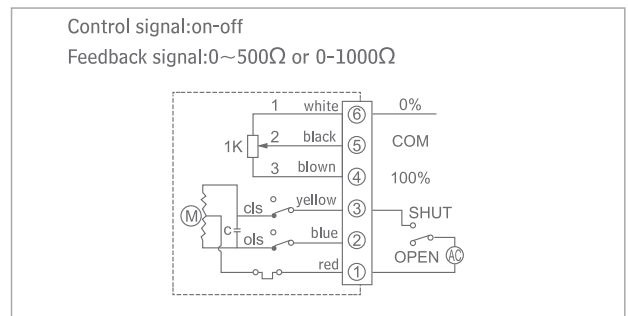
S:With 4×SPST (220VAC)



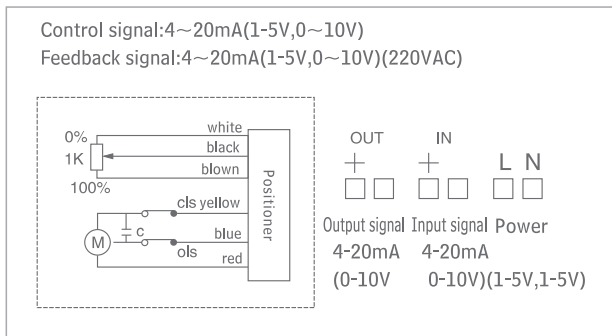
K:R/I Converter



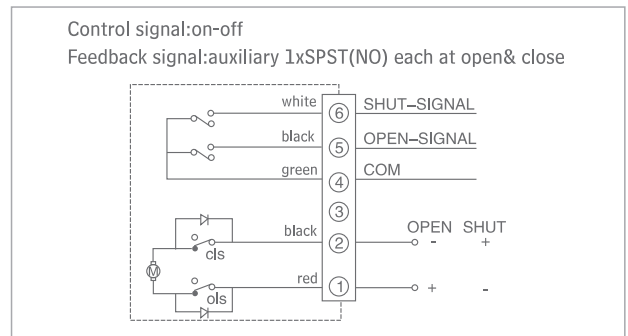
R:With potentiometer(220VAC)



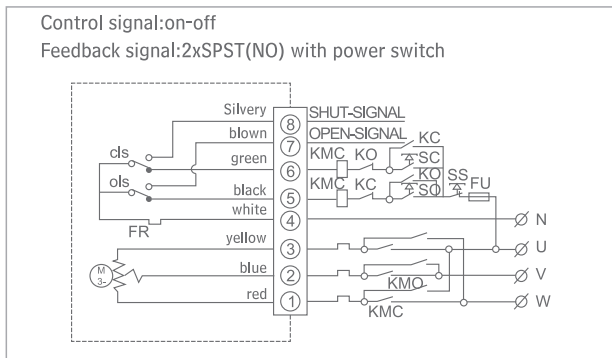
A:Modulating with positioner



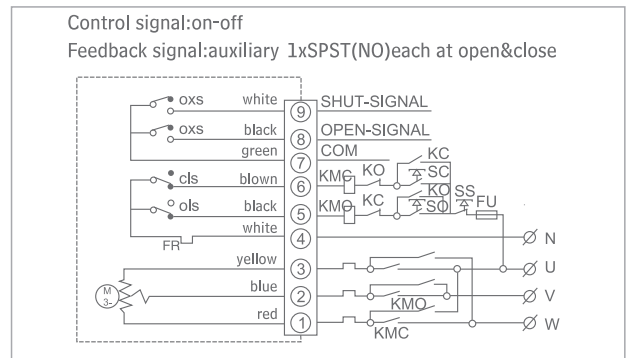
D:DC motor



H:ON-OFF (380VAC)

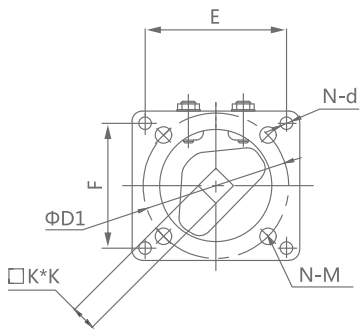
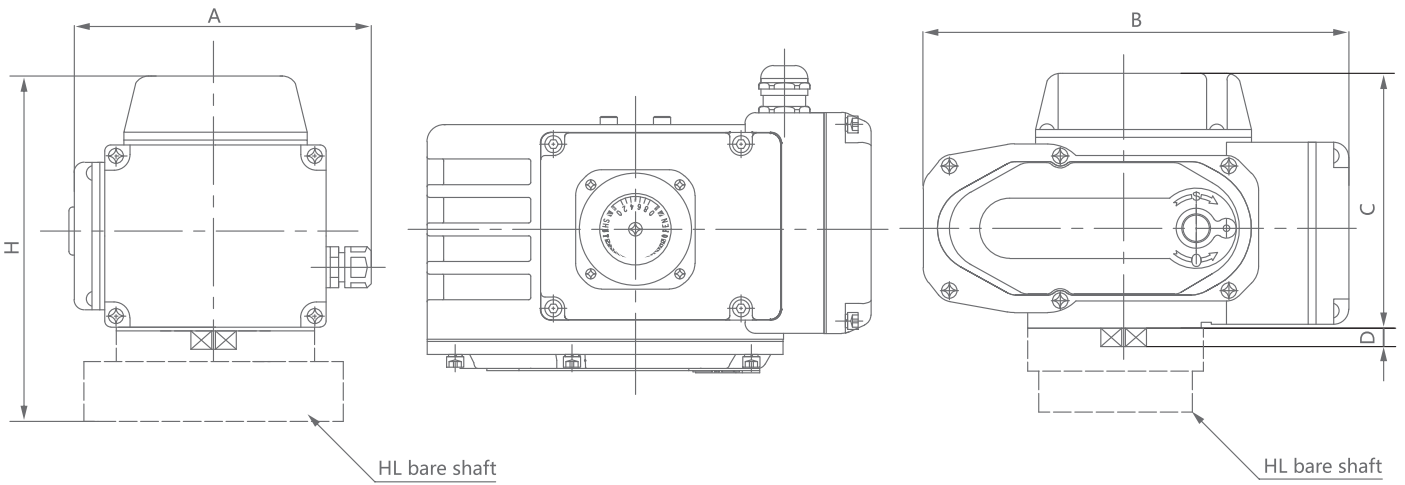


T:With 4×SPST (380VAC)

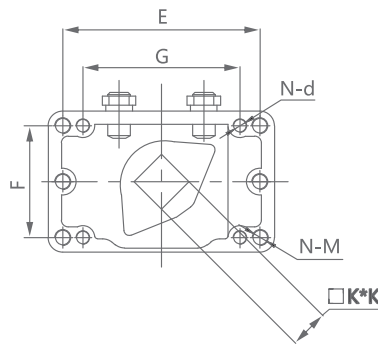


1. Inside of frame is for actuator's wiring, outside of frame is for customer's wiring.
2. Two or more electric actuators can not be connected in parallel, one same joint is not allowed to control several electric actuators, otherwise it will cause actuator uncontrolled and motor overheating.
3. Please contact with factory for any special requirements.

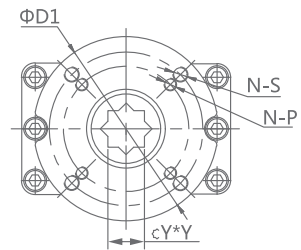
HL-Basic Type Dimension Drawing



HL05~HL50,HL400(600)
Basic type flange size



HL100~HL300
Basic type flange size



HL05~HL600
Bare shaft flange size

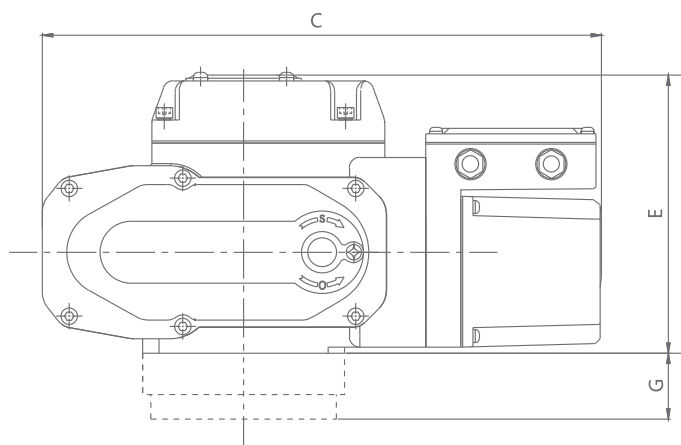
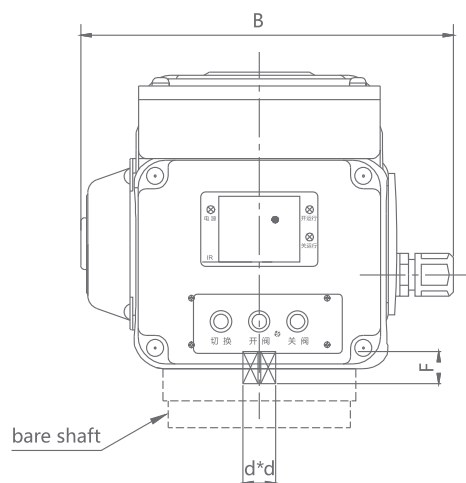
Notes:

- 1.HL On-Off actuator with terminal;
- 2.HL modulating actuator with module;
- 3.HL bare shaft type with mount bracket;
- 4.Dotted line is mount bracket.

Item	A	B	C	D	E	F	N-M	D1	N-d	G	□K*K	□Y*Y	N-S	N-P	ΦD2	H	Flange for bare shaft
HL-05	135	168	108	12	68	60	4-M8	70	4-M6	---	12*12	14x14, 11x11, 9x9	4-M6	4-M5	68	130	F03.F05
	135	168	108	12	68	60	4-M8	70	4-M6	---	12*12	14x14, 11x11, 9x9	4-M8	4-M6	68	144	F05.F07
HL-10	144	208	135	9	82	70	4-M8	70	4-M6	---	15*15	17x17, 14x14, 11x11	4-M8	4-M6	90	167	F05.F07
HL-20(50)	170	258	153	22	118	84	4-M10	102	8-M10	---	23*23	27x27, 22x22, 17x17, 14x14	4-M10	4-M8	126	201	F07.F10
HL-100(200)	178	280	165	25	148	84	6-M12	---	4-M10	118	30*30	36x36, 27x27, 22x22	4-M12	4-M10	150	231	F10.F12
	178	280	165	25	148	84	6-M12	---	4-M10	118	30*30	36x36, 27x27, 22x22	4-M20	4-M16	206	251	F14.F16
HL-300	256	325	165	30	136	116	10-M12	---	---	148	36*36	36x36, 27x27	4-M12orM16orM20	---	206	257	F12.F14.F16
HL-400(600)	266	439	179	48	---	---	8-M20	254	4-M20	---	52*52	customized	8-M16	4-M20	290	309	F16.F25



HL-05Y2~HL-600Y2 Series Dimension Drawing



Item	B	C	E	F	d*d	G
HL-05Y2	135	249	155	12	12*12	22
HL-10Y2	144	292	155	9	15*15	32
HL-20(50)Y2	170	336	153	22	23*23	48
HL-100(200)Y2	183	360	165	25	30*30	70
HL-300Y2	256	406	165	30	36*36	92
HL-400(600)Y2	266	487	179	48	52*52	130



HL series quarter-turn electric actuator
 Smart appearance, light weight,
 Easy to install, economical and durable.

ZX series small electric actuator
 Torque: 9N.m~24N.m
 Explosion proof ,Weather proof



LQ series quarter-turn electric actuator
 Overtorque protection, explosion proof as
 option, Intelligent control to meet more I
 ndustrial application.

HLF series damper electric actuator
 Suitable for heating, ventilation, air
 conditioning, refrigeration, building
 automation etc.



HEM series multi-turn electric actuator
 LCD display, Local/remote control operation
 selector, suitable for big size butterfly valves,
 ball valves, globe valves, Gate valves etc.

HAT series rack and pinion pneumatic actuator
 Maximum torque: 9340Nm



HEQ series electric actuator
 New optimized design, high enclosure
 protection, low noise, Double anti-condensation ,
 independent control unit.

Electric valves series
 Butterfly valves, ball valves, gate valves,
 regulating valves, etc. with different pressure
 class, mounting bases and operation methods.

