



Linear Electric Actuator

**HEQ** B Type S Type  
Valve Electric Actuator



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Provider of  
**control valve**  
 system  
 solutions

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## Company Profile

Wenzhou Heli Automatic Meter Co., Ltd is established in 2003Y, with a registered capital of 51.88 million CNY, construction area of 23,000 square meters, more than 100 employees. Heli is professional in develop, manufacture and sale electric acatuator, pneumatic actuator, air damper, electric valve, penumatic valve. Heli is a modern factory with dozens of utility models patents, invention patents and software copyrights, has won many honors in China.

Heli insist in the quality of product, promote innovation management continuous improvement. Heli has all kinds of advanced testing equipment and manufacturing equipment, including three-coordinate measuring instrument, mobile spectrometer, gear measuring center, meshing instrument, etc. The manufacturing equipment includes robot processing production line, numerical control gear hobbing machine, numerical control gear shaper, numerical control machining center, numerical control drilling and tapping center, numerical control lathe, and intelligent assembly line connected with the cloud, etc. The company fully implements ISO9001 quality system and 6S management policy and organizes operation and production; The products have obtained a series of certificates and formal recognition from DNV, EAC, CE, RoHS, SIL, ATEX, CNEX, 3C, IP67, IP68, etc.

Keep pace with the times, blaze new trails, keep improving, be pragmatic and seek truth, Heli strives to solve you worry.



# HEQ

## B Type

### Valve electric actuator

Heli Automatic Meter  
Focus on R & D and manufacturing of valve actuators



#### Type Specification (Type B)

HEQ3 - 06 - B1K4 - E4 (aS1 - L40)

- Stroke : 40mm
- Voltage color
- Enclosure protection , E4 : Ex db II C T6 Gb , E0 : Non-EX
- Controls type : B1K4, B1K2, B1K5, B1K9, B2K9
- Torque : 60NM ( Number×10NM )
- Item : HEQ2, HEQ3

#### Product Overview

HEQ B type series linear valve electric actuators is the derivative of our company HEQ series products. It has the characteristics of compact structure, reliable performance, easy to operate, etc., suitable for small diameter, small torque valve. This series of products is divided into explosion-proof type and non-ex type.

Explosion-proof valve electric actuator conforms to GB/T 3836.1-2021, GB/T 3836.2-2021, GB/T 3836.31-2021 , Explosion-proof marks : Ex db IIC T6 Gb, Ex tb IIIC T80°C Db,

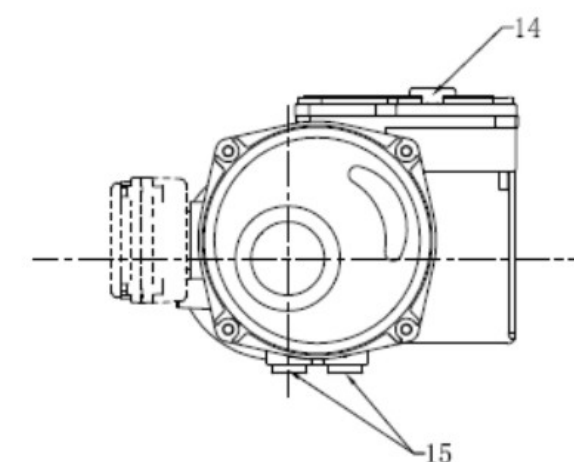
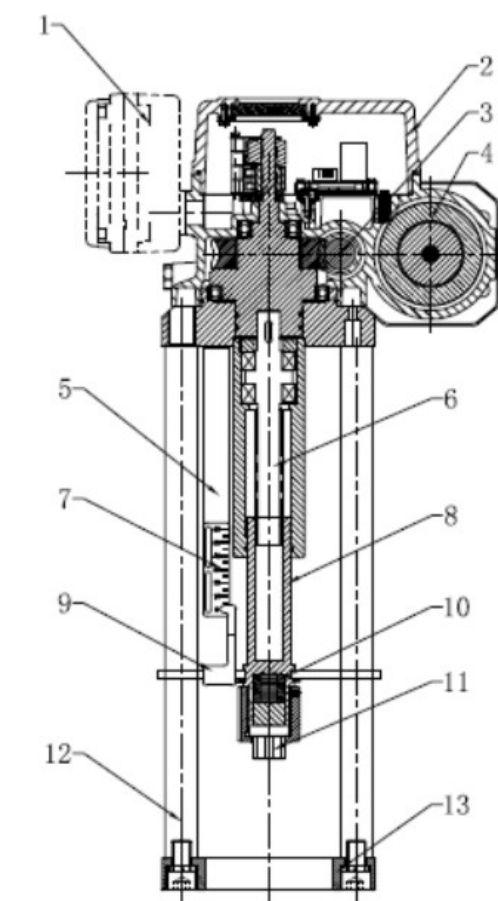


#### Work Environment

- Power Supply(optional)  
Three phase : AC380V, AC415V, AC440V ; ±10% 50/60Hz ;  
Single phase : AC110V, AC220V ; ±10% 50/60Hz ;  
DC24V±10%.
- Adjusting accuracy ±1%.
- Signal loss position setting: "hold", "full off", "full on" 3 optional.
- The product is outdoor type, and its protection grade is IP67.
- Ambient temperature: (explosion-proof type)-25~50°C, (non-explosion-proof type)-25~70°C; Ambient relative humidity no more than 90% (25°C).
- Work duty: 1200 times/h S4-40%.

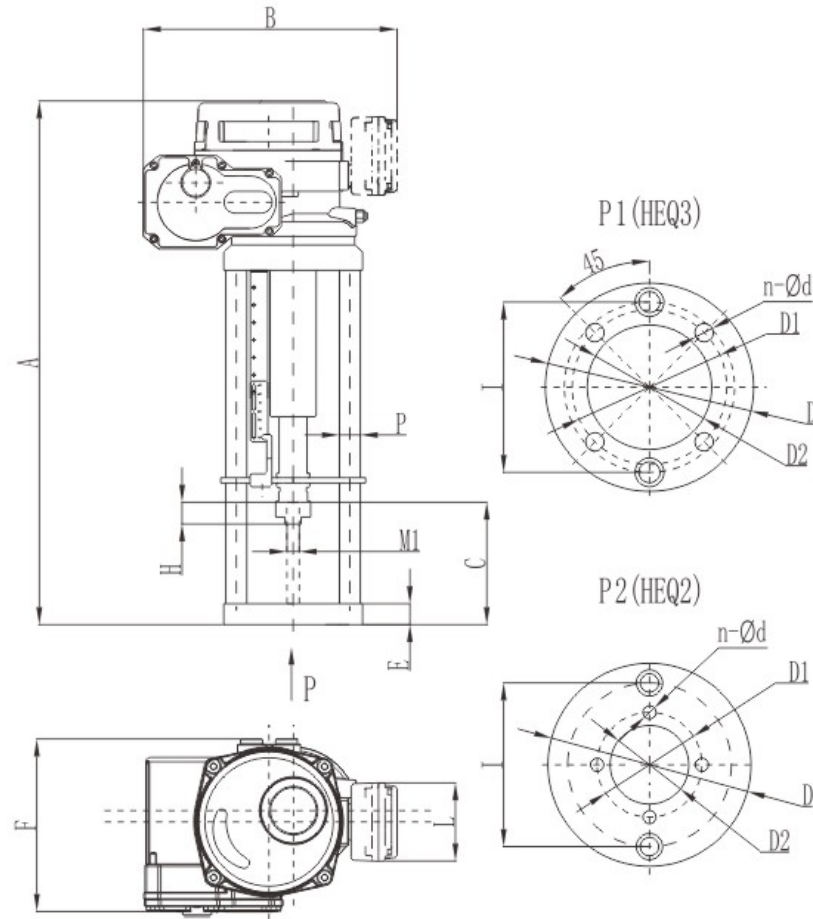
#### Product Structure

- (1) Modulating Electrical box
- (2) Case cover
- (3) Worm
- (4) Motor
- (5) Grading board
- (6) Travel drive screw
- (7) Scale
- (8) Transmission copper nut
- (9) Pointer
- (10) Disc spring
- (11) Connecting sleeve (with valve stem)
- (12) Support pin
- (13) Flange (with valve) platform connection
- (14) Manual cover
- (15) Cable connector 2pcs M20\*1.5



## Product Dimension

HEQ2~3 Overall dimension (dotted line is modulating electrical box, on/off type without this part)



Point C is the lowest point for product shutdown!

Model	Size	A	B	B1	B2	C	D	D1	D2	n-d4	E	F	L	H	P	M1
HEQ2-03		468	182	131	120	95	155	80	60	4-Ø10	24	156	120	25	24	M10
HEQ2-04		468	182	131	120	95	155	80	60	4-Ø10	24	156	120	25	24	M10
HEQ3-06		535	255	171	131	130	159	105	80	4-Ø12	24	201	120	25	24	M12*1.25
HEQ3-10		615	255	171	131	140	159	118	95	4-Ø14	24	201	120	25	24	M16*1.5
HEQ3-16		650	255	171	131	175	159	130	100	4-Ø18	24	201	120	25	24	M20*1.5
HEQ3-20		650	255	171	131	175	159	130	100	4-Ø18	24	201	120	25	24	M20*1.5

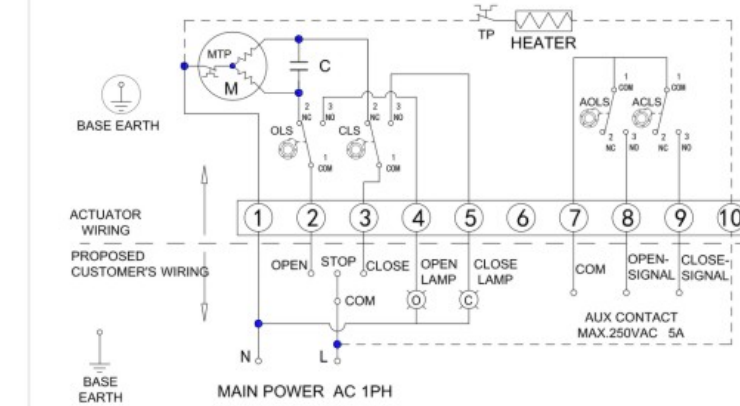
### Technical Parameter

Model	Parameter	Output thrust (N)	Running time (mm/s)	Motor power (W)	Stroke (mm)	Rated Current (A)				Weight (Kg)
						AC380V	AC220V	AC110V	DC24V	
HEQ2-03		3000	1.0	25W	≤40	0.13A	0.32A	0.55A	2.1A	16
HEQ2-04		4000		30W		0.17A	0.37A	0.71A	2.7A	
HEQ3-06		6000	1.2	60W		0.25A	0.5A	1.0A	6.8A	
HEQ3-10		10000		90W		0.38A	0.75A	1.5A	—	
HEQ3-16		16000	0.83	90W		0.38A	0.75A	1.5A	—	
HEQ3-20		20000		120W		0.55A	1.1A	2.3A	—	

Note: The product is equipped with modulating electrical box weight plus 1kg.

## Wiring Drawing

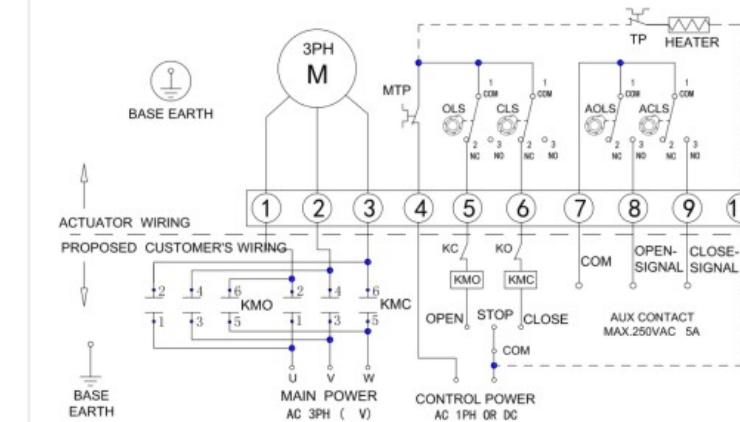
### B1K4 : Base on/off type(single phase)



Terminal wiring description:

- terminal 1 connected to the power supply neutral line;
  - When the power phase line and terminal 2 are connected, the operation is "on", and the operation stops after the stroke switch OLS, while terminal 2 and terminal 4 are connected;
  - When the power phase line and terminal 3 are connected, the operation is "off", and stops after the CLS action of the stroke switch, while terminal 3 and terminal 5 are connected;
  - Terminal 7 is the common end of passive signal contact, "on" operation in place with terminal 8, "off" operation in place with terminal 9 connected;
  - Terminal 10 is the wiring end of the heating dehumidifier.
- Can not use two or more electric devices in parallel, otherwise the switch may not be in place or the motor overheating phenomenon

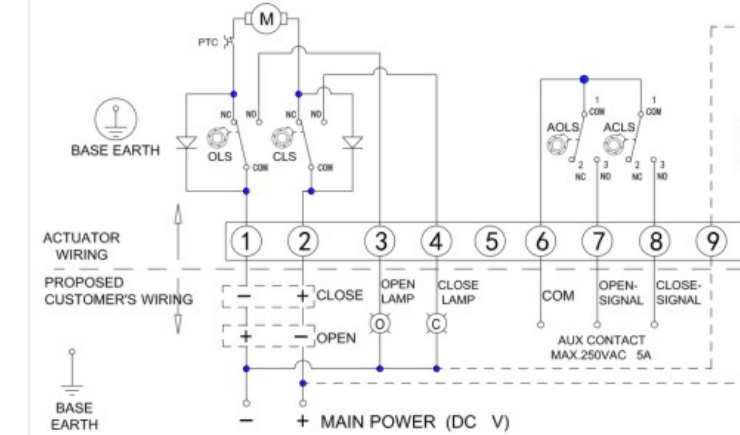
### B1K2: Base on/off type(three phase)



Terminal wiring description:

- terminals 1, 2, 3 connected to the threephase power supply after the inverter circuit;
- Terminal 4 is the common end of the control circuit;
- Terminal 5 is "open" operation control, to the stroke switch OLS action, terminal 5 and terminal 4 disconnect;
- Terminal 6 is "off" operation control, when the stroke switch CLS action, terminal 6 and terminal 4 disconnect;
- Terminal 7 is the common end of the passive signal contact, and the "on" operation is connected with terminal 8, and the "off" operation is connected with terminal 9;
- Terminal 10 is the wiring end of the heating dehumidifier.

### B1K4 :Base on/off type(DC power)

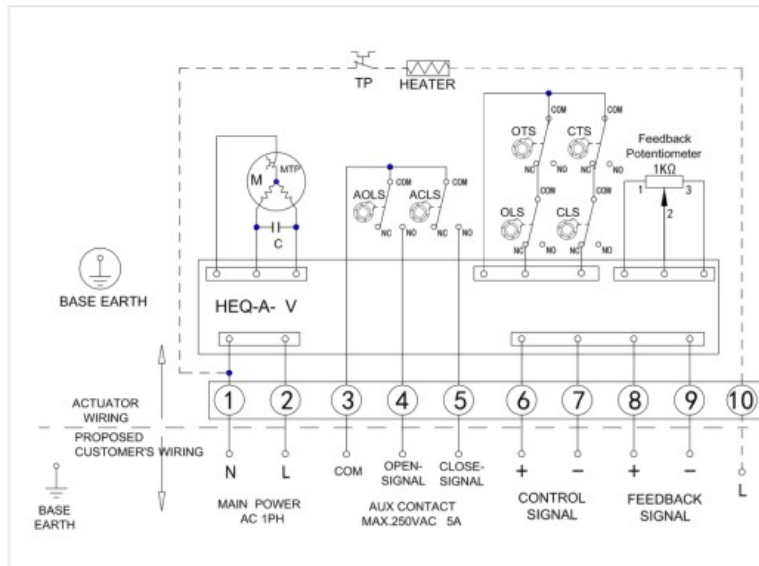


Terminal wiring description:

- When terminal 1 is connected to the positive terminal of the power supply and terminal 2 is connected to the negative terminal of the power supply, run in the "on" direction and stop when the travel switch OLS is activated. At the same time, terminal 1 and terminal 3 are connected;
- when terminal 1 is connected to the negative terminal of the power supply, terminal 2 is connected to the positive terminal of the power supply, the "off" direction of operation, until the stroke switch CLS action stops, and terminal 2 and terminal 4 are connected;
- Terminal 7 is the common end of the passive signal contact, and the "on" operation is connected with terminal 8, and the "off" operation is connected with terminal 9;
- Terminals 9 and 10 are the wiring ends of the heating dehumidifier.



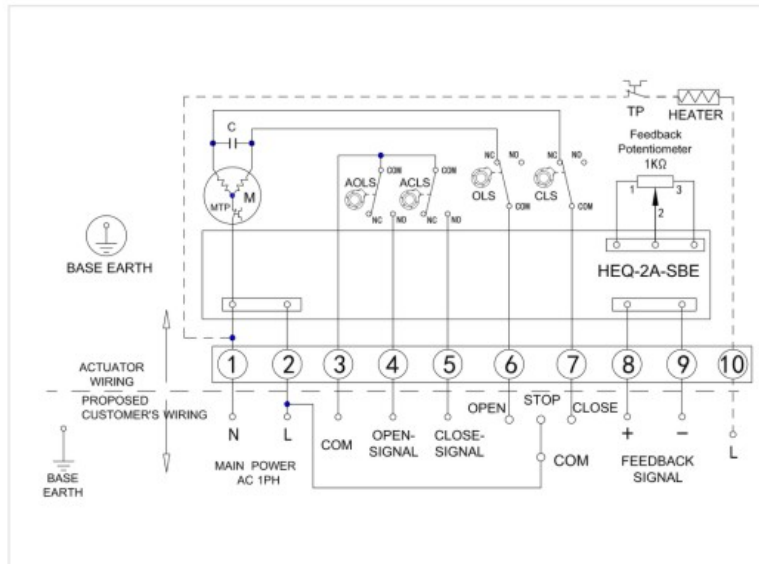
## Wiring Drawing



### B2K9 (B2K8) : Basic Modulating (single-phase power)

Terminal wiring description:

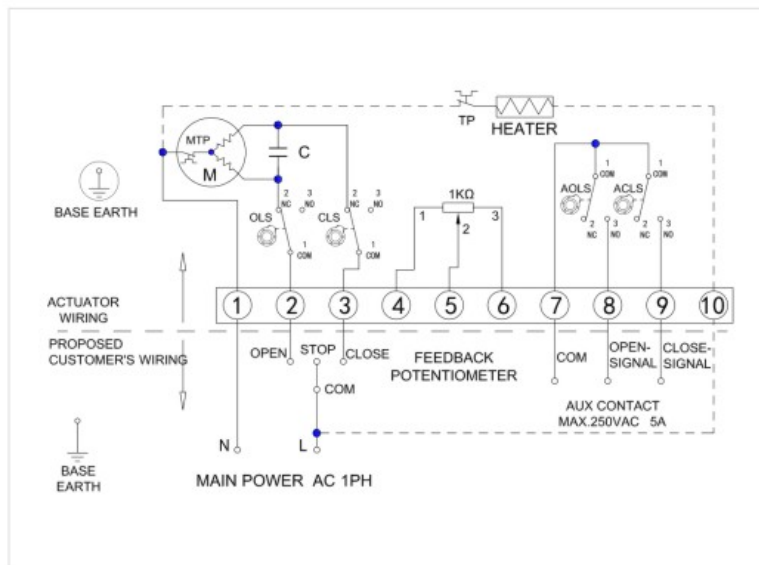
- terminal 1, 2 connected to the power supply neutral line, phase line;
- input control signal "+" connect terminal 6, "-" connect terminal 7;
- output feedback signal "+" connect terminal 8, "-" connect terminal 9;
- Terminal 3 is the common end of the passive signal contact, and the "on" operation is connected with terminal 4, and the "off" operation is connected with terminal 5;
- Terminal 10 is the wiring end of the heating dehumidifier.



### B1K9 : Position transmitter (single phase power supply)

Terminal wiring description:

- terminal 1, 2 connected to the power supply neutral line, phase line;
- When the power phase line and terminal 6 are connected, the operation is "on", and the operation stops after the stroke switch OLS;
- When the power phase line and terminal 7 are connected, the operation is "off", and the operation stops after the stroke switch CLS is activated;
- output feedback signal "+" connect terminal 8, "-" connect terminal 9;
- Terminal 7 is the common end of the passive signal contact, and the "on" operation is connected with terminal 8, and the "off" operation is connected with terminal 9;
- Terminal 10 is the wiring end of the heating dehumidifier.



### B1K5 : Position transmitter (single phase power supply)

Terminal wiring description:

- terminal 1 connected to the power supply neutral line;
- When the power phase line and terminal 2 are connected, the operation is "on" and the travel switch is reached OLS stop after action;
- When the power phase line and terminal 3 are connected, the operation is "off" and stops after the CLS action of the stroke switch;
- terminal 5 is the potentiometer boom;
- Terminal 4 is the low end of the potentiometer, and the resistance between terminals 4 and 5 runs in the "on" direction
- Terminal 6 is the high-end of the potentiometer, and the resistance value between terminals 5 and 6 decreases when running in the "on" direction;
- Terminal 7 is the common end of the passive signal contact, "open" when running in place Connect 8, and connect terminal 9 when "off" is in place;

# HEQ S Type

## Valve electric actuator

Heli Automatic Meter  
Focus on R & D and manufacturing of valve actuators

HELI 合力®



### Type Specification (Type S)

HEQ3 - 06 - S2K9 - E0 (a B1 - L40)

- Stroke : 40mm
- Color : Black
- Voltage : AC220V
- Enclosure protection , E4 : Ex db II C T6 Gb , E0 : Non-
- EXControls type : B1K4, B1K2, B1K5, B1K9, B2K9
- Torque : 6000NM(NO.x1000NM)
- Item : HEQ2, HEQ3

### Product Overview

HEQ Series S type intelligent linear valve electric actuators with digital integrated chip, absolute encoder, English operation menu and display, simple adjustment, easy operation, high enclosure protection, high reliability, stable performance and other advantages, this series of valve actuators are the new generation of our company and can be used for driving and controlling the butterfly valves, ball valves and plug valves.(part-turn valves with 90°movement),with the functions of local control and remote control both, they are widely used in the fields such as oil ,chemistry, power generation, water treatment, paper making, etc

S type intelligent valve electric actuators with non-intrusive design, all electrical components are sealed inside of the aluminum body, operating by remote control or selector switches with magnetism to make the device control more accurate, move reliable.

IP67 enclosure protection.



## Product Feature

- English display operation menu, display valve position value, alarm information, operation status and mode, intuitive, easy to learn, easy to understand, easy to operate;
  - The absolute encoder replaces the traditional potentiometer as the position sensor to achieve arbitrary Angle positioning, no dead zone, higher control accuracy and longer life;
  - Function and parameter setting of electric device, through remote control or on-site twisting operation, no need to open the lid debugging, truly realize non-invasive design;
  - The control system of the electric device has automatic identification of phase sequence, phase break, overheating, overload protection, ESD emergency operation function;
  - A variety methods of control , on/off, modulating switch , remote switch a variety of wiring methods, can use dry control, two-line control, external voltage input control;
  - On-site keys and knobs adopt non-penetrating design to improve the sealing characteristics of the whole machine;
  - Provide programmable monostable relay, can be any configuration feedback signal, convenient DCS system to monitor DENso;
  - Set up electric device monitoring relay to provide comprehensive fault signal for DCS system;
- The input/output signal channels are photoelectric isolated and can withstand 2000V surge voltage.

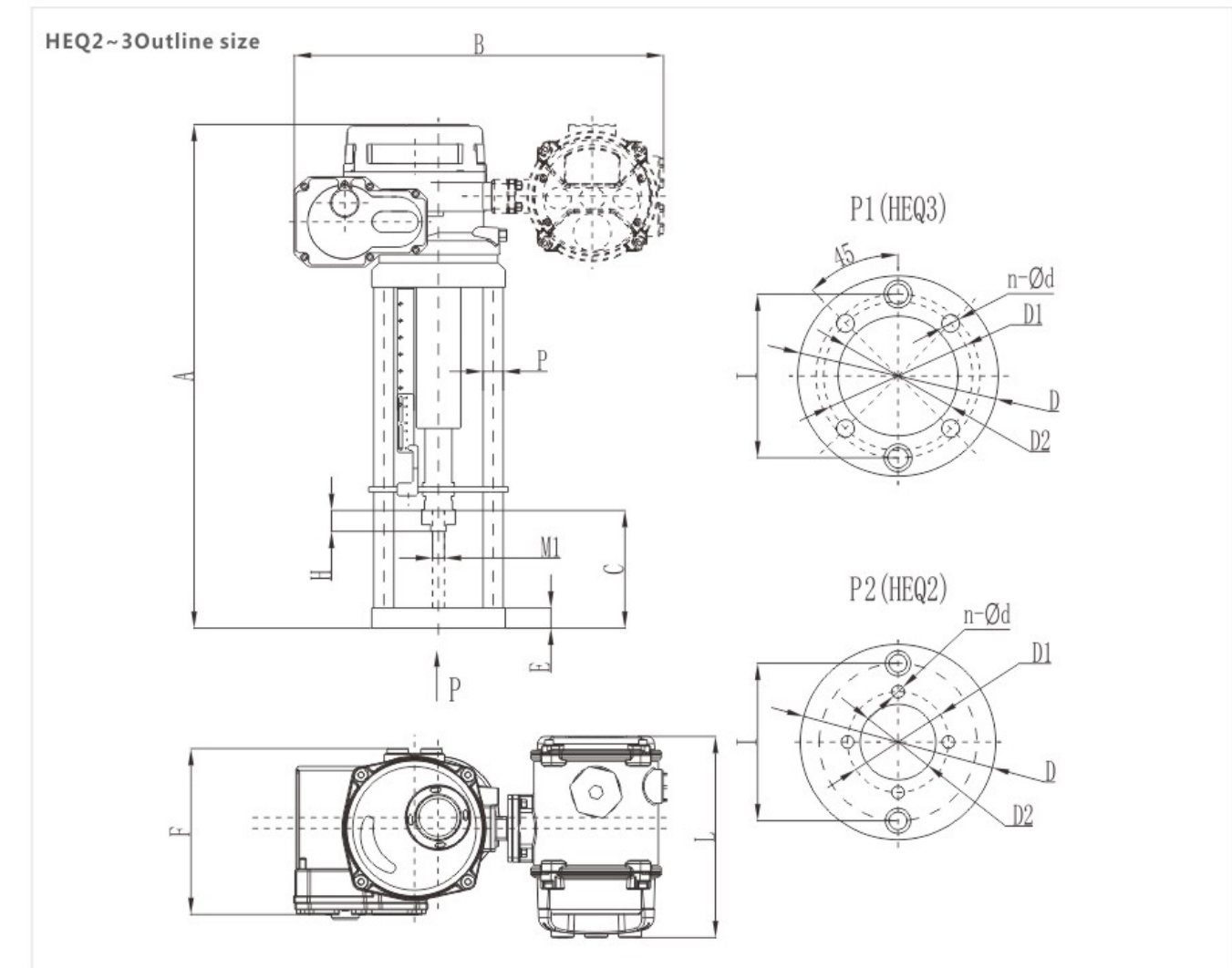
## Work Environment

- Power Supply(optional)  
Three phase : AC380V、AC415V、AC440V ; ±10% 50/60Hz ;  
Single phase : AC110V、AC220V ; ±10% 50/60Hz ;  
DC24V±10%.
- Adjusting accuracy ±1%.
- Signal loss position setting: "hold", "full off", "full on" 3 optional.
- The product is outdoor type, and its protection grade is IP67.
- Ambient temperature: (explosion-proof type)-25 ~ 50°C, (non-explosion-proof type)-25 ~ 70°C; Ambient relative humidity no more than 90% (25°C).
- Work duty: 1200 times/h S4-40%.

## Product Structure

- 
- (1) Electrical box
  - (2) Cable connector 2 NPT3/4
  - (3) Case cover
  - (4) Worm
  - (5) Motor
  - (6) Grading board
  - (7) Travel drive screw
  - (8) Scale
  - (9) Travel drive screw
  - (10) Pointer
  - (11) Disc spring
  - (12) Connecting sleeve (with valve stem)
  - (13) Support pin
  - (14) Flange (with valve) platform connection

## Product Dimension



Model	Size														
	A	B	B1	C	D	D1	D2	n-d4	E	F	L	L1	H	I	M1
HEQ2-03	468	392	131	95	155	80	60	4-Ø10	24	156	240	97	25	155	M10
HEQ2-04	468	392	131	95	155	80	60	4-Ø10	24	156	240	97	25	155	M10
HEQ3-06	535	445	171	130	159	105	80	4-Ø12	24	201	240	97	25	159	M12*1.25
HEQ3-10	615	445	171	140	159	118	95	4-Ø14	24	201	240	97	25	159	M16*1.5
HEQ3-16	650	445	171	175	159	130	100	4-Ø18	24	201	240	97	25	159	M20*1.5
HEQ3-20	650	445	171	175	159	130	100	4-Ø18	24	201	240	97	25	159	M20*1.5

### Technical Parameter

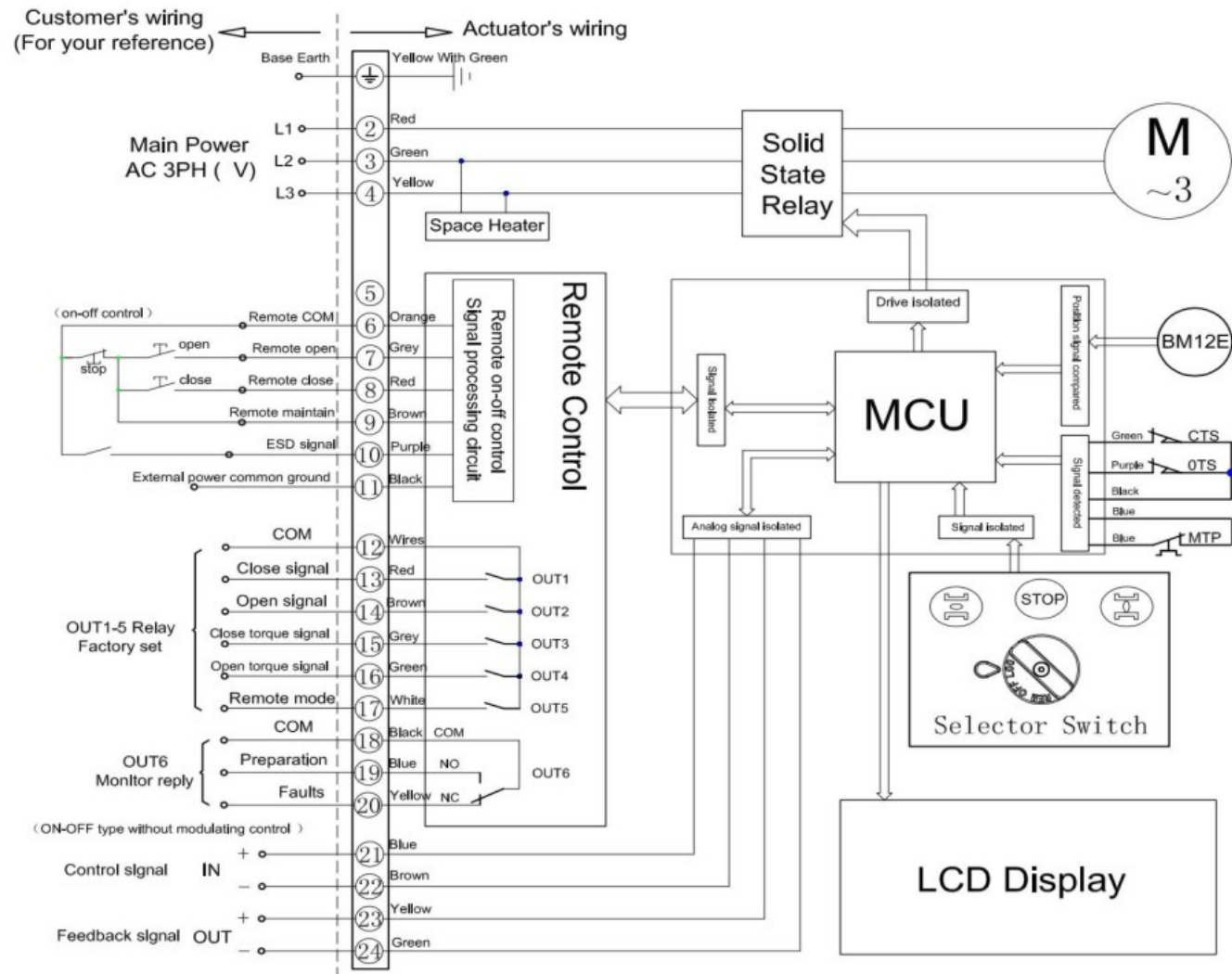
Model	Parameter	Output thrust (N)	Running time (mm/s)	Motor power (W)	Stroke (mm)	Rated Current (A)				HANDWHELL	Weight (Kg)
						AC380V	AC220V	AC110V	DC24V		
HEQ2-03		3000		25W	≤40	0.13A	0.32A	0.55A	2.1A	Optional	16
HEQ2-04		4000	1.0	30W		0.17A	0.37A	0.71A	2.7A		
HEQ3-06		6000		60W	≤60	0.25A	0.5A	1.0A	6.8A	Optional	25.9
HEQ3-10		10000	1.2	90W		0.38A	0.75A	1.5A	—		
HEQ3-16		16000		90W	—	0.38A	0.75A	1.5A	—	Optional	26.3
HEQ3-20		20000	0.83	120W		0.55A	1.1A	2.3A	—		

Note: The product is equipped with modulating electrical box weight plus 1kg.

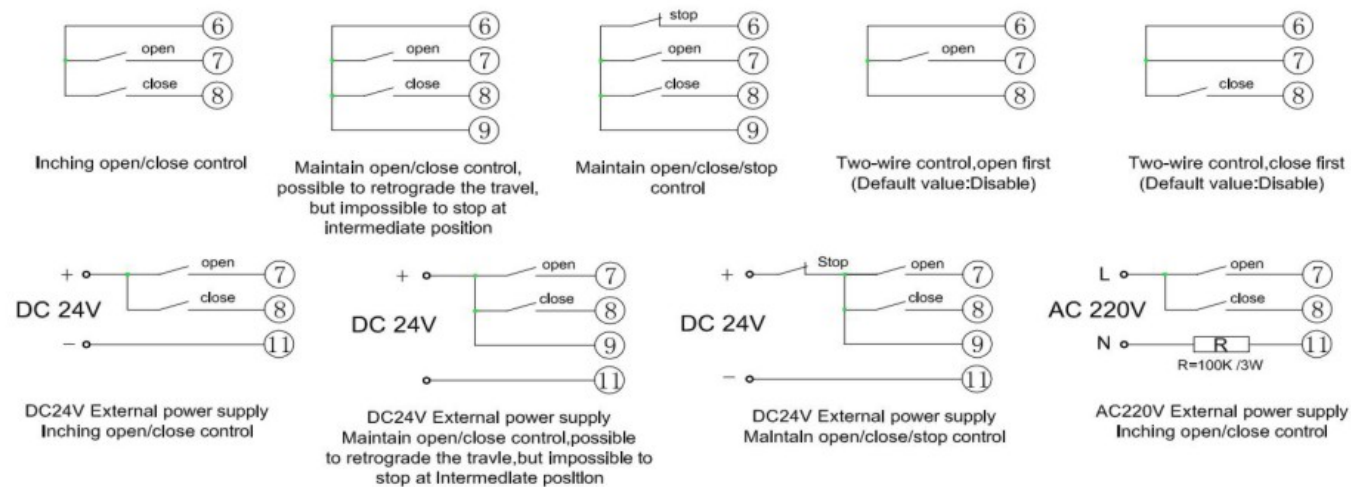


# Electrical Control Schematic Diagram

HEQ3 Wiring Drawing Of Intelligent S type (3PH,AC380V/415V/440V)

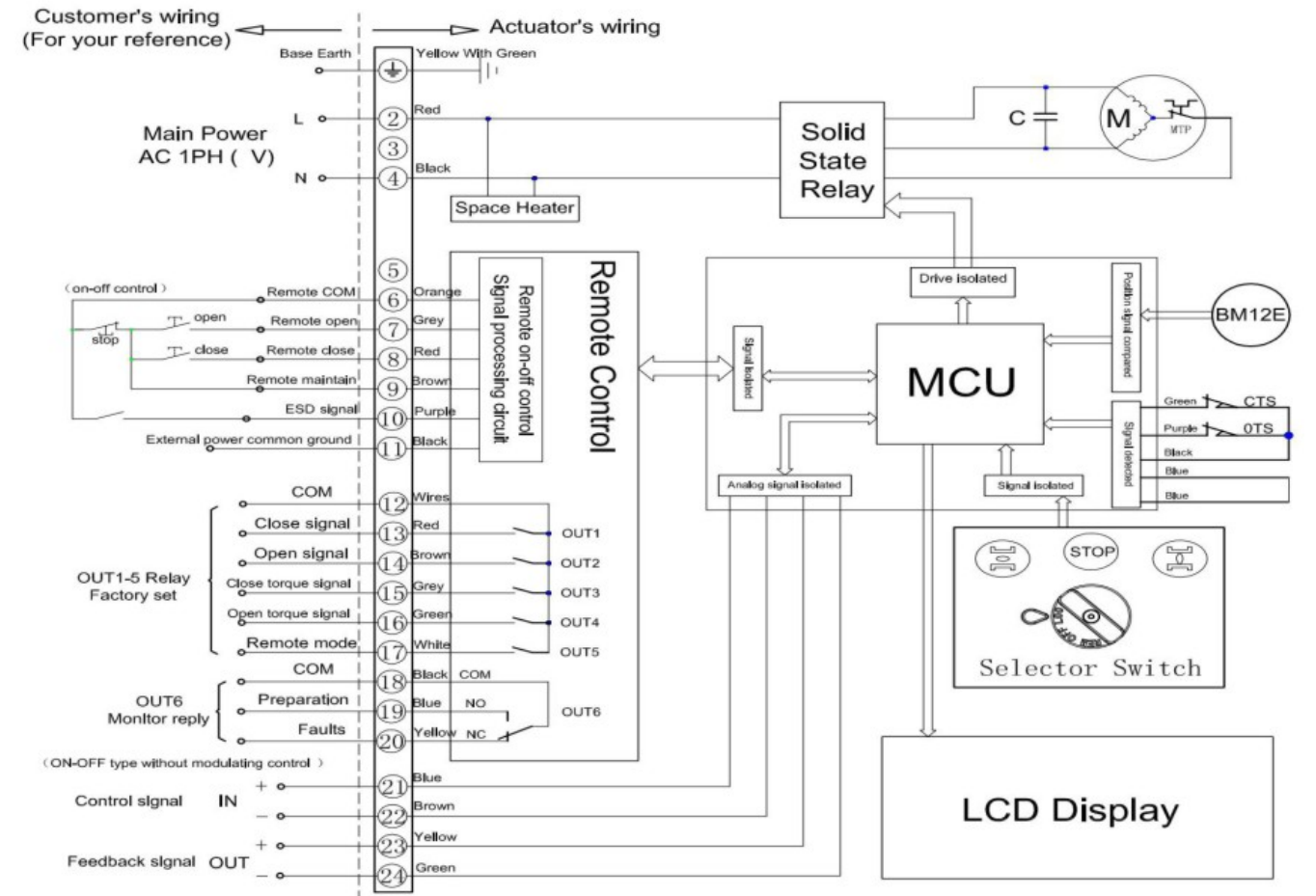


## Remote on-off (Manual) control

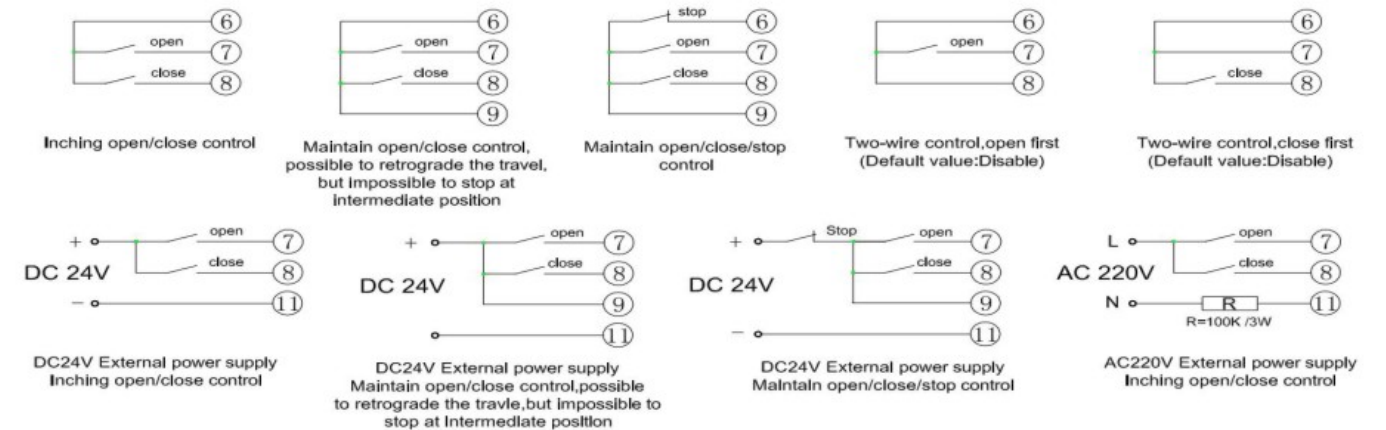


# Electrical Control Schematic Diagram

HEQ3 Wiring Drawing Of Intelligent S type (1PH,AC220V/110V)

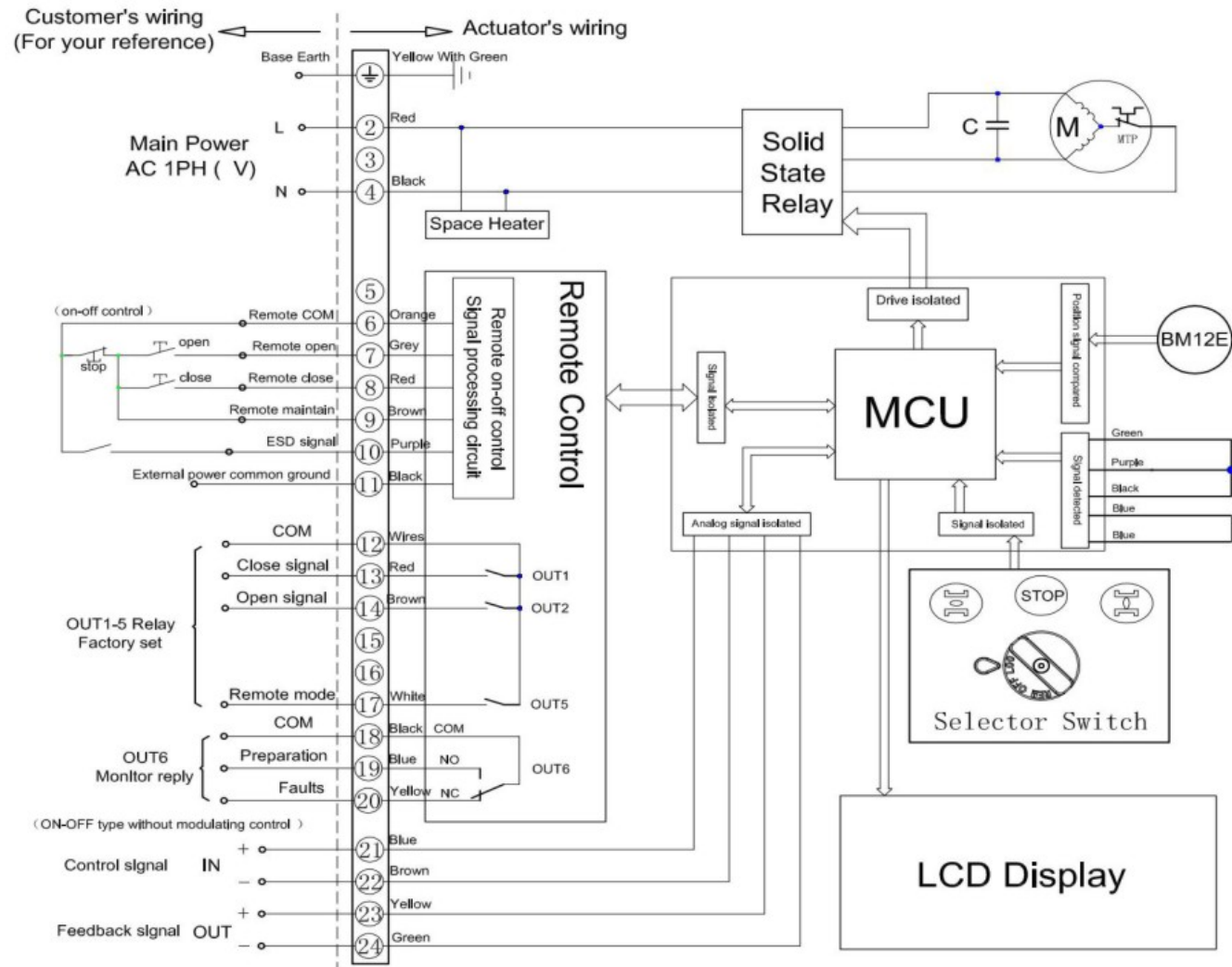


## Remote on-off (Manual) control



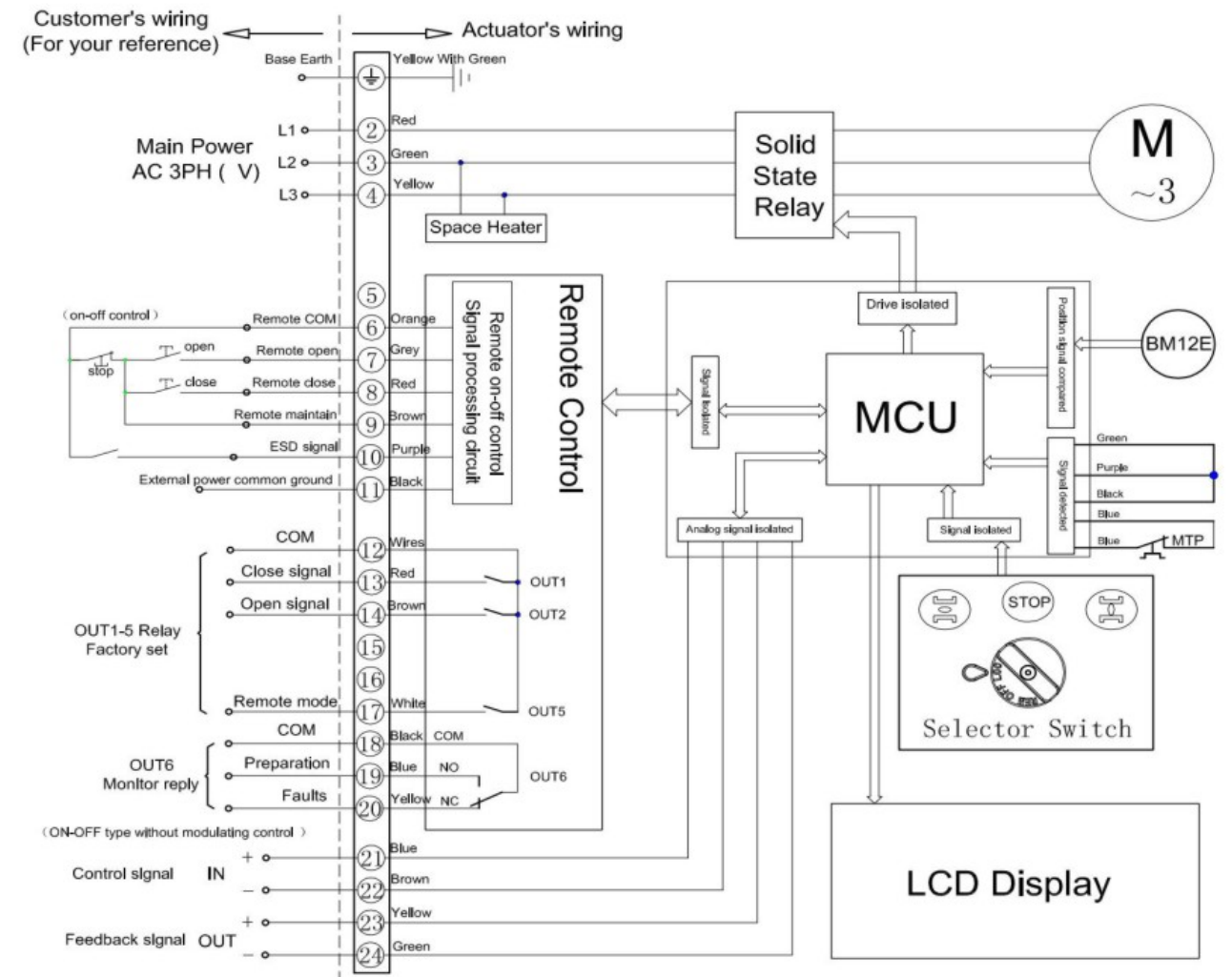
# Electrical Control Schematic Diagram

HEQ2 Wiring Drawing Of Intelligent S type (1PH,AC220V/110V)



# Electrical Control Schematic Diagram

HEQ2 Wiring Drawing Of Intelligent S type (3PH,AC380V/415V/440V)



## Remote on-off (Manual) control

## Remote on-off (Manual) control

