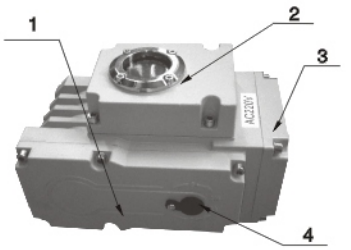
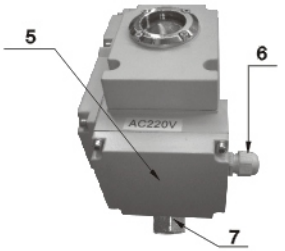
HETENG ®

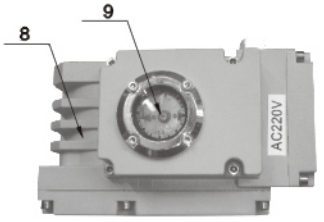
电动执行机构
Electric actuator

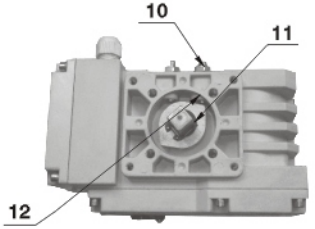
上海和腾机械有限公司

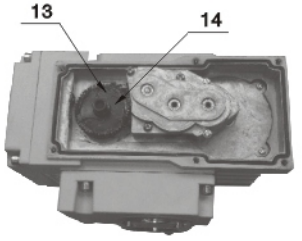
目 录 LIST

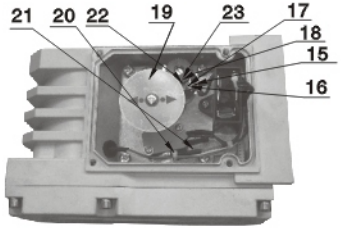








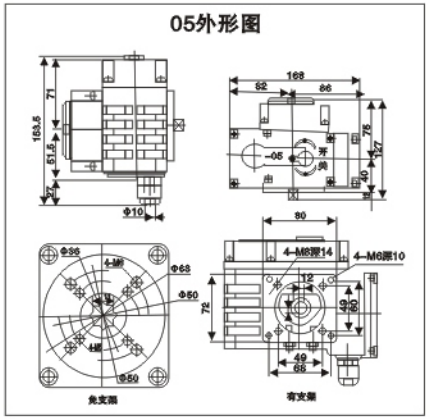




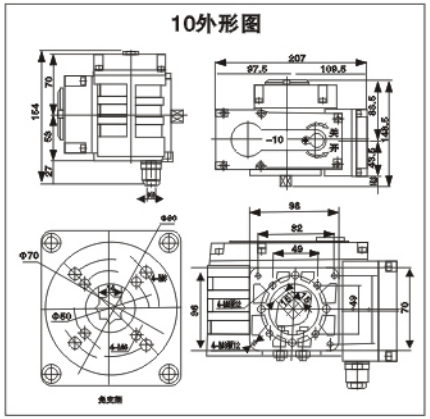
1	驱动盖 Drive cover	2	电装盖 Denso Covers	3	制御盖 Meke and resist covering	4	手动操作口 Manual handle hole
5	铭牌 Chromium card	6	进出线线锁 In and out line wire lock	7	输出轴 Output shaft	8	箱体 Case
9	开度计 Degree gauge	10	锁紧螺母 Locknut	11	机械限位挡块 Meachanical limited Location block	12	调整螺钉 Adjust screw
16	蜗杆轴 Worm shaft	14	减速齿轮组 Bookgeared gear Wheel group	15	电位器齿轮 Potentometer gear	16	电位器安装板 Potentometer mount plate
17	拉簧 Extension spring	18	电位器 Potentometer	19	指针 Neddle	20	行程挡块 travel block
21	微动开关 Sensitive switch	22	辅助轴电位器 Potentiometer of the auxiliary axle	23	开度齿轮 Turn on one digree of gear	24	标度板 Graduation board

S(SHUT)箭头方向（顺时针）代表关闭　　O(OPEN)箭头方向（逆时针）代表开启
The direction arrow S(SHUT)point(clockwise)show close　The direction arrow O(OPEN) point(anclockwise)show open

05外形图

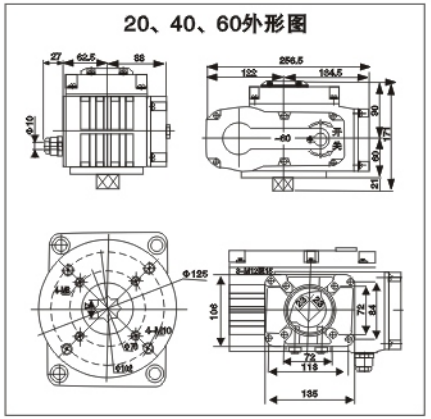


10外形图

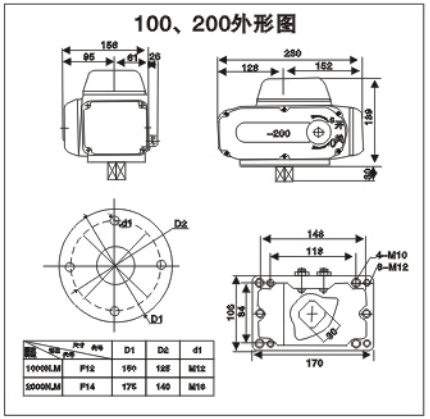


性能 Performance / 机型 type	008	05	10
输出力矩 Export torque	0.6N · M	50N · M	100N · M
90° 动作时间 90° motiom time	7S	20S/60S	30S/60S
回转角度范围 Turn around angle scope	0~90°	0~360°	0~90°
电机功率 Machine	10W	15W	25W
整机重量 Machohine	0.5kg	2kg	3kg
电源 Power source	AC110V、AC220V、AC380V、DC24V		
绝缘电阻 Monconducting resistance	100M/500VDC		
耐压等级 Resist pressure rank	1500VAC 1分钟 1min		
防护等级 Protection rank	IP66、67		
安装方位 Install position	360° 任意角度安装 360° arbitrary angle install		
电气接口 Electric interface	G 1/2防水电缆接头、电源线、信号线各一个 G1/2 Waterproof cable fitting 、power line signal line each one		
环境温度 Environmental temperature	-30℃~+60℃		
控制电路选项 The control circuit selects	A型：极限位置开关（标准型）S型：带电位器 R型：带电位器 A type:Terminal position switch(standard type) S type:Take the potentiometer R type:Take the potentiometer Rs型：带电位器和中间位置开关 P型：带伺服控制器（调节型）F型：带RI变换器 Rstype:Take the potentiometer and middle position switch P type. Take the servo controller(regulating type)		
任选功能 Optional function	◆除湿加热器 ◆不锈钢支架、联轴器 ◆Dehumidificatior heater ◆Stainless steel support,shaft coupling		

20、40、60外形图



100、200外形图



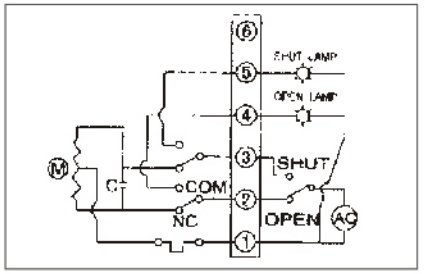
性能 Performance / 机型 type	-20	-40	-50	-60	-100	-200	DQF
输出力矩 Export torque	200N · M	400N · M	500N · M	600N · M	1000N · M	2000N · M	500N · M
90° 动作时间 90° motiom time	30S/60S	30S/60S	30S/60S	30S/60S	30S/60S	30S/60S	2S
回转角度范围 Turn around angle scope	0 ~ 90°	0 ~ 90°	0 ~ 90°	0 ~ 90°	0 ~ 90°	0 ~ 90°	90°
电机功率 Machine power	45W	60W	90W	90W	120W	120W	60W
整机重量 Machchine weight	8kg	8.5kg	9kg	9kg	17kg	18kg	35kg
电源 Power source	AC110V、AC220V、AC380V、DC24V						
绝缘电阻 Monconducting resistance	100M/500VDC						
耐压等级 Resist pressure rank	1500VAC 1分钟 1min						
防护等级 Protection rank	IP65、67						
安装方位 Install position	360° 任意角度安装 360° arbitrary angle install						
电气接口 Electric interface	G 1/2防水电缆接头、电源线、信号线各一个 G1/2 Waterproof cable fitting 、power line signal line each one						
环境温度 Environmental temperature	-30℃~+60℃						
控制电路选项 The control circuit selects	A型：极限位置开关（标准型）B型：带电位器 C型：带电位器 A type:Terminal position switch(standard type) B type:Take the potentiometer C type:Take the potentiometer CB型：带电位器和中间位置开关 E型：带伺服控制器（调节型）F型：带RI变换器 Retype:Take the potentiometer and middle position switch E type: Take the servo controller(regulating type)						
任选功能 Optional function	◆除湿加热器 ◆不锈钢支架、联轴器 ◆Dehumidificatior heator ◆Stainless steel support,shaft coupling						

调节型（E型）整机性能指标
Regulating type(E type)complete machine performance ides

机型 type / 性能 Performance	05E	10E	20E	40E
输出力矩 Export torque	50N·M	100N·M	200N·M	400N·M
90°动作时间 90° motion time	20S	30S/60S	30S/60S	30S/60S
回转角度范围 Turn around angle scope	0～90°	0～90°	0～90°	0～90°
电机功率 Machine power	15W	25W	45W	60W
整机重量 Machine weight	2kg	3kg	6kg	6.5kg
电源 Power source	AC220V、AC110V、AC380V			
输入信号 Monconducting resistance	4～20mADC、1～5VDC			
输出信号 Output signa	4～20mADC			
基本误差 Basically erro	不超过±0.5% no exceed ±0.5%			
回差 Lack of	小于0.3%			
死区 Dying area	0.1%～1.6%可调 0.1%-1.6% tunable			
阻尼特性 Damping feature	0次			
机构重复性误差 Organization' s repeated error	0%			

机型 type / 性能 Performance	60E	100E	200E
输出力矩 Export torque	600N·M	1000N·M	2000N·M
90°动作时间 90° motion time	45 S	50S	100S
回转角度范围 Turn around angle scope	0～90°	0～90°	0～90°
电机功率 Machine power	90W	120W	120W
整机重量 Machine weight	9.0kg	17kg	18kg
电源 Power source	AC220V、AC110V、AC380V		
输入信号 Monconducting resistance	4～20mADC、1～5VDC		
输出信号 Output signal	4～20mADC		
基本误差 Basically erro	不超过±0.5% no exceed ±0.5%		
回差 Lack of	小于0.3%		
死区 Dying area	0.1%～1.6%可调 0.1%-1.6% tunable		
阻尼特性 Damping feature	0次		
机构重复性误差 Organization' s repeated error	0%		

接线图
Wiring diagrm



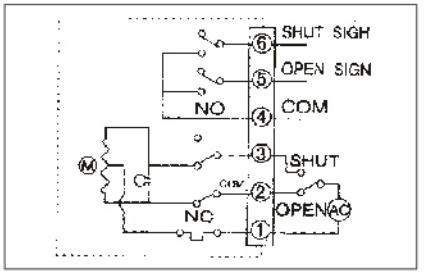
1 开关型A型
Switch type

开关型（ A型 ）线路图
switch type (standard) circuit diagram

电源：AC220V、AC110V、AC24V

极限位置开关（标准型）功能全开、全闭极限位置开关操作。

Limit location switch (standard) function: Fully open, fully close



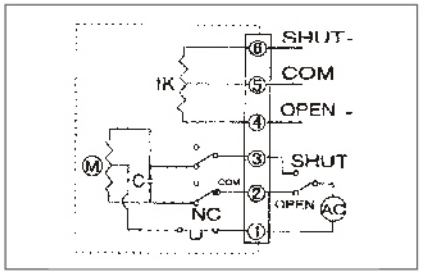
2 无源触点B型
Passive contact stype

无源触点型（ B）线路图
passive contact (B) circuitry chart art

电源：AC220V、AC110V、AC24V

带中间位置开关功能，通过开关电路实现中间位置限制或接受无源程序开关实现阀门开和关。结构一带有两个中间位置开关。

With the on-off function in the middle location, through the on-off circuit to restrict the middle location or accept the passive program switch to realize the open and close of the valve. Structure with two middle switches.



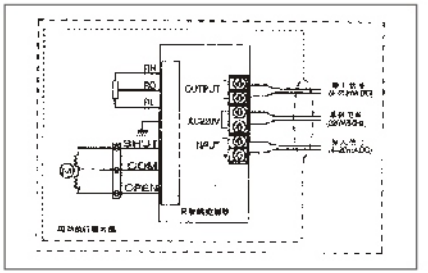
3 开度C型
shutter meter C type

开度信号型（C）线路图
shutter meter signal(P) circuitry chart

电源：AC220V、AC110V、AC24V

带电位器一功能：通过开关电路控制阀门开启角度与电位器阻值对应。结构一带500Ω或1000Ω电位器。

With potentionmeter--function: Via the switch circuit to control the open amgle of the valve to match the resistance range of the potentiometer.Structure--with 500Ω or 1000Ω potentiometer



4 智能调节E型
integration regulating type

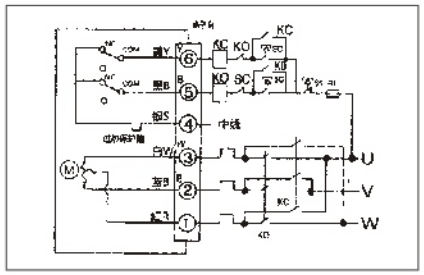
智能调节型接线示意图

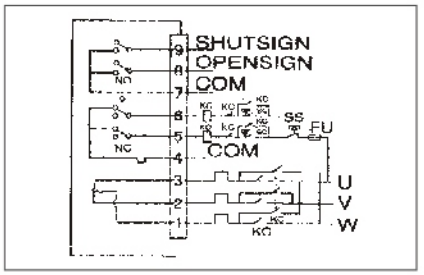
Connection wiring diagram of intelligent regulating type electric actuator

电源： AC220V

带控制模块（智能型或电子式）功能：调节作用，输入4-20mA或1-5VDC，输出4-20mA，带控制模块和1KΩ（或是5KΩ）电位器。

With control mould (intelligent or electtonic) .Function: regulating, input 4-20mA or 1-5VDC, output 4-20mA, with control mould and 1KΩ or 5KΩ potentiometer.





5 三相交流开关型A型
Three phase AC switch type

AC380V标准线路图
AC380V standard circuitry chart

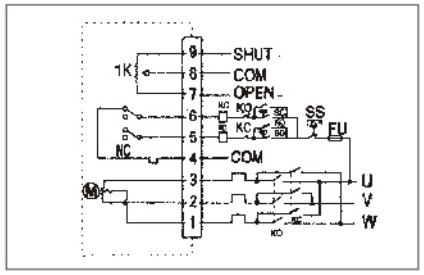
电源：AC380V

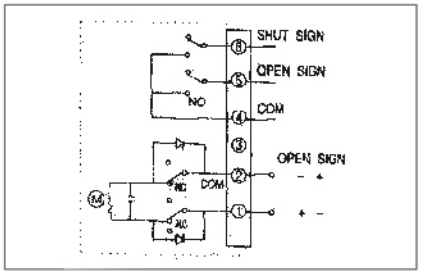
极限位置开关（标准型）功能全开、全闭极限位置开关操作。
Limit location on-off(standard) standard-sized sheet shut completely limit location on-off handle

6 三相交流无源触点B型
Three phase AC passive connect type

AC380V 无源触点型（B）线路图
AC380V passive contact(B)circuitry chart
电源：AC380V

特征：通过外部电路控制，实现控制电路换相，使阀门电动执行器开启、关闭，同时输出一组无源触点信号。
Feature: Through controlling the exterior circuit to realize the circuit commutation and make the electric actuator open and close, meanwhile, export a group passive contact signal





7 三相交流开度C型
Three phaseACshutter meter R type

AC380V开度信号型（R）线路图
AC380V Position signal (R) circuitry chart
电源：AC380V
带电位器一功能：通过开关电路控制阀门开启角度与电位器阻值对应。结构一带500Ω或1000Ω电位器。
With potentiometer-function: through the switch circuit to control the open angle of the valve to match the resistance of thepotentiometer.Structure-with 500Ω or 1000Ω potentiometer.

8 直流电机（DC）控制型
DC motor controlling type

直流线路图
Direct-current circuitrychart
电源：DC24V
特征：通过外部电路控制，实现直流电源正、负极切换，使阀门电动执行器开启、关闭。同时输出一组无源触点信号。
Feature: Through the outside circuit to control the direct-current power supply exchanges between the positive pole and negative pole and then make the electric actuator open and close and output a group passive contact signal

1.常用普通阀门
Daily ordinary valve

电动执行机构型号 Type	额定输出扭矩N·M Amount exports The torsion	配套阀门 Related valve 软密封球阀PN1.6MPa Soft sealed ball valve	中线软密封碟阀PN1.0MPa Soft sealed butterfly's Valve of centre line	通风蝶阀PN<0.1MPa Ventilate butterfly's valve
008	0.6	≤20	≤25	
DQF	500	≤150	≤250	
05	50	DN25-40	DN50-65	DN50-80
10	100	DN50 65	DN80-100	DN100-200
20	200	DN80-100	DN125-150	DN250-300
40	400	DN125	DN200	DN350-DN450
60	600	DN150	DN250	DN500-600
100	1000	DN200	DN300	DN700-800
160	1600	DN250	DN350	DN900
200	2000	DN300	DN400-450	DN1000

注：以上配置仅供参考，具体以阀门生产商提供数据为准。
Note: The above is disposed and is only for reference.it is subject to that the valve manufacturer offers the data to be concrete

2.其它类型阀门
Other types valve

因阀门种类繁多，即使同种型号同种规格的阀门由于不同厂家生产工艺、质量水平、结构形式、阀体材质等的不同其扭矩指标各有不同，实际使用中，往往因为压力波动、介质类型、现场环境、工作特性等因素致阀门开启扭矩变化很大。因此，为确保电动执行机构工作稳定可靠，必须在选型上留有充分余裕。对系列电动执行机构，本公司要求选型时保留系数不低于1.3倍。
Because of valve being various in style, the same kind of type the same kind of valve because different producer production technology,quality level structural form of specification,valve body material,etc.different their tors on index have nothing in environment,performance characteristics cause the valve to open the torsion to change greatly.So,in order to guatantee it is reliable that thee.ectron e executive body works steadily,must leave nie abundantly;on the selecting type abundantly.To serial electronic executive bodies,our company demands to keep coefficient and is at least 1.3 times at the time of the time of the select ng type.

电动执行机构额定输出扭矩（N·M）
即：---------- ≥1.3
阀门带压（PN）测试扭矩（N·M）

3.选型举例
The selecting type example

有一只D73-25P DN65金属硬密封蝶阀，25kgf/cm 2.压力下测试的扭矩为93N·M，问配何种规格电动执行机构为宜?
There is a D73-25P DN65 metal hard sealed butterfly's valve,25kgf/cm 2.The torsion tested under the preseure is 93N·M,ask which kind of electronic executive body of specification is mixed?

解：按保留系数1.3倍考虑，则该台阀门所需的开启扭矩为93N·M x 1.3=120.9N·M。根据系列产品性能参数表，查得10，20型额定输出扭矩分别为100N·M、200N·M，虽然10型额定输出扭矩大于该台阀门的测试扭矩，但因为没有考虑保留系数，故不能选用，应当选用20型。
Solve:According to keep coefficient 1.3 consideration,whom the valve need open torsion:93N·M*1.3=120.9N·MAccording to the serial parameter forms of properties of product,check so that is 100N·M,200N·Mrespectively that 10,20 type amount export the torsion,though 10 type amount outputs the test torsion that the torsion is greater than thisvalve,because has not considered keeping coefficient,so can't select for use,should be elected using 20 typely.

1.安装环境要求
The requirement of installation environment

●本产品既可在室内安装，也可在室外安装。
This product can be installed indoors,can also install outdoors.

●本产品属非防爆产品，请注意避开易燃、易爆环境。
This product belongs to the non-anti-blast products,please pay attention to avoiding the flammable,explosive environment

●在长期有雨水、原料等飞溅物和阳光直射的环境，需要安装保护整台电动执行机构的防护装备。
In ther environemnt where have the rainwater、raw materials such splash thing and that shoot diresily of sunshine for a long time need to install the protective equipment for protecting whole Electric execute institution.

●请预留接线、手动操作等维修用空间。
Please reserve wiring,manual operation,ect.and maintain and use the space.

●周边环境温度-30℃--60℃范围内
Peripheral ambient temperature -30 is-in +60℃ range.

2.工作介质温度的要求
Requirement for the job medium temperature

●与阀门配套使用时，工作介质温度传到执行机构上面，执行机构温度会升高。
While using with the valve together,the job meoium emperature is passed tothe executive body,the temperature of executive body will rise

●工作介质是高温时，与阀门连接的支架起减少热传导的作用。
When the job medium is at a high temperature,the support connected with valve plays a role in reducing the heat conduction.

●工作介质温度60℃以下时请选用标准支架。
Please select the standard support for use when the job medium temperature is under 60℃.

●工作介质温度60℃以上时请选用高温支架。
More than 60℃ of job medium temperature please select the high-temperature support for use.

3.现场电线管、电缆线安装要求
The requirement of the electric wire tube、cable install on-the-spot

用电线管时，请按图(3)安装
When being in charge of electric wire,please install according to the picture(3).
①电线管外径是Φ9-Φ11的电缆。
A cable that the electric wire's external diameter is Φ3-Φ11.
②要充分采取防水对策。
Fully adopt the waterproof countermeasure
③执行机构应高于电线管，使电线管内水珠不至流进机构以确保其安全。
The executive body should be higher than the electric wire to manage,the drops of water are unlikely to flow into to hold the organization in order to guarantee its security in making the electric wire in change of.

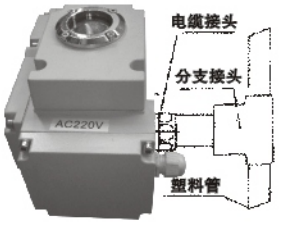


图3

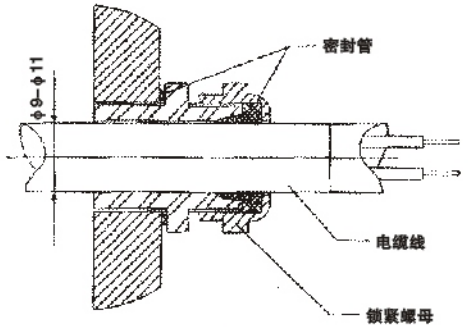


图4

用电缆时，其外径是φ9-φ11的电缆
A cable that the electric wire's external diameter is Φ9 φ11.

如图(4)一律不准使用与线缆直径不相适应的电缆，否则水可以从线锁进入执行机构内损坏所有内部零件。
Forold use with line lock diameter incompatiole cable without exception,otherwise water can lock and enter executive body to damage all internal parts from line

信号线原则上要使用屏蔽线，应当与动力线分开配线。
Signal line should use the shielding line in principle,should separate from line of motive force.

4.电源的要求
Requirement for the power

根据所订购机型使用电源的类型提供相应的现场供电。
Use the type of the power to offer the corresponding power supply live according to the orderad model.

对于现场的供电电源、电压应符合以下要求：
AC200V±10% 50/60HZ
AC110V±10% 50/60HZ
AC380V±10% 50/60HZ
24V±5%

5.断路开关保险丝的选用：
Exertion of the switch fuse of the broken circuit

安　电 机型　培　压	AC220V	AC110V	AC380V	DC24V
05	2A	3A	1A	5A
10	3A	5A	2A	7A
20、40、60	5A	7A	3A	15A
100、200	7A	10A	5A	20A

电动执行机构与阀体的安装(图5)

1.手动转动阀门，检查无异常情况，并使阀门处于全闭位置。
Rotate the valve manually,and make sure have unusualsituation to check and make the valve in a completely closing position.

2.将支架固定在阀门上。
Fix the support on valve

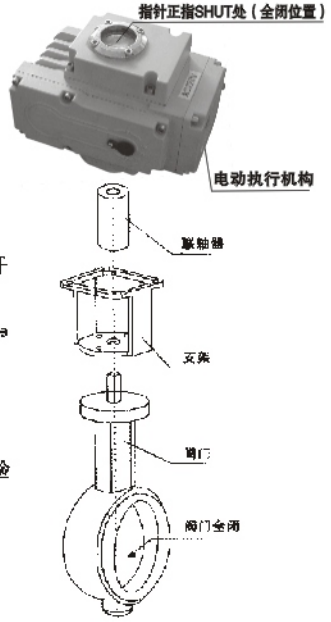
3.将联轴器的一端套在阀门芯轴上
Suit at the valve core axle one end of shaft coupling.

4.用手柄驱动电动执行机构至全闭位置（指针正指shut处零开度刻度线处），将输出轴插入联轴器四方孔内。
Urge electronic executive body to close position (indicator mean with handle shut zero turn on one degree of scale marks)all,insert the output shaft the shaft coupling all sides in the hole

5.坚固支架与电动执行机构和阀体间的连接螺栓。
Connection bolt among firm support and electronic executive body and body of valve

6.用手柄转动执行机构，确认运行平稳、无偏心、无歪斜、检查阀门在执行机构开度计指示范围能否实现全闭和全开
Rotate the executive body with the handle,partial,does not have and crooked that confirm operating steadily,Not having,check valve turn on degree count,instruct the range will you please realize,close and turn on all all in executive body.

注意：用力不可过猛，否则会导致执行机构超程运行而造成损坏。
Attention:It exerts oneself to be can't too quickly,otherwise,it will lead to the fact executive body exceed body Cheng run and cause the camage



（图5）电动阀门安装示意图
（Fig）electronic valve instal sketch map

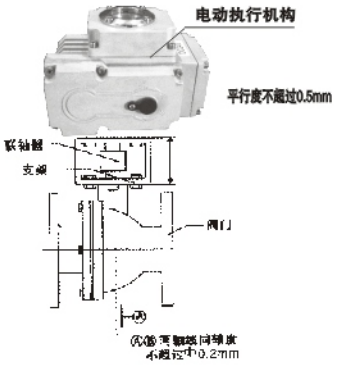
特别提示
Special suggestion

对于自备支架、联轴器的用户，请注意：
For the users who providing the support,shaft coupling by oneself,please note:

●支架、联轴器应由专业机械技术人员设计加工并应符合（图6)的标注要求。
Support,shaft coupling should be designed by the professional mechanical technical staff to process the requirement of marking that should also accord With(Fig.6).

●联轴器两端轴孔的加工应保证必要的精度，尽可能消除转动间隙，以免阀门工作中出现回差
The processing of the both ends shaft hole of the shaft coupling should guarantee the essential precision,dispel the interval of transmiss on as much as possible,in case that the difference that the appearance goes back in the valve work.

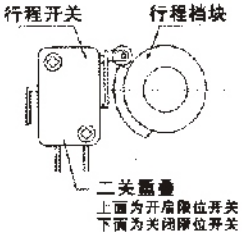
●应严格保证联轴器两端轴孔的位置度，否则有可能超出执行机构设计的工作范围，导致因执行机构行程无法调整而使阀门不能正常工作。
Should guarantee position degree of the both ends shaft hole of the shaft coupring strctly,otherwiseprobably beyond the scope of job which the executive body designs,lead to the fact that makes the valve unable to work normally because the journey of executive body is unable to adjust.



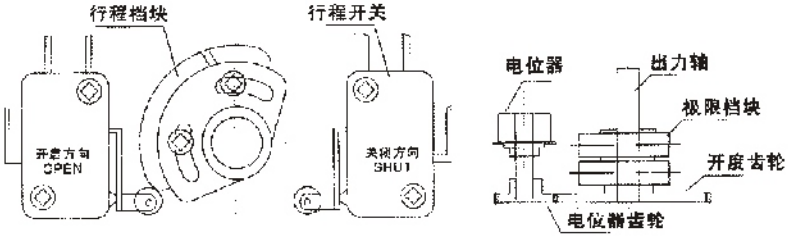
（图6）

1.电气限位的调整
Adjustment of the limited location of electric

松开行程档块的螺钉，用螺丝刀轻敲行程挡块，即可调整行程挡块的角度，从而改变电气限位的开闭角度。最后，切实紧固好行程挡块的螺钉。5、10的行程挡块和行程开关布局图。
Unclamp the screw that the journey blocked one,rap the journey and block one with the screwdriver,i.e.the adjustable journey blocks the angle of one,thus change the holding and closing the angle of the location of electric limit.Finally,fasten the screw that the good journey blocked one conscientiously.



20/40/50/60/100/200的行程挡块和行程开关布局图
20/40/50/60/100/200 of the travel block lumps and travel switch overall arrangement picture



2.电位器的调整（开度型、智能型）
Adjustment(turn on one degree of types,intelligent)of the potentiometer

a.电位器的电阻值为1KΩ、5KΩ。
The resistance value of the potentiometer is 1KΩ、5KΩ

b.用手柄转动阀门到全闭位置。
Rotate the valve and reach to close the position completely with the handle.

c.松开电位器，转动电位器齿轮，用万能表测量4–5接线端子间的电阻值，使4–5间的电阻值到5Ω以下，紧固电位器固定螺钉。（如果是智能型的七线接插件连接时请测量对RV和RS两插孔的电阻值）
Unclamp the potentiometer,rotate the gear wheel of thepotentiometer,measure the resistance value among4–5wiring sons of end with the universal meter, enable the resistance value of 4–5 under 5Ω,fasten the potentiometer fixed screw. (if please measure the resistance value to RV and RS two jack when being that intelligent Line seven connects the plug–in package connection)

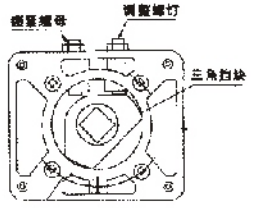
注：手动操作时，不能过分超出全开，全关的极限位置，转角过大，会导致其部件的损坏。
Note:At the time of manual operation,can't go beyond and is open excessively completely,the terminal position that is closed completely,the corner is too big,will cause its part's damage.

3.机械限位的调整
Adjustment of the mechanism spacing

a.用手柄转动到全开位置
Rotate to completely opening position with the handle

b.松开锁紧螺母，旋转调整螺钉，使之与机械挡块接触，然后，反方向旋转螺钉半圈，锁紧螺母。
Unclamp the locknut,rotate and adjust the screw ,enable it and machinery block one and keep in touch,then,rotate semi circle of screw,the locknut in the opposite direction.

c.同样方法，可进行全闭位置的机械挡块的调整。
The same method,can close the adjustment of blocking one of machinery of the position completely.



2008智能控制器是我公司最新研制的高精度电动执行器控制器，能直接接收工业控制系统，工业仪表或计算机控制系统输出的4～20mA Dc信号和执行器内部位置反馈信号，对各种电动执行器实现比例调节式控制。

该产品操作简单，调试方便，可靠性强，体积小巧，适合直接安装在各种电动执行器接线盒内，是升级执行器的可靠选择。

2008 intellectual controller is the high precision electronic execute device controller that our company developed newly,can receive industry's control system,4～20mA Dc signal and feedback signal of internal position of carrying out device that industrial instrument or computer control system outputted directly,realize the regulating type control of proportion to various electronic execute devices.This product is easy to operate,it's convenient to debug,highly reliable the volume is small and exquisite,suitable for installing directly in various electronic carrying out device terminal boxes,it is a reliable choice of upgrading the carrying out device.

一、性能特点
Performance characteristic

1. 可自适应各种电动执行器，适用的反馈电阻：500Ω～10KΩ
   Can be self-adaptation of various electronic execute devices,applicable feedback resistance.500Ω - 10KΩ
2. 单键自动标定，省却了复杂的初始标定。
   The single bond is automatic and standard,it is complicated and initial and standard to save.
3. 即可接收工业仪表的信号自动定位，亦可手动控制执行器开度，以利现场控制。
   The signal that can receive the industrial instrument makes a reservation automatically,can also control the carrying out device to open degree manually,control live with the profit.
4. 故障自我诊断，自我保护功能。
   The trouble is diagnosed onese f,self-protection function.
5. 系统模式设置采用波动开关，只观、方便，可实现无扰切换。
   The systematic mode is set up to adopt fluctuating the switch,ocular,convenient,can have realized not disturbing switching over.
6. 可设定执行器无信号状态：开、停、关。
   The state when have no signal to can establish the carrying out device:Open,stop,close.
7. 可输出4～20mA直流信号，并实现与电源，输入信号的完全隔离。
   The state when have no signal to can establish the carrying out device.Open,stop,close.
8. 可方便的调整灵敏度（精度）
   Convenient adjustment sensitivity (precision)

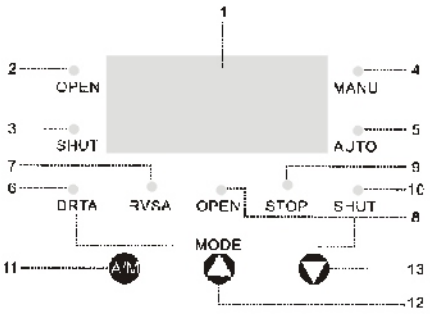
二、技术指标
Technical indicator

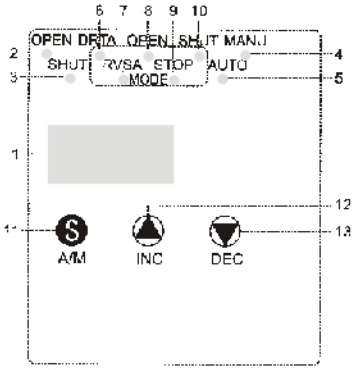
1. 精度：最高25%，最低：1%
   Precision:Highest25%are the lowest:1%.
2. 控制信号：4～20mADC。（特殊可制定）。
   Control signal:4～20mADC(can be customized specially).
3. 工作电源：220V/50HzAC
   Working power:220V/50HzAC
4. 最大驱动电机功率：≤300W
   The max power of the drive machinery:≤300W
5. 环境温度：65℃
   Ambient temperature:65℃
6. 环境湿度:70℃
   Ambient temperature:70℃
7. 输出组抗：≤500Ω
   Export imprdance:≤500Ω
8. 输入组抗:≥250Ω
   Input impedance:≥250Ω

1、执行机构的调整
Adjustment of the actuator

在调整智能定位器之前，应清楚开关角度的调整方法以，根据阀门的全闭、全开调整执行机构的电气奶位、电位器和机械限位。

Before adjust the intelligent positioner, should clear switch Angle adjustment method for,, according to a full close and door fully open The whole actuator electric milk, potentiometer and mechanical limit.





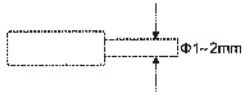
2、定位器面板
The locator panel

参数显示 Parameter display	1	LED视窗	通过按键显示阀门实际开度值、阀门设定开度值、定位器壳内温度和设定参数 Through button indicates the actual opening valve value set, valve opening and locator shell temperature and setting parameters
模式指示 Pattern instructions	2	OPEN	输出控制“开”继电器闭合 Output control relay closed "open"
	3	SHUT	输出控制“闭”继电器闭合 Output control relay closed "closed"
	4	MANU	手动状态 Manual mode
	5	AUTO	自动状态 Automatic state automatically
按键 The keys	6	DRTA	正动作模式，输出信号对应输出如下： 4mA–满位（一般标定为全开）;20mA–零位（一般标定为全闭） Is action mode, output signal corresponding to the output as follows: 4 ma – full of bits (general calibration for the full open); 20 ma – zero (general calibration for the full close)
	7	RVSA	反动作模式，输入信号对应输出如下： 4mA–零位（一般标定为全闭）;20mA–零位（一般标定为全开） Reverse action pattern, the input signals corresponding to the output as follows: 4 ma – zero (general calibration for the full close); 20 ma – zero (general calibration for the full open)
	8	OPEN	输入信号中断模态为“开”，使执行器开至最大开度限位处 Input signal interrupt mode for the "on", the implementation of the opening of the opening to maximum limit
	9	STOP	输入信号中断模态为“停”，使执行器停在当前位置 Input signal interrupt mode to "stop", make the actuator stopped at the current position
	10	SHUT	输入信号中断模态为“闭”，使执行器开至最小开度限位处 Input signal interrupt mode is "closed", make the actuator to the opening of the minimum limit
状态指示 Status indicates	11	A/M	手动／自动切换键，参数的进入修改和切换键 Manual/automatic switch button, the entry of the parameter changes and switch button
	12	▲	数值增加键，自动状态下还用于切换显示阀位设定开度值，手动状态下为“开” Increases key value, automatic mode switch is also used to show the opening of the valve position is set value, the manual mode for the "on"
	13	▼	数值减少键，自动状态下还用于切换显示定位器壳内温度，手动状态下为“闭” Numerical reduce key, automatic mode switch is also used to show the locator shell temperature, manual status to "closed"

3、接线说明
Wiring instructions

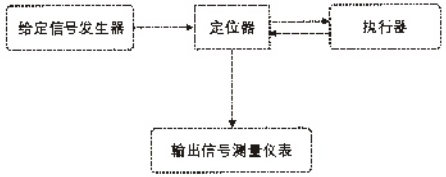
智能定位器与电动执行器通过一个七线接插件连接。定位器上有一个六线拆弹性压力锁紧的接线排（如图10），其中N、L接220VAC单相电的中线和相线，2个4~20mA（或者1–5V等）IN端子接控制电流（电压），2个4~20mA端子为反馈电流信号输出，可以连接电流表用于指示实际的阀门开度，也可以悬空不解。连接线可用线芯为φ11~2mm（如图11）的单芯或多心红外绝缘线，去掉7mm绝缘皮，如采用多芯线最好能扭紧并上锡，这样连接会容易很多接线时可以将单芯线或上锡后的多芯线插入孔内，感到有弹性阻力后，在继续插入4~5mm即可。如果线丝较软则将线放入孔内;感到阻力后，用一字型螺丝刀压下对应孔边上的弹性锁紧开关;再将线插入4~5mm，然后松开弹性锁紧开关，则线被锁紧。线被锁紧后，一般情况下拉不出来。需要拉出来时，要用一字型螺丝刀压下对应孔边上的弹性锁紧开关。然后才可将线拉出。

(图10)



(图11)

intelligent positioner and seven line electric actuator via a socket connection. Locator with a six lines split elastic pressure locking connection (figure 10), one of them N, L answer the 220 vac single–phase line, electric line and phase 2 4 ~ 20 ma (or 1–5 v, etc.) IN terminal control current (voltage), 2 4 ~ 20 ma terminals for feedback current signal is lost That can be connected to the ammeter is used to indicate the actual valve opening, can also be suspended. Cable core line available for phi 11 ~ 2 mm (as shown in figure 11) of the single core or multiple infrared insulation Line to remove 7 mm ins ulated skin, such as using multiconductor best can twist and tin, even so Pick up will be much easier after the tin on the wiri ng can be single conductor or multiconductor inserted into the hole, Feel the elastic resistance, continue to insert 4 ~ 5 mm If the wire lines will be softer Line in the hole; After feel resistance, with one word screwdriver down corresponding holes on the edge of the elastic Lock switch; To insert the line 4 ~ 5 mm, then loosen the elastic lock switch, and the thread is locked Tight. Thread locked tight after, usually can't pull it out. Need to pull out, Want to use one word screwdriver down correspon ding elastic lock switch on the side of hole. And then pull the line.



4、智能定位器的设定操作方法
Set operation method of intelligent positioner

按接线图连接号给定信号源、输出信号测量仪表（可以不接）及电源直接的连接;

●上电，此时显示阀位实际开度值，定位器处于自动测控状态;

●按A/M键切换为手动状态，分别按▲和▼键，执行器对应为信号的变化趋势和稳定性;

●自动状态下，按▲查看阀位设定开度值，此时可查看输入信号的变化趋势和稳定性;

●动状态下，按▼可观察定位器壳内温度，当温度超过70时，定位器停止对执行器的开、闭控制;

●自动状态下，按下A/M键约4秒，可以进入下列表的设定参数，参数值可以通过▲和▼键修改，详见操作流程图。

According to the wiring diagram connective a given signal and output signal measuring instrument (can not meet) and power supply direct connection;
Access to electricity, at this time of the opening of the valve position according to the actual value, the locator in automatic measurement and control condition;
Press A/M switch for manual status, press the and key respectively, actuator corresponding to the signal trends and stability;
Automatic mode, according to the view of the opening of the valve position is set value, can see at this time the ten dency of the input signal and stability;
Under dynamic state, according to the observed locator shell temperature, when the temperature more than 70, the locator to stop the on and off control of the actuator;
Automatic mode, press A/M about four seconds, can go to the following table of the set parameters, parameter values can be modified by and key, See the operation flow chart.

5、智能定位器的设定操作方法
Set operation method of intelligent positioner

参数列表 The list of parameters

参数 Parameters	显示值 According to the value	含义 Meaning	出厂值 The factory values
U0	00×.0	×＝1允许电子制动，×＝0不允许电子制动 X＝1 allows electronic brake, x＝0, do not allow electronic brake	1
	000.×	1、×＝0不允许改变定位精度，但允许改变重调时间 2、×＝1、2、3不改变重调时间，但允许改变定位精度 1, x＝0 are not allowed to change the positioning accuracy, but allowed to reset the time change 2, x＝1, 2, 3, don't change the reset time, but allow change the positioning accuracy	0
U1	00×0.	设定正反作用，×＝0为正，×＝1为反 Set a positive and negative effect, x＝0 is positive, for the x＝1	1
	000.×	中断信号模式，×＝0（忽略）×＝1（开）×＝2（停）×＝3（闭） Interrupt signal model, x＝0 (ignore) x＝1 (open) * ＝3＝2 (stop) (closed)	2
U2	×××.×	控制输出下限值制值0≤U2＜100，手动和标定零点、满位过程中不受此参数限制 Output control system of lower limit values of 0 or less U2＜100, zero and full manual and calibration process is not restricted by this parameter	0.0
U3	×××.×	控制输出上限限制0＜U2＜U3≤100,手动和标定零点、满位过程中不受此参数限制 Control output limit 0＜U2＜U3, 100 or less, the manual and the calibration of zero and full process is not restricted by this parameter	100.0
U4	00×.×	精度可调，等于×.×/100 Adjustable precision, is equal to x, x / 100	0.4
U5	×××.×	操作密码，（U5＝003.1为进入执行器开度标定） Operating password (U5＝003.1 for the opening of the actuator is calibration)	
U6	×××.×	执行器零位确认，操作▲▼键，当到达指定零位时，按A/M键，零点确认，然后进入U7 Actuator zero validation, operation keys, when to zero, press A/M, zero confirmation, and then enter the U7	
U7	×××.×	执行器满位确认，操作▲▼键，当到达指定满位时，按A/M键，满点确认 Actuator with A validation, operation keys, when reach the specified A full, press A/M, ManDian confirmation	
注：其它参数工厂保留使用，如有需要门客参考附录。 Note: other parameters keep factory use, if necessary public reference appendix.			

执行器标定出厂前已标定完毕，用户只需连接好电源、信号源和输出信号测量仪表（可以不接），可直接使用，无需重新标定。如果确要重新标定，可按以下步骤操作。

标定执行器的零位和满位。此标定对定位器的输入、输出信号无影响，执行器重新调整后，必须进行执行器转角的标定，此后定位器才能正常工作，标定有以下两种方法：

Actuator before delivery have calibration finished, users only need to connect the power, signal and output signal mea suring instrument (can not), Can be used directly, not need to calibration. If you want to calibrate, can press the following steps.
Calibration actuators of zero and full. The calibration of the locator input and output signals without the influence, perform valued new adjusted, must Actuator Angle calibration, since the locator can work normally, calibration has the following two methods:

方法一（手动标定）（参照操作流程）：

进入到U5,修改U5=003.1,然后再按一下A/M键，进到U6参数（标定零位），按或，执行器相应朝“开”或“闭”方向动作，同时显示的阀位实际开度值也相应逐渐变大或变小，当到达期望零位时（一般设在全闭位置），按A/M键，零位确认，进入U7参数。

进入到U7参数（标定满位），同理按或到期望满位（一般设在全开位置），按A/M键满位确认，执行器自动回到90%位置返回U5.

修改U5–000.5,返回测控状态。

Into the U5, modify U5 = 003.1, and then click on the A/M button, into the U6 parameter zero (calibration), press or, actuators in accordingly Direction of "open" or "close" action, at the same time show the actual valve position of the opening value also gradually becomes large or small, accordingly when to expect zero (Generally in full closed position), press A/M, zero confirmation, enter the U7 parameters.
Into the U7 parameters (calibration), the same press or to expect A full (usually in full open position), press A/M with A confirmation, Actuators automatically back to 90% return to U5 position.
U5–000.5 changes and returns the state of measurement and control.

方法二（自动标定）

进入到U5、修改U5–003.1,然后按住A/M键的同时按下键，即启动自动标定，此时定位器先标定零位，后标定满位，标定完后定位器处在手动状态，★重新进入参数U5,修改U5=000.5（默认值）后按A/M键，标定结构才被存储。

在定位器测控过程中，可能由于输入信号质量、外界电磁干扰等，执行器会出现振荡而导致发热为了避免执行器持续震荡，可以修改U0（000.X）；

1、设置X＝0,则在执行器出现震荡过程中定位精度保持为设定精度，但执行器的重调时间会不断增大至7秒，从而达到精确定位和执行器间断工作的要求。

2、X=1.2.3则在执行器出现震荡过程中重调时间保持不变（大约2秒），但执行器的精度不会断减小，从而达到最适宜精度下工作的要求。参数修改过程中如出现10S空闲，会自动回到测控状态。

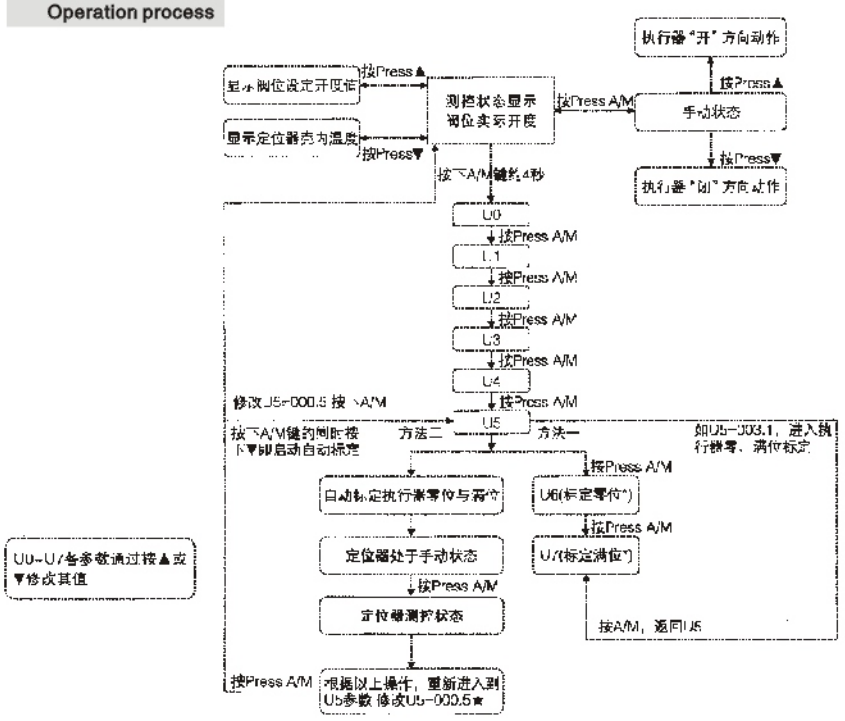
Into the U5, modify, U5–003.1, and then hold down the A/M key and press the button, which start the automatic calibration, the locator calibration first Zero, after calibration, calibration after the locator at manual state, U5 back into the parameters according to after the modification of U5 = 000.5 (default) The A/M, calibration structure to be stored.

In locator in the process of measurement and control, may be due to the quality of the input signal, the electromagnetic interference, such as actuators can appear oscillation caused by fever In order to avoid the actuators were rocky, can modify U0 (X);

1, set X = 0, the actuators were volatile as the setting precision, position precision during the reset time will continue but actuators increase to 7 seconds, so as to achieve accurate positioning and actuators discontinuous work requirements.

2, X = 1.2.3 is reset in the process of actuator volatile time remain the same (about 2 seconds), but the precision of the actuator will not broken Is small, so as to achieve the most suitable to work under the precision require ments. Parameter modification process if appear 10 s free, will automatically return to the measurement and control state

6、操作流程
Operation process

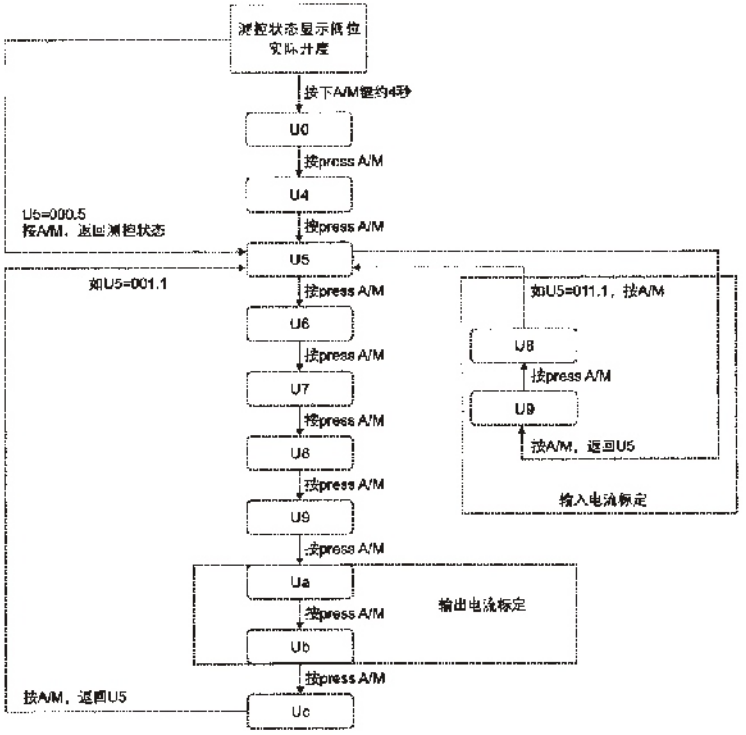


7、智能定位器的设定操作方法
Set operation method of intelligent positioner

错误代码表 The error code table

错误代码 The error code	含义 Meaning
E–01	控制信号中断或者低于0.3mA Interrupt control signal or less than 0.3 mA
E–03	定位器和执行器间的信号反馈线或开闭线接反 Between the positioner and actuator signal feedback line or line open and close
E–05	执行器震荡大，可能由于输入信号或反馈信号不稳定、精度太高等 Actuator volatility is big, may be due to the input signal and feedback signal is not stable, high precision
E–06	执行器往闭方向时堵转 Actuator to turn close your direction
E–07	执行器往开方向时堵转 Turn actuators to drive up direction
E–08	定位器壳内温度超70℃ The locator shell temperature above 70 °c

附：其它标定操作—输入信号、输出信号等标定方法见下图
Attachment: other operating – input signal and output signal calibration method below



1. 维护与保养
Maintenance

①由于使用了寿命长、耐压性好的高级钼基润滑脂，所以无需点检及加油。

Because of using advance molybcenum base lubricating grease which having long performance life and have good resist presureg,so does not need to hand over item bu item and refuel.

②在阀门的动作很稀少时，请定期驱动执行机构，检查有无异常。

When the movements of the valve are very rare,please drive the executive body regularly,to check it whether have the unusual or not.

2. 故障与对策
Trouble and countermeasure

故障现象 Trouble phenomenon	原因 Reason	对策 Countermeasure
电机不启动 The electrical machinery is not started	没有接上电源 Have not connected the power	接好电源 Connect to the power
	断线、接头与端子脱离 Break,connect is independent from terminal	修理断线，正确连接紧固端子 Repair the break line the correct connection fastens the terminals
	电源电压不对或电压过低 The power is queer in voltage or the voltage is too low	检查电压是否正常 Check the voltage whether is normal
	过热保护器运作（环境温度是否过高，阀门是否卡死） Overheated protecting device operation (whether ambient temprature is too high, whether the valve is seized)	减低环境温度，用手动的方法检查阀门的开闭是否正常 Lower ambient temperature,check the opening and closing of valve is normal by manual means
	极限开关的动作不良 The movements of the terminal switch are bad	更换开关 Change the switch
	启动运动电容不良 It is bad to start the electric capacity of soort	与生产厂家联系更换电容 Change manufacturer to change the electric capacity
开闭指示灯不亮	灯泡坏 The bulb is out of order	更换灯泡 Change the bulb
	极限开关动作不良 Terminal switch movements are bad	更换开关 Change the switch
	挡块的调整不良 The bad adjustment of the block	再调整 Change again
运动极限位置电机不能停转	极限开关动作不良 Terminal switch movements are bad	更换开关 Change the switch
	DC24V、AC380V主电源相序接反 DC24V,AC380V main power source phase list connect inside out	调整相序 Adjust the phase list
	限位开关接入控制回路接线错误 The wiring wrong of limit switch connect to the control circuit	调整接线 Adjust the wiring

产品保修卡

型号：_____ 购买日期：____ . ____
Type　Purchase date

维修项目：_____
Maintenance projects

用户地址：_____
User address

用户姓名：_____ _____
User name

使用单位地址：_____
Use the unit address

出厂编号：_____ 维修日期：_____
Production numbers　Maintenance date

维修人员签名：_____ 邮政编码：_____
Maintenance personnel signature　Postal code

销售单位名称：_____
Sales unit name

【保修须知】

◆ 1. 用户购物时，随机带有一本说明书及保修卡。用户填好后妥善保管，以作保修凭证。
◆ 2. 自购机之日起，一年之内正常使用下出现质量问题，持证用户享受免费维修服务。
◆ 3. 以下不属于保修范围： A保修卡无销售单位签字或盖章； B人为或不可抗拒因素造成损坏； C仪表正常离损。
◆ 4. 如因人为、超过保修期及不可抗拒因素造成的故障，我们将收取适当的零件费用，免收人工费。
◆ 5. 产品出现故障时，请向当地代理商或我厂要求保修，请写明具体地址、姓名、电话及故障现象。

【Warranty Guidelines】

◆ 1. Users shopping,accompanied with a specification and the warranty card.When completed,the user to properly keep the warranty certificate.
◆ 2. Since the date of buying machine,a year under normal use appear quality problem,card holder users to enjoy free maintenance.
◆ 3. The following does not belong to the warranty scope: A.warranty card no unit sign or seal; B. artificial or force majeure cause damage;C.normal wear instrument
◆ 4. If because of the people,more than warranty period and irresistible factors of fault, we will charge the appropriate parts,are exempted from Labour costs.
◆ 5. Product failure,please to the local agent or our factory warranty,please specify requirements address,name,phone and fault phenomenon.