

PEL

直行程电动执行机构

LINEAR TYPE ELECTRIC
ACTUATOR



PEL 直行程电动执行机构

PEL lineartype electric actuator

一、概 述:

PEL 系列电动执行机构是数模混合控制模块内置的新一代一体化执行机构,执行机构关键件采用进口元件,具有结构简单,性能稳定可靠,效率高、精度高、重量轻、噪音低、保护功能强、伺服放大器内装、安装方便、操作快捷等特点。执行机构输出力行程 6 ~ 100mm,额定推力 2 ~ 20KN,可对阀门、风门、进行精确可靠的开关控制和调节控制,该产品可广泛用于电力、冶金、石油、化工、制药、环保等行业。

GENERAL

PEL electric actuator is the new generation of integration implementing agency which in the digital-analog mixture control module sets, the implementing agency key uses imports the part, has the structure to be simple, performance stable reliable, efficiency high, precision high, weight light, noise low, protection function strong, servo amplifier internal installation, installment convenient, operation quickly etc. Electric actuator Stroke is from 6 to 100 mm, the rated positioning force of linear actuators is from 2kN to 20 kN, may to the valve, the air throttle, carry on the precise reliable switch control and the regulating control, They are widely applied to electric power, metallurgy, oil industry, chemical industry pharmacy industry etc.

二、主要技术指标 Main technical indexes

系列 Series	PEL
供电电源 Power supply	220 vAC(± 15%), 50Hz
输入信号 Input signal	4 ~ 20mA DC
输出信号 Output signal	4 ~ 20mA DC 或(和)开关量 4~20mA DC or cand, on/off
电机 Motor	绝缘等级 B 类 B insulation class 内置热保护 Built-in thermal protection prevents motor burning out
性能 Performance	回差 Hysteresis 1% 死区 Dead band (0.5 ~ 3.5)% 可调 Adjustable 基本误差限 Base error limit ≤ ± 1% 阻尼特性 Damping characteristic 无振荡 No damping
接口 Conduit entrance	M20X1.5 内螺纹(2 个)
工作制式 Running mode	启动频次 Start frequency 630c/h; 持续率 adherence rate 50% 启动频次 Start frequency 800c/h; 持续率 adherence rate 30%
环境温度 Ambient temperature	-20℃ ~ +60℃
相对湿度 Relative humidity	≤ 90%(年平均值 Annual mean)
允许振荡 Damping	1.5G
结构形式 Enclosure	防护等级 Enclure protection class: IP65
材质 Material	上盖 Cover 压铸铝 ZL102 底座 Base 铸铝 ZL104 法兰 Flange 碳钢 carbon steel
手动操作 Manual Override	手轮 handwheel

PEL 系列直行程电动执行机构规格及技术数据

PEL Linear type electric actuator specifications & technical data

型号 Type	输出力 Output force [KN]	速度 seep [mm/s]	电源 [vAC]	功耗 Power [w]	重量 weight [kg]	电机保护 Motor- Prtection	出线接口 Line connection	手动 操作 Manual Override	防护 等级 Enclsure protection class
PEL202	2	0.6	220	10	8	允许堵转 enabel locked-rotor	2XM20X1.5	手轮 handwheel	IP65
PEL204	4	0.85	220	20	10	内置热保护 internal thermd hrotectim			
PEL206	6	0.55	220	30	12				
PEL208	8	0.75	220	35	16				
PEL210	10	0.6	220	40	20				
PEL306	6	0.55	220	30	22				
PEL308	8	0.75	220	35	22				
PEL312	12	0.95	220	50	22				
PEL316	16	0.65	220	80	25				
PEL320	20	0.75	220	80	35				

标准规格 Standard Specifications

型号 Type	202	204	206	208	210	306	308	312	316	320
行程 Stroke [mm]	14.3 25 38					50 75 100		25 38 50 75 100		
最大行程 Max.Stroke [mm]	40					100				

四、产品选型

 订购代码 PEL ————

最大行程[mm]	输出力[KN]	型 号
40	2	202
	4	204
	6	206
	8	208
	10	210
100	6	306
	8	308
	12	312
	16	316
	20	320

标准行程(mm)

行程代号	1	2	3	4	5	6
标 准	14.3	25	38	50	75	100
调整范围	6 ~ 15	15 ~ 30	30 ~ 40	40 ~ 60	60 ~ 80	80 ~ 100

控制部件

功能 描述	代号
两位式控制模式(配两位式控制模块)不带阀位反馈输出	L
调节式控制模式 输入 / 输出 DC4 ~ 20mA	M
独立阀位反馈输出 DC4 ~ 20mA	F
两位式 + 阀位反馈输出	LF
调节式 + 数字监控	MD
调节式 + 数字监控 + 数字设定器	MDS
HART 总线智能控制板	HART
MODBUS 总线智能控制板	MB

附加限位开关

功能 描述	代号
附加限位开关(在适当反馈位置无源输出)	2WK
不带附加限位开关	0

特殊订货代号

功能 描述	代号
标准订货	0
特殊订货代号(代号后注明特殊定货要求)	T

说明: 1、与阀门组配时,开关式以计算推力的 1.2 倍选择 PEL 电动执行机构;
 2、与阀门组配时,调节式以计算推力的 1.5 倍选择 PEL 电动执行机构;

Product shaping

Order Code PEL ————

Max. Stroke [mm]	Output forceType	Type
40	2	202
	4	204
	6	206
	8	208
	10	210
100	6	306
	8	308
	12	312
	16	316
	20	320

Standard Stroke (mm)

Stroke code	1	2	3	4	5	6
Standard Stroke	14.3	25	38	50	75	100
Adjustment scope	6 ~ 15	15 ~ 30	30 ~ 40	40 ~ 60	60 ~ 80	80 ~ 100

Control unit

Functional description	代号
Two type control pattern (matches two type control module) not to have the valve position feedback output	L
The adjustment type control pattern input/outputs DC4 ~ 20mA	M
The independent valve position feedback outputs DC4 ~ 20mA	F
Two types + Valve position feedback output	LF
Adjustment type + Digital monitoring	MD
Adjustment type + Digital monitoring + Digital hypothesis	MDS
HART main line intelligence control panel	HART
MODBUS main line intelligence control panel	MB

Additional limit switches

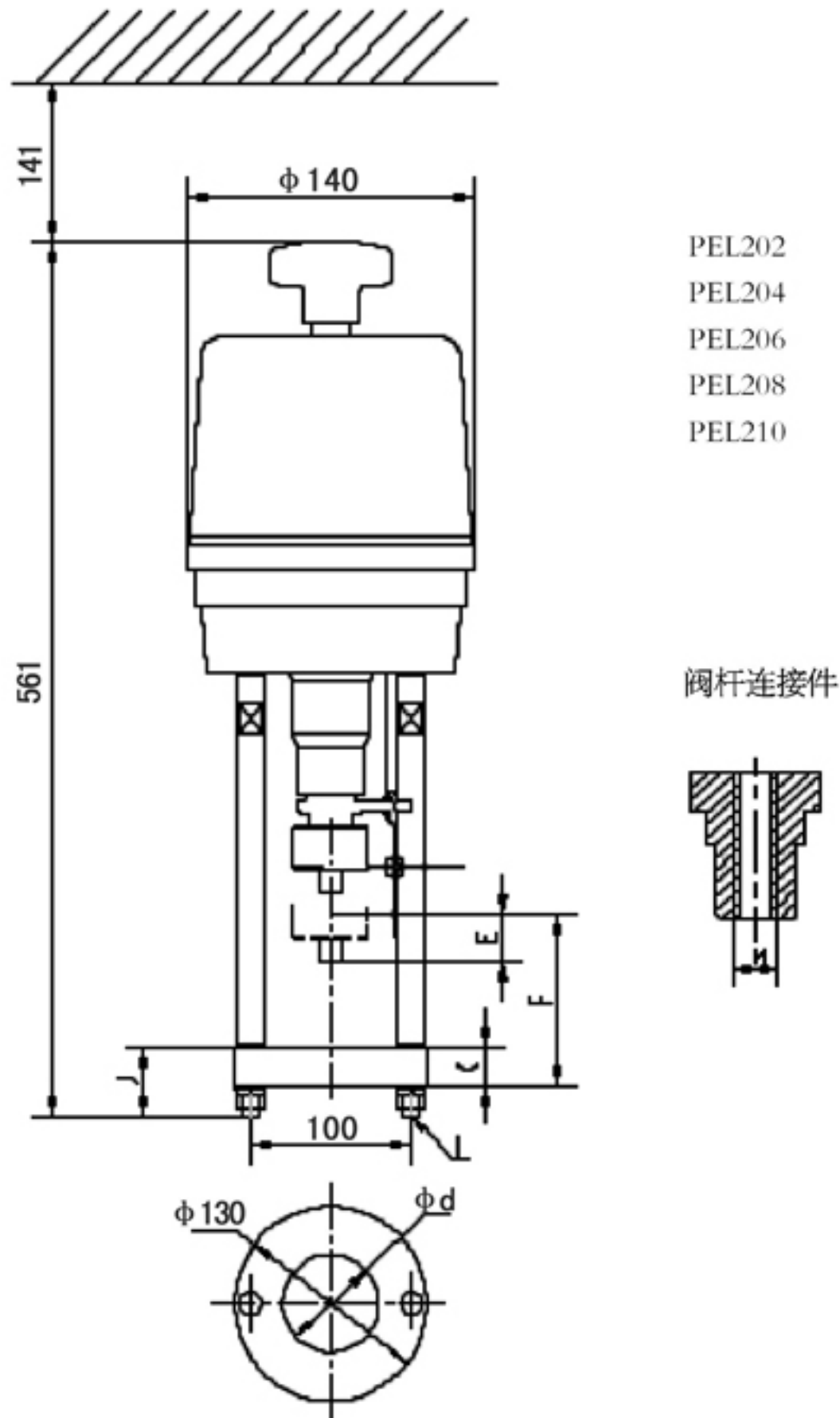
Functional description	代号
Additional limit switches(In suitable feedback position passive output)	2WK
Does not bring to additional limit switches	0

Special ordering code number

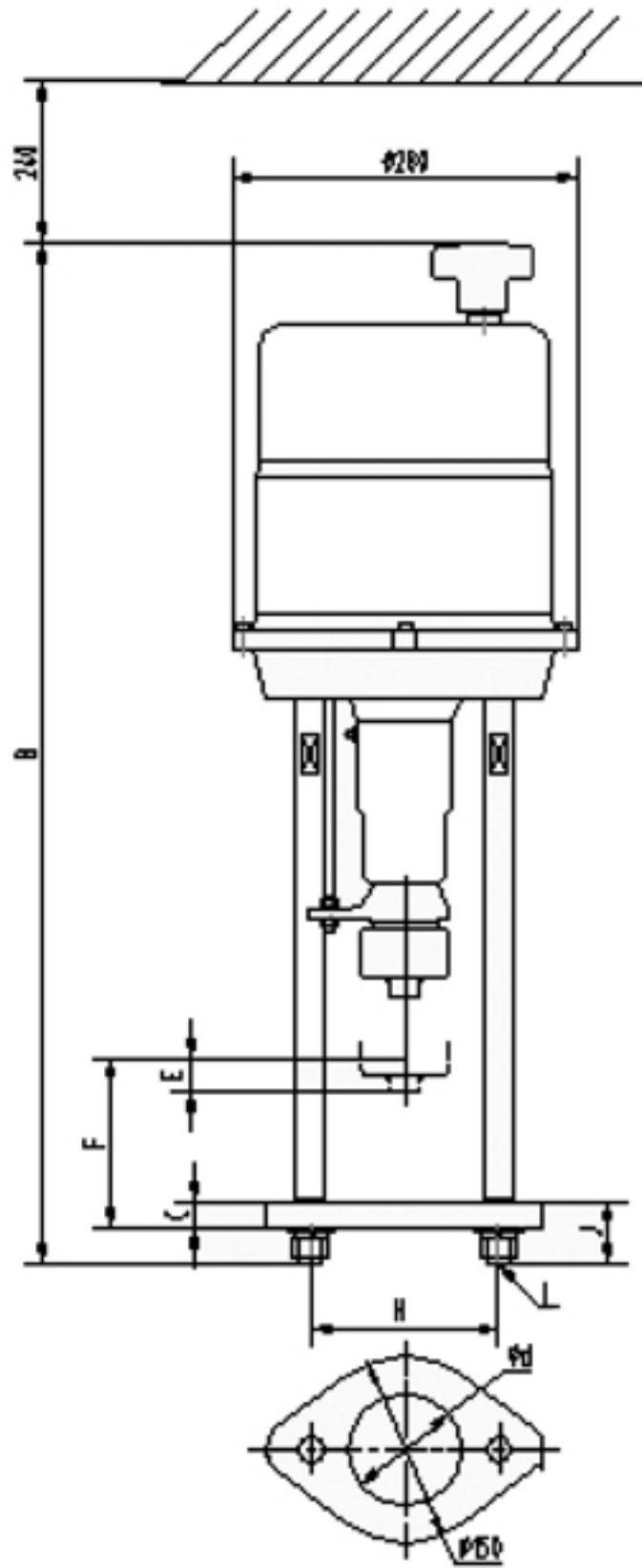
Functional description	代号
Standard ordering	0
Special ordering code number(After the code number indicates the special ordering request)	T

Explanation:

1. With the valve group timing, switch type rated thrust 1.2 times choose the PEL electric actuator;
2. With the valve group timing, adjustment type rated thrust 1.5 times choose the PEL electric actuator。

五、外形尺寸 DIMENSIONS


型号 type	连接法兰 Mounting Flange		阀杆连接尺寸 Valve handle coupling dimension			支架 Yoke		行程 Stroke
	安装孔 d	厚度 C	连接长度 E	螺纹 M	高度 F (出轴最低点)	螺纹长度 J	螺纹 I	
PEL202 PEL204 PEL206	Φ56H8	22	15	M8X1	100	45	M12	14.3
PEL208 PEL210								Φ65H8



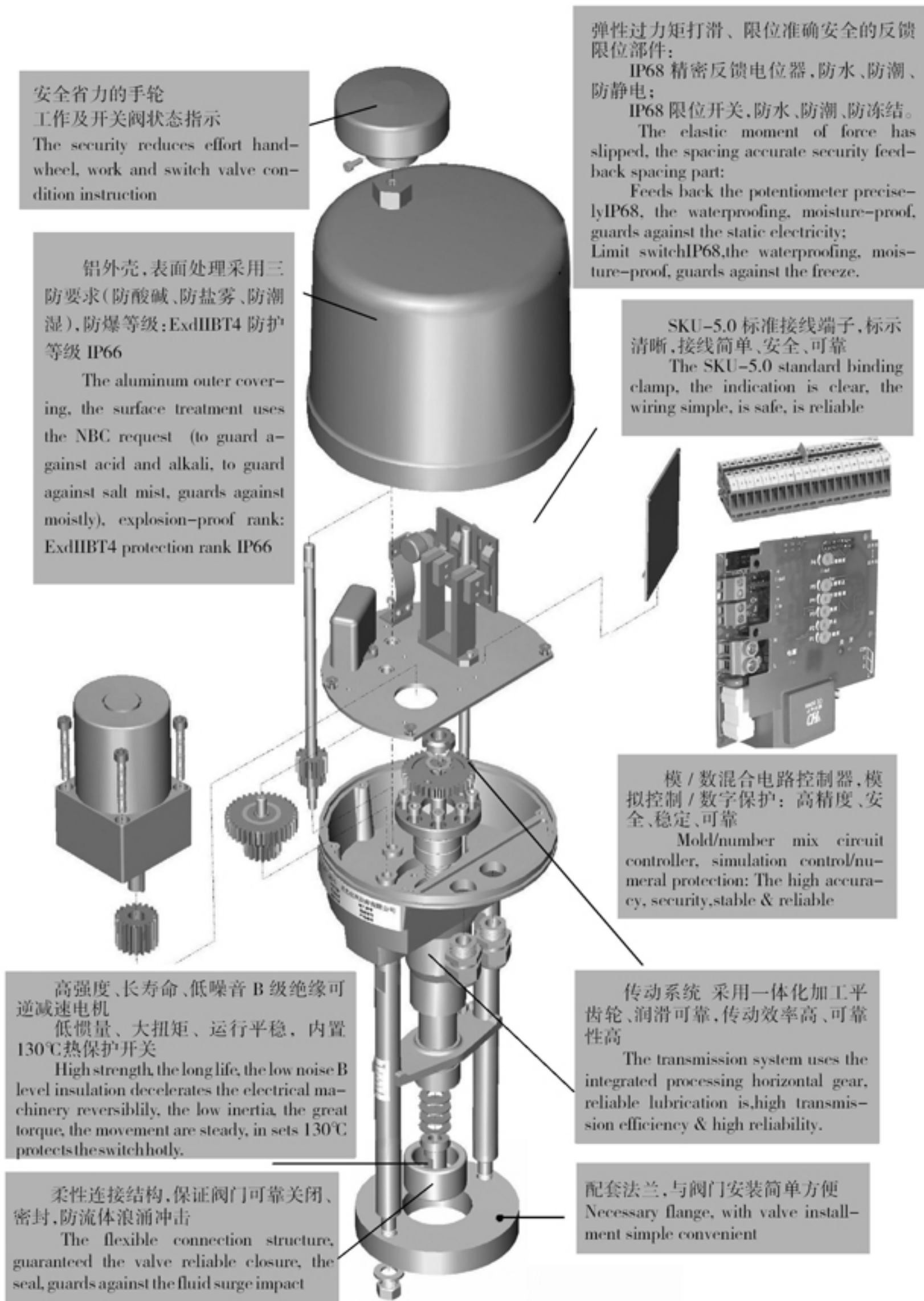
PEL306
 PEL308
 PEL312
 PEL316
 PEL320

阀杆连接件



型号 type	高度 B	连接法兰 Mounting Flange		阀杆连接尺寸 Valve handle coupling dimension			支架 Yoke			行程 Stroke
		安装孔 d	厚度 C	连接长度 E	螺纹 M	高度 F (出轴最低点)	螺纹长度 J	中心距 H	螺纹 I	
PEL306	775	Φ56H8	22	15	M8X1	100	50	150	M18	25
PEL308		Φ65H8	26	20	M12X1.25					38
PEL312	825	Φ80H8	30	25	M14X1.5	55	50			
PEL316	870	Φ90H8	35	35	M18X1.5	60	75			
PEL320	900	Φ110H8	45	35	M27X1.5	202	72	170	100	

六、产品结构 Structure of Product



机械连接 Solderless joint

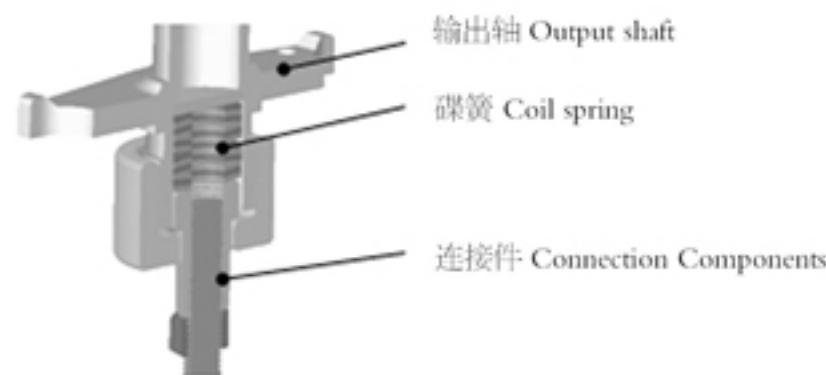
PEL 直行程电动执行机构设计采用两个支架和一个连接件与阀门连接

PEL Linear electric actuation uses two supports and a bridge piece and the valve connections

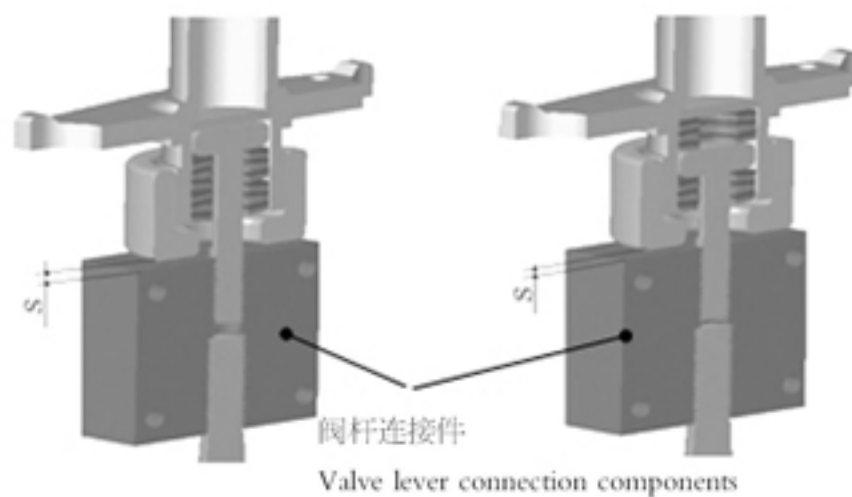
1、柔性连接及形式选择 Flexible connection and form choice

PEL 直行程电动执行机构设计了柔性连接器,保证了阀门终端的精确限位和可靠关断,还可以阻尼压力峰值、补偿热膨胀;根据配阀的不同,按下图选择不同的连接形式。

PEL Linear electric actuation has designed the flexible coupling, has guaranteed the valve terminal precise spacing and the reliable shutdown, but also may the damping pressure peak value, the compensation heat expansion; According to matches the valve the difference uses the chart choice different connection.



a 推力负载 Thrust load



b 拉力负载 Pulling force load

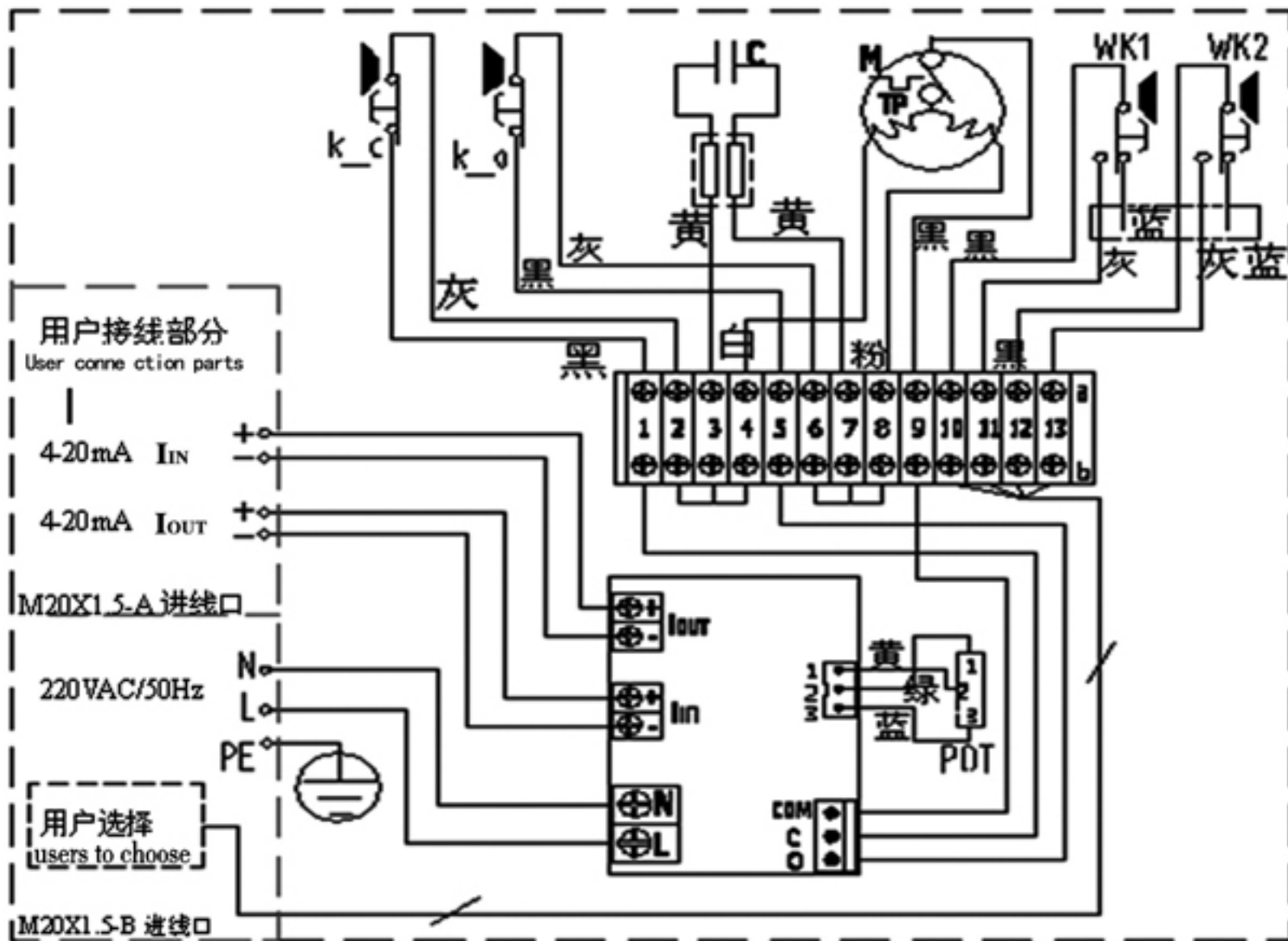
c 双向负载 Thrust & Pulling force load

2、连接前准备工作 Before connection preparatory

确认对应型号的 PEL 电动执行机构,按下表确定弹性件的组合方法和阀杆伸出长度

The confirmation correspondence Linear PEL electric actuation, According to the table definite elasticity combination method and the valve lever swinging radius

型号	PEL202	PEL204	PEL206	PEL208	PEL210	PEL306	PEL308	PEL312	PEL316	PEL320
弹性件(n*i) (叠合层数 * 对合组数)	1*10	2*6	2*6	3*4	2*6	2*6	2*6	2*6	3*4	3*4

3、端子接线图 Terminal connection fig.

进线要求

- 1、电源线 N、L :从 M20X1.5-B 进线口进线,紧固并密封,确保内外接地线可靠接地
- 2、控制信号输入线 IIN :从 M20X1.5-A 进线口进线,不要和控制信号输入线绞合,并保证密封
- 3、反馈信号输出线 IOUT :从 M20X1.5-A 进线口进线,不要和控制信号输入线绞合,并保证密封

Coil in request

- 1、Electricity Source N, L : From the M20X1.5-B coil in mouth coil in, fastens and seals, guarantees the inside and outside to meet the grounding reliable earth.
- 2、Signal input IIN : From the M20X1.5-A coil in mouth coil in, do not have with the control signal input line lay-up, and guarantees the seal.
- 3、Feedback signal output IOUT : From the M20X1.5-A coil in mouth coil in, do not have with the control signal input line lay-up, and guarantees the seal.

接线要求

- 1、电源线 N、L :区分零(N)、火(L)按上图标记接线,压紧螺钉,不可有搭接。
- 2、控制信号输入线 IIN :区分正(+)、负(-)按上图标记接线,压紧螺钉,屏蔽层接 PE 点。
- 3、反馈信号输出线 IOUT :区分正(+)、负(-)按上图标记接线,压紧螺钉,屏蔽层接 PE 点。

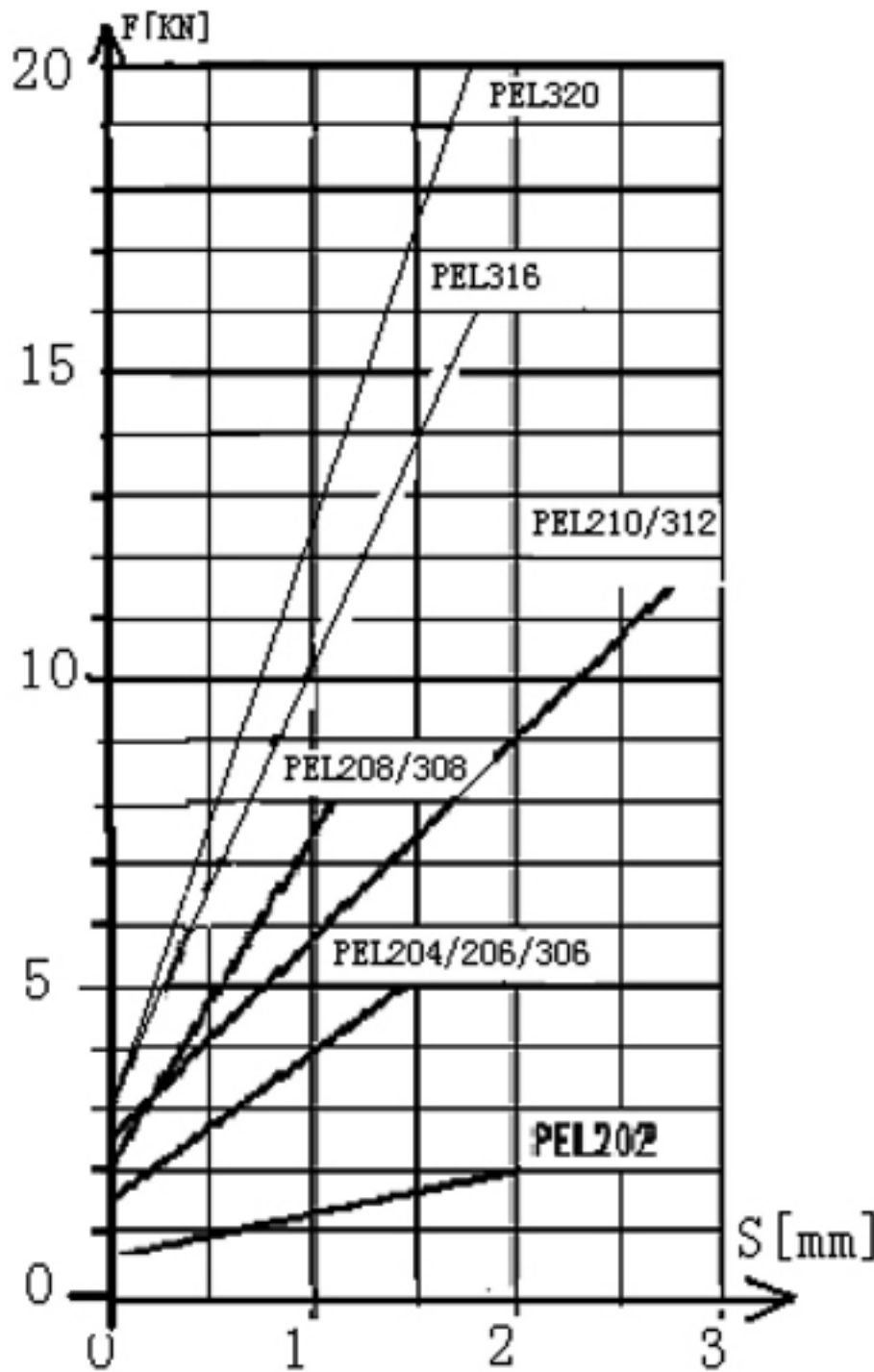
Wiring request

- 1、Electricity Source N, L :Discrimination N, L presses down the chart mark wiring, the compression screw, cannot have joining.
- 2、Signal input IIN :Differentiates (+),(-) presses down the chart mark wiring, the compression screw, the shielding layer meets the PE spot.
- 3、Feedback signal output IOUT :Differentiates (+),(-) presses down the chart mark wiring, the compression screw, the shielding layer meets the PE spot.

4、限位开关调整 Limit switch adjustment

执行机构与阀门连接后应等于或大于额定行程值,满足阀门行程设定控制的要求;根据阀门类型调整限位开关是决定执行机构的"行程"或"行程/关断力"的基本原则。

Actuator and the valve connection should be equal to or be bigger than the fixed traveling schedule value, satisfies the valve traveling schedule hypothesis control the request; Adjusts the limit switch is decides the Actuator "Stroke" or "Stroke /shutdown strength" the basic principle according to the valve type.



调整原则

配直通阀时: 首先根据"行程/关断力"设置关位,然后根据阀门的额定行程设置开位。

配三通阀时: 首先根据"行程/关断力"设置两个终端位置,然后根据两个终端位置决定执行机构限位开关。

Adjustment principle

With the through way valve: according to "Stroke/shutdown strength" the establishment to close the position, then according to the valve fixed traveling schedule.

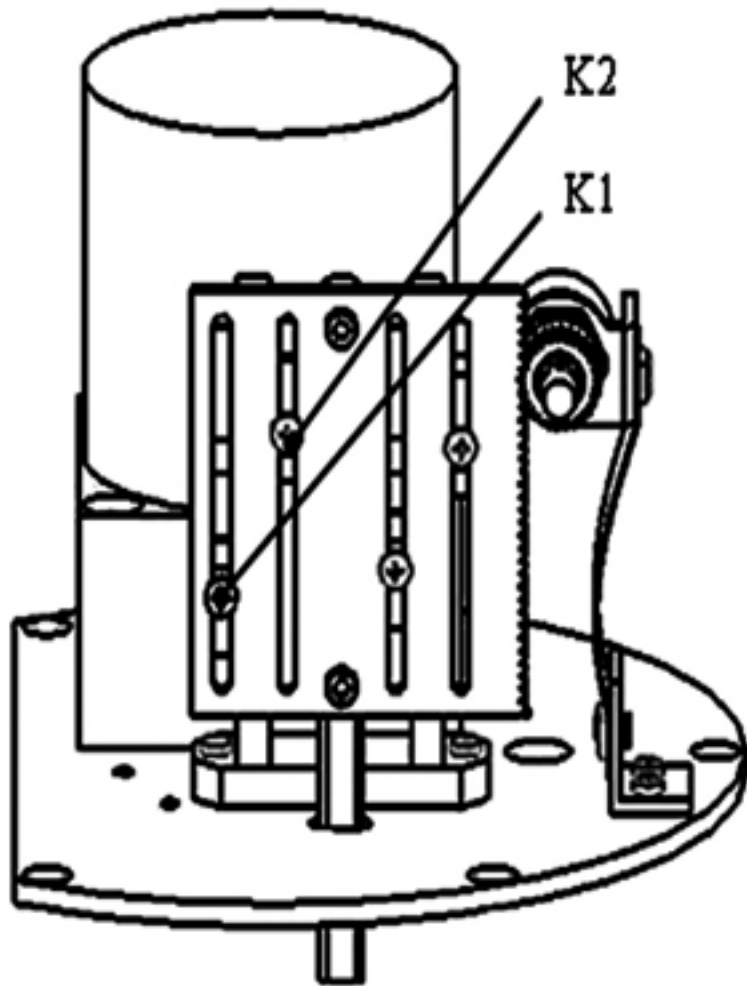
With the 3-way valve: according to "Stroke/shutdown strength" to establish two terminal positions, then according to two terminal position decision actuator limit switch.

调整原则

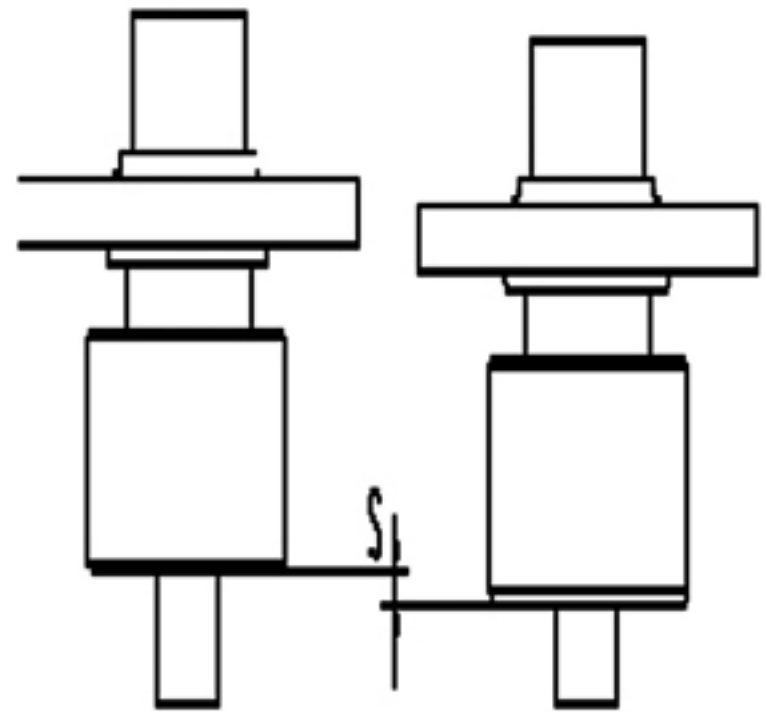
- ①手动执行机构驱动阀门的阀芯接触阀座。
- ②继续向同一方向驱动执行机构,直到执行机构盘簧被压缩到图表(上图)所示相应数值 S, 这样保证关断力,防止泄漏。
- ③旋松限位块使其上下移动,直到限位开关响应。

Adjustment method

- ① Uses the handwheel to move the actuator, causes the valve core contact valve seat.
- ② Continues to actuate the actuator to the uni-direction, is compressed until the actuator coil spring shows to on chart corresponding value S, like this guaranteed the shutdown strength, prevents divulging.
- ③ Turns on lathe, until limit switch response.



K1—下限位凸台调整螺钉
 K2—上限位凸台调整螺钉
 K1: Below limit switch adjusting screw
 K2: About limit switch adjusting screw



S—盘簧压缩量

S: The coil spring reduces the quantity

产品调试

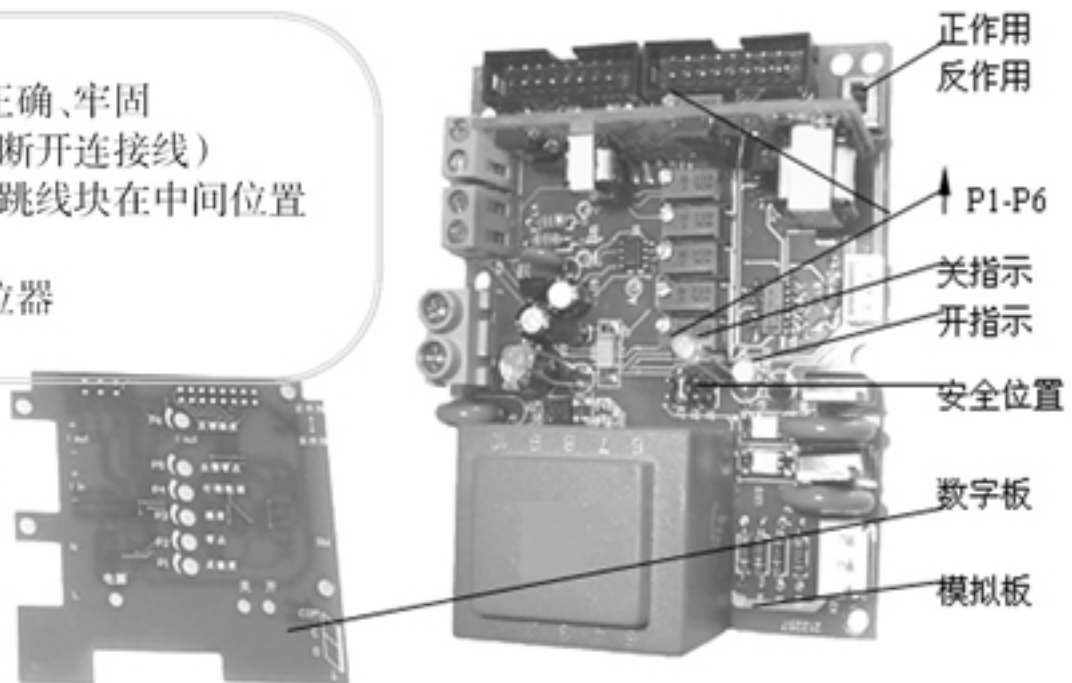
(一)模拟控制板调校

调试步骤

- 1 按数字板上的标示确认接线正确、牢固
- 2 从塑料卡座上拆下数字板(不断开连接线)
- 3 设置正反作用形式;安全位置跳线块在中间位置
- 4 进行常规调较或基本调校
- 5 完成调校后用快干漆点封电位器
- 6 装好数字板

电位器注释

- P6—span(反馈满度)
 P5—zero(反馈零点)
 P4—行程微调 P3—满度
 P2—零点 P1—死区



常规调校(伺服放大器出厂前已完成基本设定,仅需按如下步骤对执行机构零点和满度进行调整)

(1)将执行机构调到全关位置(输入 4mA 信号),右旋执行机构位置反馈电位器(POT)到 0 欧姆,测量反馈输出电流为 4mA。

(2)将执行机构调到全开位置(输入 20mA信号),调整电位器 P3 测量反馈输出电流为 20mA。

注:如反馈输出零点 4mA和反馈满度 20mA 稍有偏差,分别旋转电位器 P5 和 P6 予以调整,重复 1-2 次即可完成。

基本调校(当已将电位器 P1 到 P6 调乱,可按下列步骤恢复出厂设置)

1 将正反作用开关置于正作用端。

2 零点调整:

- ①输入 4mA 信号,执行器将向关方向动作,右旋反馈电位器 POT,执行机构动作使关限位开关 Kc 动作。
- ②左旋反馈电位器 POT 到 0 欧姆(旋不动为止),并调整 P2 使关指示灯常亮。
- ③调整 P5 使反馈电流信号为 4mA(顺时针增大);
- ④调整 P2 使 A 与 B 点间的电压为 5.02VDC。

3 行程调整:

①输入 20mA 信号,执行器将向开方向动作,直到开限位开关 Ko 动作。(若在此过程中开指示灯灭,顺时针旋转 P4 使之常亮。)

②调整 P3(顺时针增大)使 C 与 B 点间电压为 10 VDC。

③调整 P6(顺时针增大)使反馈电流信号为 20mA。

④调整旋转 P4 调整 A 与 B 点间的电压为 5.0VDC。

4 重复以上 2、3 步骤,使阀位反馈信号精确达到 4-20mA 值为止。

5 灵敏度调整:若执行机构振荡,可通过 P1 来调整灵敏度(顺时针减小)。注:应将灵敏度调整到系统所允许的最小值,这样会减少维护的工作量,延长执行机构的使用寿命。

6 安全位置(断信号保护):出厂设置为保位,用户可根据需要进行调整。

断信号全开:短路插件在 1 位,断信号后执行机构向全开动作;

断信号保位:短路插件在 2 位,断信号后执行机构停止动作;

断信号全关:短路插件在 3 位,断信号后执行机构向全关动作;

7 作用形式调整:如果与执行器所配阀门为上关下开式,可将正反作用开关置于反作用位置,调试方法同上 2-6 步。

Product commissioning

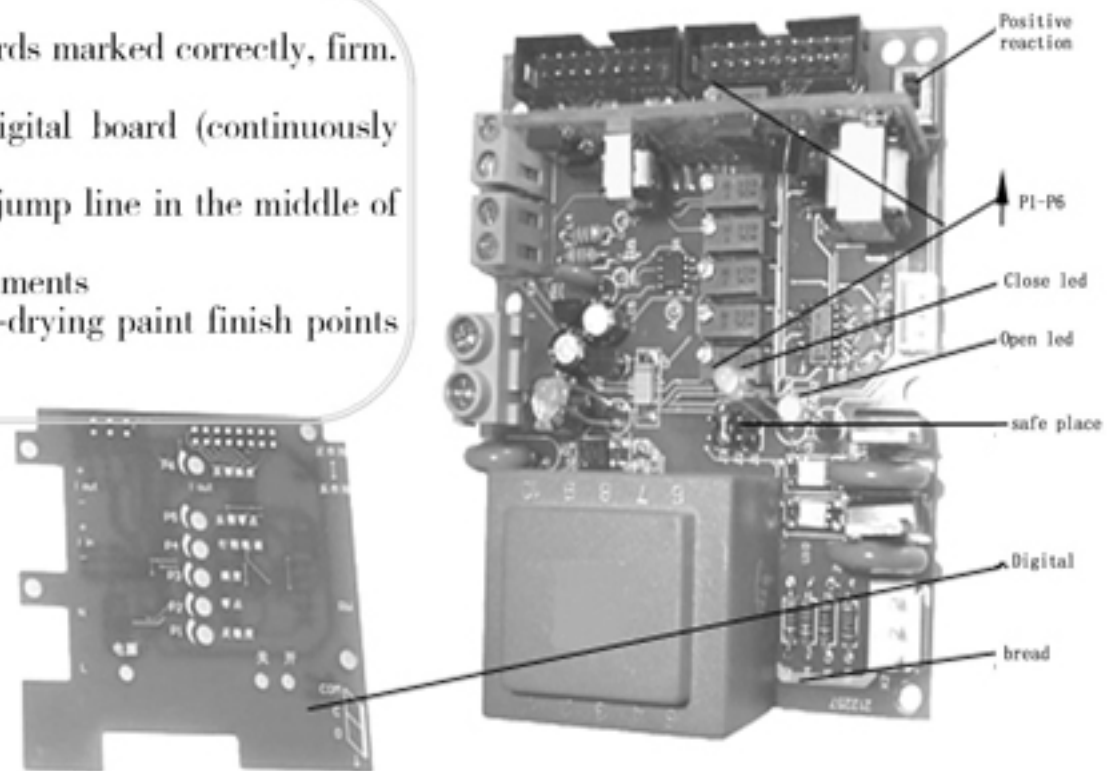
Simulation control panel

Commissioning procedures

- 1 According to the number of boards marked correctly, firm. Confirm wiring
- 2 From plastic gets stuck in digital board (continuously drive connections)
- 3 Set positive role; Safe position jump line in the middle of the block
- 4 For regular adjustment or adjustments
- 5 After the adjustment with fast-drying paint finish points sealing potentiometer
- 6 Pack good digital board

Potentiometers debugging

- P6-Feedback span
- P5-Feedback zero
- P4-Travel span
- P3-Travel
- P2-Travel zero
- P1-Dead zone



Conventional calibration (servo amplifier has completed before they leave the factory, only with the following basic set of steps and actuators are adjusted)

(1) actuators to sexual position (4mA input signal, and dextral actuator position feedback POT) to 0 (potentiometer ohm, measuring the output current feedback for 4mA.

(2) actuators to fully open position (input signal), adjust potentiometer 20mA output current for measuring feedback P3 20mA.

Note: if the feedback 4mA output zero and feedback full 20mA slight deviation, rotating potentiometer P5 and probe, adjust repeated 1-2 times to finish.

Basic set-up (P1 potentiometer when will probe into tone, according to the following steps to recover factory Settings)

1 will be positive role in positive. Switch

2 zero adjustment:

(1) 4mA input signal, actuators to shut, dextral feedback potentiometer POT, actuators to shut limit switch K c.

(2) levorotatory feedback to 0 ohms (POT potentiometer, spin motionless and adjust to shut ChangLiang indicator P2.

(3) P5 to adjust for 4mA feedback current signal (clockwise),

(P2) make A and B adjustment of the voltage is 5.02 VDC.

3 travel adjustment:

(1) 20mA input signal, actuators, to open until K o limit switches in open. In this process, if (open indicator, clockwise P4 make ChangLiang).

(2) to adjust (clockwise) make C B between voltage for 10 VDC.

(3) adjustment (clockwise) probe to feedback current signal for 20mA.

(4) Adjust rotation p4 adjustment between A and B voltage 5.0 VDC.

4 repeat above 2, 3 steps, so the valve position feedback signals to 4-20mA value.

5 sensitivity adjustment: if actuators oscillation, can pass to adjust sensitivity (P1 clockwise decrease). Note: the sensitivity adjustment should be allowed to the minimum, it will reduce the maintenance workload, prolong the life span of the actuator.

6 Safe location : cut signal protection setting for the factory, users can be adjusted as necessary.

the plugin signal after:

the short-circuit fault signal in 1, actuators to close action,

the short-circuit fault signal in 2, actuators to stop action,

the short-circuit fault signal in 3, actuators to open action,

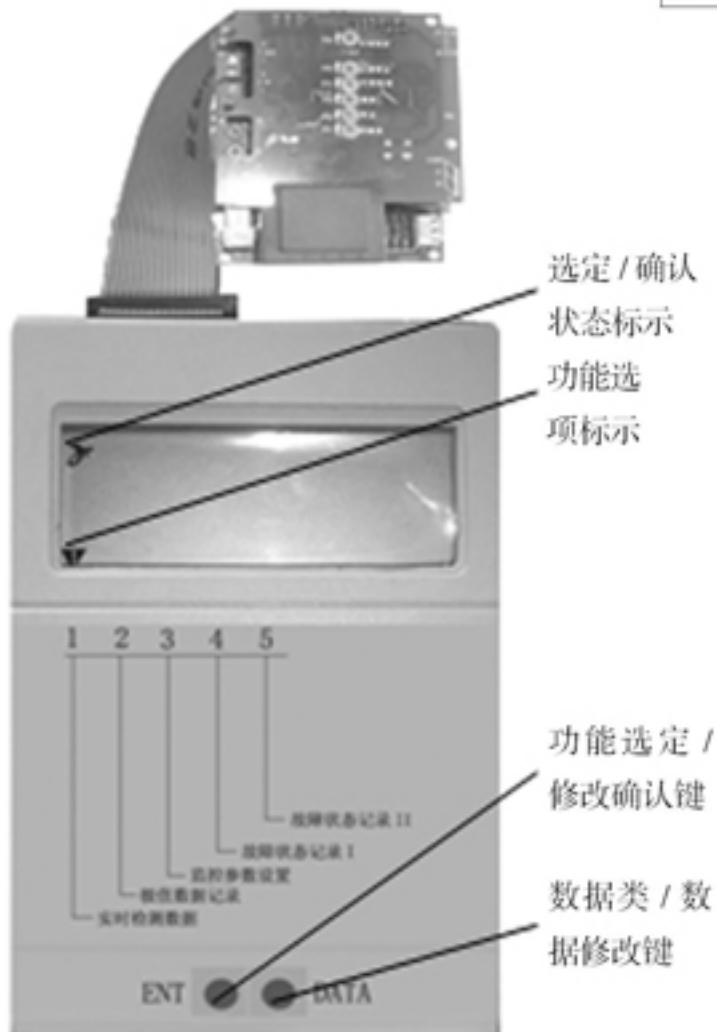
7 Form adjustment function: if the function forms and actuators for valve shut down for the positive role, will be open on reaction, switch debugging method above 2-6 steps.

(二)数字监控板调校

使用现场数字设定器可以很方便的进行数字监控参数的查看和设定，还可以查看执行机构工作状态的极值参数。

- 可查看参数：**
- 1 实时检测输入控制电流
 - 2 阀位反馈输出电流
 - 3 环境温度检测
 - 4 电机表面温度检测
 - 5 电机启动频次(平均值)

序号	数据名称	出厂设置
1	电机堵转时间	3s
2	电机禁行时间	1s
3	允许电机表面温度	80℃
4	数字监控允许	ON 允许
5	正反作用标志	OFF 正作用



- 操作说明：**
- 1 设定器数据线连接到数字板的 X7 接口；
 - 2 初始显示只为状态标示和功能项三角标示,这是第一级菜单；
 - 3 按 DATA 键使三角标示移动并从 1-5 循环变化,选定数据类；
 - 4 按 ENT 键进入第二级菜单显示选定数据类数据,液晶左边显示数据序号,右边显示数据值,按 DATA 查看数据,常按 ENT 退出；
 - 5 对第 3 类数据,按 ENT 键可进入第三级,状态标示闪烁,按 DATA 进行参数修改,常按 ENT 键确认修改数据并退回第二级菜单。

参数修改设定：

1. 电机堵转时间
允许电机堵转的时间;建议设定为 3-7s。
2. 电机禁行时间
电机两次启动的时间间隔,建议设定为 0-3S。



3. 允许电机表面温度
电机表面温度允许达到 90℃,为延长电机寿命,建议设定为 65℃-88℃。



4. 数字监控允许
选择 ON 或 OFF 设定是否启动数字保护功能,建议设置为:ON



5. 正反作用标志
应和模拟控制板的正反作用开关设置一致



注:数字监控部分的第 1、2、4、5 类参数为制造厂家调试及维护用参数,用户无修改权限。

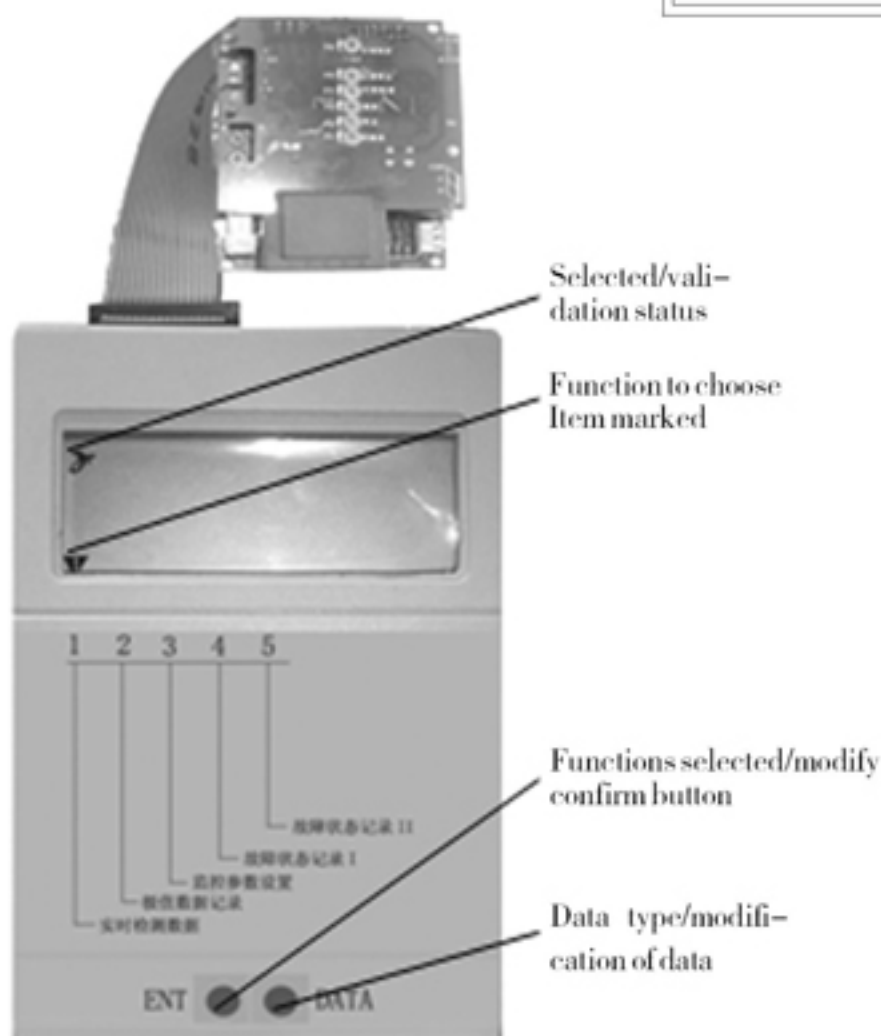
Digital control board set-up

Using field digital Settings can be very convenient for digital monitor parameter setting, also can check and see actuators working state of extreme parameters.

Can check:

- 1 real-time detecting input control current
- 2 the valve position feedback current output
- 3 environmental temperature detection
- 4 motor surface temperature detection
- 5 motor start frequency (average)

number	name of data	Set Factory
1	motor stall time	3s
2	motor drivers time	1s
3	allow motor surface temperature	80°C
4	digital control allow	ON
5	positive role	OFF



Parameter setting:

1. Motor stall

Allow motor stall of time: suggest setting for 3-7s.



2 motor drivers

Motor start-up time intervals, two Suggestions for 0-3 seconds set.



3. Allow motor surface temperature
Motor surface temperature reached 90 degrees Celsius, for allowing extend lifespan, suggest setting for motor 65° c - 88.



4. digital monitor allows

Choose ON or OFF if set start digital protection function, suggested Settings for: ON



5. 正反作用标志
The positive and negative effects with analog control switch
应和模拟控制板的正反作用开关设置一致



Operation:

1 set device connected to digital data plate X7 interface,

2 the initial state that only a triangle mark marking and function, this is the first primary menu,

According to the key DATA and labeled from 1-5 cycle changes, selected DATA, Press ENT button to enter the first four secondary menu display selected DATA type LCD display DATA and the DATA, DATA value, press the right DATA, press ENT check DATA from, 5 for the first three kinds of DATA, press ENT button to enter into the third grade, state, DATA according to the label, often parameters by ENT button to confirm modify DATA and return to the second menu.

Note: digital control part of the article 1, 2, 4 and 5 parameters for manufacturers, commissioning and maintenance without modify permissions user parameters.

使用事项 Use item



- 1、在安装、调试、操作、维护、维修执行机构之前,请认真阅读《使用手册》,并了解相关规定。
- 2、执行机构电源为交流 220V,必须断电接线,保证安全。
- 3、电机使用的表面温度可达 90℃,开盖检查时请注意防护。
- 4、调试完成后必须必须恢复盖好上盖才能正常运行。
- 5、存在关于本产品的所有问题,请用户及时和制造商联系。

1、In front of installment, debugging, operation, maintenance, service actuator, please earnestly read "User's manual", and understands the correlation stipulation.

2、Power supply: 220Vac, must the power failure wiring, the guarantee security.

3、The surface temperature of the motor can be used for 90 degrees, open when the examination please note protection.

4、After must must restore cover to cover normal operation.

5、About this product all existing problems, please contact customer timely and manufacturers.

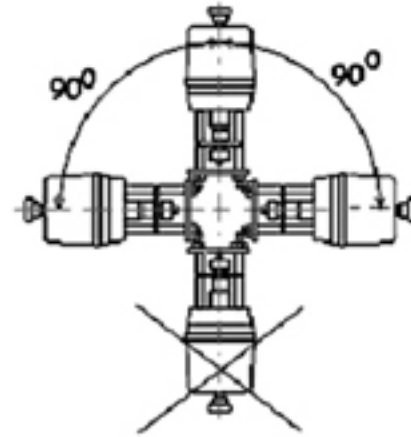
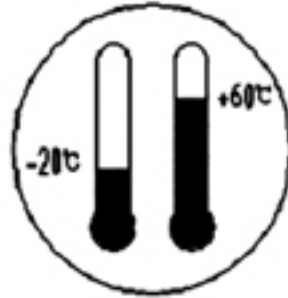
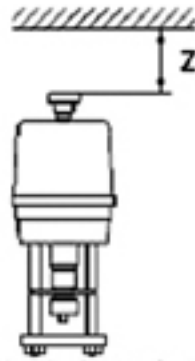


使用故障及处理方法 Using fault and processing method

具体现象 Specific phenomenon	原因 reason	处理办法 Treatment measures
控制板电源指示灯亮,但执行机构不动作 Control power indicator, but no action actuator	1 输入信号线接错 2 输入信号错误 1 input signal faulty 2 the input signal error	1 确定接线是输入信号线 2 输入信号线正、负极性确认 1 determined signal input wiring is 2 input signal positive and negative polarities confirmation
执行机构振荡、电机过热保护 Actuator oscillation, motor overheating protection	1 灵敏度设置过高 2 输入信号干扰信号过强 3 电源中干扰太强 1 set high sensitivity 2 the input signal 3 interference signals The power of interference	1 降低灵敏度 2 按要求配用屏蔽线作信号线或者在输入端并入 470uF/25V 电容 3 改善电源,使供电能达到技术要求 1 reduce sensitivity 2 the shield is made according to the requirements in the input signal or 470uf into 25V/capacitance 3 to improve power, power supply can achieve technical requirements
执行机构在运转中自动停止 Actuator in operation of automatic stop	1 阀门卡住 2 环境温度过高,电机过热保护 3 起动机次过高,电机过热保护 1 the valve stuck 2 high temperature environment, motor overheating protection 3 starter motor overheating protection, high frequency	1 确定执行机构正常后检修阀门 2 执行机构安装在通风或远离高温管道的地方 3 改善系统控制性能,降低起动机次 1 determine normal after repair valve actuator 2 actuators installed in ventilation or away from heat pipe 3 to improve system performance and reduce start frequency control
无阀位反馈信号或阀位反馈信号调整不到 20mA No valve position feedback signals or valve position feedback signal 20mA less	1 阀位反馈信号线接错 2 阀位反馈信号的负载阻抗过大(大于 400Ω) 3 连接尺寸不够 4 10V 电压调整不准确 1 the valve position feedback pick the wrong signal 2 the valve position feedback signal of the load impedance (more than 400 too Ω) 3 connection size is not enough 4 10V voltage adjustment is not accurate	1 确认阀位反馈信号输出线正确连接 2 降低阀位反馈信号的负载(<400Ω) 3 根据安装尺寸及机械连接重新连接 4 按调试方法调准 10V 电压 1 to confirm the valve position feedback signal output line properly connected 2 reducing valve position feedback signal load (< 400 Ω) 3 according to installation dimensions and mechanical connection 4 10V adjusted according to debug method
阀位达不到全关 The valve position to reach sexual	1 精密电位器零位调整不良 2 上、下限位块调整不良 3 连接尺寸不够 1 precision potentiometer zero adjustment 2 upper and lower limit a block adjustment 3 connection size is not enough	1 检查精密电位器调整情况 2 重新调整 3 根据安装尺寸及机械连接重新连接 1 check precision potentiometer 2 to adjust 3 according to installation dimensions and mechanical connection



注意事项：运输、贮存、安装、维护、保养
 Note: transportation, storage, installation and maintenance



运输与贮存

- ① 执行机构必须按技术要求进行包装后运送到安装地点。
- ② 禁止安放任何装置于执行机构上。
- ③ 存放于干燥、通风良好的地方，并防止受潮。
- ④ 遮盖以防止灰尘和雨水。

Transportation and storage

- ① the actuator must press technology requirements to install place after packing.
- ② was banned from any device on the executing agency.
- ③ deposited in the dry and ventilated place, and to prevent moisture.
- ④ to prevent dust covered with rain.

安装要求

- ① 执行机构安装前，应进行外观检查确认有无损伤，并仔细细心查对铭牌所标的型号、全行程时间、输出推力、额定电压及接线方式等是否符合使用要求。
- ② 安装位置应易于接近。
- ③ 应留有足够的拆卸空间(K 值见 " 产品安装 ")，以便整机拆装或移去防护壳。
- ④ 执行机构不可倒置。

Installation requirements

- ① actuators before installation, check should look for any damage and careful careful check mark model, the nameplate, export thrust travel time, rated voltage and wiring way, etc. With
- ② should be accessible location.
- ③ the dismantling space should be adequate K value (see "products"), to install the disassembling or remove protective shell.
- ④ actuator not inversion.

维护和保养

注 意：如果安装正确且防护罩也合适，则润滑油可维持三年，不需要维修；

进行任何维修工作前应切断执行机构电源。

运行后：如需要，请重新喷漆以防腐蚀。

维护周期：运行后每六个月检查执行机构性能。

润 滑：油脂浓度 NO.2。

一年后：检查与阀的机械联接是否可以保证，如果需要，重新上紧螺纹。

大 检 修：一年后需再次加油或需要进行维修时，请向我们询问综合维修方案。

Maintenance and maintenance

Note: if the correct installation and shields are appropriate, lubricant, does not need to maintain.

Before any repair work should be cut off power actuators.

After shipment, if need be, please repainted in corrosion.

Maintenance cycle: every 6 months after operation inspection actuators performance.

Embellish smooth concentration. 2: grease.

A year later, check and valve mechanical connection could guarantee, if needed, to tighten the screw.

Fix: after a big inspection to refuel or need maintenance again, please ask us for comprehensive maintenance plan.

VER.WY-0901-F-PEL

50年控制阀制造经验
QUALITY SINCE 1959

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