BRQT系列角行程阀门电动装置

BRQT Series quarter-turn valve electric actuators

使用说明书

Operating instruction

A 智能型 intelligent

B 基本型 Basic type

一、产品概述/Product description

BRQT 型部分回转阀门电动装置是我公司在借鉴和吸收国外先进技术的基础上研制的产品。适用于控制蝶阀、球阀、旋塞阀等做 90°回转的阀门。该产品箱体采用压铸铝，外形美观、体积小、重量轻、具有高效率、高可靠性、高防护性能、低噪音等特点。可现场操作，也可远控、集控和自动控制。可广泛用于石油、花工、发电厂、水处理、造纸等各行业。

本产品的性能符合 JB/T8528-97《普通型阀门电动装置技术条件》的规定。隔爆型的性能符合 GB3836.1-2010《爆炸性气体环境用电气设备第 1 部分：通用要求》,GB3836.2-2010《爆炸性气体环境用电气设备第 2 部分：隔爆型 "d"》及 JB/T8529-1997《隔爆型阀门电动装置技术条件》的规定。

BRQT partial rotary valve electric device is a product developed by ourcompany on the basis of learning from and absorbing foreign advancedtechnology.It is suitable for controlling butterfly valve,ball valve,plugvalve and other valves with 90 ° rotation.The product box is made ofdie-casting aluminum,with beautiful appearance,small volume,lightweight,high efficiency,high reliability,high protection performance andlow noise.It can be operated on site,remote control,centralized controland automatic control.It can be widely used in petroleum,chemicalindustry,power plant,water treatment,papermaking and otherindustries.

The performance of this product meets the provisions of JB/t8528-97technical conditions for electric devices of ordinary valves.Theperformance of flameproof type shall comply with GB38361-2010electrical equipment for explosive gasatmospheres Part 1:Generalrequirements,GB38362-2010 electrical equipment for explosive gasenvironment Part 2:Flameproof"d"and JB/t8529-1997 technicalconditions for flameproof valve electric devices.

二、产品型号说明/Product Model Description

产品设计序列号：BR
Product design serial No:BR

BR 1 2 3 — 4 5 6 — 7 8

1.产品型号/Product model:
- IQ-IQ型多回转系列/Q type partial rotary series
- IT—IT型部分回转系列/IT type partial rotary series
- Z-Z型多回转系列/Z type partial rotary series
- Q-Q型部分回转系列/Qtype partial rotary series
- QT-QT型部分回转系列/QT type partial rotary series

2.适用环境(QT不表示)/Aplicable key(QTdoes not indicate)
- 室外标准型(C/Outdoor standard type
- 隔爆型(B)/Flameproof type

3.额定转矩(N.m)/Rated torque(N.m):
- 10/15/20/30/60/100/150/200(N.m)

4.输出转速(r/min)/Output speed(r/min):
- 0.3/0.5/1(r/min)

5.输出形式/Output foem:
- 常规转矩型(W)/Conventional torque type
- 推力型(L)/Thrust type
- 特殊连接尺寸(T)/Special connection size

6.产品功能/Product features:
- 普通开关型(不表示)/Common switching type(not expressed)
- 一体化开关型(B)//ntegrated switching type(B)
- 一体化调节型(C)/ntegrated control type(C)
- 遥控智能开关型(K)/Remote intellgent switchtype(K)
- 遥控智能调节型(E)/Remote control intelligent type(E)
- FF总线型(F)/FF Bus type(F)
- Modbus总线型(M)/Modbus bus type
- Profibus总线型(P/Profibus type(P)
- 特殊定制(Z/Special customization(Z)

7.工作电压/Working voltage:
- 110V/220V/440V/660V(380V不表示)/:110V/220V/440V/660V/(380V No indication)

8.特殊码/Special code:

三、产品分类/Product Categories

按控制方式分：普通型、智能开关型、智能调节型
(Profibus 现场总线、Modbus 现场总线、Hart 现场总线、FF 现场总线、DeviceNet 现场总线);
按防护类型分：户外型和防爆型；

Divided by control mode: ordinary type,intelligentswitch type,inteligent adjustment type
(Profibus fieldbus,Modbus fieldbus,Hartfieldbus,FF fieldbus,Device Net fieldbus);
Divided by protectiontype:outdoor and explosion-proof;

四、主要技术指标/Main Specifications

输入信号 Input signal	4mA-20mA; 无源触点 /Passive conact	
供电电源 Power supply	常规 Conwentional	单相 /Single phase:220V 三相 /three phase:AC380
	特殊 Special	三相 /Three phase:AC60V、AC440V、AC415V(50Hz、60Hz)
		单相 /Single phase:AC110(50HZ,60HZ)
		DC24V
基本误差限 Basic eror limit	≤1%	
防护等级 Protection class	IP67、IP68	
防爆型等级 Explosion-proof grade	Exdll BT4、Exdll CT4、Exdl CT6;	
环境温度 Ambient temperature	-30C-+70C(可选 /Optional:40C-+100°C)	
环境湿度 Environment humidity	≤95%(25C°)	
电机工作制：标配长时电机，F 级绝缘 Motor working system Standard long-term motor,F-class insulation		

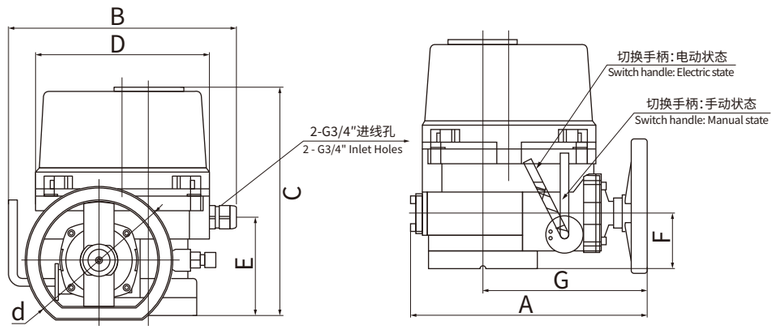
五、性能参数表/Performance parameter table

型号 / 规格 Wdel/ Specicion	输出转矩 Ouptbmue (N.m)	输出转速 Otput ped (r/min)	最大阀杆直径 (ϕmm)	运行时间 Waium sndan	电机功率 (W) Moior power		额定电流 (A) Raled auent		参考重量 Running time (kg)
					(380V)	(220V)	(380V)	(220V)	
BRQT10	100	0.5	Ø32	30	40	40	0.6	1.1	13
BRQT20	200	0.5	Ø32	30	60	60	0.7	1.2	13
BRQT30	300	0.5	Ø32	30	60	60	0.7	1.2	18
BRQT40	400	0.5	Ø32	30	90	90	0.8	1.6	19
BRQT60	600	0.5	Ø32	30	120	120	1.0	2.0	19
BRQT80	800	0.5	Ø42	30	120	120	1.0	2.0	25
BRQT100	1000	0.5	Ø42	30	180	180	1.5	3.0	25
BRQT150	1500	0.3	Ø50	50	180	180	1.5	3.0	50
BRQT200	2000	0.3	Ø50	50	200	200	1.8	3.3	50
BRQT250	2500	0.3	Ø50	50	200	200	1.8	3.3	50

以上参数为常规供货，如有特殊需要可在订货时说明

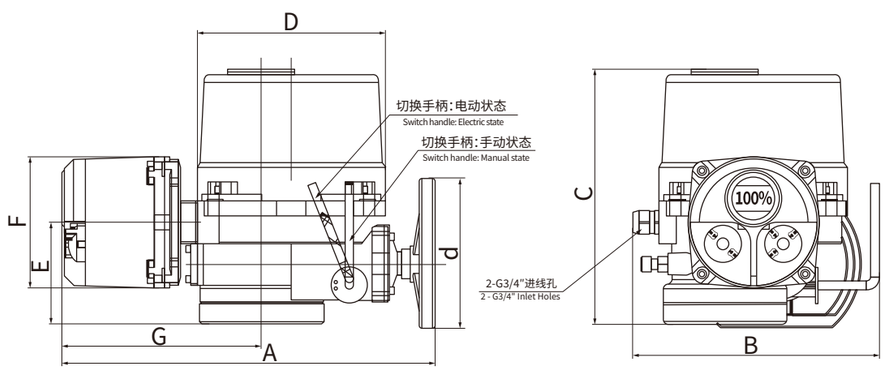
Note:I refers to connection sizeof power station typeThe above parameters are forregular supply,and can be explained when ordering if there is special need

六、外形尺寸/Overall dimension



基本型外形尺寸图
Basic outline dimension drawing

尺寸/Size / 型号/Model	A	B	C	D	E	F	G	d
BRQT10/20	272	262	263	200	113	64	189	170
BRQT30/60	293	289	298	220	119	70	204	200
BRQT80/100	333	313	342	258	127	78	227	250
BRQT150/250	357	325	451	258	236	187	227	250



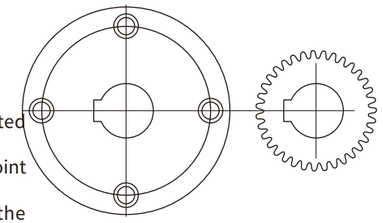
智能一体化外形尺寸图
Intelligent integrated outline drawing

尺寸/Size / 型号/Model	A	B	C	D	E	F	G	d
BRQT10/20	418	262	263	200	113	155	229	170
BRQT30/60	439	289	298	220	119	155	234	200
BRQT80/100	478	313	342	258	127	155	251	250
BRQT150/250	478	325	451	258	236	155	251	250

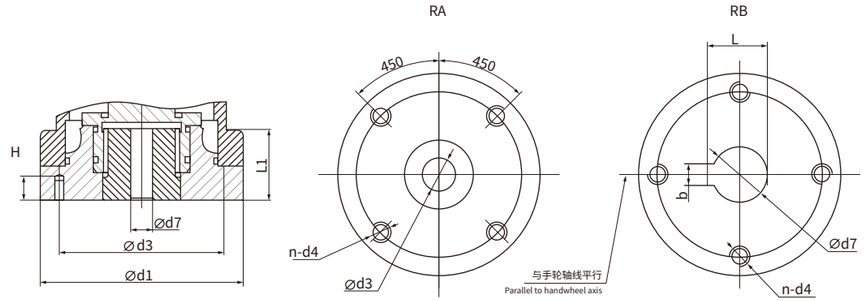
七、阀杆接头/Stem joint

随电装提供给用户的阀杆接头是与输出轴为渐开线花键连接。
①取下花键接头，按阀杆的轴径、键的尺寸加工阀杆接头的孔和键槽。
②将加工好的阀杆接头按阀杆键槽方向放至输出轴内，如不合适可沿圆周运动 1 个齿进行角度微调。

The valve stem joint provided to the user withthe glectric device is.connected with the outputshaft by involute spline.
①Remove thespline joint,and process the holeand keyway of the yalve stem joint according to theshaft diameter of the valve stem and the sizeof thekey.
②Place the processed valye stem joint into theoutput shaft according to the direction of valvestem keyway.If itis inappropriate,move one toothalong thecif-cumferencefor angle fine adjustment



八、法兰结构与连接尺寸/Flange structure and connection dimensions



型号 Model	法兰形式 Flange form		ϕd1	ϕd3	ϕd7 标准尺寸 Standard size	ϕd7 预留尺寸 Reserved size	ϕd7 最大允许 Maximum size	b	L	L1	ϕd4	H
BRQT10 BRQT20	RA	F05	125	50		10	22			45	4-M6	12
		F07		70		15	32					
		F10		102								
	RB	2"2.5"3"		57	12.6			3	14.1		4-M6	10
		4"		70	15.9			5	18.2		4-M10	15
		5"6"			19			5	21.3			
BRQT30 BRQT40 BRQT60	RA	F10	150	102		15	32			45	4-M10	15
	RB	8"		89	22.2			5	24.5		4-M12	20
		10"			28.5			8	31.8			
BRQT80 BRQT100	RA	F12	175	125		20	42			58	4-M12	18
		F14		140							4-M16	25
	RB	8"		89	22.2			5	24.5		4-M12	20
		10"			28.5			8	31.8			
		12"14"		108	31.7			8	35			
BRQT150 BRQT200 BRQT250	RA	F14	215	140		20	50			77	4-M16	25
		F16		165							4-M20	30
	RB	14"		108	31.7			8	35		4-M18	30
		16"		159	33.2			10	36.5			
		18"			38			10	41.3			

九、调试注意事项/Commissioning precautions

电动前的注意事项：电动执行器首次运行时，必须确认电机的转动方向是否正确，若不正确会对电动执行器造成损坏。

①先转动手轮，手动将阀门运行至中间位置，然后进行电动开阀或关阀的操作，检查电动时的运行方向是否正确。

----- 一输出轴顺时针转动（面向开度窗）: 阀门关闭。

------—输出轴逆时针转动（面向开度窗）: 阀门打开。

②若阀门转动方向与上述的正确方向相反，应立即停止操作，改变电机与电源相序的连接，并再次检查方向是否正确。

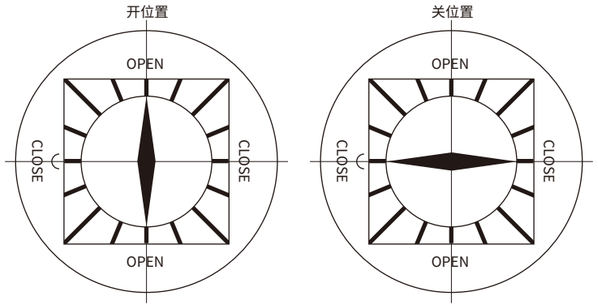
Precautions beforeelectric:when the electric actuator runs for the firsttime,it must be confirmed whether therotation direction of the motor is correct.If it is notcorrect,it will cause damage to the electric actuator.

①First turnthe hand wheel,manually move thevalve to the middle position,and then open or close the valve electrically to check whether the operation directionis correct.

Output shaft rotates clockwise(facing the opening window):thevalve is closed.

Output shaft rotates counterclockwise(facing the opening window):the valve opens.

②Ifthe rotation direction of the valve is opposite to the above correct direction,stop the operation immediately,change the connection between the motor and the phase sequence of the power supply,and check whether the direction is correct again.



十、行程控制机构调整/Stroke control mechanism adjustment

以上准备就绪后将进行如下调整：

①拉动手一电动切换手柄至手动位置后，顺时针转动手轮，使阀门至全关位置，用 "L" 板子，松动下部凸轮 (CLS) 上的螺钉，调整凸轮，使之与下部的微动开关接触（刚好听到咔哒声）然后紧固螺钉。

②拉动手一电动切换手柄至手动位置后，逆时针转动手轮，使阀门至全开位置，用 "L" 板子，松动上部凸轮 (OLS) 上的螺钉，调整凸轮，使之与上部的微动开关接触（刚好听到咔哒声）然后紧固螺钉。

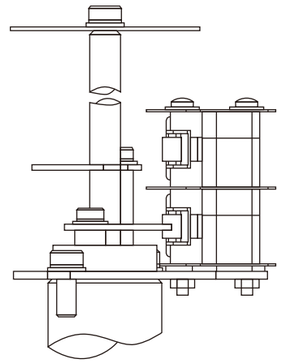
③手动或电动开，关阀门，检查阀门开启或关闭是否符合要求，如果不符合要求，按上述步骤进行微调，直到符合要求。

When the above is ready,the following adjustments will be made:

①After pulling the hand electric switch handle to the manual position,turn the hand wheel clockwise to"make the valve fully closed.Use the "!"plate to loosen the screw on the lower cam(CLS),adjust the cam to make it contact with the lower microswitch (just hear the click),and then tighten the screw.

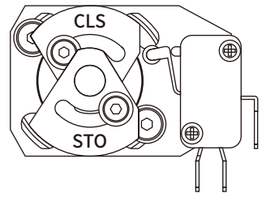
②After pulling the hand electric switeh handle to the manual position,turn the hand wheel counterclockwise to make the valve fully open.Use the "L"plate to loosen the screw on the upper cam(OLS),adjust the cam to make it contact with the upper microswitch (just hear the click),and then tighten thescrew.

①Open and close the valve manually or electrically,and check whether the opening or closing of the valve meets the requirements.If not,fine tune according to the above steps until therequirements are met.



下部凸轮CLS--关方向限位凸轮
Lower cam CLS closing direction limit cam

上部凸轮OLS--开方向限位凸轮
Upper cam OLS opening direction limit cam



十一、机械限位调整/Mechanical limit adjustment

①出厂时，装置上的两机械限位螺钉已调整好并紧固，无特殊需求，用户不须松动。

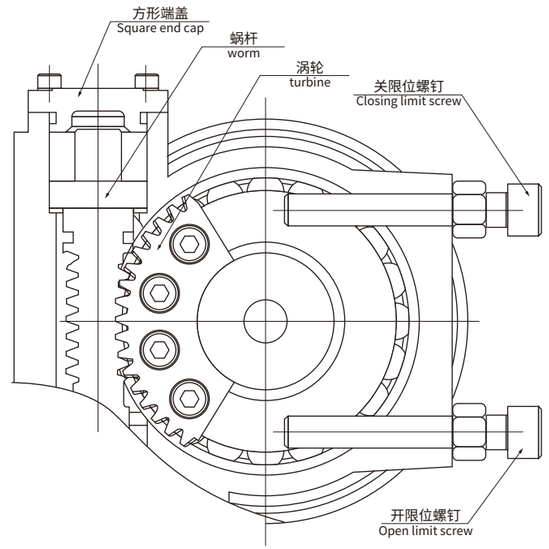
②如遇必须调整限位螺钉时，应首先确定该螺钉所限制的阀门位置。当阀门右旋为关时，右侧为关限位螺钉，左侧为开限位螺钉（当箱罩开度窗向上，面对限位螺钉调整端面）。

③当调好阀门极限位置（或所需位置）时，先向内旋入限位螺钉至扇形涡轮端面相接触，而后再退回 0.5-1 固（使之成为行程限位或过力矩的安全保护）。最后将限位螺钉外端的放松螺母可靠拧紧，至此限位调整完毕。

①When leaving the factory,thetwo mechanical limit screws on the device have been adjusted and tightened.There is no special demand,and the user does not need to loosen them.

②If it is necessary to adjust the limit screw,first determine the valve position window of the box cover is upward,adjust the end face facing the limit screw).

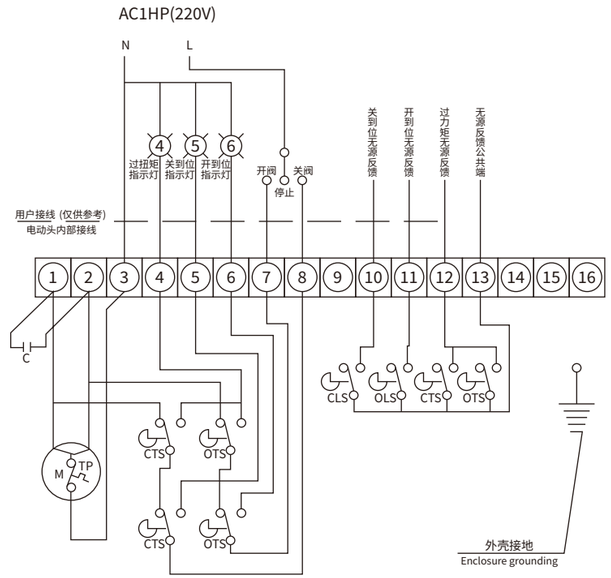
③When adjusting the limit position(or required position)of the valve,first screw the limit screw_inward until the end surface of the sector turbine contacts,and then return it for 0.5-1 turn(making it a safety protection for travel limit or over torque).Finally,tighten the locknut at the outer end of the limit screw reliably,and the limit adjustment is completed.



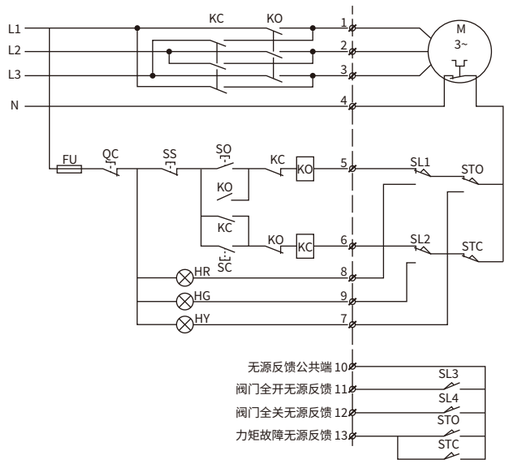
十二、基本型接线图/Basic wiring diagram

CLs:dose travel imit switch(250V AC 6a)
OLS:open travel limit switch (250V AC 6a)
CTS:dosing torque limit switch (250V AC6a)
OTS:opening torque limit switch(250V AC 6a)
TP:motor thermal protecter(250V AC15a)

CLS: 关向行程限位开关 (250V AC 6A)
OLS: 开向行程阳位开关 (250VAC6A)
CTS: 关向力矩限位开关 (250V AC 6A)
OTS: 开向力矩阳位开关 (250V AC6A)
TP: 电机热保护器 (250VAC 15A)



220V 基本型接线图
220V basic wiring diagram

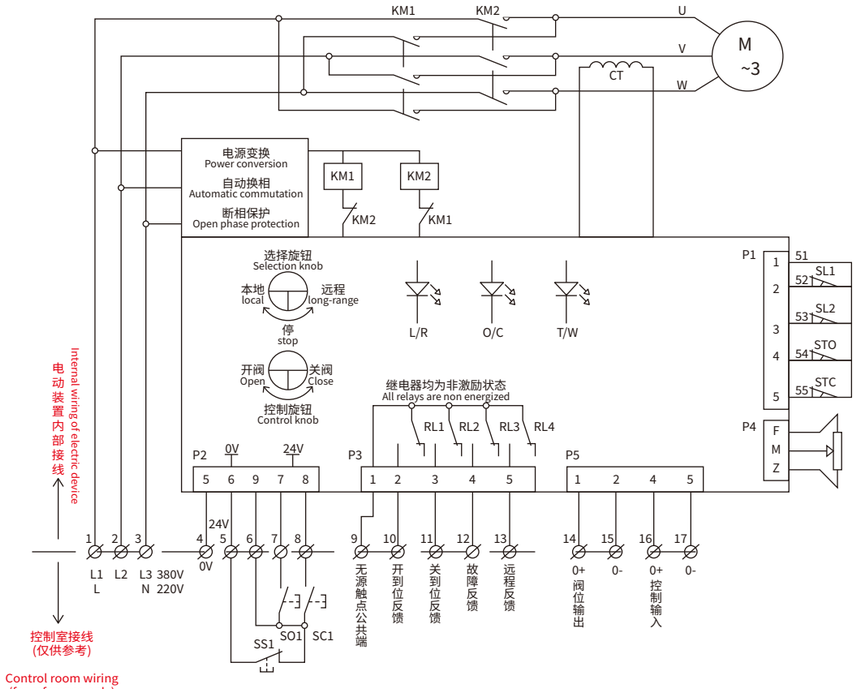


说明 :Note
1. 本图表示电动阀门处于中间位置。
1.The Valve is at the middle position in this diagram
2.Ø: 用户接线端子 ,
2.: Wiring Terminals for User to Connec!

元 件 表			Capsnents Table
11	FU	电源保险	Power fuse
10	HY	过力矩指示灯	Over torque indicator
9	HG	全关到位指示灯	Fully closed in place indicator
8	HR	全开到位指示灯	Full open position indicator
7	SC	现场关阀按钮	Field valve closing button
6	SO	现场开阀按钮	Field valve opening button
5	SS	现场/远控工作转换按钮	Field / remote control work conversion button
4	STO·SLC	开、关向力矩限位开关	Opening/closing torque switch
3	SL1·SL4	开、关向行程限位开关	Opening/closing limitation switch
2	KO、KC	交流接触器	AC contactor
1	M	阀门专用电机(AC380V)	Special-used moter for the valve
序号 NO.	标号 Symbo1	名称	Name

380V 基本型接线图
380V basic wiring diagram

十三、一体化接线图/Integrated wiring diagram



说明 :
1、本图表示电动阀门处于中间位置，状态继电器非激励。
2、∅: 用户接线端子。
Notes :
1、This diagram shows that the electric valve is at the middle position and the state relay is not excited.
2、∅:User's connection terminal.

元 件 表			Capsnents Table
11	TH	电动机热保护开关	Motor over-heated protection switch
10	RH	空间加热器、24k/25w	Room heater 24k/25w
9	RLI-5	状态输出继电器	State output relay
8	RPI	位置反馈电位器	Position feedback potentiometer
7	T/W	事故/电源指示灯	Over-torque/Power Indicator
6	O/C	阀开/阀关指示灯	Field valve opening button
5	L/R	现场/远控工作转换按钮	Opening/closing indicator
4	STO·STC	开、关向力矩限位开关	Opening/closing torque switch
3	SL1·SL2	开、关向行程限位开关	Opening/closing limitation switch
2	KM1-2	交流接触器	AC contactor
1	M	阀门专用电机(AC380V)	Special-used moter for the valve
序号 NO.	标号 Symbo1	名称	Name
		在电动装置上	In the electric actuator

十四、非侵型电控组件调试说明/commisioning instructions for non intrusive electronic controlcomponents

非侵型是我公司在数字型产品基础上开发的。其可接收 DCS 系统中 PLC 等控制器发出的开关量信号 (无源干触点、有源 24V、有源 220V, 点动保持可切换) 或模拟量信号 (DC4~20mA、0~10V 等), 可直接驱动，也可通过接触器或固态继电器驱动电动执行器动作。输出 DC4~20mA 反馈电流和四个继电器触点 (开位、关位、远控、故障报警)。该组件集成了伺服控制单元、液晶显示单元、旋钮操作等单元。本产品操作简单，保护功能完善，是您重新定义高品质和简易智能型的最佳选择。

Non intrusive products aredeveloped byour company on the basis of digital products.It can receive the on-off signal (passive dry contact,active 24V,active 220V,inching and holdingcan be switched)or analog signal (de4-20ma,0-10V,etc.)sen by PLC and other controllers in DCS system,and it can be directly driven,or it can also drive the electric actuator throughcontactoror solid-state relay.Output DC4~20mA feedback currentand four relay contacts(open position,close position,remote control,fault alarm).Themodule integrates servo controlunit,liquid crystal display unit,knob operation unit,etc.With simple operation and perfect protection function,this product isthe bestchoice for you to redefine high quality andsimple intelligent type.

1. 旋钮操作说明

红色旋钮为方式钮，可在现场 / 停止 / 远方之间切换；或在设定状态实现菜单的保存 (从停位旋到现场) 和退出 (从停位旋到远方)。黑色旋钮为操作钮，可在现场模式进行打开或关闭操作，或在设定状态进行加减设置。现场旋钮操作时，短时间作用为现场点动模式，当操作钮有效作用时间超过 3 秒钟后报警区显示 “bc” 为自动进入现场保持模式，反向旋操作钮或将方式钮旋到停止，即停止动作。

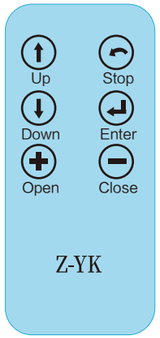
The red knob is the mode button,which can be switched between site /stop /remote;or the menucan be saved (from stop tosite)and exited (fromstop to remote)in theset state.The black knob is theoperation knob, which canbe opened or closed in the field mode,or set up plus and minus in the setstate.When the field knob is operated,the short-termaction is the field inchingmode.When the effectiveaction time of the operation knob exceeds 3 seconds,the alarm area displays "BC"asthe automatic entry into the field holding mode.Turn the operation knob reversely or turn the modeknob to the stop,that is to say,stop the operation.

2. 遥控器操作说明 (遥控器为选配件，需要时请在订货时特殊说明

Up -- 上移 / 开标定 Down -- 下移 / 关标定

Enter -- 确认 / 保存 Stop -- 停止 / 退出

Open -- 值加 / 现场开 Close -- 值减 / 现场关



在现场方式时，按 “Open” 键执行保持方式开阀，按 “Close” 键执行保持方式关阀，按 “Stop” 键停动。

现场方式，连按三次 "Up°键进入开位标定状态，"Open"、“Close"、"Stop” 键可控制电动执行器开、关、停，"Enter" 键用于保存行程，"Stop" 键用于返回

现场方式，连按三次 “Down” 键进入关位标定状态，其它操作同上

现场方式，连按三次 “Enter” 键进入高级设置菜单，菜单内 “Up"、"Down” 键用于菜单上移下移，"Open”、"Close" 用于参数值改变，"Enter" 键用于进入菜单和保存参数，"Stop" 键用于返回上级和退出菜单。

In the field mode,press the "open"key to open the valve inthe holdingmode,Press "close"to close the valve in holding mode,andpress "stop"to stop. In the field mode,press the"up"key three timesto enterthe open position calibration state,the"open°,"close"and"stop" keys cancontrol the opening,closing and stopping of the electric actuator,the"enter key is used to save the stroke,and the "stop"key is used to retum. In the field mode,pres the"down"key threetimes to enter the off position calibration state,and other operations are the same as above. In the fieldmode,pressthe "enter"key three timesto enter the advanced setting menu.The"up"and"down"keys in the menu are used to move up and down the menu.The"open"and "close"keys are used tochange the parameter value.The "enter"key is used to enter the menu and save the parameter.The"stop"key is used toreturn to thesuperior and exit the menu.

3. 信号查询 (显示屏左下角为信号查询区)

3.1. 远控信号查询

方式钮旋到远方，在显示屏的左下角显示接收到的远控信号。开关型：OP 代表有远方打开；CL 代表有远方关闭；bc 代表有远方保持 (多状态并存时交替显示)。调节型：显示收到控制电流值或电压值

3.2. 阀位信号查询

方式钮旋到现场，显示屏左下角显示阀位信号。阀位采集为电位器时显示阻值的百分比 (d01~d99); 阀位采集为 12 位编码器时显示编码器的百分比 (b00~b99); 阀位采集为 18 位编码器时显示编码器的千分比 (000~999)。

4. 行程标定

4.1 关位标定

停止位置旋操作钮至关闭约 3 秒钟，等到闪烁显示字母 L 时松开操作钮并将方式钮旋到现场，此时 L 不再闪烁表示进入关位标定状态。可通过操作钮执行电动开或电动关动作，调整到关位后将方式钮旋到停止再旋回现场，此时字母 L 闪两次，输出反馈电流为 4mA 同时驱动关位继电器闭合并显示 0% 表示关位标定完成。若方式钮由停止旋至远方则直接退出行程标定。

4.2 开位标定

停止位置旋操作钮至打开约 3 秒钟，等到闪烁显示字母 H 时松开操作钮并将方式钮旋到现场，此时 H 不再闪烁表示进入开位标定状态。可通过操作钮执行电动开或电动关动作，调整到开位后将方式钮旋到停止再旋回现场，此时字母 H 闪两次，输出反馈电流为 20mA 同时驱动开位继电器闭合并显示 100% 表示开位标定完成。若方式钮由停止旋至远方则直接退出行程标定

注：保存行程时，出现 Fu 或 Fn 报警时，请重新调整编码器的旋转区间，并重标行程；

3.Signal query (the lowerleftcorner of the display is the signalquery area)

3.1.Remotecontrol signalquery

Turm the mode button to the remote position,andthe received remote control signal willbe displayed in the lower left corner ofthe display screen.Switch type:OP stands for remote opening;CL stands for remote closing;BC standsforremote holding (altematedisplay when multiple states coexist).Regulating type:displaythe received control current value or voltage value.

3.2.Valve position signal query

Tum the mode button to the site,and the lower left corner of the display shows the valve position signal.When the valve position acquisition ispotentiometer,itshowsthe percentage of resistance value (d01-d99);when the valve position acquisi-tion is 12 bit encoder,it shows the percentage of encoder (b00-699);when the valve position acquisition is 18 bit encoder,it shows the thousandth ratio of encoder (000-999).

4.Stroke calibration

4.1 off position calibration

When the stopposition is turmed to the off positionfor about 3 seconds,releasethe operaion button and tum the mode button to the sitewhenthe display letter Lfiashes.At this time,whenI no longer flashes,it means entering the ofposition calibrationstate.The electric opening or closing action can be performed through the operation button.Aferadjusting to the closing position,turn the mode button to the stop and then turn it back to the site.At this time,the letterL flashes twice,and theoutput feedback current is 4mA.At the same time,drive the closingrelay tocloseand display 0%to indicate that the closing calibration is completed.If the mode button isturned from stop toremote position,it will exit the stroke calibration directly.

4.2open positioncalibration

When the stopposition is turned totheopen position for about 3seconds,release the operation button and turm the mode button to the sitewhen the flashing letter His displayed.At this time,h will no longerflash to indicate entering the open positioncalibration state.The electric opening or closingaction can beperformed through the operation button.Afteradjusting to the opening position,turn the mode button to the stop and then tum it back to the site.Atthis time,the letter H flashestwice,and the output feedback current is 20mA.At the same-time,drive theopening relay toclose and display 100%to
indicate that the opening calibration is completed.If the mode button isturned from stop to remoteposition,it will exit the stroke calibration directy.

Note:when savingthe stroke,in case of Fu or FN alarm,please readjust the rotation range of encoder and remark the stroke;

5. 输出电流微调

5.1 4mA 输出电流微调

停止位置旋操作钮至关闭约 10 秒钟，等到闪烁显示字母 LF 时松开操作钮并将方式钮旋到现场再旋回停止，即进入 4mA 输出电流微调状态。此时可通过操作钮调整输出电流的大小，调整输出电流达到 4mA 后将方式钮旋到现场，此时 LF 闪烁两次表示 4mA 输出电流微调完成。若方式钮由停止旋至远方则直接退出输出电流微调状态。

5.2 20mA 输出电流微调

停止位置旋操作钮至打开约 10 秒钟，等到闪烁显示字母 HF 时松开操作钮并将方式钮旋到现场再旋回停止即进入 20mA 输出电流微调状态。此时可通过操作钮调整输出电流的大小，调整输出电流达到 20mA 后将方式钮旋到现场，此时 HF 闪烁两次表示 20mA 输出电流微调完成。若方式钮由停止旋至远方则直接退出输出电流微调状态

6. 死区设置 (此功能只适用于调节型)

死区为自调节，无需设置，且精度更高无震荡。

5.Output currentfine adjustment

5.1 4mA output current fine adjustment

Tum the operation button to the stop position forabout10 seconds,release the operation buttonwhen the fashing display letter LF isdisplayed,turn the mode button tothe site,and then turn it back to stop,that is,enterthe 4mA output current fine-tuning state.At this time,the output curent can be adjusted through theoperation button.When the output current reaches 4mA,turn the mode button to thesite.At this time,If fashes twiceto indicate thatthe output curent of 4mA is fine-tuning.If the mode button is turned from stop to remote,it will directly exit from the outputcurrent fine-tuning state.

5.2 20mA output current fine adjustment

Tum the operation button to the stop position for about10 seconds,release the operation button when the flashing display letter HF is displayed,turnthe mode button to the site,and thenturn it back to stop,that is,enter the 20mA output current fine-tuning state.At this time,the output current can be adjusted through the operation button.After the output currentreaches 20mA,tum the mode button to the site.At this time,HFfickers twice toindicate that the output current of 20mAis fine adjusted. If the modebutton is turned from stop toremote,it will directlyexitfrom the output current fine-tuning state.

6.Deadbandsetting (this funcionis only applicable to the adjustable type)

The deadband is self-adjusting,no need to set,and the accuracy is higher withoutvibration.

7. 高级设置

停止位置，旋操作钮至打开约 18 秒钟，等到闪烁显示字母 CF 时松开操作钮并将方式钮旋到现场再旋回停止，即进入高级设置菜单。

遥控操作时，现场方式连按三次 “Enter” 键即可进入高级设置菜单

注：各级菜单内，若方式钮由停止旋至远方 (或按遥控器 “Stop” 键) 则返回上级或退出菜单

7.1 CF-- 关闭方向 (默认值 -C, 顺时针)

菜单项移至 "CF" 然后将方式钮旋到现场再旋回停止 (或按遥控器 “Enter" 键), 即进入关闭方向设置，此时显示屏左下角显示参数值 C-- 顺时针，A- 逆时针，可通过操作钮调整参数值 (或按遥控器 "Open"、"Close" 键), 调整好后将方式钮旋到现场再旋回停止 (或按遥控器 "Enter" 键), 此时 CF 闪烁两次表示关闭方向设置完成并退回上级菜单。

7.Advanced settings

Inthe stop position,tum the operation button to the open positfion for about 18 seconds.When the letter CF is flashing,release the operation button,turn the mode button to the site,and then turm the button backto the stop position to enter theadvanced setting menu.

During remotecontrol operation,press"enter"three times in field mode to enter advanced settingmenu.

Note:in al levels ofmenus,if themode buttonis turned from stop to remote(or press the"stop"key of the remote-control), return to the upper level or exit the menu

7.1 CF-closing direction(default value--C,clockwise)

Move the menu item to"CF"andtum the mode button to the site and then turn it back to stop(or press the"enter"key of the remote control),that is,enterthe settingof the closingdirection.Atthis time,the parameter value C-clockwise,a-counter-clockwise isdisplayed in the lower left comer of the display screen.Adjust the parameter value(or press the"open"and"close" keys of the remote control).Afteradjustment,tum the mode button to the site and then tum it backto stop(or press the"enter"key ofthe remote control)Pressthe"enter"key of theremote control),whenCFflashes twice,it means that the closing direction setting iscompleted and the upper menu is returned.

7.2 LS--- 控制低信

菜单项移至 “LS” 然后将方式钮旋到现场再旋回停止 (或按遥控器 “Enter” 键), 即进入控制低信设置，此时显示屏左下角显示收到控制电流值或电压值，当控制信号改变时参数值同步改变，调整好后将方式钮旋到现场再旋回停止 (或按遥控器 “Enter” 键), 此时 LS 闪烁两次表示控制低信设置完成并退回上级菜单。

7.3 HS-- 控制高信

菜单项移至 “HS” 然后将方式钮旋到现场再旋回停止 (或按遥控器 "Enter” 键), 即进入控制高信设置，此时显示屏左下角显示收到控制电流值或电压值，当控制信号改变时参数值同步改变，调整好后将方式钮旋到现场再旋回停止 (或按遥控器 “Enter” 键), 此时 HS 闪烁两次表示控制低信设置完成并退回上级菜单。

7.4 CA--- 死区设置 (默认值 -A, 死区自适应)

菜单项移至 "CA" 然后将方式钮旋到现场再旋回停止 (或按遥控器 "Enter" 键), 即进入死区设置，此时显示屏左下角显示参数值 A--- 死区自适应、03~99--- 死区设定 0.3%~9.9%, 可通过操作钮调整参数值 (或按遥控器 "Open"、"Close" 键), 调整好后将方式钮旋到现场再旋回停止 (或按遥控器 “Enter” 键), 此时 CA 闪烁两次表示死区设置完成并退回上级菜单。

7.5 CS--- 丢信动作 (默认值 - 丢信保位，调节型时此设置有效)

菜单项移至 “CS” 然后将方式钮旋到现场再旋回停止 (或按遥控器 "Enter" 键), 即进入丢信动作设置，此时显示屏左下角显示参数值 OP-- 丢信开、CL- 丢信关、SP-- 丢信保位，可通过操作钮调整参数值 (或按遥控器 “Open”、"Close" 键), 调整好后将方式钮旋到现场再旋回停止 (或按遥控器 “Enter” 键), 此时 CS 闪烁两次表示丢信动作设置完成并退回上级菜单。

7.2LS-control low signal

Move the menu tem to "LS"and tum the mode buttonto the site and then turn it back tostop(or press the "enter key of the remote control),that is,enter the control low signal setting.At this time,the lower left comer of the display shows the received controlcurrent value orvoltage value.When the control signal changes,the parameter value changes synchronously. After adjustment,turn the mode button to the site and then tum it back to stop (or pressthe"enter"key of the remote control). At this time,LS Flashing twice indicates thatthe control low signal seting iscompleted and returned to theupper menu.

7.3HS-control high signal

Move themenu item to"HS"and turn the mode button tothe site and then turn it backto stop(or press the "enter"key of the remote control),that s,enter the control low signal setting.At this time,the lower left comer of the display shows the received controlcurrent value or voltage value.When the control signal changes,the parameter value changes synchronously. After adjustment,turn the mode button tothe site and then tum itback to stop (or press the"enter"key of the remote control). At this time,HS Flashingtwice indicates that the control low signal setting is completed and returned to the upper menu.

7.4 CA--deadband setting(default value-A,deadband adaptive)

Move the menu tem to "CA"and tum the mode button to the site and then turn it backto stop(or press the"enter"key of the remote control),that is,enter the dead zone setting.At this time,the lower leftcomer of the displayshowsthe parameter value a---dead Zone adaptive,03~99---dead zone setting 0.3%~9.9%.You can adjust the parametervalue through the operation button(or pres the "open"and"close"keys of the remotecontrol).After adjustment,tum themode button to the site Then turn the cycle to stop(or pres the "enter key of the remote control),when theCA flashestwice,it indicatesthat the dead zone setting is completed and returns tothe uppermenu.

7.5 CS--lossofsignal action(default value-loss of signalprotection position,this seting iseffective whenitis adjustable)

Move the menu item to "CS"and then turnthe mode button to the site and then turn it back to stop(or press the "enter" key of the remote control),thatis,enter the seting of the loss ofinformation action.At this time,the lower left comerof the display shows the parameter values OP---loss of informationon,CL--loss of information of,SP--loss of information protection.You can adjust the parameter values(orpress the"open"and"close"keys of theremote control)through the operation button.Afterthe adjustment,turn the mode button tothe site Tum it back to stop(or press the "enter"key of the remote control),at this time,CSflashes twice to indicate that thesetting of the lost signal action is completed and returns to the upper menu.

7.6 CH-- 两线控制 (默认值 - 常规控制，开关型时此设置有效)

菜单项移至“CH" 然后将方式钮旋到现场再旋回停止 (或按遥控器 "Enter” 键), 即进入两线控制设置，此时显示屏左下角显示参数值 OP- 有信开无信关、CL-- 有信关无信开、SP-- 常规控制，可通过操作钮调整参数值 (或按遥控器 "Open"、"Close" 键), 调整好后将方式钮旋到现场再旋回停止 (或按遥控器 "Enter" 键), 此时 CH 闪烁两次表示丢信动作设置完成并退回上级菜单。

7.6 ch-two wire control(default-general control,this setting iseffectivewhen the switch type isused)

Move the menu item to"ch"and then turn the mode button to the site and then tum it back to stop(or press the "enter key of the remote control),that is,enter thetwo-wire control setting.At thistime,the lower left comer of the display shows the parameter values OP-with or without signalon,CL-with or without signal on,SP-general control.You can adjust the parameter values throughthe operation button(orpress the "open"and"close"keys of theremote control).After the adjustment iscompleted,youcan adjust the parametervalues Tum the button to the site and then tum itback to stop(or press the "enter"key of theremote control).At this time,ch flashes twice to indicate that the seting of the lostsignal actions completed and retuns tothe upper menu.

7.7 cu--- 正反作用 (默认值 --- 正作用，调节型时此设置有效

菜单项移至 "CU” 然后将方式钮旋到现场再旋回停止 (或按遥控器 "Enter" 键), 即进入正反作用设置，此时显示屏左下角显示参数值 P-- 正作用，n--- 反作用，可通过操作钮调整参数值 (或按遥控器“Open”、“Close” 键), 调整好后将方式钮旋到现场再旋回停止 (或按遥控器“Enter” 键), 此时 CU 闪烁两次表示关闭方向设置完成并退回上级菜单。

7.8 Cd--- 堵转时间 (默认值 ---20)

菜单项移至“Cd” 然后将方式钮旋到现场再旋回停止 (或按遥控器 "Enter" 键), 即进入堵转时间设置，此时显示屏左下角显示参数值 03-99, 可通过操作钮调整参数值 (或按遥控器 "Open"、“Close” 键), 调整好后将方式钮旋到现场再旋回停止 (或按遥控器 "Enter" 键), 此时 Cd 闪烁两次表示关闭方向设置完成并退回上级菜单。

7.9 CE--- 恢复出厂值

若在菜单设置过程中将各参数设乱了，可用此项来恢复除行程的“ 开位 ”、“ 关位 ” 和 “ 关闭方向 ” 参数外的出厂设置值。

7.7 Cu-positive and negative action(default value-positive action,this seting is effective whenthe adjustment-type is used)

Movethemenu item to "Cu ° and turn the mode button to the site and then turn it back to stop(or press-the"enter"key of the remote control),that is,enterthe positive and negative action setting.Atthistime,the lower left-corner ofthedisplay shows the parameter valuep-positive action,n-negative action.Youcan adjust the parameter value (or press the"open"and"close"keysofthe remote control)through the operation button.After the adjustment,-tum the mode button to thesite and then tum it backto stop(or Press the "enter"key of the remotecontrol),and the Cu flashes twice,indicating tha theclosing directionsetting is completed and the upper menu is retumed.

7.8CD-locked rotor time(default value---20)

Move the menu item to"CD"andturn themode button to thesiteand then tum it back tostop (or pres-the"enter"key of the remote control),that is,enterthe locked rotor time setting.At this time,the parameter value 03-99 is displayed in the lower left cornerofthe displayscreen.Youcan adjust the parameter value(or press the"open"and"close"keys of the remote control)through theoperation button.After the adjustment,turn themode button to the siteand then turn it back to stop(or press the "enter key of the remote control)Key),CD flashestwice at this time,indicating thatthe closingdirection setting is completed and retums tothe upper menu.

7.9CE-restore factory value

If the parametersare set disorderly in themenu setting process,this tem can be used to restorethe factory settings except for the"on","ofr and"dlose direction"parameters of the stroke.

具体做法为：菜单项移至 “CE” 然后将方式钮旋到现场再旋回停止 (或按遥控器 “Enter” 键), 即进入恢复出厂值设置，此时显示屏左下角显示参数值，no 不恢复，yes--- 恢复，可通过操作钮调整参数值 (或按遥控器 "Open"、"Close" 键), 然后将方式钮旋到现场再旋回停止 (或按遥控器 "Enter" 键), 此时 CE 闪烁两次表示恢复出厂值完成并退回上级菜单。

The specific method is asfollows:move the menu item to "CE"and tum the mode button to the site and then tum it back to the stop(or pres the "enter'key of the remote control),that is,enter the factory value restoration setting.At this time,the parameter value is displayed inthe lower left comer of the display screen,no-no restoration,yes--restoration.Adjust the parameter value(or pressthe "open"and"close"keys ofthe remote control),and then tum the mode button to the site and then Cydleto stop(orpress the"enter key ofthe remote control),when CE flashes twice,itmeans that the factory value is restored and returned to the upper menu.

7.10 SA--- 保存出厂值

菜单项移至 “SA” 然后将方式钮旋到现场再旋回停止 (或按遥控器 "Enter" 键), 即进入保存出厂值设置，此时显示屏左下角显示参数值，no- 不保存，yes-- 保存，可通过操作钮调整参数值 (或按遥控器 “Open"、"Close” 键), 调整好后将方式钮旋到现场再旋回停止 (或按遥控器 "Enter" 键), 此时 SA 闪烁两次表示保存出厂值设置完成并退回上级菜单。

7.11 CJ--- 禁动时间 (默认值 ---02)

禁动时间指的是执行器在远方调节模式时，两次动作之间的停动时间间隔 (00-10S)。

菜单项移至 “CJ” 然后将方式钮旋到现场再旋回停止 (或按遥控器 “Enter” 键), 即进入禁动时间设置，此时显示屏左下角显示参数值 03-99, 可通过操作钮调整参数值 (或按遥控器 "Open"、“Close” 键), 调整好后将方式钮旋到现场再旋回停止 (或按遥控器 “"Enter" 键), 此时 Cd 闪烁两次表示关闭方向设置完成并退回上级菜单。

7.10 SA-save factory values

Move the menu item to"Sa"and turn the modebutton to the site and then turn it back to stop(or press the "enter"key of the remote control),that is,enter to savethe factory value settings.At this time,the lower lef cormer-of the display shows the parameter values,No--do not save,yes-save.You canadjust the parameter value through the operation button(or press the "open"and"close"keys of the remotecontrol).After the adjustment,turnthe mode button to the site and then tum it back tostop (or press the"enter key ofthe remote control).At this time,SA-flashes twice,indicating that the factory value is saved and returned to the upper menu.

7.11CJ--stop time(default value-02)

Stop time refers to the stop time interval(00-10s)between twoactions when the actuator is in remoteadjustment mode.

Move the menu item to CJ"and then tum the mode button to the site and thenturn it back to stop(or press the"enter" key of the remote control),that isto say,enter thesetting of thetime to stop.At this time,theparameter value 03-99 is displayed in the lower left corner of the display screen.You can adjust the parameter value(or press the"open"and"close" keysof the remote control)through the operation button.After the adjustment,turn the mode button to the site and then tum it back to stop(or press the"enter key of the remote contrl)Key),CD fashes twice at this time,indicating that the closing direction sttingis completed andreturns to the upper menu.

8.modbus 总线设置 (需定制)

停止方式，旋操作钮至关闭约 18 秒钟，等到闪烁显示字母 Id 时松开操作钮并将方式钮旋到现场再旋回停止，即进入总线设置菜单

遥控操作时，现场方式连按三次 “Stop” 键即可进入总线设置菜单

注：本机总线参数重设以后，执行器须先断电，再重新上电后方能保证总线控制正常工作

8.MODBUS bus setting(customized)

Stop mode:turn the operation button to close for about 18 seconds,release the operationbutton when flashing the letter ID,turmnthemode button to the field and then tum it back to stop,that is,enter the bus setting menu.

During remote control operation,press the"stop"keythree times infield mode to enter the bus setting menu.

Note:aferrestting the bus parametersofthe machine,the actuator must be powered offirst and then powered on again to ensure the normal operationof thebuscontrol.

8.1 Id-- 通道地址 (默认住 --003)

通道地址是指总线控制时所能被主控系统 (主站) 和自身识别的身份代码

菜单项移至 Id 然后将方式钮旋到现场再旋回停止 (或按遥控器 "Enter" 键), 即进入通道地址设置，此时显示屏左下角显示参数值 000-247, 可通过操作钮或调整参数值 (或按遥控器 “Open"、"Close” 键), 调整好后将方式钮旋到现场再旋回停止 (或按遥控器 "Enter" 键), 此时 Id 闪烁两次表示通道地址设置完成并退回上级菜单。

8.1ID-channel address(default address--003)

Channel address refers to the identification code thatcan be identifed by the master control system(master station)and itself duringbus control

Move the menu item to"ld"and thenturn the mode button tothe site and then tum it back to stop(or pressthe "enter"key ofthe remote control),thatis,enter thechannel address setting.Atthis time,theparametervalue 000-247 is displayed in the lower left corner of the display screen.You can turm the mode button to the site and then turm itbackto stop(or press the enter"key of the remote control)after adjustment by operating the button or adjusting the parameter value(or press the open"and"close"keys of the remote control)"Key),and the ID fiashes twice to indicate that the channel address seting is completed andreturnsto the upper menu.

8.2 bd-- 波特率 (默认值 --096)

波特率是指总线控制回路上每秒中传送的数据位数，通常用 KB/S(千位 / 秒) 表示。

菜单项移至 “bd” 然后将方式钮旋到现场再旋回停止 (或按遥控器 "Enter" 键), 即进入波特率设置，此时显示屏左下角显示参数值 003-384(003-0.3KB/S、006-0.3KB/S、012-1.2KB/S、024-2.4KB/S、048-4.8KB/S、096-9.6KB/S、192-19.2KB/S、384-38.4KB/S), 可通过操作钮或调整参数值 (或按遥控器 "Open"、“Close” 键), 调整好后将方式钮旋到现场再旋回停止 (或按遥控器 “Enter” 键), 此时 bd 闪烁两次表示波特率设置完成并退回上级菜单。

8.3 PA- 校验位 (默认值 --n2)

校验位是指总线控制回路上传送的数据中校验位的设置

菜单项移至 “PA” 然后将方式钮旋到现场再旋回停止 (或按遥控器 “"Enter” 键), 即进入校验位设置，此时显示屏左下角显示参数值 O、E、n1、n2(O 奇校验、E- 偶校验、n1- 无校验和 1 位停止位、n2- 无校验和 2 位停止位), 可通过操作钮或调整参数值 (或按遥控器 “Open"、"Close” 键), 调整好后将方式钮旋到现场再旋回停止 (或按遥控器 "Enter" 键), 此时 PA 闪烁两次表示校验位设置完成并退回上级菜单。

8.2BD-baud rate (default value---096)

Baud rate refers to thenumberofbitsof data transmitted per second on the bus control loop,usualy expressed in kilobytes/S(kilobits/second).

Move the menu item to "BD"and turnthe mode button to the site and then turn it back to stop(orpressthe "enter"key of the remotecontrol),that is,enter the baudrate setting.A this time,the parameter values 003-384 (003-0.3kb/s,006-0.3kb/s,012-1.2kb/s,024-2.4kb/s,048-4.8kb/s,096-9.6kb/s,192-19.2kb/s,384-38.4kb/s)willbe displayed inthe lower left corner of the display screen.You canadjustthe parametervalues(orpress the remote control button or Control"open"and"close" keys.After adjustment,turn the mode button to thesiteand then turn itback to stop(or press the"enter"key of the remote control).Atthistime,BD flashes twice to indicate that baud rate setting is completed and returns to the upper menu.

8.3 PA-check bit(default value-N2)

Check bit refers to the settingofthe check bit in thedata transmitted onthe bus control circuit.

Move the menu item to "pa"and then turm the mode button to the site and then turn it back tostop(orpress-the "enter key of the remote control),thatis,enterthe calibration position setting.At this time,the parameter values o,e,N1,N2(o-dd,e-even,n1-no calibration and 1-stop,n2-no calibration and 2-stop)are displayed in the lower left corner of the display screen.You can adjust the parametervalues through the operation button or by pressing the remote control"open"And"close".After adjustment,turn the mode button to the site and then tum it back to stop (orpress the"enter"keyof the remote control).At this time,PA flashes twice to indicate that the check bit stting is completed and retums to the upper menu.

8.4 Lo--- 丢信时间 (默认值 ---010)

丢信时间是指执行器接收不到总线信号的容许时间。若超过此时间还接收不到总线信号，则判定为总线信号丢失，此时执行器将按照在高级设置中 “ 丢信动作 ” 项设定的要求进行动作。

菜单项移至 “Lo” 然后将方式钮旋到现场再旋回停止 (或按遥控器 “Enter” 键), 即进入校验位设置，此时显示屏左下角显示参数值 O-199(0-199 秒), 可通过操作钮或调整参数值 (或按遥控器 “Open"、“Close” 键), 调整好后将方式钮旋到现场再旋回停止 (或按遥控器 "Enter" 键), 此时 Lo 闪烁两次表示丢信时间设置完成并退回上级菜单。

8.4 Lo--lost time(default value--010)

The lost signal time refers to the allowabletime when the actuator cannot receive thebus signal.If the bus signal is not received after this time,it is determined that the bus signal is lost.At thistime,the actuator willact according to the requirements set inthe "loss of signal action"item in the advancedsettings.

Move the menu tem to "Lo"andtum the mode button to the site andthen turm it back tostop(or press the"enter"key of the remotecontrol),that is,enter the calibration position setting.At this time,theparameter value o-199(0-199 seconds) is displayed in the lower left comer of the display screen.You can turn the mode button tothe site and then turn itback to stop(orpress the remote control"open"and"close"key of the remote control)Enter),andlo flashestwice to indicate that the setting ofthe losttime is completed and returns to the upper-menu.

8. 报警信息说明 (显示屏右下角为报警区)
8. Alarm information description (the lower right corner of the display is the alarm area)

故障码 Troublecode	故障信息 Fault information	故障码 Troublecode	故障信息 Fault information
FA	转向出错 Steering error	Fb	比例标定错误Fb闪烁3次 Proportion calibration error FB flashes 3 time.
FC	关过矩 closing moment	FO	开过矩 Opening moment
Fd	堵转或其它原因导致的阀位不变化 No change of valve positiondue to locked rotor or otherreasons	FP	电源缺相 Power missing phase
FS	DC4-20mA远控信号丢失 Dc4-20ma remotecontrolsignal lost	FH	远控开、关信号同在 Remote control on / off signal
FE	电机温度开关断开或力矩公共端开路 Motor temperature switch openor torque common open	FF	阀位故障 (电位器开路、接线错或编码器故障) Valve position fault (potentiometer opencircuit, wrong wiring or encoder fault

9. 常见问题处理方法
9. Solutions to common problems

通电指示灯和显示屏不显示 Power on indicator anddisplay do not show	A.电源实际未接入 B.电压过低 C.接线错 D.电路坏 A. The power supply is not connected actually B. the voltage is too low' C. the wiring is wrong D. the circuit is broken
工作中灯和显示屏显示异常 Abnormal display of workinglight and display	A.故障码 B.查询信息 C.指示灯或显示屏坏需更换电路 A. Fault code. B. query information C. the circuit needs to be replaced if the indicator light or display screen is broken
通电现场和远控均不动作 Neither the power on site northe remote control will operate	A.接线错或开路 B.故障保护 C电机坏或卡死 D启动电容坏 E.电路坏 A. Wrong wiring or open circuit B. fault protection C. motor broken or stuck D.starting capacitance broken E. circuit broken
现场工作正常,但远控不动作 The scene works normally, butthe remote control does not work	A.无信号或接线反 B旋钮板坏或没在远方 C正/反作用设错 D.电路坏 A. No signal or wiring is reversed B. knob board is broken or not in remote C.positive /negative reaction is set wrong D. circuit is broken
现司作但种作 control works normal	A旋钮版坏或没在现场模式 B操作钮未旋到位 C电路坏 A. the knob board is broken or not in the field mode B. the operating knob is not screwed in place C. the circuit is broken
能开不能关或能关不能开 Can open or close or can not close	A.力矩或行程开关开路 B.到限位或过矩 C.电机坏或堵转或接线错 D.电路坏 A. Torque or travel switch open circuit B. to limit or over torque C. motor broken or locked rotor or wrong wiring D. circuit broken
无控制信号,通电立即动作 No control signal, actionimmediately after power or	A.接线错 B.控制信号实际有效存在 C,丢信动作 D.设为两线控制 E电路坏 A. Wiring error B. control signal is actually valid C. signal loss action D. set as two-wire control E. circuit failure
中间位置能动作到限位不动 The middleoosition camove to the limit	A.力矩开关接线错误 B.恰巧到位电机坏或接线开路 C电路坏 A. Torque switch wiring error B. motor in place is broken or wing is open C. circuit is broken
动作方向反 Reverse direction	A.电机接线反 B.阀位标定反， C正/反作用或关闭方向设反 D.信号反 A. Motor wiring is reversed B. valve position calibration is reversed C. positive / negative action or closing direction is reversed D. signal is reversed
无比例反馈输出或时有时无 No proportional feedbackoutput or sometimes none	A.输出接线错或接触不良 B.电位器或编码器故障或接触不良 C.电路坏 A. Wrong output wiring or poor contact B. potentiometer or encoder failure or poor contact C. circuit failure
比例反馈偏大或偏小或不变 Proportional feedback is toolarge or too small or co	A.电位器或编码器故障 B.标定错 c电位器与传动齿轮啮合不好 D.电路坏 A. Potentiometer or encoder fault B. wrong calibration C. poor engagerent of potentiomter and traission gear D. circuit failure

注：接线请严格按照电气接线图连接。
Note: please connect the wiring in strict accordance with the electrical wiring diagram

注：本说明书如有更改恕不另行通知，如有疑问请联系供应商。
Note: This manual is subject to change without notice. If in doubt, please contact the supplier