

电动执行机构

Electric actuator

防爆、防水型使用说明书

Explosion proof and waterproof operation manual

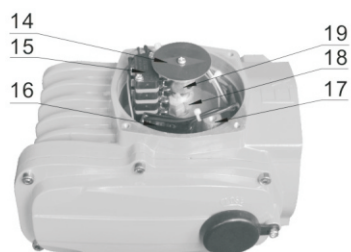
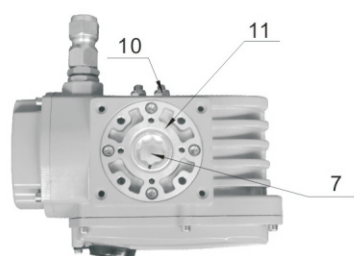
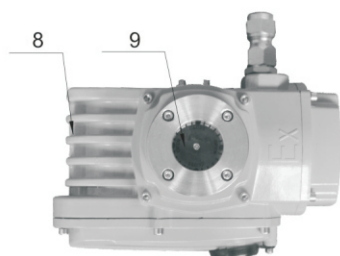
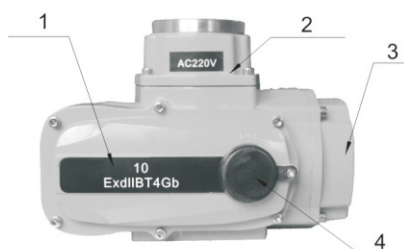


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产品各部名称 The name of every parts



1 驱动盖
Drive cover

6 进出线线锁
In and out line wire lock

11 铜蜗轮
Copper worm

16 电容
Capacitance

2 电装盖
Denso covers

7 输出轴
Output shaft

12 蜗杆轴
Worm shaft

17 辅助轴电位器
Potentiometer of the auxiliary axle

3 制御盖
Make and resist covering

8 箱体
Case

13 减速齿轮组
Backgeared gear wheel group

18 行程挡块
travel block

4 手动操作口
Manual handle hole

9 开度计
Degree gauge

14 指示针
Needle

19 行程挡块
travel block

5 铭牌
Chromium card

10 锁紧螺母
Locknut

15 微动开关
sensitive switch

CLOSE箭头方向（顺时针）代表关闭
The CLOSE arrow direction (clockwise) represents closure

O(OPEN)箭头方向(逆时针)代表开启
The OPEN arrow direction (counterclockwise) represent open

防爆电动执行器概述 Summary

在安装或使用系列防爆型产品之前，请您务必详细阅读本说明书。

Before installing or using the series explosion-proof product, please make sure to read this manual carefully.

型号表示方法

Exab

EX A B C D

A: 表示产品代数，如“1”表示第一代产品，“2”表示第二代，以此类推。

B: 表示产品力矩（数字×10）包括：05、10、16、20、40、60、100、200。

C: 表示控制电路形式：ABCDEF和H。

D: 附加功能：可以选也可以缺失（220V，标准结构支架联轴器厂家自配）

Model representation

Exab

EX A B C D

A: indicating product generation number. For example, “1” represents the first generation product, “2” the second generation product, and the rest are represented in the same manner.

B: indicating product torque (numerals × 10), including: 05, 10, 16, 20, 40, 60, 100, 200.

C: indicating control circuit form: ABCDEF and H.

D: auxiliary functions: can be selected or omitted (220V, standard structure bracket coupling shall be provided by the factory).

C: 电源DC 24V C: Power Supply DC 24V	E: 电源AC 380V E: Power Supply AC 380V	F: 电源AC 110V F: Power Supply AC 110V
L: 直接式结构、支架联轴器一体、直接安装当配阀门时，阀门单独根据要求另外选型。 L: Integrated direct type structure and bracket coupling with direct installation. When the valve is installed, its model shall be selected separately according to the requirements.		
K: 快开系列、回转时间30s变成15s，或10s变成4s，力矩30、100、200、400Nm 变成20、50、100、200Nm。 K: quick opening series. Rotation time changes from 30s to 15s, or from 10s to 4s, and torque changes from 30, 100, 200 and 400Nm to 20, 50, 100 and 200Nm respectively.		

例如：EX110A-E，表示该系列第一代隔爆电动执行器，力矩为100NM，控制电路为A型，电压380V。

备注：产品型号含EX为防爆系列产品，如不含表示为普通型电动执行器，其接线原理和防爆一样。

For example: EX110A-E represents these series first generation flameproof electric actuator, torque 100NM, control circuit A type, voltage 380V.

Remark: The product with EX in its model is an explosion-proof product, and is an ordinary electric actuator if without EX in its model, and their wiring principles and explosion-proof functions are the same.

防爆结构和防爆性能

系列防爆产品的隔爆结构符合GB3836.1-2000《爆炸性气体环境用电气设备第一部分：通用要求》及GB3836.2-2000《爆炸性气体环境用电气设备第二部分：隔爆型“d”》的有关规定，并采用整机隔爆结构。产品各防爆部件组成的防爆外壳可以承受爆炸性气体混合物在壳内爆炸所产生的爆炸压力，并可以阻止壳内的爆炸向壳外周围的爆炸性气体环境传播，即产品内部产生爆炸时不会传播到壳外引爆壳外的爆炸性气体混合物。

Explosion-proof structure and explosion-proof performance

The flameproof structure of the series explosion-proof product conforms to relevant stipulations in GB3836.1-2000 Electrical equipment for explosive gas atmospheres-Part I: General requirements and GB3836.2-2000 Electrical equipment for explosive gas atmospheres-Part II: Flameproof type “d”, and an integral flameproof structure is adopted. The explosion-proof enclosure of the product composed of explosion-proof parts can bear explosion pressure produced during explosion of explosive gas mixtures inside the enclosure, and prevent the explosion inside the enclosure from expanding to the surrounding explosive gas atmospheres outside the enclosure. That is, when occurring inside the product, explosion will not expand to the outside of the enclosure and ignite explosive gas mixtures outside the enclosure.

防爆电动执行器概述 Summary

防爆等级

本产品的防爆等级为：Exd II CT4

其中：Ex-防爆标识；

d-防爆类型，表示为“隔爆型”；

II-设备类别，表示除煤矿外的其他爆炸性气体环境用电气设备；

C-爆炸级别，该级别决定执行机构各隔爆结合面的尺寸（宽度和间隙上）

T4-温度组别，表示允许执行机构最高表面温度为135°C；

在GB3836.1-2000附录B中详细列出了可燃性气体，蒸汽的级别及温度组别。必要时用户可以查阅。

特别注意：该产品使用场所周围的爆炸性介质的种类和组别必须与本产品所允许的防爆介质相一致，否则起不到防爆作用。

Explosion-proof grade

Product explosion-proof grade: Exd II Ct4

Where: Ex- explosion-proof mark

d- explosion-proof type: expressed by “flameproof type”；

II- equipment type, indicating electrical equipment for explosive gas atmospheres except coal mines;

C- explosion class. This class determines the dimensions of flameproof binding faces of the actuator (width and interval).

T4- temperature class, indicating the maximum surface temperature of the actuator is 135°C.

Flammable gases, steam class and temperature class are detailed in appendix B of GB3836.1-2000. Users may refer to them when necessary.

Special note: The type and group of explosive media surrounding the work site of this product must be consistent with the allowable explosive media of this product. Otherwise, explosion-proof functions will fail.

使用注意事项

- 注意警示标贴上的提示，在有易燃易爆气体的场合严禁带电开启各盖（即打开产品防爆腔）。
- 隔爆镜片为防爆结构，使用中不允许拆卸或用硬物冲击。当产品各隔爆零件有损坏时应立即更换，合格零部件未装上前，产品不得进行电动操作。
- 产品铭牌和警示标贴不得撕毁或丢失，其上的文字应保持清晰。
- 调试或维修时隔爆接合面不得有磕碰、划伤等现象。电装盖、制御盖、马达盖与箱体连接的紧固螺丝不可漏装。
- 本产品的电机腔为一独立的防爆腔，禁止用户自行拆卸马达盖紧固螺丝和电机引线粘接胶合面。
- 产品必须内外接地，各紧固件不得松动并应定期检查。
- 配线进口处必须按照本说明书使用要求加装防爆电缆接头及采用相应电缆。
- 安装调试人员必须具有相关的操作资质。

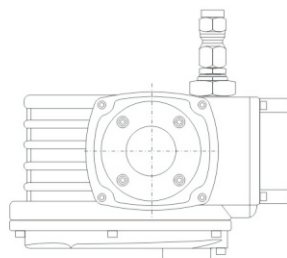
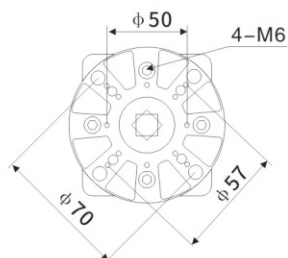
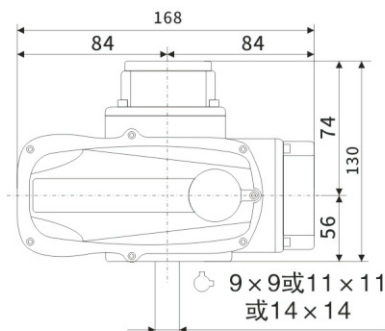
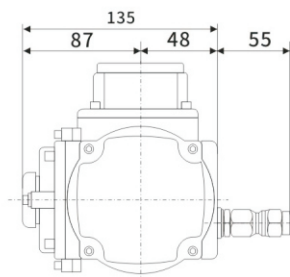
Notes for use

- Pay attention to the indication on the warning label. It is forbidden to open the cover in applications with flammable and explosive gases (i.e. open the explosion-proof cavity of the product).
- The flameproof lens is of an explosion-proof structure. During the use, disassembly or impact with hard objects is not allowed. In case of damage to any flameproof part of the product, it must be replaced. The product shall not be subject to electrical operation before it is assembled with the conforming part.
- The product nameplate and warning label shall not be torn up or lost, and the words on them shall be clear.
- During commissioning or repair, there shall be no occurrence such as collision and scratch on the flameproof joint face. Neglected installation of the actuator cover, control cover, motor cover and fastening screws connecting the box is not allowed.
- The motor cavity of this product is an independent explosion-proof cavity. Users are forbidden to disassemble the motor cover, fastening screws and motor lead wire glue joint face.
- The product must be provided with internal and external grounding. All fasteners shall not be loose and shall be subject to regular check.
- The wire inlet must be additionally provided with explosion-proof cable connector and use corresponding cable according to use requirements in this manual.
- The installation and commissioning personnel must have relevant operation qualifications.

Ex05型外形尺寸与性能参数

Dimensional and parameter

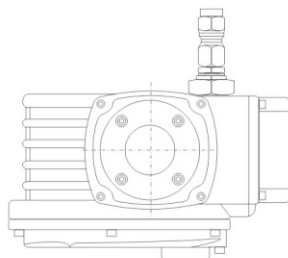
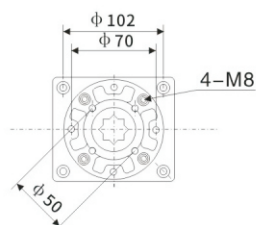
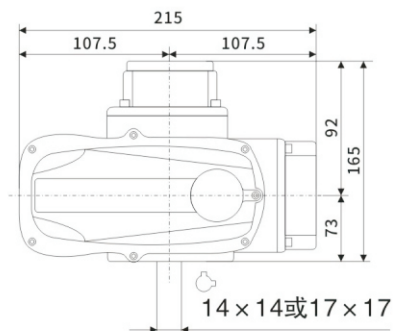
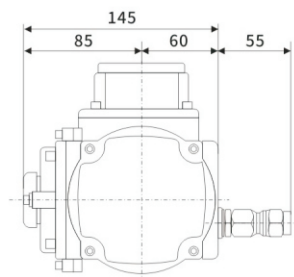
型号 电源	Ex05				
性能参数	DC24V	AC24V	AC110V	AC380V	AC220V
电机功率 machine power	15W	10W	10W	6W	15W
额定电流 rated current	1.82A	1.50A	0.24A	0.07A	0.25A
标准时间/力矩 standard/moment	20S/50Nm				
可选时间/力矩 Optional time/moment	10S/30Nm			10S/30Nm 60S/50Nm	
回转角度范围 turn around angle scope	0~360° 可调				
可选控制电路 Optional control circuit	A型/B型/C型/D型/E型				
整机重量 machine weight	3.0kg				
绝缘电阻 monconducting resistance	DC24V/AC24V;100MΩ/250VDC AC110V/AC220V/AC380V;100MΩ/500VDC				
耐压等级 resist pressure rank	DC24V/AC24V;50VAC1分钟、AC110V/AC220V;1500VAC 1分钟、AC380V;1800VAC 1分钟				
防护等级 protection rank	IP67 / IP68				
防爆等级 Explosion-proof grade	Exd II CT4Gb				
安装方法 install position	360° 任意角度安装				
电气接口 electric interface	2-M20×1.5防爆堵头，使用时用户可根据所选电缆，加装相应的防爆电缆接头				
环境温度 environmental temperature	-20℃~+60℃				
任选功能 Optional function	除湿加热器				



Ex10型外形尺寸与性能参数

Dimensional and parameter

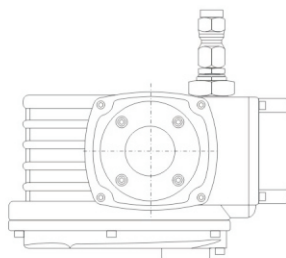
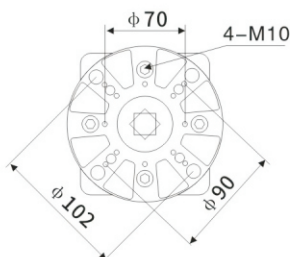
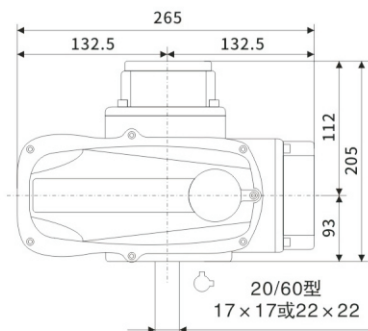
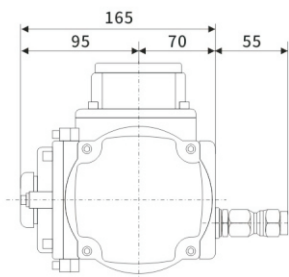
型号 电源	Ex10				
性能参数	DC24V	AC24V	AC110V	AC380V	AC220V
电机功率 machine power	30W	25W	25W	15W	25W
额定电流 rated current	2.20A	2.12A	0.57A	0.10A	0.35A
标准时间/力矩 standard/moment	30S/100Nm				
可选时间/力矩 Optional time/moment	15S/50Nm			15S/50Nm 60S/100Nm	
回转角度范围 turn around angle scope	0~360° 可调				
可选控制电路 Optional control circuit	A型/B型/C型/D型/E型				
整机重量 machine weight	5.5kg				
绝缘电阻 monconducting resistance	DC24V/AC24V;100MΩ/250VDC AC110V/AC220V/AC380V;100MΩ/500VDC				
耐压等级 resist pressure rank	DC24V/AC24V;50VAC1分钟、AC110V/AC220V;1500VAC 1分钟、AC380V;1800VAC 1分钟				
防护等级 protection rank	IP67 / IP68				
防爆等级 Explosion-proof grade	Exd II CT4Gb				
安装方法 install position	360° 任意角度安装				
电气接口 electric interface	2-M20×1.5防爆堵头，使用时用户可根据所选电缆，加装相应的防爆电缆接头				
环境温度 environmental temperature	-20℃~+60℃				
任选功能 Optional function	过力矩保护 除湿加热器				



Ex20\40\60型外形尺寸与性能参数

Dimensional and parameter

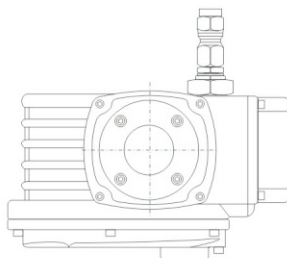
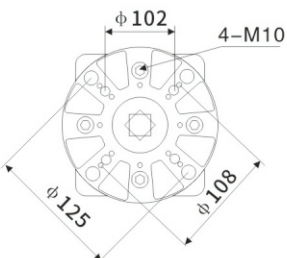
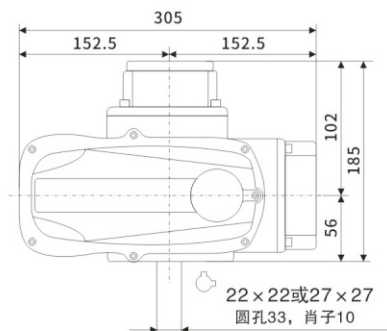
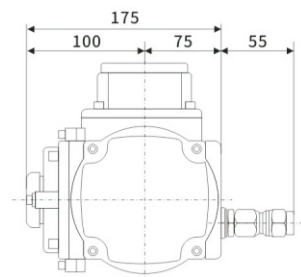
型号	Ex20/40/60											
电源	DC24V	AC110V	AC380V	AC220V	DC24V	AC110V	AC380V	AC220V	DC24V	AC110V	AC380V	AC220V
性能参数												
电机功率 machine power	110W	40W	30W	40W	110W	90W	40W	90W	110W	90W	40W	90W
额定电流 rated current	7.8A	0.63A	0.19A	0.35A	7.80A	1.12A	0.29A	0.64A	8.00A	1.18A	0.29A	0.67A
标准时间/力矩 standard/moment	60S/200Nm			30S/200Nm			30S/400Nm			45S/600Nm		
可选时间/力矩 Optional time/moment	30S/200Nm			15S/100Nm			15S/200Nm 60S/200Nm			15S/100Nm 60S/400Nm		
回转角度范围 turn around angle scope	0~360° 可调											
可选控制电路 Optional control circuit	A型/B型/C型/D型/E型											
整机重量 machine weight	11kg				11.5kg				11.5kg			
绝缘电阻 monconducting resistance	DC24V/AC24V;100MΩ/250VDC AC110V/AC220V/AC380V;100MΩ/500VDC											
耐压等级 resist pressure rank	DC24V/AC24V;50VAC1分钟、AC110V/AC220V;1500VAC 1分钟、AC380V;1800VAC 1分钟											
防护等级 protection rank	IP67 / IP68											
防爆等级 Explosion-proof grade	Exd II CT4Gb											
安装方法 install position	360° 任意角度安装											
电气接口 electric interface	2-M20×1.5防爆堵头，使用时用户可根据所选电缆，加装相应的防爆电缆接头											
环境温度 environmental temperature	-20℃~+60℃											
任选功能 Optional function	过力矩保护 除湿加热器											



Ex100/200型外形尺寸与性能参数

Dimensional and parameter

型号	Ex100/200									
电源	DC24V	AC24V	AC110V	AC380V	AC220V	DC24V	AC24V	AC110V	AC380V	AC220V
性能参数										
电机功率 machine power	180W	120W	120W	120W	120W	180W	120W	120W	120W	120W
额定电流 rated current	8.5A	0.90A	2.2A	0.48A	0.90A	9A	0.9A	2.2A	0.48A	1.0A
标准时间/力矩 standard/moment	45S/1000Nm					50S/2000Nm				
可选时间/力矩 Optional time/moment	15S/500Nm					15S/1000Nm				
回转角度范围 turn around angle scope	0~360° 可调									
可选控制电路 Optional control circuit	A型/B型/C型/D型/E型									
整机重量 machine weight	14.5kg					15.5kg				
绝缘电阻 monconducting resistance	DC24V/AC24V;100MΩ/250VDC AC110V/AC220V/AC380V;100MΩ/500VDC									
耐压等级 resist pressure rank	DC24V/AC24V;50VAC1分钟、AC110V/AC220V;1500VAC 1分钟、AC380V;1800VAC 1分钟									
防护等级 protection rank	IP67 / IP68									
防爆等级 Explosion-proof grade	Exd II CT4Gb									
安装方法 install position	360° 任意角度安装									
电气接口 electric interface	2-M20×1.5防爆堵头，使用时用户可根据所选电缆，加装相应的防爆电缆接头									
环境温度 environmental temperature	-20°C~+60°C									
任选功能 Optional function	过力矩保护 除湿加热器									



调节型 (P型) 整机性能指标

Regulating type (E type) complete machine performance index

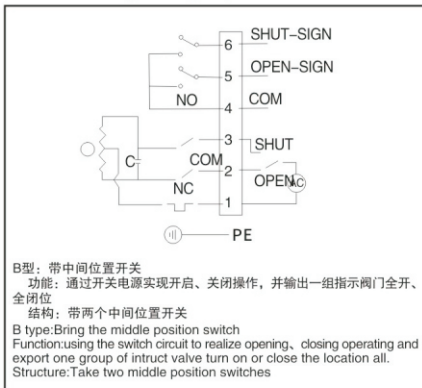
性能 performance	机型 type	05P	10P	15P	20P	40P
输出力矩 export torque		50Nm	100Nm	150Nm	200Nm	400Nm
90°动作时间 90° motion time		20S	30S/60S	30S/60S	30S/60S	30S/60S
回转角度范围 turn around angle scope		0~90°	0~90°	0~90°	0~90°	0~90°
电机功率 machine power		15W	25W	30W	45W	60W
额定电流 rated current		0.25A	0.35A	0.4A	0.45A	0.55A
整机重量 machine weight		3.0kg	5.0kg	5.2kg	5.5kg	9.5kg
电 源 power source		AC220V、AC110V、AC380V、DC24V				
输入信号 monconducting resistance		4~20mADC、1~5VDC、0~10VDC				
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%				
开关到位区 Switch position zone		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%				

性能 performance	机型 type	50P	60P	100P	200P
输出力矩 export torque		500Nm	600Nm	1000Nm	2000Nm
90°动作时间 90° motion time		45S	45S	50S	100S
回转角度范围 turn around angle scope		0~90°	0~90°	0~90°	0~90°
电机功率 machine power		90W	90W	120W	120W
额定电流 rated current		0.65A	0.75A	0.9A	1.0A
整机重量 machine weight		9.0kg	10.0kg	14.5kg	15.5kg
电 源 power source		AC220V、AC110V、AC380V、DC24V			
输入信号 monconducting resistance		4~20mADC、1~5VDC、0~10VDC			
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%			
开关到位区 Switch position zone		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

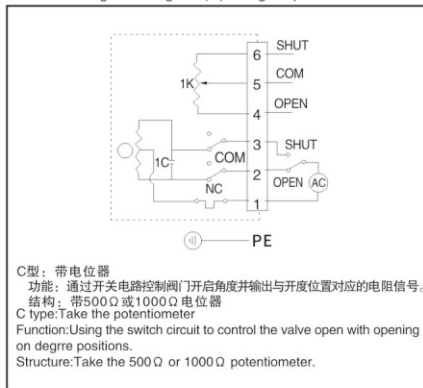
(1)A型无源触点型(S)线路图(AC220V)

Passive contact type wiring map



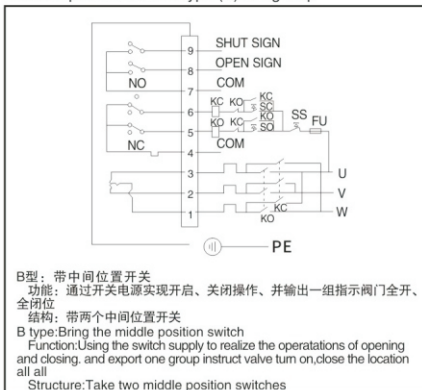
(2)B型开度信号(R)线路图(AC220V)

Make one degree of signals(R)wiring map



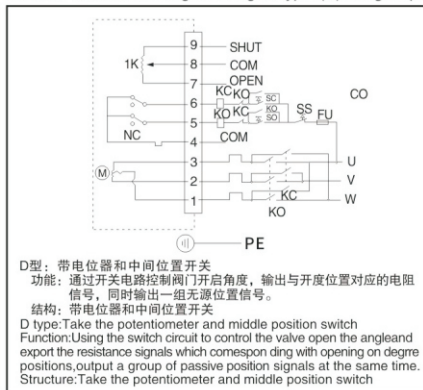
(3)C型AC380V无源触点型(S)线路图

AC380V passive contact type (S)wiring map



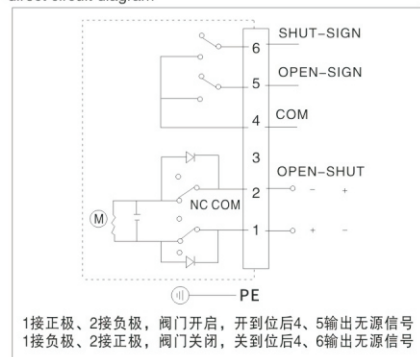
(4)D型AC380V开度信号型(R)线路图

AC380V turns on one degree of signal types(R)wiring map



(5)E型直流电路图(DC24V / DC220V)

direct circuit diagram



电机执行机构的应用选型

plication selecting type of the electrical machine institution

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Nm Amount exports the torsion	配 套 阀 门 Related valve		
		软密封球阀PN1.6MPa Soft sealed ball valve	中线软密封蝶阀PN1.0MPa Soft sealed butterfly's valve of centre line	通风蝶阀PN<0.1MPa Ventilate butterfly's valve
05	50	DN15-32	DN50-80	DN50-125
10	100	DN40-50	DN100	DN150-200
15	150	DN50-65	DN125	DN250-300
20	200	DN65-80	DN150-200	DN300-450
40	400	DN80	DN200	DN450-500
50	600	DN100	DN250	DN500-600
100	1000	DN125-150	DN300-400	DN700-900
200	2000	DN150-200	DN400-500	DN900-1200

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 torsion index have nothing in common with each other, while using actually, often because such factors as the pressure fluctuates, medium type, on-the-spot environment, performance characteristics cause the valve to open the torsion to change greatly. So, in order to guarantee it is reliable that the electronic executive body works steadily, must leave me 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 selecting type.

电动执行机构额定输出扭矩 (Nm)

即：..... ≥ 1.3

阀门带压 (PN) 测试扭矩 (Nm)

3.选型举例

The selecting type example

有一只D73-25P DN65金属硬密封蝶阀，25kgf/cm²压力下测试的扭矩为93Nm，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/cm². The torsion tested under the pressure is 93Nm. 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：93Nm × 1.3 = 120.9Nm。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100Nm、200Nm，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: 93Nm × 1.3 = 120.9Nm According to the serial parameter forms of properties of product, check so that is 100Nm, 200Nm respectively that 10, 20 type amount export the torsion, though 10 type amount outputs the test torsion that the torsion is greater than this valve, because has not considered keeping coefficient, so can't select for use, should be elected using 20 type.

使用要求

Instructions for use

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 the environment where have the rainwater, raw materials such splash thing and that shoot directly 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, etc. and maintain and use the space.

- 周边环境温度 $-30^{\circ}\text{C} \sim +60^{\circ}\text{C}$ 范围内。

Peripheral ambient temperature $-30^{\circ}\text{C} \sim +60^{\circ}\text{C}$ range.

2、工作介质温度的要求

Requirement for the 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 medium temperature is passed to the 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°C 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°C .

- 工作介质温度 60°C 以上时请选用高温支架。

More than 60°C 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 installation-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 $\phi 9 \sim \phi 11$ 的电缆。

A cable that the electric wire external diameter is $\phi 9 \sim \phi 11$.

- 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执机构以确保其安全。

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 charge of.

使用要求

Instructions for use

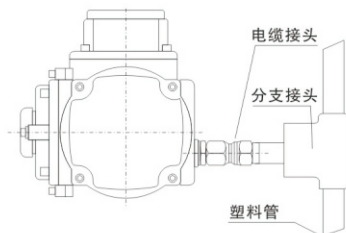


图3

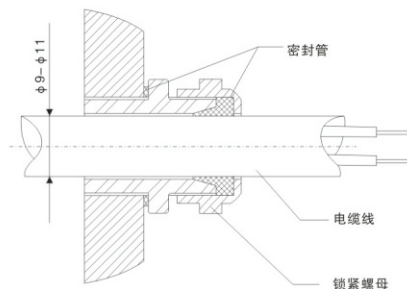


图4

用电缆时，其外径是 $\phi 9-\phi 11$ 的电缆。

A cable theat the electric wire s external diameter is $\phi 9-\phi 11$

如图(4)一律不准使用与线锁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。

Forbid use with line lock diameter incompatible 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

Requiemet 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 tpe of the power to offer the corresponding power supply live according to the ordered model.

对于现场的供电电源、电压应符合以下要求：

AC200V $\pm 10\%$ 50 / 60Hz

AC110V $\pm 10\%$ 50 / 60Hz

AC380V $\pm 10\%$ 50 / 60Hz

24V $\pm 5\%$

5、断路开关保险丝的选用：

Exertion of the switch fuse of the broken circuit

机 型 \ 安 培 电 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

防爆 / 防水电动执行机构与阀体的安装

Installation of explosion proof / waterproof electric actuator and valve body

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 unusual situation 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 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 Cheng run and cause the damage.

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。

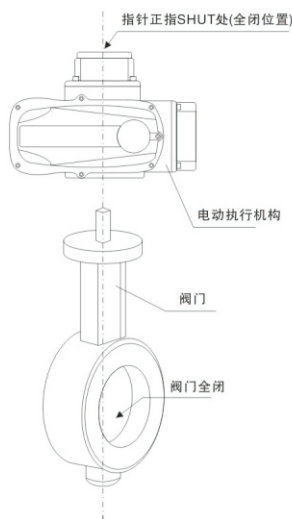
Support, shaft coupling should be designed by the professional mechanical technical staff to process the requirement of marking that should also accord with (Fig. 6).

● 联轴器两端轴孔的加工应保证必要的精度, 尽可能消除传动间隙, 以免阀门工作中出现回差

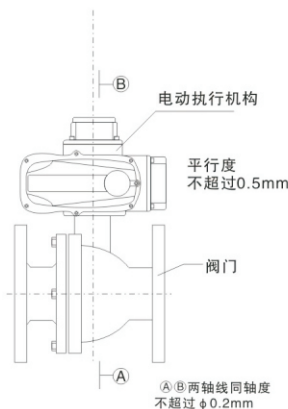
The processing of the both ends shaft hole of the shaft coupling should guarantee the essential precision, dispel the interval of transmission as much as possible, in case that the difference that the appearance goes back in the valve work.

● 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 coupling strictly, otherwise probably 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5) 电动阀门安装示意图
(5 Fig) electronic valve install sketch map



(图6)

开关角度的调整

Adjustment of the light angle

1、电气限位的调整

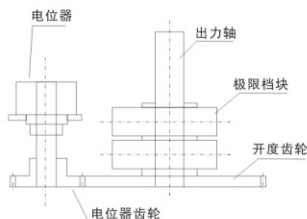
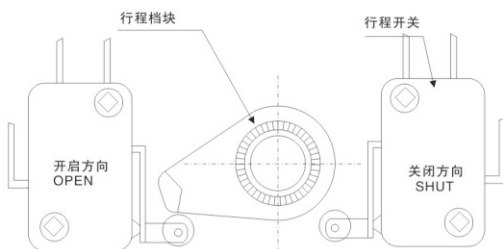
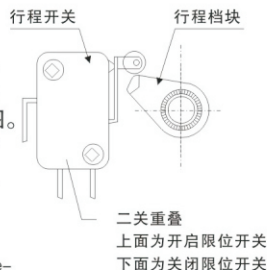
Adjustment of the limited location of electric

松开行程挡块的螺钉，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 scrsrw 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 swiych 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 the potentiometer, measure the resistance value among 4-5 wiring sons of end with the univcrsal 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 beyon and is open excessively completely, the termina position that is closed completely, the comer 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。

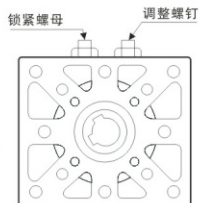
Rotate to completely opening position with the handle.

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.



防爆型电动阀门的整机调试

Commissioning of explosion-proof electric valve

一、行程限位的调整(图12、图13)

转动手轮使执行器运动到阀门全关的位置。然后,用扳手松开限位凸轮固紧螺母,转动限位凸轮将其调整到恰好压下限位开前(CLS)的位置,再将限位凸轮螺母固紧。这样就设定好了执行器全关时行程限位的位置。全开时的位置同样方法设定。

二、机械限位的调整

松开机械限位螺钉的锁紧螺母,然后手动使执行器运动到全关的位置,旋转限位螺母,当其碰到时面的扇形齿轮后停止转动,再旋出两圈,最后上紧锁紧螺母。这样就设定好了执行器全关时的机械限位的位置。全开时的位置可同样设定,如图14所示。

三、电位器的调整(图15)

电位器在执行器中作为一种反馈信号输出,有三个输出端子,其中②脚接电位器的滑臂。①脚接执行器开动作时,与滑臂之间的电阻不断减小一端,③脚则接执行器关闭动作时与滑臂之间的电阻不断减小一端(注意:电位器不应出现阻值过零,跳变现象)。用手柄转动阀门到全开位置,以开到限位开关动作为准,用万能表测量,将接线端子②脚①脚电阻调整到 $35\Omega-60\Omega$ 之间。若不正确可通过转动电位器传动齿轮调整。

I. Adjustment of travel limit (figure 12, figure 13)

Turn the handwheel to make the actuator move to the valve full closing position. Then, use a wrench to loosen the limit cam fastening nut, turn the limit cam to adjust it to be just at the position before the limit switch (CLS) is pressed, and then tighten the limit cam nut. In this way, the setting of the position of travel limit when the actuator is fully closed is completed. Its position during full opening can be set by adopting the same method.

II. Adjustment of mechanical limit

Loosen the lock nut of mechanical limit screws. Then manually make the actuator move to the full closing position. Turn the limit nut, and stop turning when it contacts the segment gear, and then turn it outwards for two circles and finally tighten the lock nut. In this way, the setting of the position of mechanical limit when the actuator is fully closed is completed. Its position during full opening can be set by adopting the same method, as shown in figure 14.

III. Adjustment of potentiometer (figure 15)

As a kind of feedback signal output in the actuator, the potentiometer has three output terminals, among which, pin ② is connected with the potentiometer slider. Pin ① is connected with the end at which the resistance between it and the slider continuously decreases when the actuator makes opening action, and pin ③ is connected with the end at which the resistance between it and the slider continuously decreases when the actuator makes closing action. (Note: There shall be no occurrence such as zero-passing resistance and transition in the potentiometer.) Use the handle to turn the valve to the full opening position, with opening until the limit switch acts as appropriate. Use a multimeter to measure and adjust pin ② and pin ① of the wiring terminal to be within $35\Omega-60\Omega$. If the values are not correct, turn the potentiometer driving gear to make adjustments.

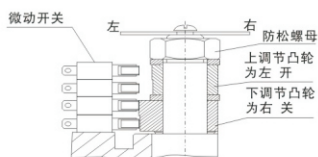


图12

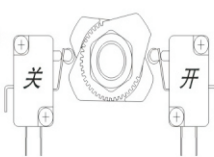


图13

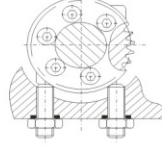


图14

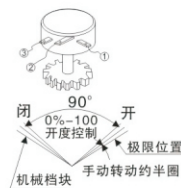


图15

注: 主要说明凸轮上下向左向右为阀门开关调节度数

Note: the main cam up and down to the left reverse, right for the valve switch adjustment degrees

使用与维护

Use and safeguard

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 molybdenum base lubricating grease which having long performance life and have good resist presure,so does not need to hand over item by 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 wheether 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 temperature is too high, whether the valve is seized)	减低环境温度，用手动的办法检查阀门的关闭是否正常 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 sport	与生产厂家联系更换电容 Contact 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
运行极限位置 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