

阀门电动装置

Valve Electric Actuators

QT Quarter-turn

QT 型部分回转

Flowspec Luokai Industrial Co., Ltd.



FLOWSPEC INDUSTRIAL LIMITED

QT型部分回转阀门电动装置 NEUMAX

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QT型 (NEUMAX) 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,研制的换代型产品。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, 也可远距离控制。可广泛用于石油、化工、发电厂、水处理、造纸等各行业。

该产品的防护等级为IP67。特殊订货可达IP68可生产基本型, 带现场操作按钮灯盒型, 整体型, 整体调节型和防爆型 (防爆等级为ExdIIBT4 Gb) 及整体防爆型。

The QT range, a upadated product of our Company, is a quarter-turn electric actuator which has absorbed foreign advanced technology. It can operate with butterfly valve, ball valve and cock valve and other kinds of quarter-turn valves.

Its case body is made of die-casting aluminum, compact and light, which boasts of a striking design.

QT range is featured by high efficiency, high reliability, high protection class and low noise. Both remote control and local control are available. This product has been applied to many fields, such as petroleum, chemicals, electricity, water treatment and paper-making industry.

The protection class is IP67 and if required, IP68 is also available. QT range includes QT Standard, QT Integral (QT. IN), QT Modulating Integral, QT Explosion proof (QT. Ex) (Explosion-proof grade is ExdIIBT4 Gb) and QT Intergral Explosion proof (QT. Ex. IN).

QT0-QT4/JS型 (220V单相电机) 产品技术参数

Technical parameters of QT0-QT4/JS products (220V, Single-phase motor)

型号 Type	规格 Model	工 作 转 矩 Working Torque (N·m)	输 出 转 速 Output Speed (r/min)	运 行 时 间 Operating Time (s)	最大阀 杆直径 Max Dia of stem (mm)	电 机 功 率 Motor power (kW)	电机电流 Current of Motor (A)		电 容 Capacitance uF/450V	手轮转 圈 数 Hand wheel Turns	参 考 重 量 Reference net weight (kg)
							额 定 Rated	堵 转 Locked Rotor			
QT0	QT05	50	0.8	18	14	0.01	0.3	0.5	1.2		2
QT1	QT04	40	0.86	17.5	14	0.01	0.45	0.7	4	8.5	6
	QT06	60			22	0.015	0.55	0.75	7		9
	QT09	90				0.025	0.7	1.1	7		10
QT2	QT05	50	0.73 1.5	20 10	22	0.025	0.7	1.1	7	10.5	12
	QT10	100			32	0.025	0.7	1.1	7		
	QT15	150				0.04	1.1	1.3	10		
	QT20	200				0.04	1.1	1.3	10		13
QT3	QT30	300	0.57 1.2	26 13	32	0.04	1.2	1.5	10	12.8	17
	QT40	400				0.06	1.2	1.8	12		18
	QT50	500				0.09	1.6	2.1	15		19
QT4	QT60	600	0.57 1.2	26 13	42	0.09	2.0	3.2	15	14.5	22
	QT80	800				0.18	3.0	4.0	30		23
	QT100	1000				0.2	3.3	4.5	30		25
QT4/JS	QT150	1500	0.17 0.34	90 45	50	0.18	3.0	4.0	20	43	48
	QT200	2000				0.2	3.3	4.5	20		50
	QT250	2500				0.2	3.3	4.5	20		50

1. 转速 > 1r/min, 输出轴不自锁, 当阀门有自锁要求时应予以注意。

2. 产品为整体型时整机重量增加3kg。

1. When the output speed is no less than 1r/min, the shaft will not be self-locking.

Please pay attention when the valve is required to be self-locked.

2. The weight of the product is added 3kg for the QT Integral.

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QT1-QT4/JS型 (380V三相电机) 产品技术参数

Technical parameters of QT1-QT4/JS products (Three-phase motor)

型号 Type	项目 Item	规格 Model	工作转矩 Working Torque	输出转速 Output Speed	最大阀杆直 径 Max Dia of stem	电机功率 Motor power	电机电流 Current of Motor (A)		90° 运行时间 Operating time for 90° turn	参考重量 Reference Net weight
			(N.m)	(r/min)	(mm)	(kW)	额 定 Rated	堵 转 Locked Rotor	(s)	(kg)
QT1		QT06-1	60	1	22	0.025	0.3	0.6	15	9
		QT09-1	90			0.025				
QT2		QT05-1	50	1	22	0.025	0.3	0.6	18	10
		QT10-1	100	1		0.025			18	10
		QT10-2		2		0.04	0.6	0.9	9	12
		QT15-1	150	1	32	0.04	0.6	0.9	18	12
		QT15-2		2		0.06	0.7	1.1	9	13
		QT20-1	200	1	32	0.06			18	
		QT20-2		2		0.06	9			
QT3		QT30-0.5	300	0.5	32	0.06	0.5	1.0	24	17
		QT30-1		1		0.06			12	
		QT30-2		2		0.09	0.8	1.7	6	18
		QT40-0.5	400	0.5		0.09			24	
		QT40-1		1		0.09			12	
		QT40-2		2		0.09			6	
QT4		QT60-0.5	600	0.5	42	0.12	1.0	2.0	28	22
		QT60-1		1					14	
		QT60-2		2		0.18	1.5	2.5	7	25
		QT80-0.5	800	0.5					28	
		QT80-1		1					14	
		QT80-2		2					7	
		QT100-0.5	1000	0.5					28	
		QT100-1		1					14	
QT4/JS		QT150-0.3	1500	0.3	50	0.18	1.3	2.2	45	48
		QT200-0.3	2000			0.20	1.8	3.0		50
		QT250-0.3	2500							

1. 输出转速为2r / min时, 产品输出轴不自锁, 当阀门有自锁要求时应给予注意。

2. 产品为整体型时整机重量增加4kg。

1. As the output speed is 2r/min, the shaft will not be self-locking. Please pay attention when the valve is required to be self-locked.

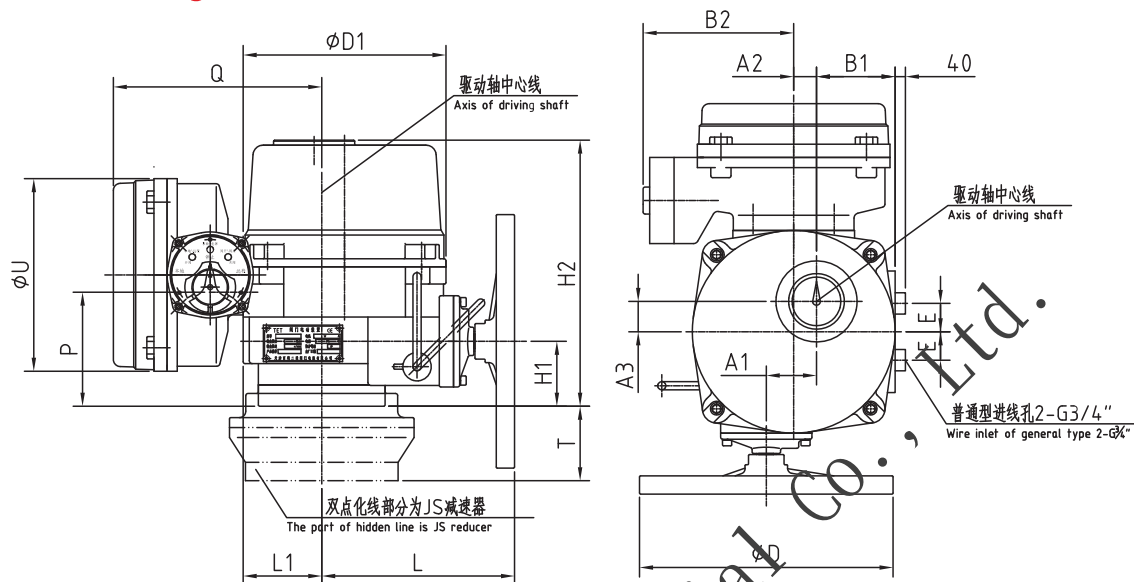
2. The weight of the product is added 4kg for the QT Integral.

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QTI ~ QT4/JS系列整体型部分回转阀门电动装置

QTI ~ QT4/JS Integral Quarter-turn Valve Electric Actuators



型号 Type	A1	A2	A3	B1	B2	D	D1	E	H1	H2	L	L1	T	P	Q	U
QT1	44	17	36	68	150	200	170	27.5	62	257	181	62	/	109	177	190
QT2	49.5	22.5	30	77.5	150	200	200	27.5	64	263	190	85	/	113	198	190
QT3	60	33	35	77	150	200	220	27.5	70	304	205	88	/	119	203	190
QT4	70	43	38	92	150	250	260	27.5	78	342	228	106	/	127	220	190
QT4/JS	70	43	38	92	150	250	260	27.5	78	342	228	106	112	127	220	190

注：QT4/JS外形图可参见11页

按电气控制可分为：

- 基本型：可选带行程、力矩无源接点，输出4~20mA 阀位信号。
- 带现场操作按钮灯盒型：可选带行程、力矩无源接点，输出4~20mA 阀位信号。
- 整体型：带控制电器元件和现场操作旋钮及现场-远控选择旋钮灯盒。可选带行程、力矩无源接点，现场-远控工作状态无源接点，输出4~20mA 阀位信号。鉴断相及自动换相保护装置等。
- 整体调节型：带电器元件调节板元件和现场操作按钮及现场-远控选择旋钮灯盒。可选带行程、力矩无源接点，现场-远控工作状态无源接点。鉴断相及自动换相保护装置等。

Attention: Please turn to Page11 for the drawing of QT4/JS.

QT Range could be classified into four types according to electrical control:

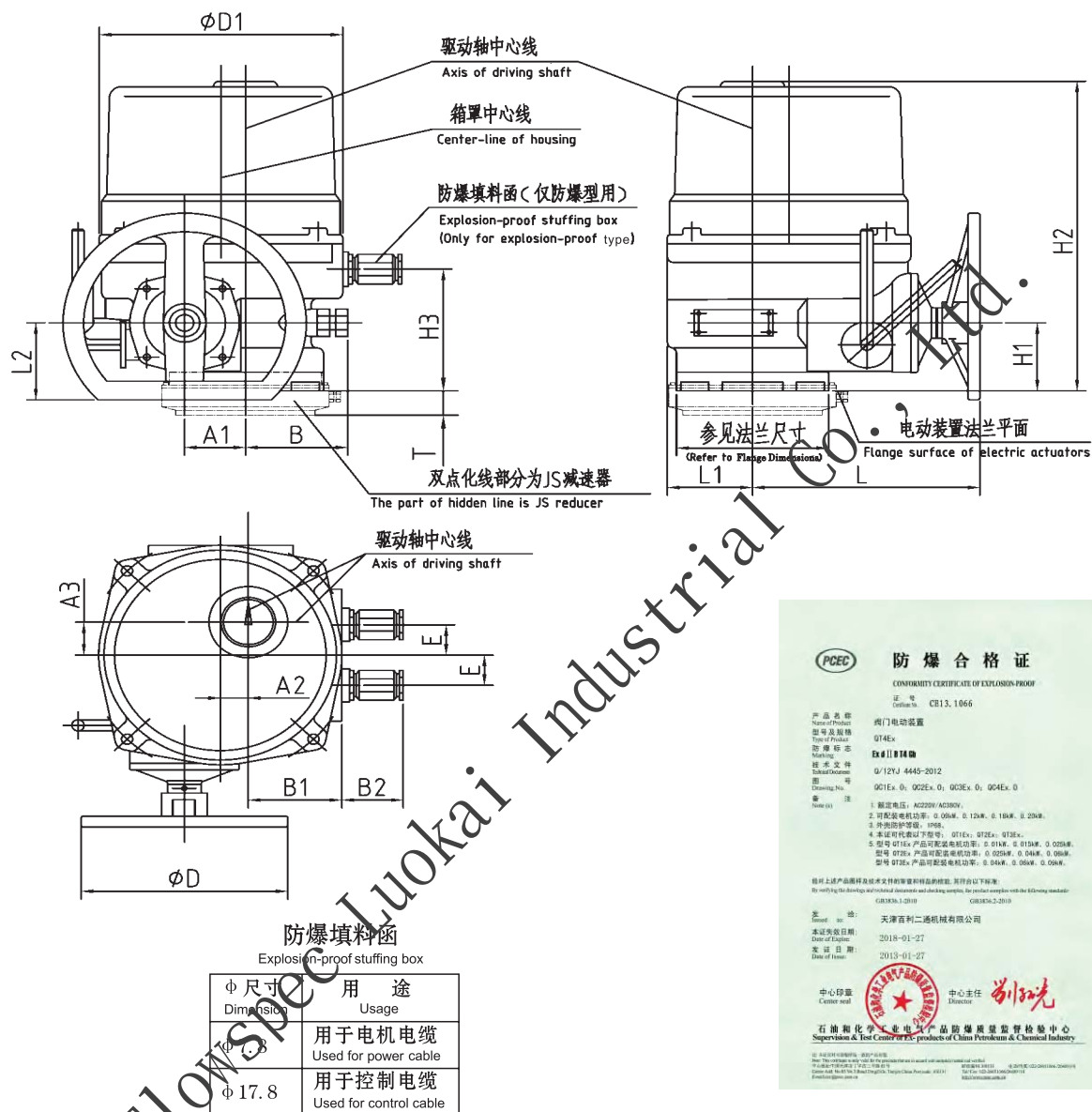
- QT Basic type: both stroke and torque with dry contact are available. Valve position signal:4-20mA.
- Local operation button in the light box: both stroke and torque with dry contact are available. Valve position signal:4-20mA.
- QT Integral: Provided with electric components and local operating buttons;Local/Remote Button is also provided. Stroke and torque with dry contact; Local /Remote Button with dry contact; valve position signal: 4-20mA;provided with phase demodulation, phase loss and commutation.
- QT Modulating Integral: with electric components and components on the adjusting plates; with local operating buttons including Local/Remote button. Limit and torque with dry contact; Local/Remote Button with dry contact; Please-sequence discrimination and automatic phase changing-over protection device.

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QT1 ~ QT4/JS (QT1Ex ~ QT4/JS.Ex) 系列 (防爆型) 部分回转阀门电动装置

QT1 ~ QT4/JS (QT1Ex ~ QT4/JS.Ex) Series (explosin-proof type) Quarter-turn Valve Electric Actuators



型 号 Type	A1	A2	A3	B	B1	B2	D	D1	E	H1	H2	H3	T	L	L1	L2
QT1 (QT1Ex)	44	17	36	75	68	40 (60)	200	170	27.5	62	257 (267)	109	/	181	62	76
QT2 (QT2Ex)	49.5	22.5	30	85	77.5		200	200		64	263 (272)	113	/	190	85	76
QT3 (QT3Ex)	60	33	35	100	77			220		70	304 (308)	119	/	205	88	76
QT4 (QT4Ex)	70	43	38	115	92		250	260		78	342 (347)	127	/	228	106	110
QT4/JS (QT4/JS.Ex)				165						78	342 (347)	127	112			

注：QT4/JS(QT4Ex/JS)外形图可参见11页

Please turn to page 11 for drawing of QT4/JS

QT型部分回转阀门电动装置 NEUMAX

QT Quarter-turn Valve Electric Actuators NEUMAX

QT1Ex.IN ~ QT4/JSEx.IN 防爆整体型 部分回转阀门电动装置

QT1Ex.IN~QT4 / JSEx.IN系列防爆整体型阀门电动装置产品依据GB3836.1-2010《爆炸性环境第1部分：设备通用要求》和GB3836.2-2010《爆炸性环境第2部分：由隔爆外壳“d”保护的设备的有关规定进行设计制造的机电一体化产品，并经过国家认定的防爆审查机关审查、实验、认可，并获得防爆合格证。防爆标志为：Exd IIBT4Gb，产品共有5种机座号：QT1Ex.IN，QT2Ex.IN，QT3Ex.IN，QT4Ex.IN，QT4 / JS.Ex.IN，其中技术参数、连接尺寸参照普通型。



QT1Ex.IN-QT4/JSEx.IN Explosion-Proof Ingegrate Quarter-turn Valve Electric Actuator

QT 1.Ex.IN-QT4/JS Ex.IN. explosion proof electric actuators are designed and manufactured on the basis of GB3836.1-2010《General Requirement for the Equipment Used in Explosion Environment Part I》and GB3836.2-2010《Equipment Protected by Explosion-proof Enclosure "d" Explosion Environment Part II》.

Investigated and examined by the national-recognized Explosion-proof censorship, this range has achieved the Conformity Certificate of Protection. Exd IIBT4 is the explosion mark. According to motor frame No., this range can be divided into five kinds which are QT1Ex.IN, QT2Ex.IN, QT3Ex.IN, QT4Ex.IN and QT4/JS.Ex.IN. Please refer to the Standard Type for technical parameters and connecting size.

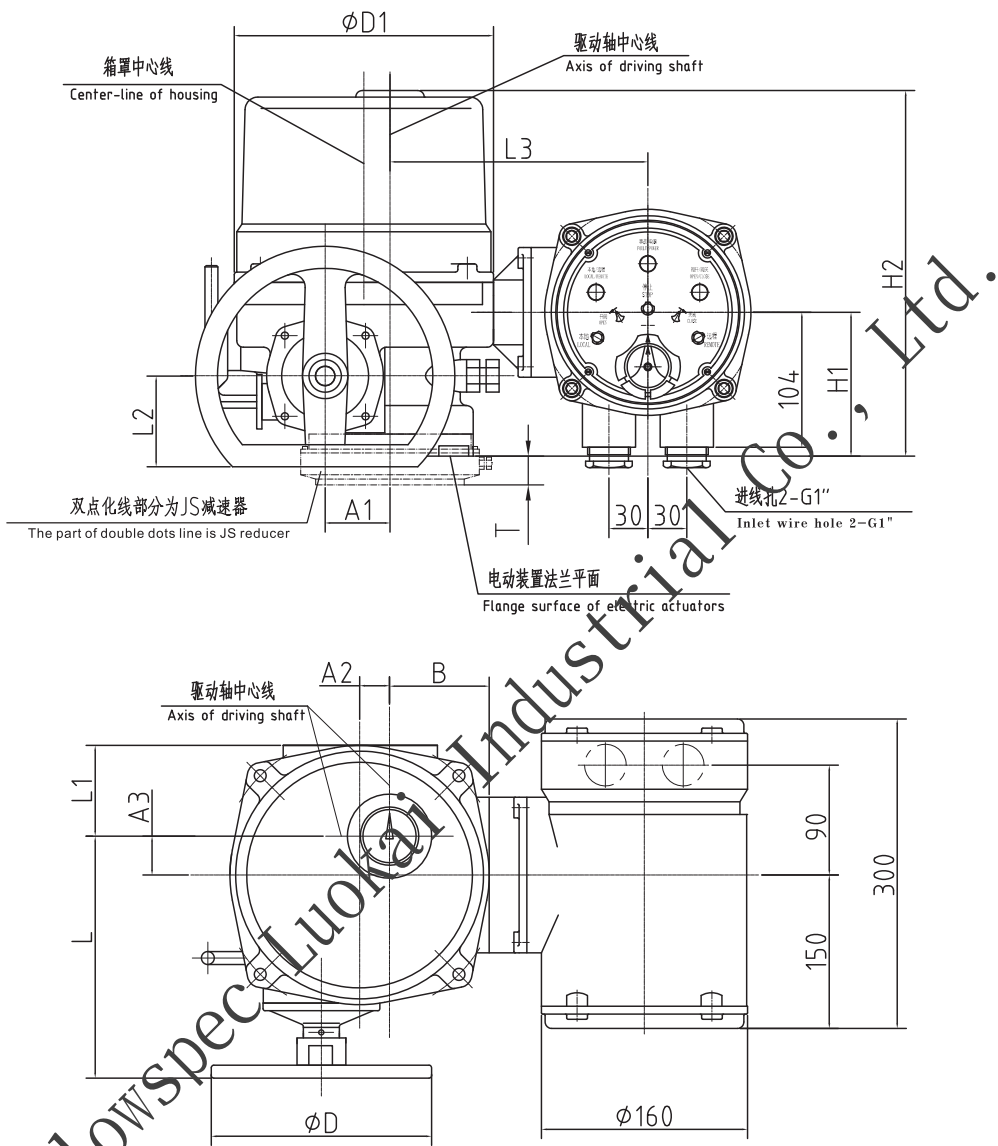


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QT1Ex.IN-QT4/JSEx.IN 防爆整体型外形尺寸

QT1Ex.IN-QT4/JSEx.IN Explosion-proof Integral Dimension



型 号 Type	A1	A2	A3	B	D	D1	H1	H2	T	L	L1	L2	L3
QT1Ex.IN	44	17	36	68	200	170	109	267	/	181	49	76	188
QT2Ex.IN	49.5	22.5	30	77.5	200	200	113	272	/	190	70	76	200
QT3Ex.IN	60	33	35	77		220	119	308	/	205	75	76	
QT4Ex.IN	70	43	38	92	250	260	127	347	/	228	92	110	212
QT4/JSEx.IN							127	347	112				

注：QT4/JS.IN(QT4Ex/JS)外形图可参见11页
Please turn to page 11 for drawing of QT4/JS

QT型部分回转阀门电动装置 NEUMAX

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QT0 型部分回转阀门电动装置

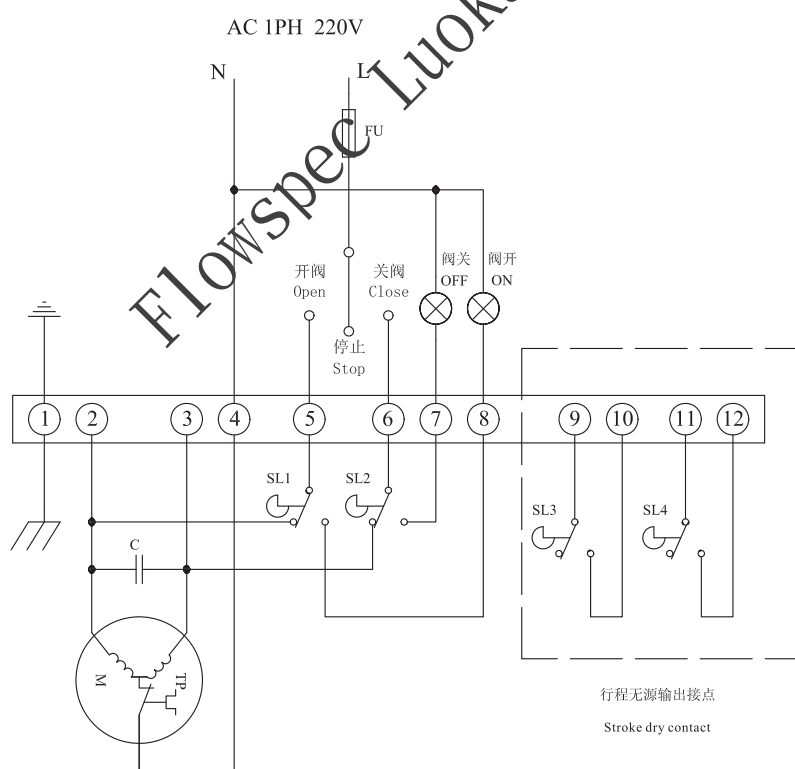
QT0 型阀门电动装置是专门为小型球、蝶阀而设计的小型电动装置，也是QT系列中最小的一个规格。该产品为压铸铝喷涂外壳，外形美观。具有体积小($\phi 115 \times 145$)，重量轻(整机重量2kg)、高效率(工作转矩50 N·m)、高性能(采用10 W 阀门专用电机)、高防护性能(IP67)、低噪音等特点。可广泛用于建筑、化工、造船、造纸等行业。

QT0 Quarter-turn Valve Electric Actuator

QT0 electric actuator, which is the minimum specification of the QT series, is specially designed for small-sized ball valve and butterfly valve. QT0 boasts of a striking design, with a die-casting aluminum enclosure. This product is featured by small size ($\phi 115 \times 145$), light weight (2kg for the entire product), high efficiency (working torque 50 N·m), high capability (applying 10w motor power), with a relatively high protection degree (IP67) and low noise. This product can be applied to architecture, chemical engineering, ship building, and paper-making industry.

QT0 型电气原理图 (AC220V)

QT0 Electrical Schematic Diagram (AC220V)

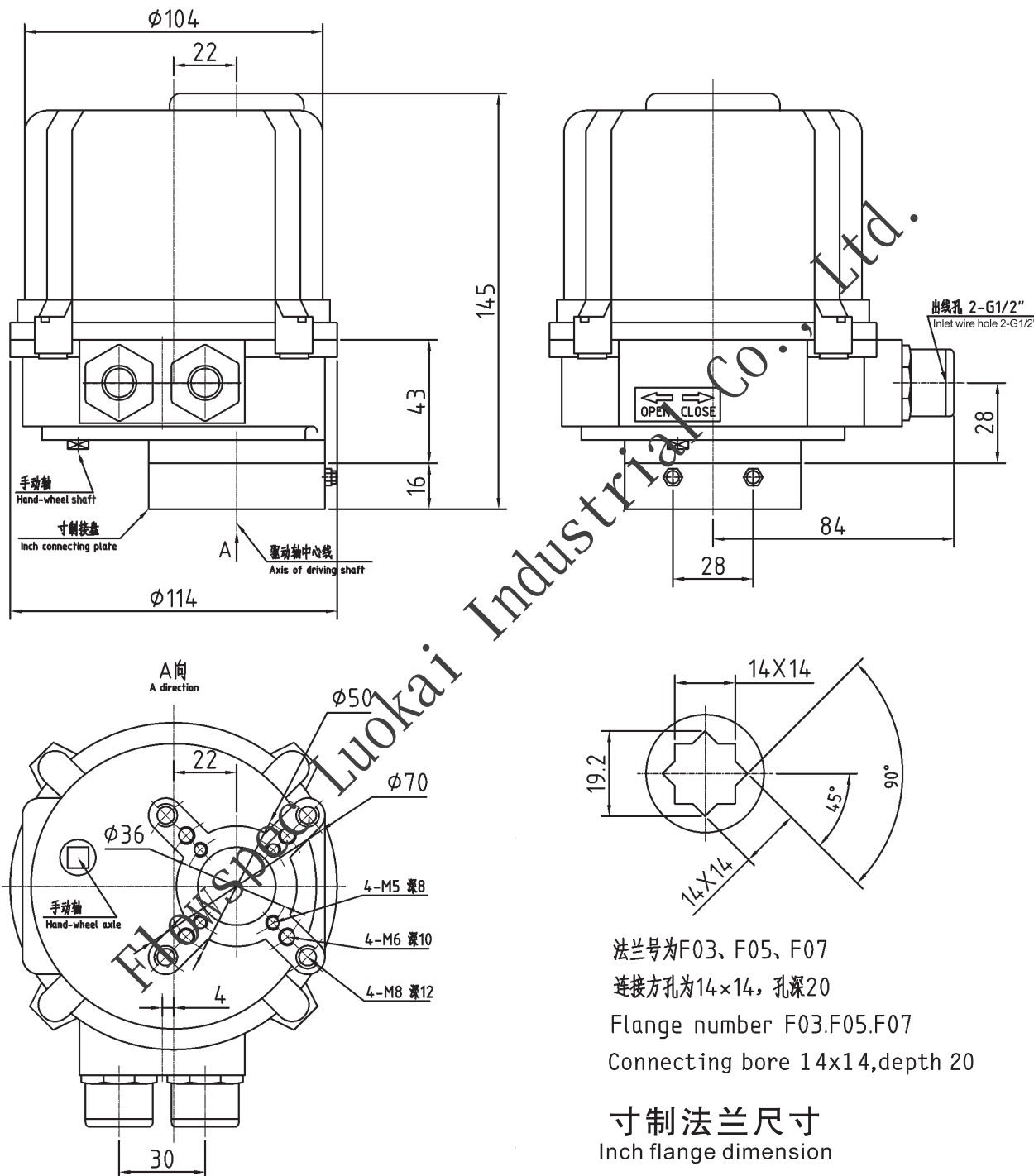


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QT Quarter-turn Valve Electric Actuators NEUMAX

QT0 型外形及法兰尺寸

QT0 outline and flange dimension



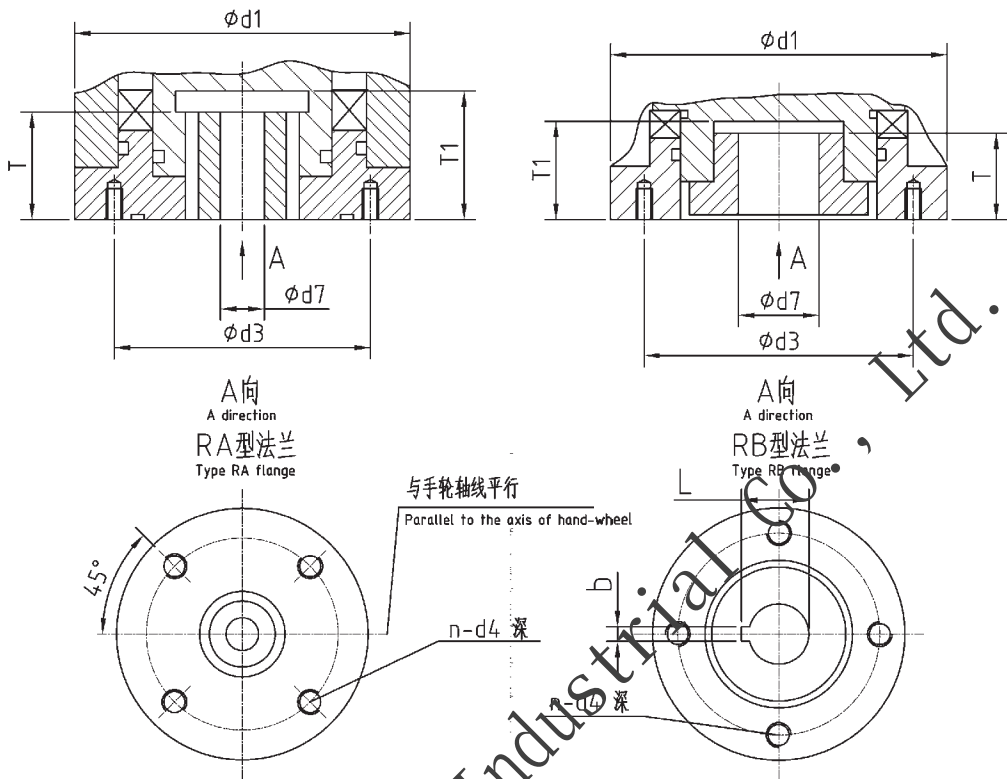
寸制接盘 Inch connecting plate	φ d1	φ d3	φ d7	b	L	T	n-d4
2"	82	57.5	12.6	3	14	32	4-M6 深10 4-M6 depth 10

详见第12页
See details 12th Page

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QT Quarter-turn Valve Electric Actuators NEUMAX

QT0-QT4 法兰结构及尺寸
QT0-QT4 Flange structure and dimensions



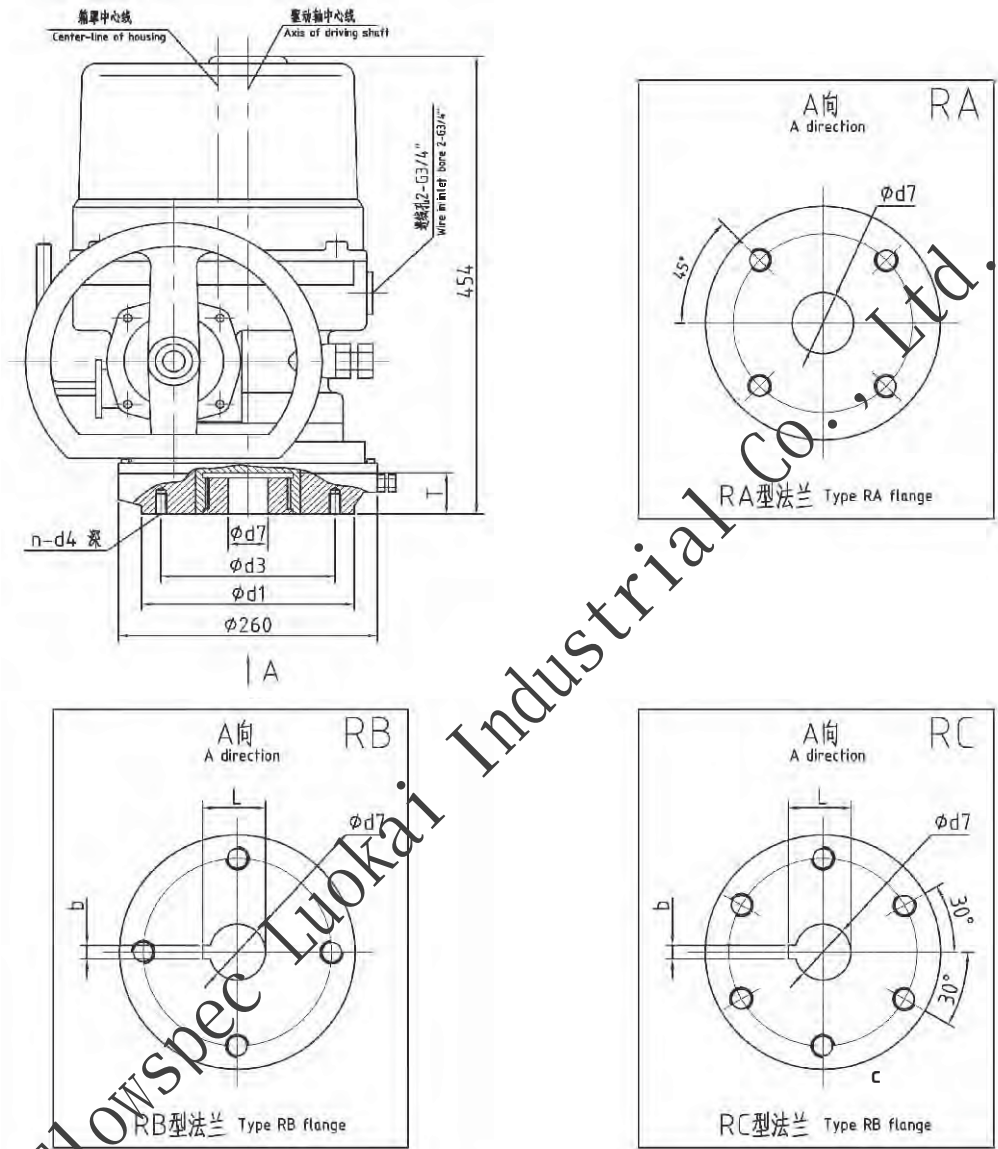
型号 Type	代号 Code	法兰号 Flange code	$\Phi d1$	$\Phi d3$	$\Phi d7$			b	L	T	$T1$	$n-d4$ 深 $n-d4$ depth
					标准尺寸 Standard dimensions	预留尺寸 Preliminary dimensions	最大允许 Max permissible					
QT0	RA	F03	88	36	14 × 14 (方孔)	—	—	—	—	20	20	4-M5深8 4-M5 depth8
		F05		50								4-M6深10 4-M6 depth10
		F07		70								4-M8深12 4-M8 depth12
QT1	RA	F05	102	50	—	10	22	—	—	30	43	4-M6深12 4-M6 depth12
		F07		70						40		4-M8深12 4-M8 depth12
	RB	2"		57.15	12.6	—	—	3	14	40		4-M6深10 4-M6 depth10
		3"								46		4-M8深15 4-M8 depth15
QT2	RA	F05	125	50	—	10	22	—	—	45	49	4-M6深12 4-M6 depth12
		F07		70		15	32			46		4-M8深14 4-M8 depth14
		F10		102		—	—			—		4-M8深15 4-M8 depth15
	RB	2"		57.15	12.6	10	22	3	14	45		4-M6深10 4-M6 depth10
		2.5"								46		4-M8深15 4-M8 depth15
		3"								46		4-M8深15 4-M8 depth15
		4"								46		4-M8深15 4-M8 depth15
		5"								46		4-M8深15 4-M8 depth15
		6"		69.85	18.92	15	32	5	21.22	46		4-M8深15 4-M8 depth15
	RA	F10	145	102	—	15	32	—	—	46	52	4-M10深15 4-M10 depth15
		F12		125						46		4-M12深18 4-M12 depth18
QT4	RA	F14	175	140	—	20	42	—	—	58	63	4-M16深25 4-M16 depth25
		8"		88.9								4-M12深20 4-M12 depth20
	RB	10"		88.9								4-M12深20 4-M12 depth20
		12"		107.95								4-M12深20 4-M12 depth20
		14"		107.95								4-M12深20 4-M12 depth20
		16"		107.95								4-M12深20 4-M12 depth20

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QT4/JS型外型图及法兰尺寸

QT4/JS Outline and flange dimension



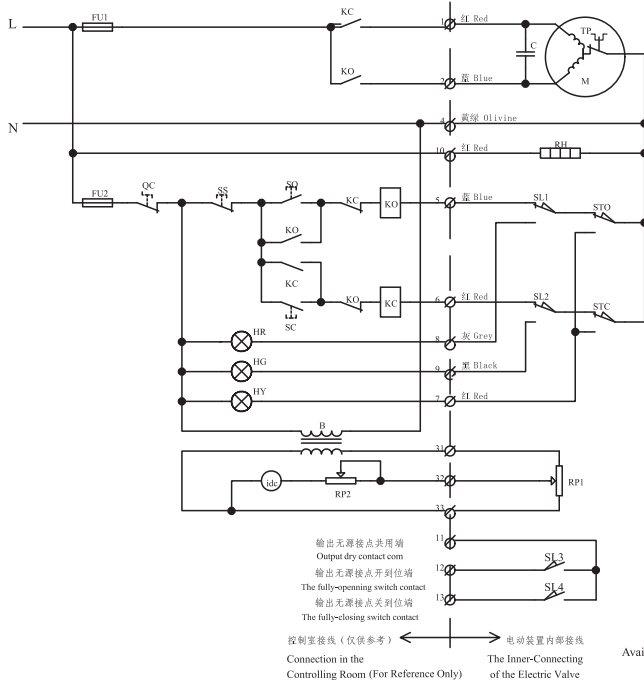
法兰型式 Flange type	法兰口径 或法兰号 Flange bore or flange code	Φd1	Φd3	Φd7			b	L	n-d4	T	h
				标准尺寸 Standard dimensions	预留尺寸 Preliminary dimensions	最大允许 Max permissible					
RA	F14	175	140	/	/	/	/	/	4-M16	77	25
	F16	210	165						4-M20		
RB	16"	215	158.75	33.15	20	50	10	36.45	4-M18		
	18"			38.00				41.3			
	20"			41.15				44.45			
RC	Q120	215	165	/	/	/	/	/	6-M16		

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QT 系列基本型电气原理图 (AC220V)

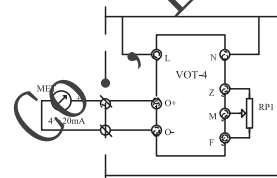
QT Series Basic Type Electrical Schematic Diagram (AC220V)



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、 $\emptyset$: 用户接线端子,
2. $\emptyset$: Wiring Terminals for User to Connect.
- 3、元件表中“@”为选装件。
3. The “@” in Component List represents selecting element.

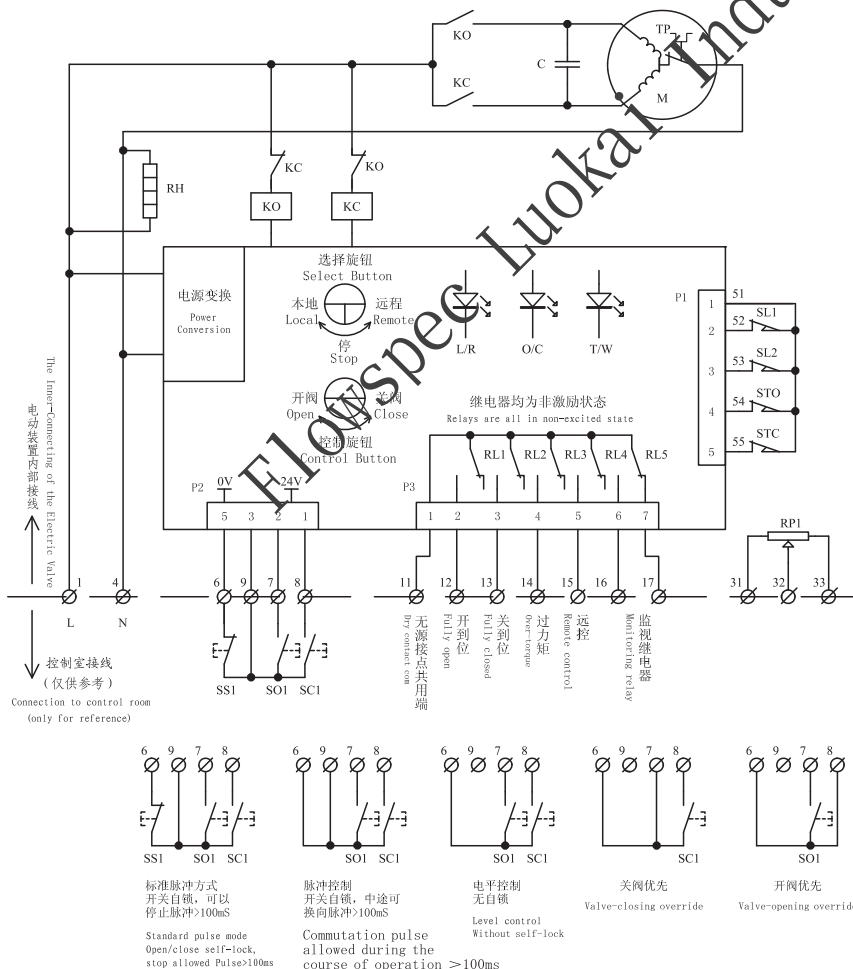
元 件 表 Component List	
8	
7	4-线制阀位电流发生器 4-Wire Valve Position Current Generator
6	RP1 位置反馈电位器 Valve Position Feedback Potentiometer
5	STO-STC 开、关双向限位开关 Opening/Closing torque Switch
4	SL1-SL4 开、关双向行程限位开关 Opening/Closing Limit Switch
3	RH 空间加热器 Space Heater
2	C 电机分相电容 Motor Phase capacitance
1	M 阀门专用电机 (AC220V) Valve Drive Motor (AC220V)
序号	标号 Name
在电动装置上 In the electric actuator	



选装: 4~20mA 阀位输出电流
Available: 4~20mA valve position current

QT 系列整体型电气原理图 (AC220V)

QT Series Integral Type Electrical Schematic Diagram (AC220V)



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。
1. This diagram shows that the electric valve is at the middle position and the state relay is not excited.
- 2、 $\emptyset$: 用户接线端子。
2. $\emptyset$: User's connection terminal.

Notes :

1. This diagram shows that the electric valve is at the middle position and the state relay is not excited.
2. $\emptyset$: User's connection terminal.

元 件 表 Components Table	
11	TP 电动机热保护开关 Over-heated protection switch
10	RH 空间加热器、8.2k/20w Room heater 8.2k/20w
9	RL1-5 状态输出继电器 State output relay
8	RP1 位置反馈电位器 Position feedback potentiometer
7	T/W 事故/电源指示灯 Malfunction power indicator
6	O/C 阀开/阀关指示灯 Opening/closing indicator
5	L/R 本地/远程工作指示灯 Local/remote indicator
4	STO STC 开、关双向限位开关 Opening/closing torque switch
3	SL1 SL2 开、关双向行程限位开关 Opening/closing limit switch
2	KO KC 交流接触器 AC contactor
1	M 阀门专用电机 (AC220V) Special motor (AC220V)
序号No.	标号 Symbol
在电动装置上 In the electric actuator	

标准脉冲方式
开关自锁, 可以
停止脉冲>100ms

脉冲控制
开关自锁, 中途可
换向脉冲>100ms

电平控制
无自锁

阀门优先
Valve-closing override

阀门优先
Valve-opening override

外供DC24V
External power
supply DC24V

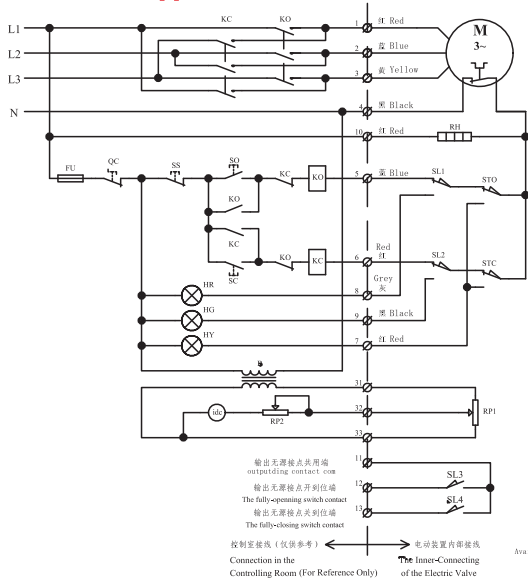
手动脉冲控制/自动电平控制
Manual pulse control /
Automatic level control

QT型部分回转阀门电动装置 NEUMAX

QT Quarter-turn Valve Electric Actuators NEUMAX

QT 系列基本型电气原理图 (AC380V)

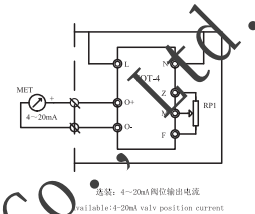
QT Series Basic Type Electrical Schematic Diagram (AC380V)



说明: Note:

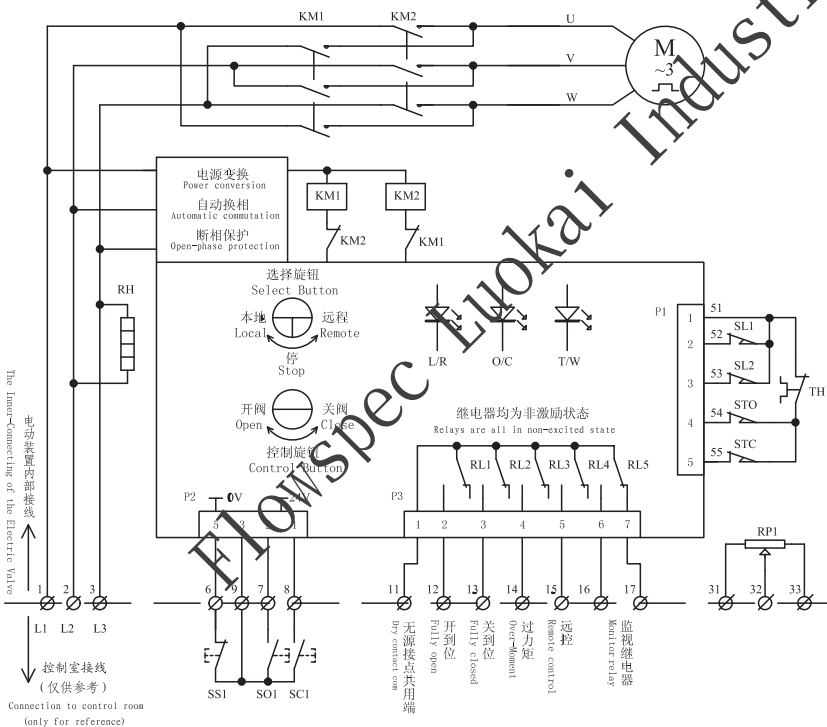
1. 本图表示电动阀门处于中间位置。
1. The Valve is at the middle position in this diagram.
2. ∅: 用户接线端子。
2. ∅: Wiring Terminals for User to Connect.
3. 元件表中“@”为选装件。
3. The “@” in Component List represents selecting element.

元 件 表 Component List	
2	RP1
3	SL1-SL2
4	STO-STC
5	TH
6	RP1
7	T/W
8	O/C
9	L/R
10	RH
11	TH
12	RL1-5
13	RP1



QT 系列整体型电气原理图 (AC380V)

QT Series Integral Type Electrical Schematic Diagram (AC380V)



说明:

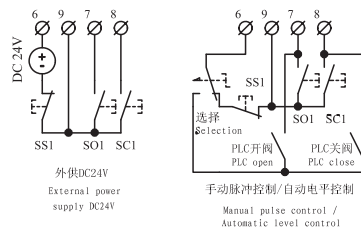
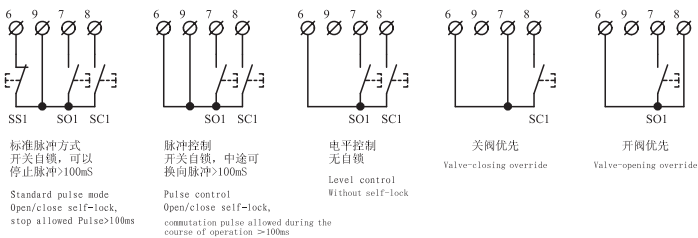
1. 本图表示电动阀门处于中间位置, 状态继电器非激励。
1. This diagram shows that the electric valve is at the middle position and the state relay is not excited.
2. ∅: 用户接线端子。
2. ∅: User's connection terminal.

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 Components Table	
11	TH
10	RH
9	RL1-5
8	RP1
7	T/W
6	O/C
5	L/R
4	STO-STC
3	SL1 SL2
2	KM1-2
1	M

在电动装置上 In the electric actuator

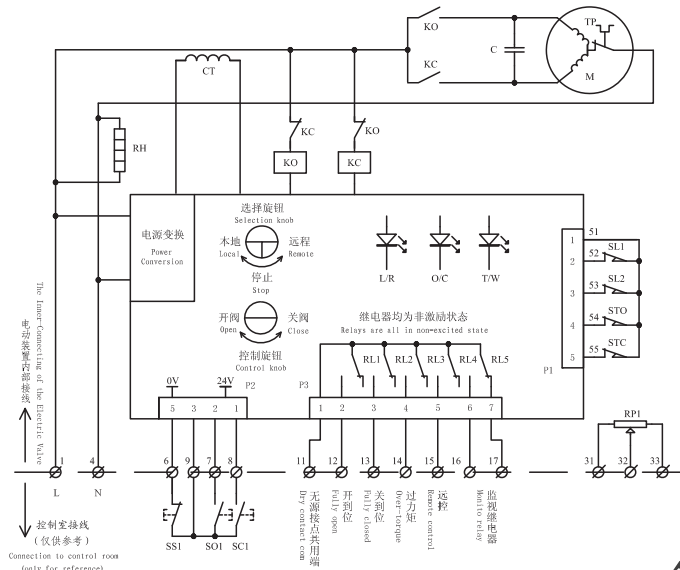


QT型部分回转阀门电动装置 NEUMAX

QT Quarter-turn Valve Electric Actuators NEUMAX

QT 系列防爆整体型电气原理图 (AC220V)

QT Series Explosive Integral Type Electrical Schematic Diagram (AC220V)



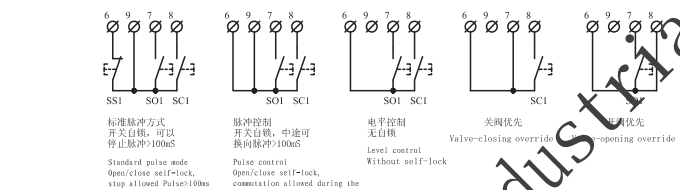
说明:

- 1、本图表示电动阀门处于中间位置, 状态继电器非激励。
- 2、Ø: 用户接线端子。

Notes:

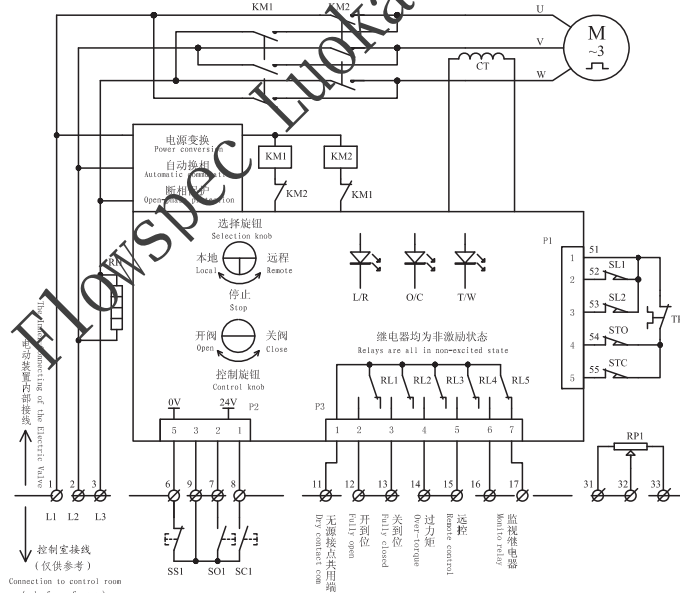
- 1、This diagram shows that the electric valve is at the middle position and the state relay is not excited.
- 2、Ø: User's connection terminal.

元 件 表 Components Table	
12	CT 电流互感器 Current sensor
11	TP 电动机热保护开关 Motor over-heated protection switch
10	RH 空间加热器, 8.2k/25w Room heater 8.2k/25w
9	RL1-5 状态输出继电器 State output relay
8	RP1 位置反馈电位器 Position feedback potentiometer
7	T/W 事故/电源指示灯 Multifunction/power indicator
6	O/C 开/关指示灯 Opening/closing indicator
5	L/R 本地/远程指示灯 Local/remote indicator
4	STO/STC 开、关方向限位开关 Opening/closing limit switch
3	SL1/SL2 开、关行程限位开关 Opening/closing limitation switch
2	KO/KC 交流接触器 AC contactor
1	M 电动机 (AC220V) Special motor (AC220V)
符号/名称 Symbol/Name	在电动装置上 In the electric actuator



QT 系列防爆整体型电气原理图 (AC380V)

QT Series Explosive Integral Type Electrical Schematic Diagram (AC380V)



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、Ø: 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、Ø: User's connection terminal.

元 件 表 Components Table	
12	CT 电流互感器 Current sensor
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	RL1-5 状态输出继电器 State output relay
8	RP1 位置反馈电位器 Position feedback potentiometer
7	T/W 事故/电源指示灯 Multifunction/power indicator
6	O/C 开/关指示灯 Opening/closing indicator light
5	L/R 本地/远程指示灯 Local/remote indicator light
4	STO/STC 开、关方向限位开关 Opening/closing limit switch
3	SL1/SL2 开、关行程限位开关 Opening/closing limitation switch
2	KM1-2 交流接触器 AC contactor
1	M 电动机 (AC380V) Special-used motor
符号/名称 Symbol/Name	在电动装置上 In the electric actuator

