

Multi-Turn Electric Gate Valve INSTRUCTION MANUAL



dc DELCO

Specialized Control Valve Manufacturer



Introduction

The gate of the electric multi turn gate valve is wedge-shaped or parallel, and the actuator drives the valve stem to rotate multiple times to drive the gate to move vertically. When fully opened, the flow channel is completely unobstructed. Clear stem (visible valve stem lifting) and concealed stem structure. Low flow resistance: When fully open, the diameter of the flow channel is the same as that of the pipeline, with minimal pressure loss. Bidirectional sealing: suitable for bidirectional flow media. High pressure resistance: The metal seal can withstand high pressure above PN100. Application areas: long-distance pipelines, power plant main steam systems, crude oil storage and transportation.

Standards and Norms

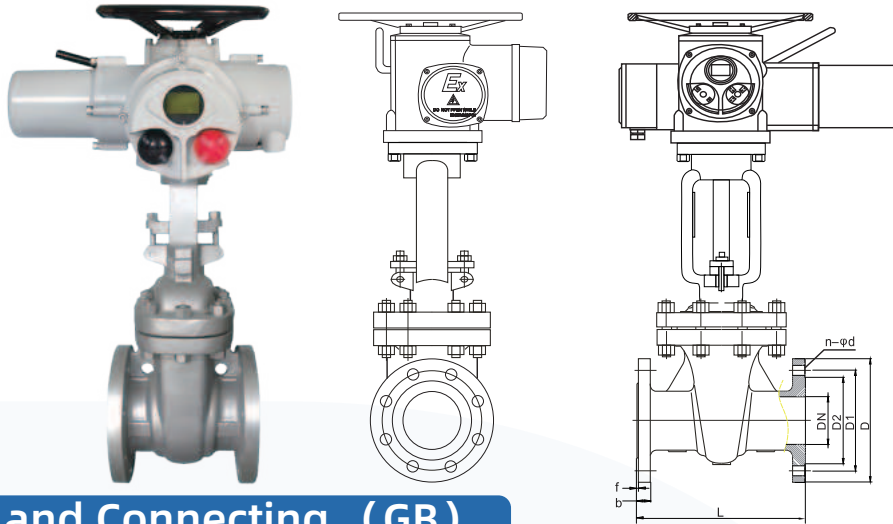
Design and Manufacture	Structure Length	Pressure-temperature rating	Connection fange	Test and Inspection
GB 12234	GB 12221	GB 12224	JB/T79.1-2-94 GB 9113-2009 HG 20592~20635	JB/T 9092-1999 GB 13927-2005
ASME B16.34API600	ASME B16.10	ASME B16.34 API600	ASME B16.5 ASME B16.25 ASME B16.47	ISO5208 API598
JS B2073 B2083	JS B2002	JIS B2212 B2214	JS B2073 B2083	JIS B2003

Performance Parameter

NO.	Project name	Project name					
		PN16	PN25	PN40	PN64	PN100	PN160
1	PN(MPa)	1.6	2.5	4.0	6.4	10	16
2	Shell strength test pressure(MPa)	15 Times the nominal pressure at room temperature					
3	High-pressure sealing Test pressure(MPa)	1.1Times the nominal pressure at room temperature					
4	Operating pressureat room temperature(MPa)	According to GB/T 12224 pressure temperature rating					

Main Components Material

Name	Material								
Body/Bonnet	CF8	CF3	CF8M	CF3M	WCB	LCB	WC6	WC9	C5
Wedge	CF8	CF3	CF8M	CF3M	WCB	LCB	WC6	WC9	C5
Stem	F304	F304L	F316	F316L	2CR13	F304	F304	F304	F304
Stem Nut	Aluminium Bronze								
Packing	PTFE					Graphite			
Gasket	PTFE					Graphite			
Gland	CF8	CF3	CF8M	CF3M	WCB	LCB	WC6	WC9	C5
Bolt	Stainless Steel					35CrMoA			
Nut	Stainless Steel					45、35CrMoA			

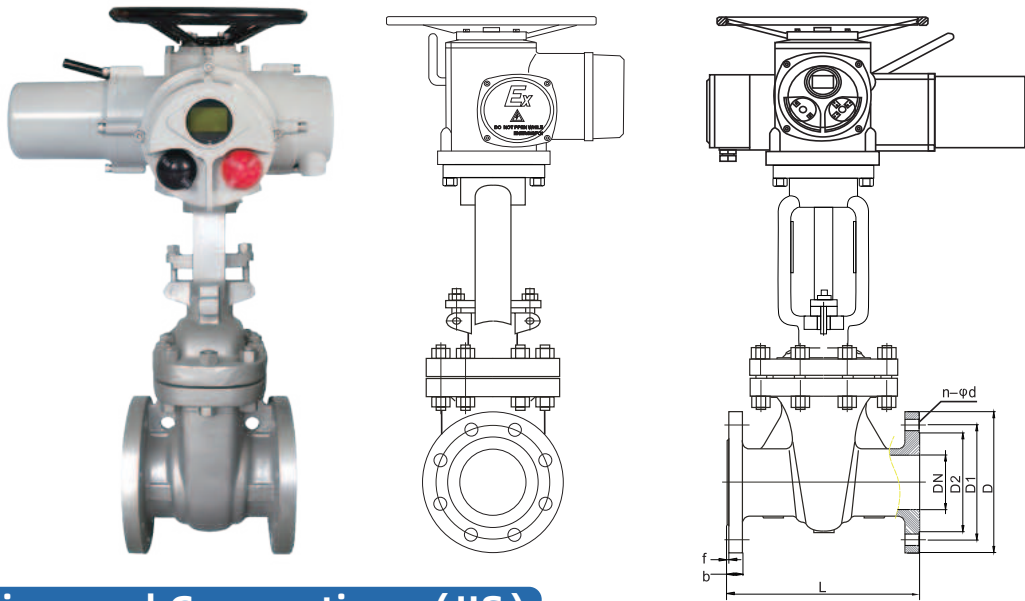


Main Outline and Connecting (GB)

MEDLE		Inch	D	D1	D2	n-d	b	f	L
1.0	DN15	1/2"	95	65	45	4-14	14	2	130
	DN20	3/4"	105	75	55	4-14	16	2	150
	DN25	1"	115	85	65	4-14	16	2	160
	DN32	1-1/4"	140/135	100	78	4-18	18	2	180
	DN40	1-1/2"	150/145	110	85	4-18	18	2	200
	DN50	2"	165/160	125	100	4-18	20	3	180
	DN65	2-1/2"	185/180	145	120	4-18	20	3	195
	DN80	3"	200/195	160	135	8-18	20	3	210
	DN100	4"	200/215	180	155	8-18	22	3	230
	DN125	5"	245	210	185	8-18	22	2	255
	DN150	6"	280	240	210	8-22	24	2	280
	DN200	8"	335	295	265	8-22	24	2	330
	DN250	10"	390	350	320	12-22	26	2	380
	DN300	12"	440	400	368	12-22	26	2	420
	DN350	14"	500	460	428	16-22	26	2	450
	DN400	16"	565	515	482	16-26	26	2	480
DN450	18"	615	656	532	20-26	28	2	510	
DN500	20"	670	620	585	20-26	28	2	540	
1.6	DN15	1/2"	95	65	45	4-14	14	2	130
	DN20	3/4"	105	75	55	4-14	14	2	150
	DN25	1"	115	85	65	4-14	14	2	160
	DN32	1-1/4"	140/135	100	78	4-18	16	2	180
	DN40	1-1/2"	150/145	110	85	4-18	16	3	200
	DN50	2"	165/145	125	100	4-18	16	3	250
	DN65	2-1/2"	185/180	145	120	4-18	18	3	265
	DN80	3"	200/195	160	135	8-18	20	3	280
	DN100	4"	220/215	180	155	8-18	20	3	300
	DN125	5"	220/215	210	185	8-18	22	3	325
	DN150	6"	250/245	240	210	8-23	24	3	350
	DN200	8"	285/280	295	265	12-23	26	3	400
	DN250	10"	340/335	355	320	12-25	30	3	450
	DN300	12"	405	410	375	12-25	30	4	500
	DN350	14"	460	470	435	16-30	34	4	550
	DN400	16"	520	525	485	16-30	36	4	600
DN450	18"	580/640	585	545	20-30	40	4	650	
DN500	20"	715/705	650	608	20-34	44	4	700	

Main Outline and Connecting (ANSI)

MEDLE		Inch	D	D1	D2	n-d	b	f	L
150 Class	DN15	1/2"	90	60.3	34.9	4-16	11.5	2	108
	DN20	3/4"	100	69.9	42.9	4-16	13	2	117
	DN25	1"	110	79.4	50.8	4-16	14.5	2	127
	DN32	1-1/4"	115	88.9	63.5	4-16	16	2	140
	DN40	1-1/2"	125	98.4	73	4-16	17.5	2	165
	DN50	2"	150	120.7	92.1	4-19	19.5	3	178
	DN65	2-1/2"	180	139.7	104.8	4-19	22.5	3	190
	DN80	3"	190	152.4	127	4-19	24	3	203
	DN100	4"	230	190.5	157.2	8-19	24	3	229
	DN125	5"	255	215.9	185.7	8-22	24	2	254
	DN150	6"	280	241.3	215.9	8-22	25.5	2	267
	DN200	8"	345	298.5	270	8-22	29	2	292
	DN250	10"	405	362	323.8	12-25	30.5	2	330
	DN300	12"	485	431.8	381	12-25	32	2	356
	DN350	14"	535	476.3	412.8	12-29	35	2	381
	DN400	16"	595	539.8	469.9	16-29	37	2	406
300 Class	DN15	1/2"	95	66.7	34.9	4-16	14.5	2	140
	DN20	3/4"	115	82.6	42.9	4-19	16	2	152
	DN25	1"	125	88.9	50.8	4-19	17.5	2	165
	DN32	1-1/4"	135	98.4	63.5	4-19	19.5	2	178
	DN40	1-1/2"	155	114.3	73	4-22	21	2	190
	DN50	2"	165	127	92.1	8-19	22.5	2	216
	DN65	2-1/2"	190	149.2	104.8	8-22	25.5	2	241
	DN80	3"	210	168.3	127	8-22	29	2	282
	DN100	4"	255	200	157.2	8-22	32	2	305
	DN125	5"	280	235	185.7	8-22	35	2	381
	DN150	6"	320	269.9	215.9	12-22	37	2	403
	DN200	8"	380	330.2	269.9	12-25	41.5	2	419
	DN250	10"	445	387.4	323.8	16-29	48	2	457
	DN300	12"	520	450.8	381	16-32	51	2	502
	DN350	14"	585	515.4	412.8	20-32	54	2	762
	DN400	16"	650	571.5	469.9	20-35	57.5	2	838
600 Class	DN15	1/2"	95	66.7	34.9	4-14	21	6.4	165
	DN20	3/4"	115	82.6	42.9	4-14	23	6.4	190
	DN25	1"	125	88.9	50.8	4-14	24	6.4	216
	DN32	1-1/4"	135	98.4	63.5	4-18	27.5	6.4	229
	DN40	1-1/2"	155	114.3	73	4-18	29	6.4	241
	DN50	2"	165	127	92.1	4-18	32	6.4	292
	DN65	2-1/2"	190	149.2	104.8	4-18	35	6.4	330
	DN80	3"	210	168.3	127	8-18	38.5	6.4	356
	DN100	4"	275	215.9	157.2	8-18	45	6.4	432
	DN125	5"	330	266.7	185.7	8-18	51.5	6.4	508
	DN150	6"	355	292.1	215.9	8-23	54.5	6.4	559
	DN200	8"	420	349.2	269.9	12-23	62	6.4	660
	DN250	10"	510	431.8	323.8	12-25	70	6.4	787
	DN300	12"	560	489	381	12-25	73.5	6.4	838
	DN350	14"	605	527	412.8	16-30	76.5	6.4	889



Main Outline and Connecting (JIS)

MEDLE		Inch	D	D1	D2	n-d	b	f	L
10K	DN15	1/2"	95	70	52	4-15	12	1	108
	DN20	3/4"	100	75	58	4-15	14	1	117
	DN25	1"	125	90	70	4-19	14	1	127
	DN32	1-1/4"	135	100	80	4-19	16	2	140
	DN40	1-1/2"	140	105	85	4-19	16	2	165
	DN50	2"	155	120	100	4-19	16	2	178
	DN65	2-1/2"	175	140	120	4-19	18	2	190
	DN80	3"	185	150	130	8-19	18	2	203
	DN100	4"	210	175	155	8-19	18	2	229
	DN125	5"	250	210	185	8-23	20	2	254
	DN150	6"	280	240	215	8-23	22	2	267
	DN200	8"	330	290	265	12-23	22	2	292
	DN250	10"	400	355	325	12-25	24	2	330
	DN300	12"	445	400	370	16-25	24	2	356
	DN350	14"	490	445	415	16-25	26	2	381
DN400	16"	560	510	475	16-25	28	2	406	
20K	DN15	1/2"	95	70	52	4-15	14	1	140
	DN20	3/4"	100	75	58	4-15	16	1	152
	DN25	1"	125	90	70	4-19	16	1	165
	DN32	1-1/4"	135	100	80	4-19	18	2	178
	DN40	1-1/2"	140	105	85	4-19	18	2	190
	DN50	2"	155	120	100	8-19	18	2	216
	DN65	2-1/2"	175	140	120	8-19	20	2	241
	DN80	3"	200	160	135	8-23	22	2	282
	DN100	4"	225	185	160	8-23	24	2	305
	DN125	5"	270	225	195	8-25	26	2	381
	DN150	6"	305	260	230	12-25	28	2	403
	DN200	8"	350	305	275	12-25	30	2	419
	DN250	10"	430	380	345	12-27	34	2	457
	DN300	12"	480	430	395	16-27	35	3	502
	DN350	14"	540	480	440	16-33	40	3	762
DN400	16"	605	540	495	16-33	46	3	838	

Z series actuators, are driving equipment for valves to achieve opening, closing, adjustment and control. This series of actuators have the characteristics of full-featured, reliable performance, advanced control system, small size, light weight, convenient use and maintenance.

Z series actuators are suitable for valves with linear movements, such as gate valves, globe valves, diaphragm valves plunger valves, shut-off valves, water gates, etc., which can be used for bright stem valves and dark stem valves. The valve can be controlled remotely, collectively and automatically. It is widely used in electric power, metallurgy, petroleum, chemical, pharmaceutical, sewage treatment, agricultural irrigation and other industries.

The performance of this series of ordinary products meets the requirements of GB / T24923-2010 "Technical Conditions for Ordinary Valve Electric Devices";

The performance of this series of flameproof products conforms to GB3836.1-2010 "Explosive Environment Part 1: General Requirements", GB3836.2-2010 "Explosive Environment Part 2: Equipment Protected by Flameproof Enclosure" d" and GB / T24922-2010 "Technical Conditions of Flameproof Valve Electric Device".

Product Categories

Divided by control method: Divided by control method: ordinary type, intelligent switch type, intelligent adjustment type (Profibus fieldbus, Modbus Fieldbus, Hart fieldbus, FF fieldbus, Device Net fieldbus);

Divided by protection type: Outdoor and explosion-proof;

Divided by connection method: Torque type and thrust type

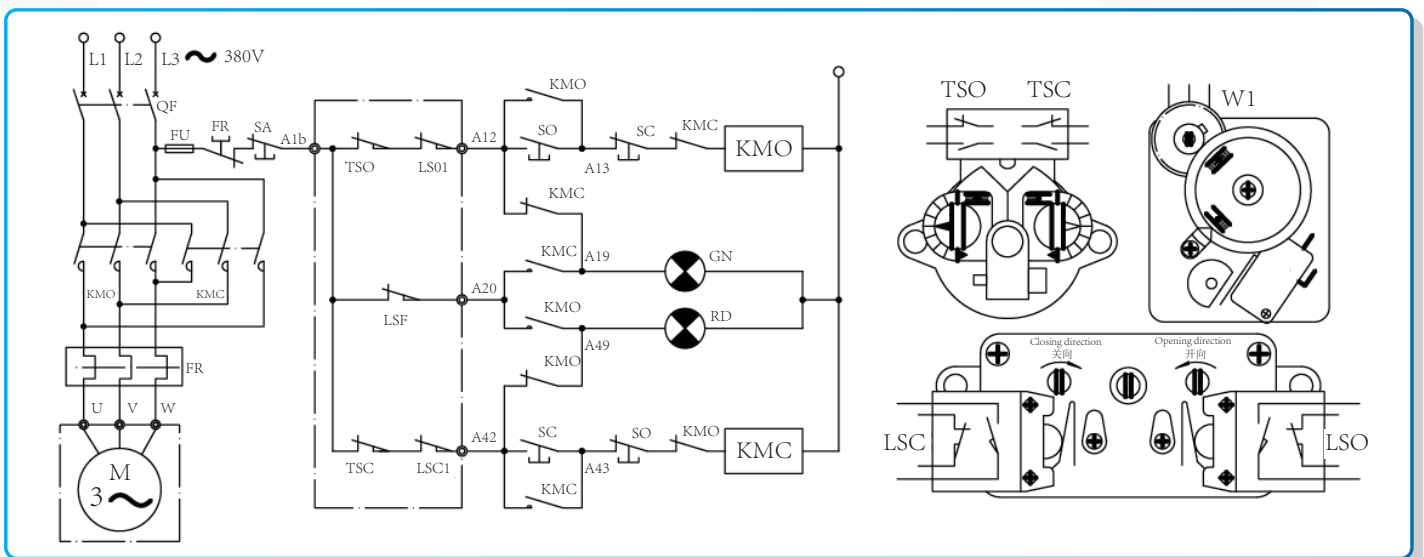
Main Specifications

input signal	4mA~20mA; Passive contact	
Power supply	Conventional	Three phase: AC380V(50Hz)
	Special	Three phase: AC660V、AC440V、AC415V(50Hz、60Hz)
		Simplex: AC220V、AC110V(50Hz、60Hz)
		Direct: DC12V、DC24V、DC48V
Basic error limit	≤1%	
Protection class	IP65、IP68.....	
Explosion-proof grade	ExdII BT4、ExdII CT4;	
Ambient temperature	-30°C~+70°C (Optional: -40°C~+100°C)	
Environment humidity	≤95%(25°C)	
Motor working system	Standard long-term motor, F-class insulation	

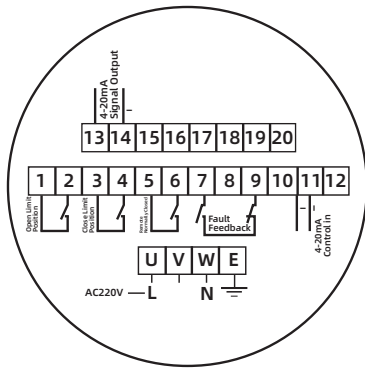
Model and Main Technical Parameters

MEDLE	Output Torque	Output Speed	Manual Speed Ratio	Motor Power	Rated Current	Reference Weight
Z05	50	18/24	1:1	0.12/0.18	0.45/0.6	15.2
Z10	100	18/24	1:1	0.18/0.25	0.6/0.85	15.8
Z15	150	18/24	1:1	0.25/0.37	0.85/1.05	16.2
Z20	200	18/24	1:1	0.37/0.55	1.05/1.3	24.2
	200	36/48	1:1	0.55/0.75	1.3/1.7	24.2
Z30	300	18/24	1:1	0.55/0.75	1.3/1.7	25.8
	300	36/48	1:1	0.75/0.85	1.7/1.85	25.8
Z45	450	18/24	1:1	0.75/0.85	1.7/1.85	63
	450	36/48	1:1	1.1/1.5	2.5/3.2	63.2
Z60	600	18/24	1:1	1.1/1.5	2.5/3.2	65.2
	600	36/48	1:1	1.5/2.2	3.2/4.5	65.2
Z90	900	18/24	1:1	1.5/2.2	3.2/4.5	67.5
	900	36/48	1:1	2.2/3.0	4.5/6.3	68.5
Z120	1200	18/24	1:1	2.2/3.0	4.5/6.3	69.8
	1200	36/48	1:1	3.0/4.0	6.3/8.5	69.8
Z180	1800	18/24	1:21	4	8.5	120
Z250	2500	18/24	1:21	5	10.5	125
Z350/500	3500/5000	8	1:60	5	10.5	200
Z700/1000	7000/10000	4.5	1:107	5.5	11.2	260

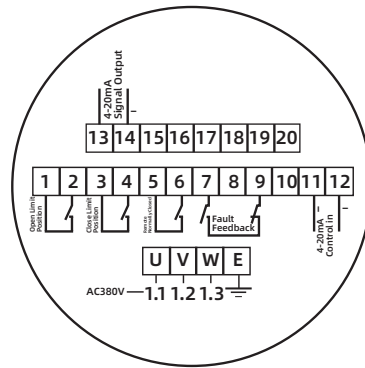
Electrical Control Section



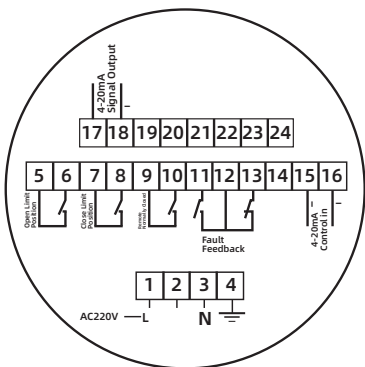
Code Name	Name	Model	Number	Remarks	Code Name	Name	Model	Number	Remarks
FR	Thermal relay		1	User self provided	LSF	Flash switch	V-157	1	
KMOKMC	AC contactor	GJ10	1	User self provided	W1	Potentiometer	WX14-12	1	
SASOSC	Button	LA11-11D	1	User self provided	M	Electric machinery	YDF2-W	1	
TSOTSC	Torque switch	DK3-2A	1		TH	Thermosensitive switch		1	Special order
LSOLSC	Torque switch	HWK-22A	1		RT	Torque switch		1	Special order



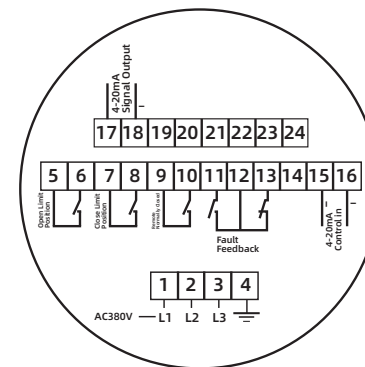
Wiring Diagram of Regulated 220V Terminal



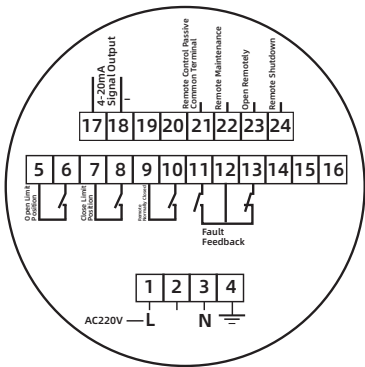
Wiring Diagram of Regulated 380V Terminal



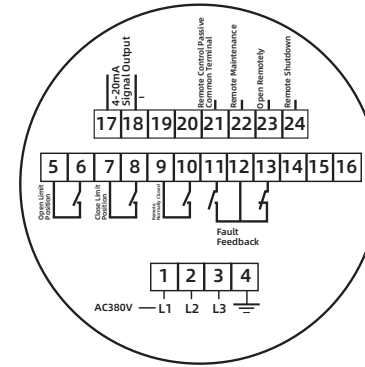
Wiring Diagram of Regulated Explosion-Proof 220V Terminal



Wiring Diagram of Regulated Explosion-Proof 380V Terminal

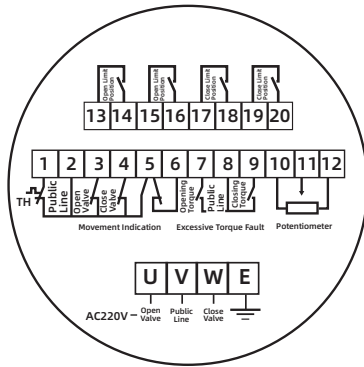


Wiring Diagram of Non-invasive Explosion-Proof Switch Type 220V Terminal

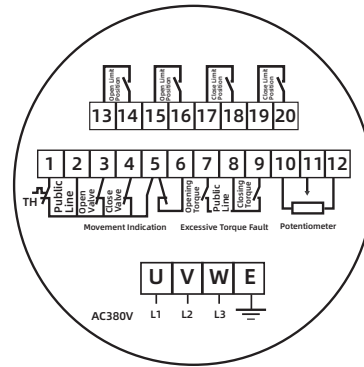


Wiring Diagram of Non-invasive Explosion-Proof Switch Type 380V Terminal

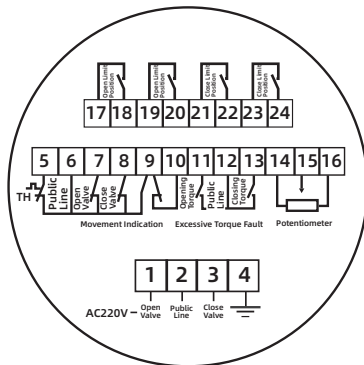
- | | | | |
|--------------------------------|-------------------|--|---------------|
| Fault feedback | Valve opening | Limit position | Control input |
| Signal output | Shut off valve | Common line | |
| Remote control open | Open torque | Moment of closure | |
| Remote normal closure | Opening limit | Potentiometer | |
| Operation instructions | Over torque fault | Remote control shutdown | |
| Remote control and maintenance | | Remote control passive common terminal | |



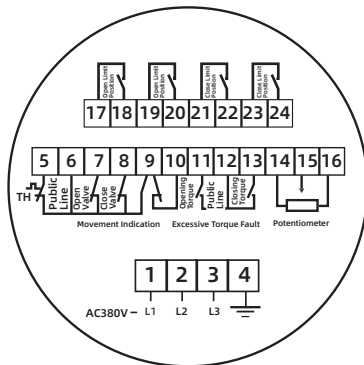
Wiring Diagram of 220V Common Terminal



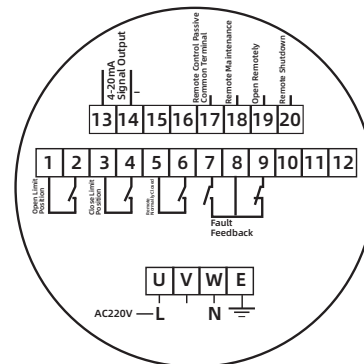
Wiring Diagram of 380V Common Terminal



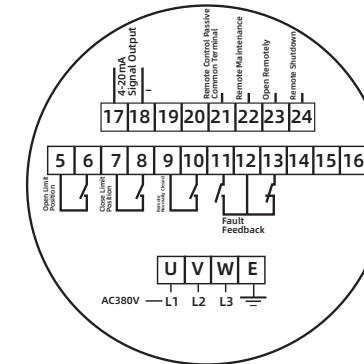
Wiring Diagram of 220V Explosion-Proof Terminal



Wiring Diagram of 380V Explosion-Proof Terminal



Wiring Diagram of Non-invasive Switch Type 220V Terminal



Wiring Diagram of Non-invasive Switch Type 380V Terminal

- | | | | |
|--------------------------------|-------------------|--|---------------|
| Fault feedback | Valve opening | Limit position | Control input |
| Signal output | Shut off valve | Common line | |
| Remote control open | Open torque | Moment of closure | |
| Remote normal closure | Opening limit | Potentiometer | |
| Operation instructions | Over torque fault | Remote control shutdown | |
| Remote control and maintenance | | Remote control passive common terminal | |

Seeking For Global Distributors



dc DELCO

Specialized Control Valve Manufacturer



DELCO VALVE CO.LTD

Phone: +86-159 8960 2972

Website: www.delcofluid.com / www.delcovalves.com / www.delcovalve.ru

E-mail: sales@delcofluid.com

Address: Building 8A#, Tiansheng Industrial Park, Wanjiang Street, Dongguan, China

