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**ANTI-EXPLOSION SERIES ELECTRIC ACTUATOR**

■ Used for Potential Explosive Environment ■ Match With Angle Stroke Valve

■ Anti-Explosion Grade Exd II CT4Gb ■ Protection Class IP68



**DYNAMIC CORPORATION LIMITED**



## Creates Dynamic World With You

To reduce opening cost, improve precision and automatic level, more and more equipments of high automatic level are used.

In potential environment of flammable and explosive, such as petroleum, chemical ,electric power, metallurgy and new gas industry, etc, it is significant to utilize high automatic level equipment which keeps the workers away from the possible dangerous environment.

The power-drive equipment used in the environment of flammable and explosive must meet a basic requirement : anti-explosion—No danger for any cases .The electric actuator mounted in environment of flammable and explosive must also meet this requirement.

The characteristics of DCL anti-explosion series electric actuator : Compact , graceful, easy installation and found to be in compliance with the anti-explosion requirements of Exd II CT4Gb.



Explosion Protection Certificate (English Version)



ISO9001:2015



ATEX Certification



IECEx Certification



CSA Certification

## High Quality Anti-Explosion Electric Actuator

It is made of high strength glass lens fritting technology,the visual performance is more artistic and smooth.

It is made of round seam allowance to match up flameproof joint,the performance of Exd is better and more reliable.

Micro Regulation Device of Electric Limit Stroke makes the adjustment of electric limit simpler and more precise.

With protection grade IP68,It solves recurring illness of conventional Exd products in low protection grade and poor performance.

With explosion protection grade ExdIICT4Gb, it meets Exd requirement in more than 90% explosive gas atmosphere.

The casing with good quality aluminum alloy and the style with streamline column makes ingenious and artistic.  
Patent Number:ZL 201030192020.6

The connection of the direct installation type ISO5211 mounting Plate with valve is more standard and simpler.

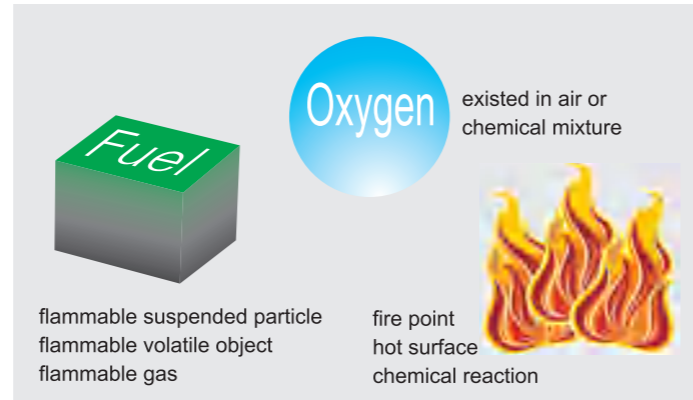


**Warning:** These series products possess two patents. Any copy being found will be held accountable by law!

What is Explosion?

The precondition causing explosion is that explosive material must mix with oxygen in some proportion and cause a chemical reaction under proper ignition conditions. It will be defined Explosion if reaction speed exceed sound velocity.

When explosive mixture run up to a certain extent, it will explode suddenly and cause destructive effects in the form of explosive wave.



What is Anti-Explosion?

Explosion can be prevented if anyone condition of three conditions above-mentioned is restricted to happen. In many working sites, explosive material and oxygen are difficult to avoid, so the ignition source should be restricted.

The electric equipment is a potential ignition source, this result in a elevatory surface temperature, ESD or a electric spark caused by transient current, etc. when the machine is turning .

The anti-explosion electric equipment doesn't become potential ignition source, because it avoids elevatory surface temperature and electric spark caused by the current in the process in the design.



Classification by potential explosive environment

Electric equipment used in explosive gas atmosphere is usually divided into two categories:

- I .electric equipment designed for colliery;
- II .electric equipment designed for other explosive gas atmospheres except for colliery.

For electric equipment II ,it can be divided into three magnitudes of explosion of II A, II B, II C according to MESG(Exd) and minimum experimental ignition current(intrinsic safety type) of detonating gas, and the equipment II B is suitable for service conditions of equipment II A, the equipment II C is suitable for service conditions of equipments II A and II B

For electric equipment II ,it can be divided into six temperature groups of T1(450°C),T2(300°C),T3(200°C),T4(135°C),T5(100°C),T6(85°C) according to allowable maximum surface temperature, and the equipment of higher temperature group is suitable for service conditions of lower temperature group.

More than 90% explosive gas are included in magnitudes of explosion of II A, II B and temperature groups of T1-T4.

		Temperature group					
		T1(450°C)	T2(300°C )	T3(200°C)	T4(135°C)	T5(100°C)	T6(85°C)
Magnitude of explosive	II A	Acetone ,ethane, ammonia, benzene, acetic acid, carbinal, propane, methylbenzene...	Alcohol ,butane, butanol, ethene, dichloro ethane ...	Benzene, diesel oil, aviation gasoline, ethane, fuel ...	Aldehyde		
	II B	Gas	Ethene Ethylene Oxygen		Ether		
	II C	Hydrogen	Ethyne				Carbon, Disulfide

How to perform Anti-explosion?

There are different ways to make electric equipment suitable for an explosive environment, there are detailed descriptions of these ways in standards GB3836, IEC60079, EN50014, etc.

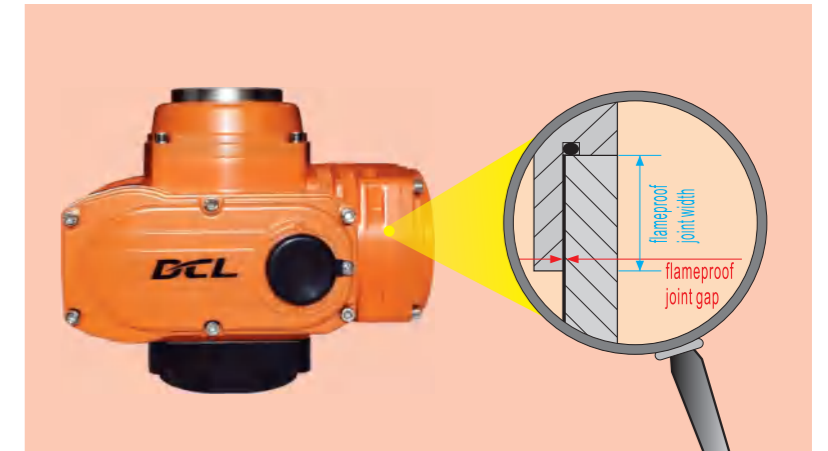
DCL anti-explosion series electric actuator is manufactured as a type of Exd and matches up to requirements of standards-GB3836.1-2000, GB3836.2-2000 regulations in EN/IEC 60079-0, EN/IEC 60079-1, EN/IEC 60079-31, EN ISO/IEC 80079-36, and EN ISO/IEC 80079-37.

Exd

Exd actuator allows interior explosion, the flameproof joint of the casing is designed to prevent the contact of interior sparks or explosive carrier with the outside. Appropriate flameproof joint gap and adequate flameproof joint width can assure this. At the same time, a hard casing can withstand high pressure caused by interior explosion without being damaged.

The following components of DCL anti-explosion series actuator are designed and manufactured by the standard of Exd.

- ◆ Electric Motor Cavity
- ◆ Electronic Component Cavity
- ◆ Connection Cavity



Anti-explosion Grade

The anti-explosion grade of DCL anti-explosion series electric actuator is :Exd II CT4Gb

- Ex—anti-explosion identification
- D—anti-explosion type stands for explosion-proof type;
- II — equipment type stands for the electric equipment designed for other explosive gas atmosphere except for colliery;
- C—magnitude of explosion, it determines the size (width and gap) of each flameproof joint of the actuator;
- T4—temperature group stands for the highest surface temperature allowed of actuator is 135°C.
- Gb—Standards for protection grade.

How to use and maintain the equipment of Anti-Explosion?

Operation such as installation, adjustment, maintenance, repair and replacement must be performed by trained and qualified explosion-proof professional technicians and must be strictly performed according to [Operation Manual] of electric equipment.

Actuator Type	Standard Time/Torque	Optional Time/Torque	Turning Angle (Max.range)	Total Weight	Power Supply	Selected Control Circuit
DCL-Ex05	20S/50Nm	4S/20Nm 10S/30Nm 60S/50Nm	0~360° Adjustable	3.0Kg	DC24V AC110V AC220V AC380V	Types of A/B/C/D/E/F/G/H
DCL-Ex10	30S/100Nm	15S/50Nm 60S/100Nm	0~90° Adjustable	5.0Kg	DC24V / AC110V AC220V / AC380V	Types of A/B/C/D/E/F/G/H
DCL-Ex20	30S/200Nm	15S/100Nm 60S/200Nm	0~90° Adjustable	5.5Kg	DC24V / AC110V AC220V / AC380V	
DCL-Ex40	30S/400Nm	15S/200Nm 60S/400Nm	0~90° Adjustable	9.5Kg	DC24V AC110V AC220V AC380V	Types of A/B/C/D/E/F/G/H
DCL-Ex60	45S/600Nm		0~90° Adjustable	10Kg		

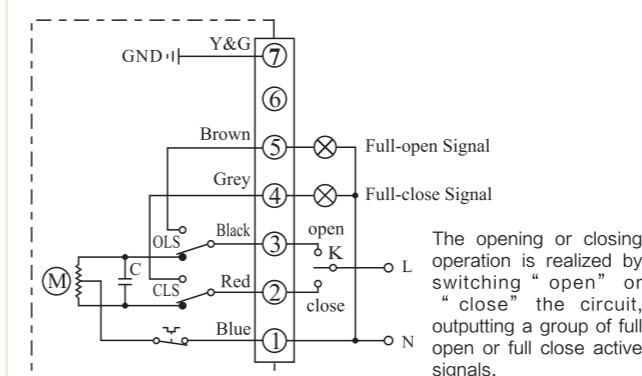
Valve Match (For Reference Only)

Actuator Type	Butterfly Valve (≤PN1.0MPa)	Ball Valve (≤PN1.6MPa)	Vent Valve (≤PN0.1MPa)
DCL-Ex05	DN50~60	DN40	DN50~80
DCL-Ex10	DN80~100	DN50~65	DN100~200
DCL-Ex20	DN125~150	DN80~100	DN250~300
DCL-Ex40	DN200	DN125	DN350~450
DCL-Ex60	DN250	DN150	DN500~600

Note: The datum of electric actuator and valve listed in the table above are only for reference. The actual datum shall base on the torque values provided by valve manufacturer.

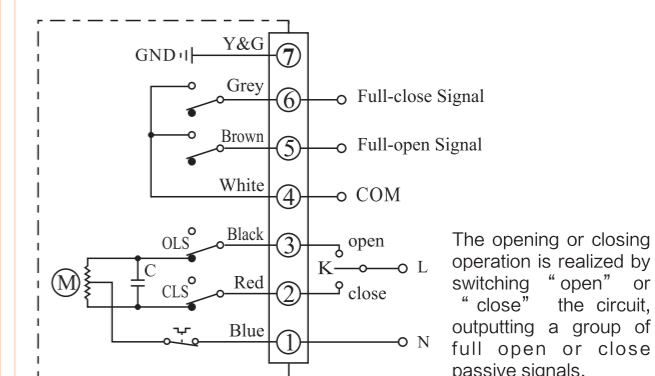
Due to many categories of valve, the torque values are different from each other. Even if the same type with same specification, it would exist some difference as manufacturing technology, quality level, structural form and quality of material of valves are difference. It would be so happened that the opening torque of valve changes greatly with the differences of medium types, site conditions and working characteristics, and pressure fluctuation as well. In order to ensure the actuator to work stably and reliably, it is necessary to have enough allowance in selection. It is suggested to have 1.1~1.3 times allowance factor, which is: output torque/torque of valve tested with pressure ≥ 1.1~1.3 times.

Type A: With Limit Position Switch (Active Contact)



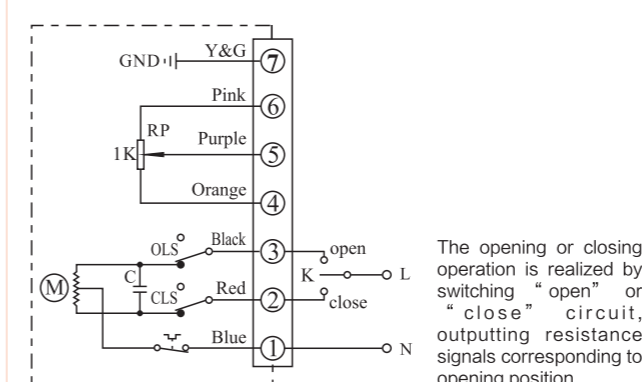
The opening or closing operation is realized by switching "open" or "close" the circuit, outputting a group of full open or full close active signals.

Type B: Switch with Middle Position (Passive Contact)



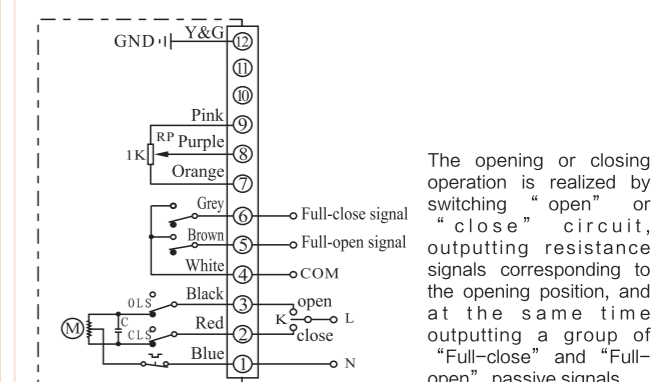
The opening or closing operation is realized by switching "open" or "close" the circuit, outputting a group of full open or close passive signals.

Type C: With 1KΩ (or 500Ω) Potentiometer



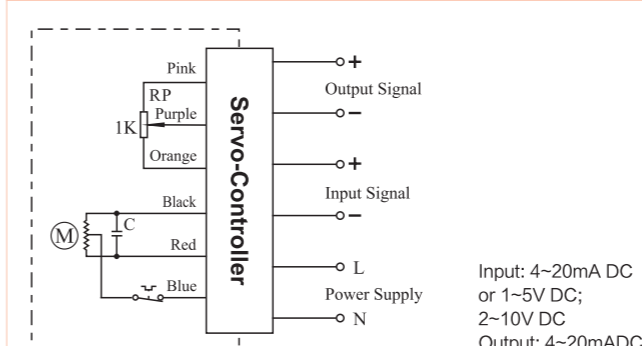
The opening or closing operation is realized by switching "open" or "close" circuit, outputting resistance signals corresponding to opening position.

Type D: Position Switch with Potentiometer and Passive Contact



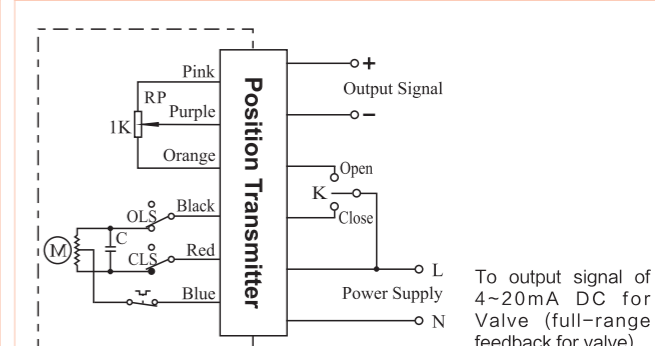
The opening or closing operation is realized by switching "open" or "close" circuit, outputting resistance signals corresponding to the opening position, and at the same time outputting a group of "Full-close" and "Full-open" passive signals.

Type E: With Servo Controller (Adjusting Type)



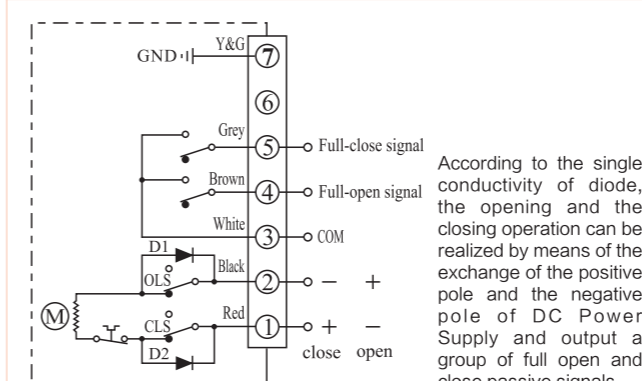
Input: 4~20mA DC or 1~5V DC; 2~10V DC  
Output: 4~20mADC

Type F: With Position Transmitter



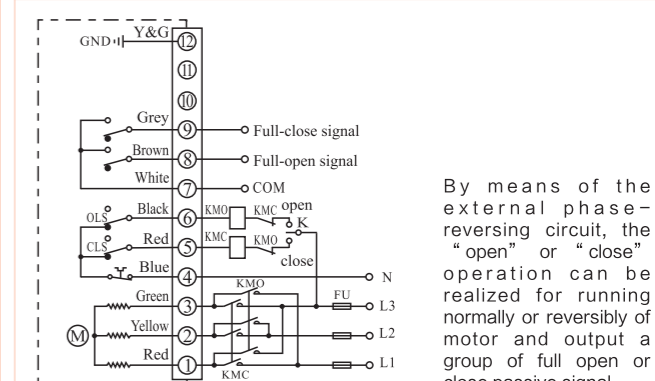
To output signal of 4~20mA DC for Valve (full-range feedback for valve)

Type G: DC Control Circuit with Passive Contact Switch



According to the single conductivity of diode, the opening and the closing operation can be realized by means of the exchange of the positive pole and the negative pole of DC Power Supply and output a group of full open and close passive signals.

Type H: 3-phase AC Control Circuit with Passive Contact Switch



By means of the external phase-reversing circuit, the "open" or "close" operation can be realized for running normally or reversibly of motor and output a group of full open or close passive signal.

Note: The internal circuit of actuator is shown in the dotted frame. The circuit out of the dotted frame is for reference of customers.

## Overall Dimensions and performance parameters of DCL-Ex05 Explosion proof Type

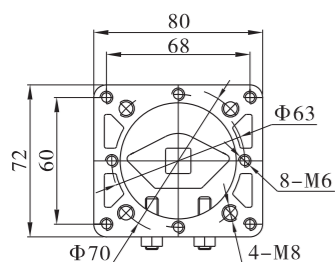
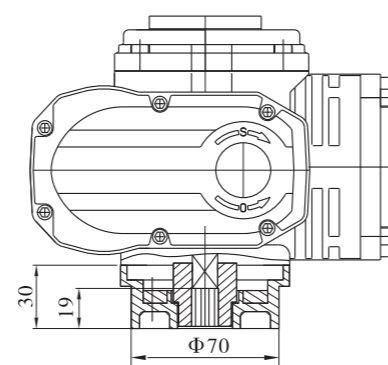
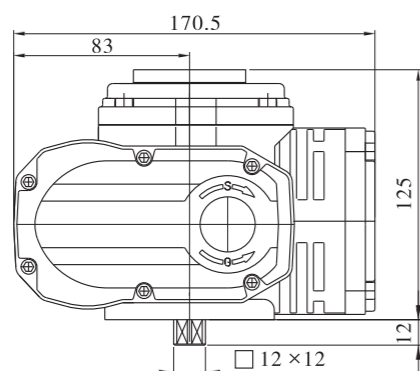
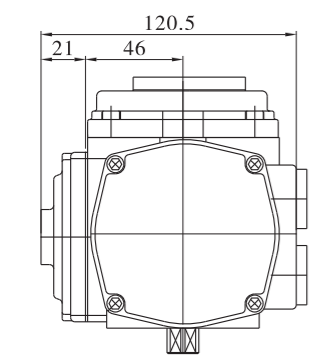
Type Performance Parameters	DCL—Ex05			
	DC24V	AC110V	AC380V	AC220V
Motor Power	13W	10W	6W	10W
Rated Current	1.82A	0.24A	0.07A	0.15A
Standard Time/Torque	20S/50Nm			
Optional Time/Torque	4S/20Nm 10S/30Nm		4S/20Nm 10S/30Nm 60S/50Nm	
Turning Angle	0~360° Adjustable			
Available Control Circuit	Types of A、B、C、D、E、F、G、H			
Total Weight	3.0kg			
Insulating Resistance	DC24V/AC24V: 100MΩ/250VDC AC110V/AC220V/AC380V: 100 MΩ/500VDC			
Withstand Voltage Class	DC24V/AC24V: 500VAC 1minutes、AC110V/AC220V:1500VAC 1minutes、AC380V:1800VAC 1minutes			
Protection Class	IP68			
Explosive-proof grade	Exd II CT4Gb			
Installation Angle	360° at any angle			
Electric Interface	2-M20×1.5 explosion-proof plug, clients should install corresponding explosion-proof cable connector when using according to the cable selected.			
Ambient Temperature	-20℃ ~ +55℃			
Optional Function	◆ Heater for eliminating moisture			

## Overall Dimensions and performance parameters of DCL-Ex10/20 Explosion proof Type

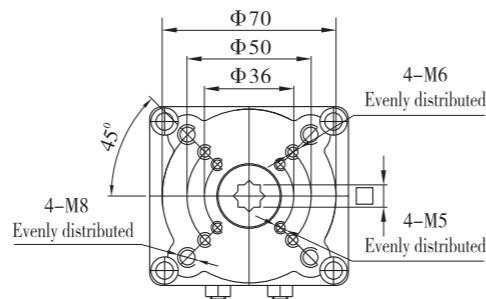
Type Performance Parameters	DCL—Ex10				DCL—Ex20			
	DC24V	AC110V	AC380V	AC220V	DC24V	AC110V	AC380V	AC220V
Motor Power	25W	25W	15W	25W	25W	25W	15W	25W
Rated Current	2.20A	0.57A	0.10A	0.30A	0.30A	0.63A	0.10A	0.35A
Standard Time/Torque	30S/100Nm				60S/200Nm	30S/200Nm		
Optional Time/Torque	15S/50Nm		15S/50Nm 60S/100Nm	30S/100Nm	15S/100Nm	15S/100Nm 60S/200Nm		15S/100Nm 60S/200Nm
Turning Angle	0~90° Adjustable							
Available Control Circuit	Types of A、B、C、D、E、F、G、H							
Total Weight	5.0kg				5.5kg			
Insulating Resistance	DC24V/AC24V: 100MΩ/250VDC AC110V/AC220V/AC380V: 100 MΩ/500VDC							
Withstand Voltage Class	DC24V/AC24V: 500VAC 1minutes、AC110V/AC220V:1500VAC 1minutes、AC380V:1800VAC 1minutes							
Protection Class	IP68							
Explosive-proof grade	Exd II CT4Gb							
Installation Angle	360° at any angle							
Electric Interface	2-M20×1.5 explosion-proof plug, clients should install corresponding explosion-proof cable connector when using according to the cable selected.							
Ambient Temperature	-20℃ ~ +55℃							
Optional Function	◆ Over-torque Protector ◆ Heater for eliminating moisture							

### Explosion-proof standard type

### Explosion-proof Direct Installation Type

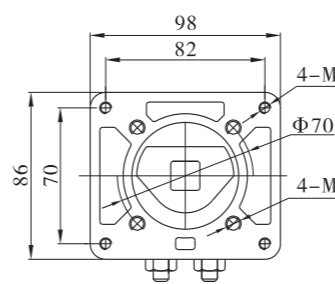
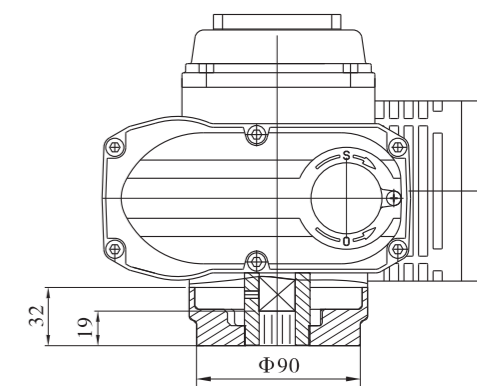
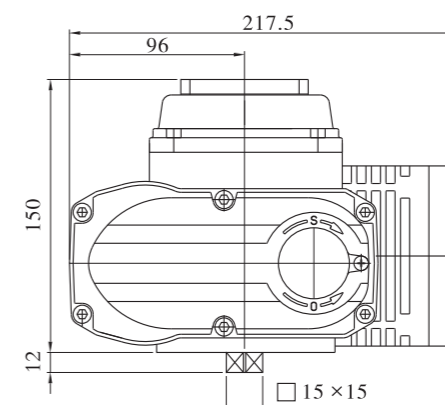
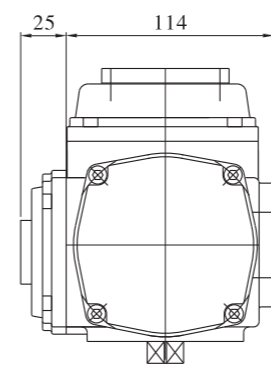


Parameters for direct installation	
Square	□9×9 □11×11 □14×14
Flange	F03 F05 F07
Valve stem	Height ≤ 19mm

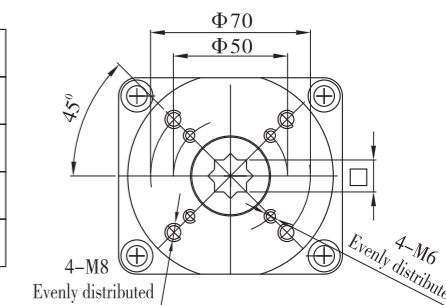


### Explosion-proof standard type

### Explosion-proof Direct Installation Type



Parameters for direct installation		
	Ex10	Ex20
Square	□9×9 □14×14 □17×17	□14×14 □17×17
Flange	F05 F07	
Valve stem	Height ≤ 19mm	



## Overall Dimensions and performance parameters of DCL-Ex40/60 Explosion proof Type

Type Power Performance Parameters	DCL—Ex40				DCL—Ex60			
	DC24V	AC110V	AC380V	AC220V	DC24V	AC110V	AC380V	AC220V
Motor Power	70W	90W	40W	90W	70W	90W	40W	90W
Rated Current	7.80A	1.12A	0.29A	0.64A	8.00A	1.18A	0.29A	0.67A
Standard Time/Torque	30S/400Nm				45S/600Nm			
Optional Time/Torque	15S/200Nm		15S/200Nm 60S/400Nm					
Turning Angle	0 ~ 90° Adjustable							
Available Control Circuit	Types of A、B、C、D、E、F、G、H							
Total Weight	9.5kg				10.0kg			
Insulating Resistance	DC24V: 100MΩ/250VDC AC110V/AC220V/AC380V: 100 MΩ/500VDC							
Withstand Voltage Class	DC24V: 500VAC 1minutes、AC110V/AC220V:1500VAC 1minutes、AC380V:1800VAC 1minutes							
Protection Class	IP68							
Explosive-proof grade	Exd II CT4Gb							
Installation Angle	360° at any angle							
Electric Interface	2-M20×1.5 explosion-proof plug, clients should install corresponding explosion-proof cable connector when using according to the cable selected.							
Ambient Temperature	-20℃ ~ +55℃							
Optional Function	◆Over-torque Protector ◆Heater for eliminating moisture							



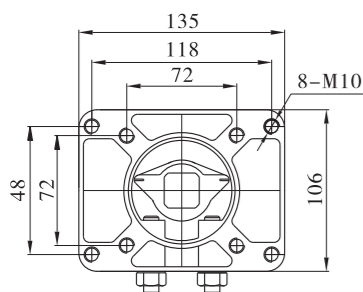
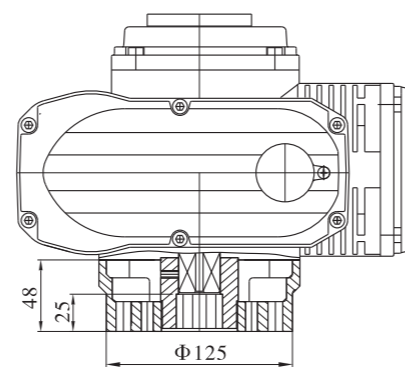
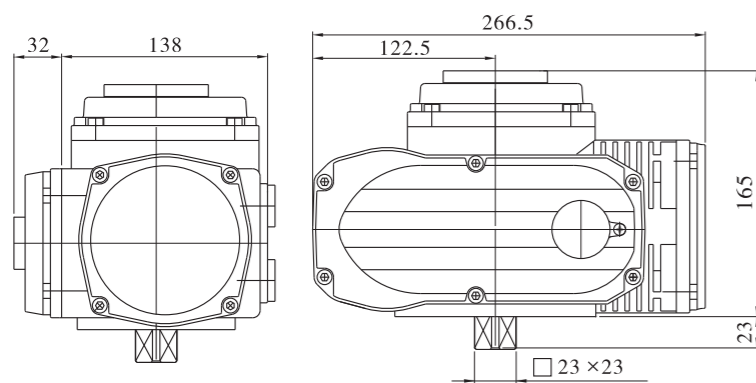
Explosion-proof standard type



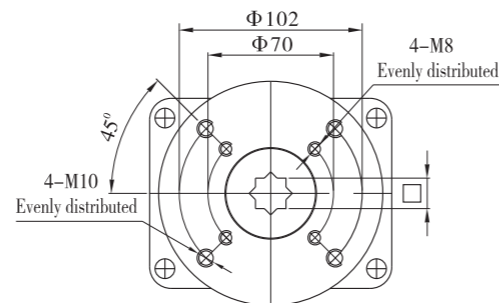
Explosion-proof Direct Installation Type

### Explosion-proof standard type

### Explosion-proof Direct Installation Type



Parameters for direct installation	
Square	□17×17 □22×22
Flange	F07 F10
Valve stem	Height ≤ 25mm



## Performance Parameters of Anti-explosion Adjusting (Type E)

Parameters Power Performance	Type	Ex05E	Ex10E	Ex20E	Ex40E	Ex60E
		AC110V/AC220V/DC24V				
Output Torque		50Nm	100Nm	200Nm	400Nm	600Nm
Acting Time		20S	30S	30S	30S	45S
Turning Angle		0 ~ 90°	0 ~ 90°	0 ~ 90°	0 ~ 90°	0 ~ 90°
Motor Power		10W	25W	40W	90W	90W
Rated Current		0.24/0.15A	0.57/0.30A	0.63/0.35A	1.12/0.64A	1.18/0.67A
Total Weight		3.0kg	5.0kg	5.5kg	9.5kg	10.0kg
Input Signal		4~20mADC, 1~5VDC, 2~10VDC				
Output Signal		4~20mADC				
Basic Error		not more than ± 1%				
Reciprocating Error		No more than 1%				
Dead Space		0.5% - 5.0% adjustable				
Damping Characteristic		0 times				
Repeating Error in Actuator		≤ 1%				
Insulating Resistance		100 MΩ/500VDC				
Withstand Voltage Class		1500VAC 1minutes				
Protection Class		IP68				
Explosive-proof grade		Exd II CT4Gb				
Installation Angle		360° at any angle				
Electric Interface		2-M20×1.5 explosion-proof plug, clients should install corresponding explosion-proof cable connector when using according to the cable selected.				
Ambient Temperature		-20℃ ~ +55℃				
Optional Function		◆Over-torque Protector ◆Dehumidify Heater ◆Passive contact switch				
Remark		Any other input or output signal needed, please specified in purchase order.				

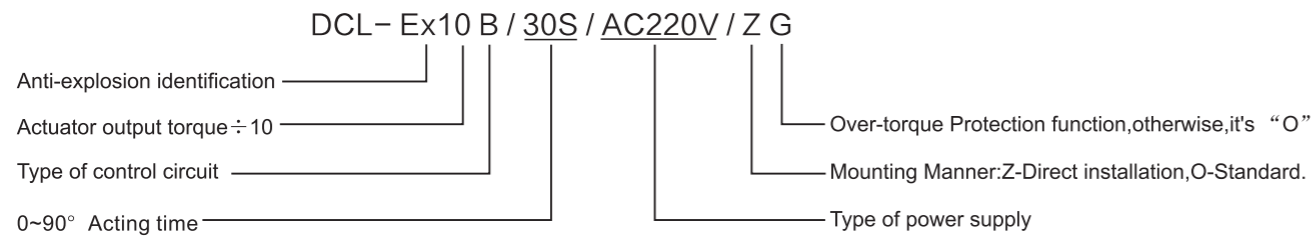


Anti-explosion Electric Control Valve



Anti-Explosion Electrically Actuated Butterfly Valve

**Design of Model**

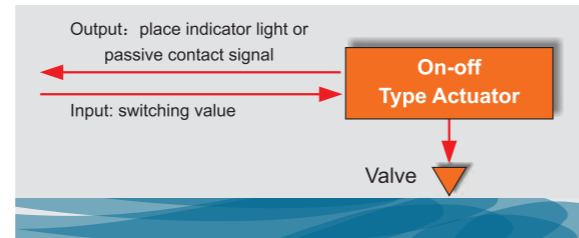


**On-off Type Actuator**

**Control circuit of Type A、B、D、G、H**

On-off type has only Full-open and Full-close limit positions. You can preset middle position (type B、D、G、H) if you need. Actuator will drive valve to Full-open or Full-close or middle position etc. when receiving proper command.

Adopt the S2 short-time duty, the time of continuous operate less than 15 minutes.

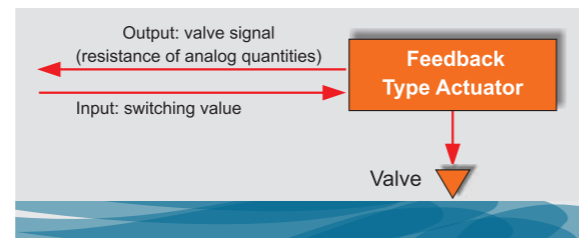


**Feedback Type Actuator**

**Control circuit of Type C、D、F**

During the actuator drives valve, it will full-range feedback valve signal to Central Control System at the same time, type C、D feedbacks valve signal of resistance quantity, type F feedbacks valve signal of analog quantity.

Adopt the S2 short-time duty, the time of continuous operate less than 15 minutes.

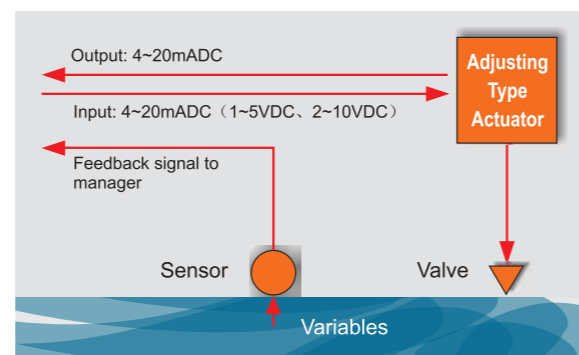


**Adjusting Type Actuator**

**Control Circuit of Type E**

The Servo-Controller is located inside of the actuator. It receives command of the Central Control System and drives valve to proper opening Position according to varying conditions of Variables (Flow, Pressure, Temperature, Fluid level) in the pipe.

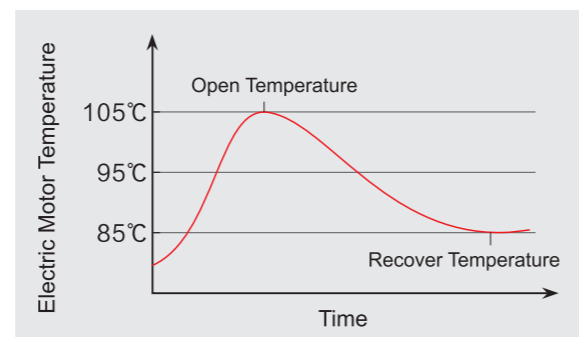
Adopt character of service of S4 Intermittent Type, working frequency reaches 1200 times /hour.



**Electric Motor**

Electric motors of DCL series electric actuator have some particular designs: Electric motor of actuator has higher starting torque. This is due to the working characteristic of valve; the actuator is required to have full-load starting ability at the opening, closing and any other intermediate positions. At the same time, electric motor of actuator has less rotation inertia because of the need for adjustment of the flow (opening range).

Actuator stified causes a rapid rise in temperature of the motor. For protecting electric motor and control system, PTC overheating protector located in electric motor winding will switch off the circuit when the temperature up to 105°C, the circuit will recover through when temp. drops to 80~90°C.



**Servo-Controller**

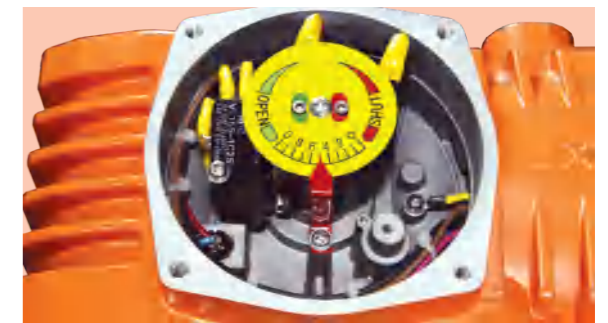
The unique circuit design, imported technical grade electronic parts and components and modern making technology of circuit board of the DCL ensures high quality and reliability of the Servo-Controller. The circuit board with resin plastic package makes shock and humidity resistance better. The unique electronic brake function makes actuator dead-beat when position is fixed, the period of damping character is zero times (Standard: less than 3.5 times).



**Micro Regulation Device of Electric Limit Stroke**

It is very easy to adjust open-direction and close-direction electric limit strokes of actuator with a hexagon spanner because of unique patent technology of DCL. Meanwhile, the unique micro regulation function makes adjustment of electric limit stroke more precise.

Patent NO. : ZL201020214725.8

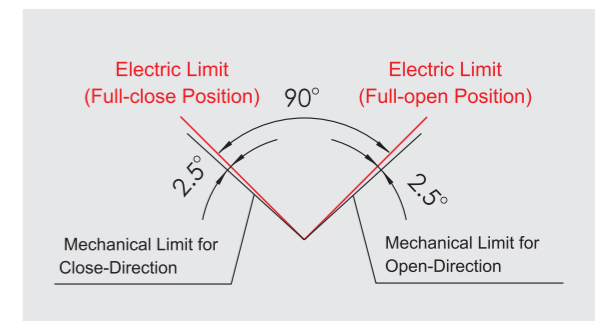


**Electric & Mechanical Limit Function**

The function of electric limit: The electric limit switch located inside the actuator will switch off the circuit to protect actuator when actuator reaches Full-open and Full-close limit positions or any given position between them.

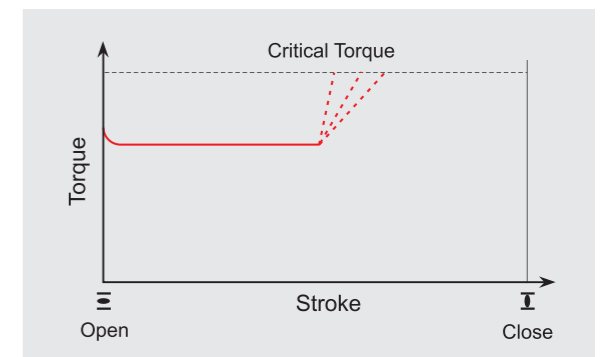
Mechanical limit function of output shaft: When the electric limit function is out of work, the output shaft of actuator will be lock-in by mechanical limit device to protect valve from damage.

Graphical representation is position relation of electric limit and mechanical limit.



**Over-Torque Protection Function(Optional)**

When valve is stuck in the working because of impurity and foreign matters in the pipe or other causes, the output torque of the actuator will rise rapidly to a critical valve (preset), the torque switch will switch off the circuit to protect valve and actuator from damage.



**Heating & Dehumidification Function(Optional)**

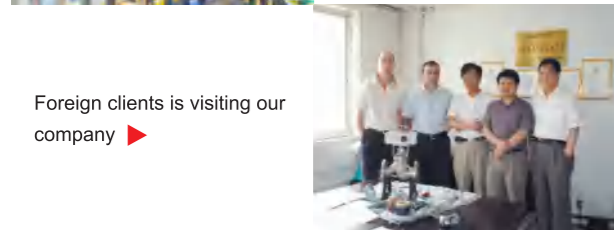
The electric Cavity of DCL Series actuator can be equipped with PTC electronic heating component to prevent electronic component from damage resulting from condensation. It's used at the area relatively moist and when difference in temperature of day and night is biggish. The heater will operate continuously and it always electriferous no matter when the actuator works or not.



Hi-tech enterprise certificate



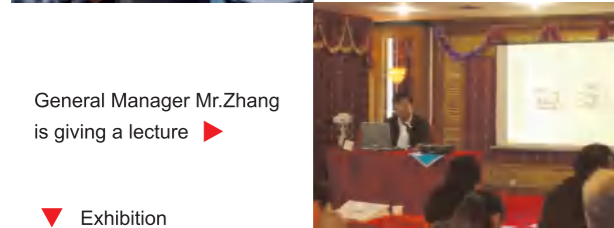
◀ Former Deputy Secretary of the Ministry of Industry and Commerce is visiting our company



Foreign clients is visiting our company ▶



◀ Russia clients is visiting our company.



General Manager Mr.Zhang is giving a lecture ▶



▼ Exhibition

Dynamic Corporation Limited is a stock holding/high-tech enterprise with self-support export authority, which is engaged in research, development, manufacture and sale for Electric Actuator, Electric Valve and its Automation Control System. The main leading product, DCL Series Electric Actuator is featuring the compact construction, exquisite appearance, smart control, remarkable performance, superior quality, easy operation and so on.

DCL series electric actuator is widely used in the industrial field, such as petroleum, chemical, electric power, smelting, energy, pharmaceutical, paper-making, water treatment, food, brewage, shipbuilding and the automation system for the building, and is fully in customers' good graces and trust-worthy. Many customers in various industrial lines with their practice over the years confirm that DCL series products of electric actuator present outstanding in reliability, durability and after-sale service, as well as in quality.

In papermaking industry, the rising of material cost, environmental protection and frequent action require our company to develop and provide various actuators with high precision and good reputation. Our products have played a good role of progress of quality and reduction of cost to the papermaking industry, and taken a great market share.

In metallurgical industry, due to the requirements of energy saving and automation, re-circulation and utilization of blast furnace gas, as well as high ambient temperature; it gives a higher requirement to actuator. Especially in the application of steam pipes, it is not only asked to increase the height of support, but also asked to have higher and more requirements to the motor of actuator, driving mechanism and servo control system. Our company has many successful references in this field.

In the field of ocean-going ship, due to the limit of installation space and the aggression of mist and sea water, it is required to have smaller, better sealed and anti-corrosion actuator, as well as higher reliability due to ocean-going. DCL electric actuator is warmly welcomed by the customers in this field and becomes their first choice with its protection class of IP68, compact construction, super light and good reliability.

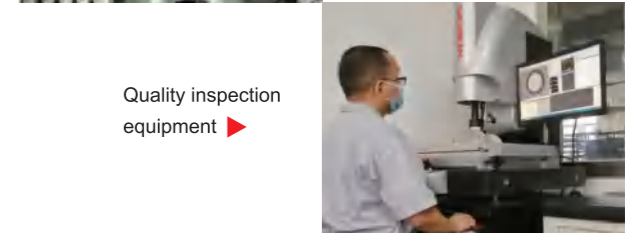
We think we can not only provide to the market the good quality products, but also present our responsibility to the society, which we think is the most important. We ask all of our employees to keep in mind to put the quality first, be faithful to his job, and be responsibility to anything done. Quality control has a long way to go. It is a management culture and a way for the company to exist. The quality consciousness should be brought into the mind of each employee and displayed in each action of his daily work.

- November 2001: Founding of the company with registration;
- January - December 2002: Type S (DCL-10 Series), Type M (DCL-20, 40, 60 Series) successfully developed;
- January 2003: Passed performance test of SITIIAS (Shanghai Inspection and Testing Institute of Instruments and Automatic Systems) according to the standard of JB/T8219-1999 《 Electric Actuator for Industry Process Measurement and Control System》 ;
- October 2003: Passed the assessment of ISO9001-2000 International Quality Management System;
- November 2003: DCL-M05, M10 Series, exquisite Multi-turn Electric Actuator, successfully developed by a joint scientific research with the Naval- Ships Section, Wuhan Navy Engineering University, mainly applied to automation system of ships and warships;
- December 2003: 3500 sets of various types and specifications of electric actuators sold in total in the year, realizing good sale in the first sale year since the founding of the company;
- April 2004: Awarded the Title of Outstanding Civil-run Science and Technology Enterprise granted by Hubei Province Civil-run Industrialist Association;

- Feb. - Sept. 2004: Z Type (DCL-03, 05 Series) successfully developed;
- December 2004: 7300 sets of various types and specifications of electric actuators sold in total in the year, and first batch of DCL Series electric actuators sold to Europe;
- January 2005 Passed inspection and test of SITIIAS (Shanghai Inspection and Testing Institute of Instruments and Automatic Systems), the protection class reaches to IP68 according to the standard of GB4208-1993 《Protection Class for Casings》 ;
- Feb. - Sept. 2005: L Type (DCL-100, 160, 200 Series) successfully developed;
- December 2005: First time in breaking the annual sale record of 10000 sets of electric actuators;
- Aug.-Dec. 2005: Direct installation type of electric actuator successfully developed;
- January-June 2007: DCL-02 series subminiature electric actuator is successfully developed and awarded patent authority by the National Patent Office;
- July.-Oct. 2007 The Electric Magnetic Compatibility (EMC) and Low Voltage (LVD) of DCL Series Products have been assessed by SGS Taiwan Ltd and found to be in compliance with the requirements of CE Standard;
- Sept. 2007 The products are inspected and tested by SITIIAS (Shanghai Inspection and Testing Institute of Instruments and Automatic Systems), and found to be in compliance with the requirements set forth by GB/T7094-2002 《 Vibration Test Method (Sine) for Electric Equipment of Ship》 ;
- October 2009: Micro regulation device of electric limit stroke and opening display device of adjustment convex type are developed successfully and awarded patent authority by the National Patent Office;
- December 2009: Our Company has self-support import and export authority awarded by Foreign Affairs Economic Committee of Wuhan City;
- Feb-Aug 2010: Compact Anti-explosion series electric actuator is developed successfully and awarded Patent authority by the National Patent Office;
- December 2010:Anti-explosion series electric actuators of EXQZ, EXQS and EXQM passed test (Shanghai national grade Supervise Inspection Station of Instruments Anti-explosion Safety, according to the standard of GB3836.1-2010, GB3836.2-2010 and awarded qualification certificate of Anti-explosion;
- June.2011 : Drafted out the standard of 【 Marine Electric control butterfly valve】 and 【 Marine Electric control ball valve】 two standards, approved by ship Standardization Committee , and issued by the Ministry of Industry and Information technology;
- 6<sup>th</sup> Jun, 2013 ,DCL all series products passed CSA certification;
- 13<sup>th</sup> Sep, 2013, Company relocated to No.6 Hengroad, liufangyuan, East-lake, Hi-tech Development Zone, Wuhan;
- 11<sup>th</sup> Apr,2014, DCL-MZZ multi -rotation actuator successfully developed;
- 25<sup>th</sup> Aug, 2014, DCL all series of products passed the EU RoHS Certification;
- 14<sup>th</sup> Oct, 2014, Company achieved high-tech enterprise certification;
- 7<sup>th</sup> May,2015, DCL05-60 series 24VDC modulating type successfully developed;
- 8<sup>th</sup> Oct , 2015 DCL-K05 ~ K100 quick-open series launched out and mass production, it can be customized within the range of 15Nm-1200Nm and with time around 2S/4S/8Seconds;
- 3<sup>rd</sup> Nov,2015, DCL series electric actuators won the Excellent Award of Electronic Instruments in the "Made in China Beauty 2015" annual award;
- Oct.2016. Participated in drafting the standard of Common and Interlligent Electric actuator for Industrial process control system, which released by MIIT and implemented in April. 2017.



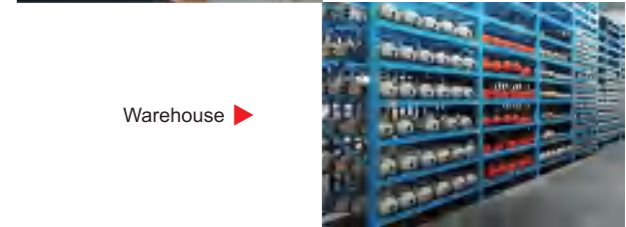
◀ Assembling workshop



Quality inspection equipment ▶



◀ Housing processing



Warehouse ▶



▲ Sample listing room

