



Product Catalogue

AOITEC INTERNATIONAL PTE. LTD.

Ultra-Compact Patented Actuators Engineered for the World



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AOI
AOITEC

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01

Company Overview

Company Overview

Business Scope

Why Choose AOITEC

Achievements and Certifications

Company Overview

Core Business & Mission

AOITEC designs and manufactures electric valve actuators and intelligent automation solutions for fluid control systems. We are committed to delivering precise, reliable, and customizable products that enhance operational performance across industrial applications.

Experience & History

With over 30 years of engineering expertise, AOITEC has become a trusted provider of high-performance actuator technology. As part of AOITEC (GD) Co., Ltd., our team supports a wide range of industries with advanced motion control and automation products. Our in-house R&D team is dedicated to continuous actuator innovation and customization, enabling us to meet evolving application needs with precision and flexibility.



Manufacturing Capabilities

AOITEC operates manufacturing facilities in China and Taiwan with high-volume capacity and strict quality control. Our production setup supports reliable lead times and the flexibility to meet both standard and custom actuator requirements. With dual-site operations, we also provide supply chain resilience and help customers reduce exposure to US-imposed tariffs.

Geographic Presence

AOITEC operates offices in both China and Singapore, with manufacturing facilities in China and Taiwan. We serve clients in over 25 countries including the United States, Japan, Europe, South Korea, and Southeast Asia. Our global footprint ensures local responsiveness and strong distributor partnerships.



Certifications & Standards

All standard products are manufactured in accordance with ISO9001 and JB/T8219-1999 standards, and certified to CE requirements. Quality and compliance are embedded in every stage of production.

Industries Served

Serving a broad spectrum of sectors including oil and gas, marine, food and beverage, chemical processing, HVAC, power control systems, water treatment, energy, manufacturing, infrastructure, and more.

Innovation & R&D Focus

AOITEC maintains in-house R&D capabilities focused on continuous product innovation. From brushless DC actuators to intelligent modules and supercapacitor fail-safe systems, our engineering team develops solutions that are efficient, durable, and forward-compatible.

Customer Commitment

AOITEC is committed to delivering dependable service, responsive technical support, and solutions tailored to specific application needs. We collaborate closely with integrators, OEMs, consultants, and end users to ensure each actuator system is optimized for its operating environment.

Business Scope

Electric Rotary Actuators

- Available in On/Off and Modulating control, with Rotary or Linear motion configurations.
- Available in a wide torque range with various customisation options and functionalities.

Basic Model



Ulli Series

General duty on-off actuators with torque range from 20Nm to 6000Nm



Digicon Series

General duty modulating actuators with torque range from 20Nm to 6000Nm

Advanced Model



Highspd® Series

5-20x faster than traditional actuators



Explosion-Proof Series

EXD-certified, designed and tested for harsh environments



Brushless DC Actuator

Energy-saving of 20%-60% with 100% duty cycle

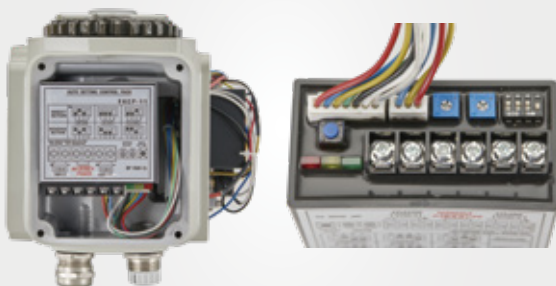


SuperCap Failsafe Actuators

Supercapacitor-powered for dependable emergency shutdown

Control Packs and Modules

Auto Setting Control Pack (FACP-11)



Electric Valves

Butterfly Valve



Ball Valve



Why Choose AOITEC

Four Key Product Differentiators

Truly Bracket-Free Ultra-Compact Design

01

Unlike most "direct-mount" actuators, AOITEC fully eliminates internal brackets. ISO 5211 mounting allows direct valve installation, saving space and weight. Lowest height and weight in its class (only 35% of other products), making it ideal for tight or high-maintenance spaces.

Advanced Brushless DC Technology

02

Advanced brushless DC motors enable energy savings of 20%– 60% , significantly reducing operating costs. With no brushes to wear out, it offers longer service life, faster response, and minimal maintenance, making them ideal for frequent start-stop operations.

100% Duty Cycle No Downtime Even Under Heavy Use

03

Our actuators, including AC-supplied models with DC motors, support 100% duty cycle for uninterrupted, high-frequency use, avoiding overheating issues common in 25% duty cycle models.

Competitive Global Pricing

04

Offers premium features and performance at a more accessible price point by optimizing product design, making us significantly more cost-effective than traditional brands like Rotork and Auma.

Our Value Proposition



TRUSTED QUALITY

Proven performance across industries, backed by real-world reliability.



SHORT AND STABLE LEAD TIME

Fast production and delivery to keep your projects on schedule.



TAILORED SOLUTIONS

Custom configurations to fit your exact application needs.



INNOVATIVE DESIGN

We create advanced actuator solutions that evolve with your needs.



DIRECT FACTORY PRICING

No middlemen, offering competitive pricing without added costs.



TECHNICAL SUPPORT

Two-year warranty and fast technical assistance when you need it.

Achievements and Certifications



Business License



CE (Conformité Européenne)



Patents



ECM (Ente Certificazione...)



Software Copyright



Trademark Registration Certificate



ISO 9001



Explosion Proof Certificate



IPX8 Test Report



Electric Actuators

Introduction

ULLI & DIGICON Series

Structure Diagram for ULLI & DIGICON Series

Data Sheet for ULLI Series

AC24V / DC24V Dual Voltage Actuator

Data Sheet for DIGICON Series

Explosion-Proof Series

High Speed Series

Data Sheet for High Speed Series

Data Sheet for Linear Option

Dimensioned Drawings for ULLI & DIGICON

Series Dimensioned Drawings for Explosion-Proof

Series Dimensioned Drawings Linear Option

Wiring

BLDC Actuator

Diagram and Wiring for BLDC Actuator

Data Sheet for BLDC Actuator

SuperCap Failsafe Actuator

Data Sheet for SuperCap Failsafe Actuator

Direct Mount Dimensions for Butterfly Valve

Options and Add-Ons

Introduction



Refined through years of dedicated development and optimization, our electric rotary actuators offer exceptional reliability and durability, making them a trusted choice for a wide range of applications. Our electric rotary actuators are manufactured in accordance with JB/T8219-1999 and certified to CE and ISO 9001 standards, ensuring consistent quality and regulatory compliance. We also hold a portfolio of patents, underscoring our commitment to innovation and excellence. A key advancement is our exclusive bracket-free models, developed to provide a compact, lightweight, stable, and precise design. We proudly offer three specialized series designed to meet diverse operational requirements for modern industrial needs:

Basic Model

- **Ulli Series**

On/off rotary actuators for general duty designed for robustness and reliability.

- **Digicon Series**

Modulating rotary actuators for general duty tailored for precise adjustments and control.

Advanced Model

- **Highspeed Series**

Extreme-speed actuators delivering performance up to 20 times faster than standard models.

- **Brushless DC Series**

BLDC motor combining high efficiency, 100% duty cycle, extended life and low energy consumption.

- **Explosion Proof Series**

EXD-certified, designed for harsh environments

- **SuperCap Series**

Fail-safe actuators powered by supercapacitor technology, ensuring automatic return to a safe position during power loss.

Features and Functionalities for ULLI & DIGICON Series



ulli®

The ulli® series represents the company's on/off actuators

- **Prefix Meaning:**

"U" stands for "unique," highlighting patented designs.

"L" for "light" (lightweight) and "long life" (durability).

"I" for "intelligentize," emphasizing smart features.

- **20NM-6000NM**



digicon®

The digicon® series represents the company's modulating actuators

- **Prefix Meaning:**

"Digi" stands for "digital", "Con" for "control".

"Digicon" symbolizes control technology centered around digital technology.

- **20NM-6000NM**

Features and Functionalities



Functionality Performance & Integration

- **Ultra Compact and Lightweight**

Truly bracket-free – only 35% of the size and weight of products in the same class with ISO 5211 direct mount.

- **Customization Options**

Shaft types, male/female, BLDC motor, overload protection, explosion-proof, emergency shut-off, etc.

- **High-Speed Option**

5s, 10s, 15s, 30s, and 60s options available, with other speeds customizable subject to technical confirmation. Proprietary patented design enables faster operation with minimal heat generation.

- **Smart Control**

Built-in smart control module, eliminating the need for external positioners.

- **Versatile Power Option**

DC24V
Single-Phase: AC110V / AC120V / AC220V / AC230V / AC24V
Three-Phase: AC380V / AC400V / AC415V / AC480V



Reliability & Durability

- **Certified Safe**

Tested with 1500V withstand voltage, F-class insulation, CE compliant.

- **Robust Build**

Die-cast aluminum housing with a refined, smooth finish to reduce electromagnetic interference. Integrated worm gear output shaft made of specially forged copper alloy, offering high strength and excellent wear resistance.

- **Wide Environmental Compatibility**

No lubrication or inspection needed. IP68 waterproof, rustproof, and supports angle-free installation.

- **Position Feedback**

Clear visual indicator for quick status check.

Structure Diagram for ULLI & DIGICON Series



1 Spherical Viewing Window

2 Electrical Cover

3 Housing/Body

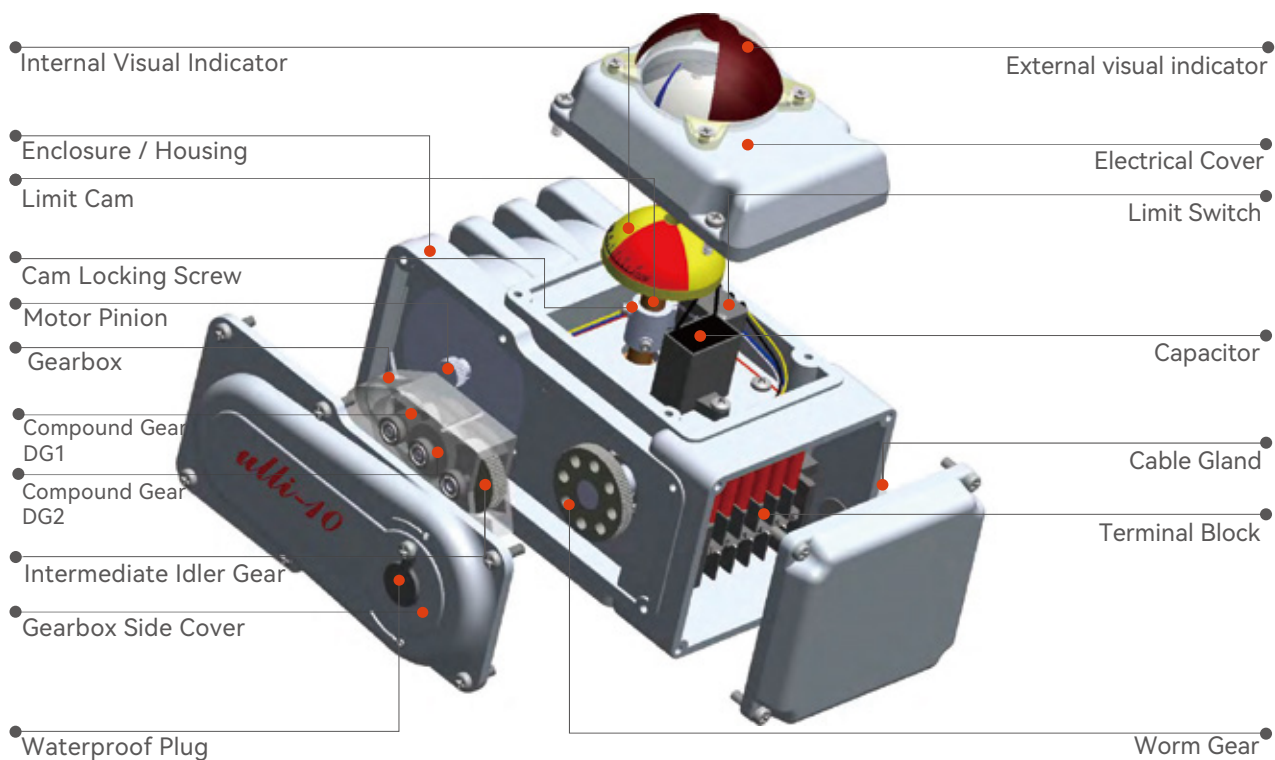
4 Cable Fixing Head

5 Wiring Cover

6 Gear Reduction Cover

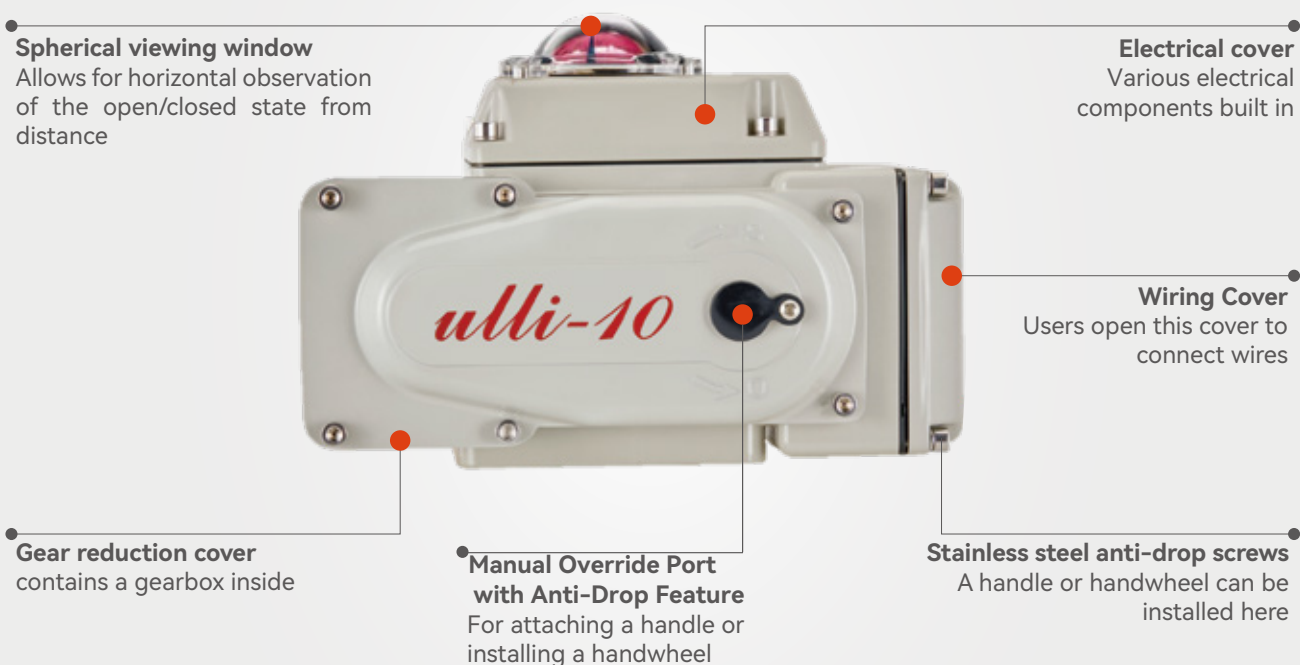
7 Handle or Handwheel Opening Plug

8 Output Shaft or Output Hole

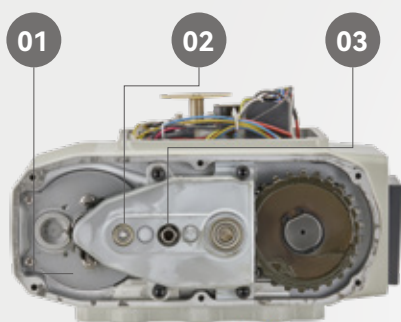


Structure Diagram for ULLI & DIGICON Series

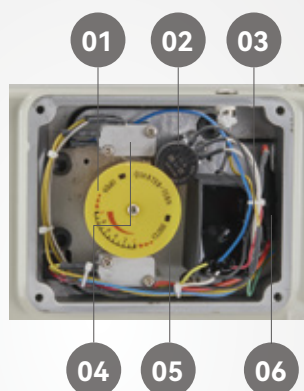
Front View



Detailed diagrams



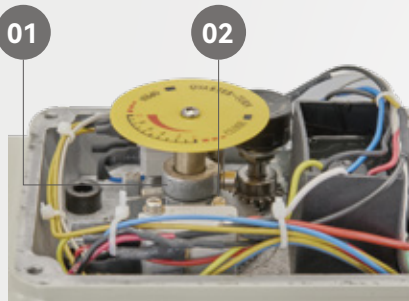
- 01 Motor Cover**
contains an F-class high-temperature-resistant motor
- 02 Fully Rolling Bearings**
Designed for Permanent Durability
- 03 Manual Operation Port**
Standardized dimensions for compatibility



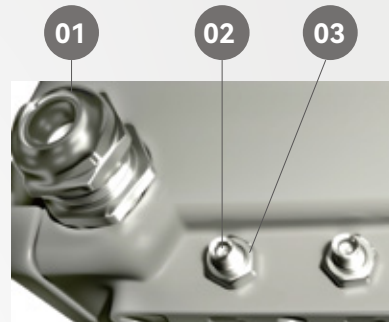
- 01 Indicator Dial**
(Opening Plate): Ball/flat
- 02 Japanese Potentiometer**
High precision and wear resistance
- 03 Internal Wiring**
High-temperature resistant and anti-aging wiring for durability
- 04 OMRON Micro Switch**
Electrical limit position switch for precision control
- 05 Electrical Limit Cam**
Located below the indicator dial adjustable for open/close angles or signal output points.
- 06 Capacitor**
Long lifespan with high-temperature resistance

Structure Diagram for ULLI & DIGICON Series

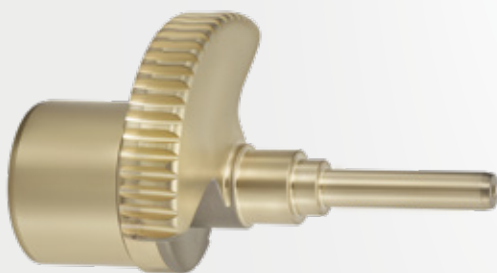
Detailed diagrams



- 01 Electrical Limit Cam**
Located below the indicator dial and adjustable for open/close angles or signal output points
- 02 Electrical Limit Cam Fixing Screw**
Loosen to adjust cam angles for fine-tuning



- 01 Brass Cable Gland**
High strength, fully sealed and non-aging
- 02 Limit Screw**
Mechanical limit adjustment screw
- 03 Locknut**
Locks in place after mechanical limit adjustment



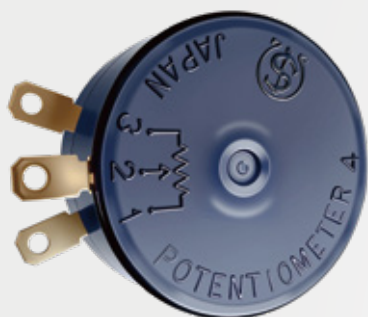
- Specially Designed Integrated Output Shaft**
Integrates five positions into one, providing greater reliability and reducing gaps



- Dome Position Indicator with Color Coding**
Displays open/close status from a distance without needing to climb up and complies with IP68 protection standards

Structure Diagram for ULLI & DIGICON Series

Detailed diagrams



Potentiometer

Japanese brand, precision-made, and highly durable



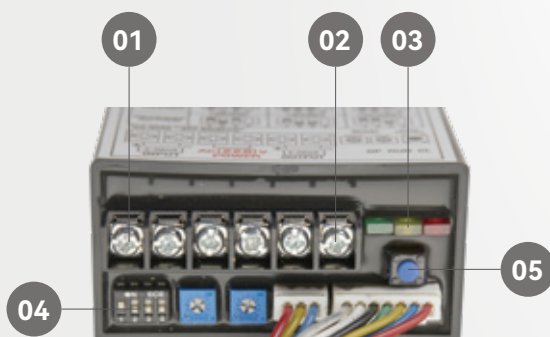
Patented Terminal Block Design

Patented with high strength, one-piece casting and terminal numbering, ensuring correct wiring indication.



Handwheel with Clutch (Optional)

Unique design with a standardized size, compatible with our entire actuator series



- 04 Mode Selection Switch**
Allows easy switching between operation modes

- 01 Intelligent Control Module (Optional)**
High reliability, supports large currents, and offers high precision

- 05 Automatic Calibration Button**
Simplifies configuration and system calibration

- 02 Reinforced Stainless Steel Terminals**
Durable and corrosion-resistant terminal connectors

- 03 Status or Fault Indicator**
Clear status feedback for system monitoring

Data Sheet for ULLI Series

Ulli Series (On-Off Rotary)								
Model	Power Supply	Torque (NM)	Stroke Time for 50Hz (Sec)	Motor Power (In/Out)	220VAC Start Current	220VAC Rated Current	Weight (kg)	IP CLASS
ulli-2	AC24V AC220V AC110V	20	30	15W/5W	0.12A	0.12A	1.8	IP68
ulli-5	AC380V AC/DC24V AC220V AC110V	50	30	30W/10W	0.25A	0.25A	2.6	IP68
ulli-10	AC380V AC/DC24V AC220V AC110V	100	30	80W/23W	0.58A	0.5A	3.7	IP68
ulli-16	AC380V AC/DC24V AC220V AC110V	160	30	100W/30W	0.72A	0.6A	3.7	IP68
ulli-20	AC380V AC/DC24V AC220V AC110V	200	30	100W/30W	0.72A	0.68A	3.7	IP68
ulli-25	AC380V AC/DC24V AC220V AC110V	250	30	150W/45W	0.86A	0.8A	8	IP68
ulli-50	AC380V AC/DC24V AC220V AC110V	500	30	300W/90W	1.38A	1.2A	8	IP68
ulli-60	AC380V AC/DC24V AC220V AC110V	600	30	300W/90W	1.38A	1.2A	8	IP68
ulli-100	AC380V AC/DC24V AC220V AC110V	1000	50	300W/90W	1.38A	1.2A	12	IP68
ulli-200	AC380V AC/DC24V AC220V AC110V	2000	100	300W/90W	1.38A	1.2A	12	IP68
ulli-400	AC380V AC/DC24V AC220V AC110V	4000	120	500W/150W	2.3A	2.0A	31	IP68
ulli-600	AC380V AC/DC24V AC220V AC110V	6000	180	500W/150W	2.3A	2.0A	31	IP68

Note

All parameters are not limited to the datasheet. Parameters such as voltage, torque, stroke time, inner bore dimensions, and other key metrics can be customized to meet specific application requirements.

Data Sheet for ULLI Series

Model Variations

- ulli-xxs**

Four-position switch signal feedback (dry contact or LED)

- ulli-xxR**

Potentiometer (resistive) position feedback

- ulli-xxEX**

Explosion-proof design

- ulli-xxw**

Wireless remote control with RS-485 Bus Control

- ulli-xxt**

Electronic bidirectional overload protection

- ulli-xxCB**

Super capacitor failsafe function

- ulli-Lxx**

Linear actuator with position indicator light

Other specifications (applicable for all models)

Materials



Mounting/Shaft: Copper Alloy

Cover: Diecast aluminum alloy

Base: Diecast aluminum alloy

Cover & Base Finish: Powder coated epoxy

ISO 5211 Direct Mount Connections



Flange: F05 / F07 / F10 / F12 / F14 / F16 / F25

Drive shaft: Female or Male drive shaft

Temperature Range



-20°C to 60°C

-80°C (heater required) to 60°C

Enclosure Rating



IP68

Electrical Connection



PF1/2" conduit

Duty Cycle



xxx-05, xxx-10: 80%

xxx-25: ~60%

xxx-50 to xxx-200: ~50%

(Above ratings apply to AC motors)

All DC motor models: 100% continuous duty

Lubrication



Molybdenum-based grease, permanent and effective

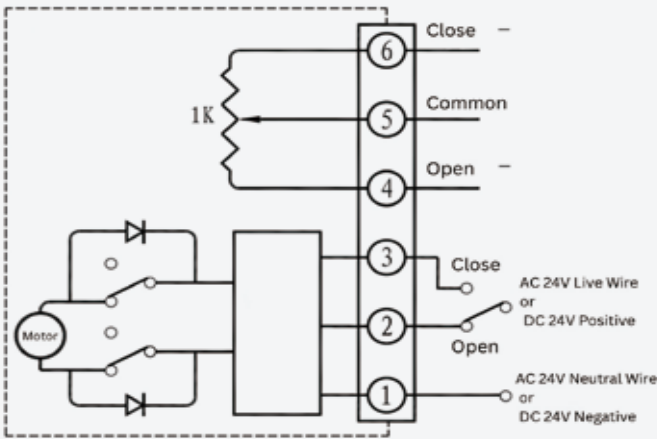
AC24V / DC24V Dual Voltage Actuator

The AC24V/DC24V universal actuator utilizes our proprietary "function block" design (as shown in the diagram) to achieve dual-voltage compatibility. When using AC24V, the wiring method is exactly the same as for our standard AC models. If using DC24V, connect the negative terminal to terminal 1 and switch the positive polarity between terminals 2 and 3 to control rotation direction.

Model Specification Table (AC/DC 24V Universal Models)

Model	Power Supply	Torque (Nm)	Stroke Time for 50Hz (Sec)	Motor Power (In/Out)	Locked-Rotor Current (A)	Working Current (A)	Weight (kg)	IP CLASS
ulli-5	AC/DC 24V	50	6	15W / 5W	0.6	0.3	2.6	IP68
ulli-10	AC/DC 24V	100	12	15W / 5W	1.0	0.6	3.7	IP68
ulli-25	AC/DC 24V	250	11	90W / 30W	3.0	1.5	7.5	IP68
ulli-50	AC/DC 24V	500	22	90W / 30W	3.0	1.5	8	IP68
ulli-100	AC/DC 24V	1000	45	90W / 30W	6.0	2.5	12	IP68
ulli-200	AC/DC 24V	2000	100	300W / 90W	6.0	2.5	12	IP68
ulli-400	AC/DC 24V	4000	100	500W / 150W	10.0	5.0	31	IP68
ulli-600	AC/DC 24V	6000	150	500W / 150W	10.0	5.0	31	IP68

AC/DC 24V Power Supply Universal Circuit Diagram



Data Sheet for DIGICON Series

The Digicon Series offers general-duty electric rotary actuators with reliable modulating control and torque output from 50Nm to 6000Nm.

Digicon Series (Modulating Rotary)

Model	Power Supply	Torque (NM)	Stroke Time for 50Hz (Sec)	Motor Power (In/Out)	Input Signal	Output Signal	Weight (kg)	IP CLASS
digicon-5	DC24V AC24V AC220V AC110V	50	30	30W/10W	4-20mA 0-10V	4-20mA 0-10V	3	IP68
digicon-10	DC24V AC24V AC220V AC110V	100	30	80W/23W	4-20mA 0-10V	4-20mA 0-10V	4.5	IP68
digicon-25	DC24V AC24V AC220V AC110V	250	30	150W/45W	4-20mA 0-10V	4-20mA 0-10V	8.5	IP68
digicon-50	DC24V AC24V AC220V AC110V	500	30	300W/90W	4-20mA 0-10V	4-20mA 0-10V	8.5	IP68
digicon-100	DC24V AC24V AC220V AC110V	1000	50	300W/90W	4-20mA 0-10V	4-20mA 0-10V	12.8	IP68
digicon-200	AC220V AC110V	2000	100	300W/90W	4-20mA 0-10V	4-20mA 0-10V	12.8	IP68
digicon-400	AC220V AC110V	4000	150	500W/150W	4-20mA 0-10V	4-20mA 0-10V	32	IP68
digicon-600	AC220V AC110V	6000	150	500W/150W	4-20mA 0-10V	4-20mA 0-10V	32	IP68

Note

- All parameters are not limited to the datasheet. Parameters such as voltage, torque, stroke time, inner bore dimensions, feedback options, and other key metrics can be customized to meet specific application requirements.

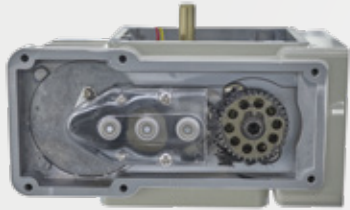
- Digicon-Lxx: Linear option with position indicator light.

Explosion-Proof Series




- Certified as explosion-proof with a conformity certificate accredited by CNAS
- Withstood extensive testing experience in harsh environments
- Internationally certified electronic control module

Explosion-proof Certification: EX d II BT4




Reinforced for Safety

Standard Actuator vs Explosion-Proof

Explosion-proof actuator features a much thicker housing for superior durability and protection in hazardous environments.

Standard model

Explosion-proof

SPECIFICATIONS

Explosion Proof Actuator

Model	Power Supply	Torque (NM)	Stroke Time for 50Hz (Sec)	Motor F Class In/Out	220VAC Start Current	220VAC Rated Current	Weight (kg)	IP CLASS
ulli-10EX	AC380V AC/DC 24V AC/DC 220V AC110V	100	30	80W/23W	0.58A	0.5A	10	IP66
ulli-16EX	AC380V AC/DC 24V AC/DC 220V AC110V	160	30	110W/30W	0.72A	0.68A	10	IP66
ulli-25EX	AC380V AC/DC 24V AC/DC 220V AC110V	250	30	150W/45W	0.86A	0.8A	10	IP66
ulli-50EX	AC380V AC/DC 24V AC/DC 220V AC110V	500	30	300W/90W	1.38A	1.2A	10	IP66
ulli-60EX	AC380V AC/DC 24V AC/DC 220V AC110V	600	30	300W/90W	1.38A	1.2A	10	IP66
digicon-10EX	AC380V AC/DC 24V AC 220V AC110V	100	30	80W/23W	Input signal 4-20mA 0-10V	Output signal 4-20mA	11	IP66
digicon-16EX	AC380V AC/DC 24V AC 220V AC110V	160	30	80W/23W	Input signal 4-20mA 0-10V	Output signal 4-20mA	11	IP66
digicon-25EX	AC380V AC/DC 24V AC 220V AC110V	250	30	150W/45W	Input signal 4-20mA 0-10V	Output signal 4-20mA	11	IP66
digicon-50EX	AC380V AC/DC 24V AC 220V AC110V	500	30	300W/90W	Input signal 4-20mA 0-10V	Output signal 4-20mA	11	IP66
digicon-60EX	AC380V AC/DC 24V AC 220V AC110V	600	30	300W/90W	Input signal 4-20mA 0-10V	Output signal 4-20mA	11	IP66

High Speed Series



Patented Technology

High-speed

Soft-start

Stall Protection



Travel time ranges from 2 to 5 seconds, achieving speeds 5 to 20 times faster than traditional actuators, earning it the title of an ultra-fast actuator



Built for fast quarter turn duty on sites with no compressed air. Without the compressor, the air lines, or the maintenance, and available across the full torque range up to large line sizes.



Surpasses pneumatic actuators in speed while eliminating the need for an air supply, providing a solution that is more convenient, lightweight, and cost-effective.



The wiring method is identical to that of a single-phase AC actuator, ensuring full compatibility and easy replacement.



This technology significantly reduces the travel time of high-torque actuators. For instance, the Highspd-200 model accelerates from 100 seconds to just 15 seconds, greatly enhancing operational efficiency.

Data Sheet for High Speed Series

Delivers high speed and stability with exceptional precision and efficiency, supported by a 100% duty cycle for continuous operation.

Model	Power Supply	Torque (Nm)	Stroke Time (sec)	Motor (In/Out)	Weight (kg)	Compatible Valve (DN Reference)
highspd-5	AC220V / AC110V	50	2.5	450W / 150W	2.5	25-100
highspd-10	AC220V / AC110V	100	5	450W / 150W	3.5	80-150
highspd-25	AC220V / AC110V	250	5	500W / 200W	7.3	150-200
highspd-50	AC220V / AC110V	500	9	500W / 200W	7.3	200-300
highspd-100	AC220V / AC110V	1000	20	600W / 300W	11.5	300-400
highspd-200	AC220V / AC110V	2000	30	600W / 300W	11.8	400-500
highspd-400	AC220V / AC110V	4000	50	800W / 500W	30	600-700
highspd-600	AC220V / AC110V	6000	50	800W / 500W	30	800-1000
hidigico-5	AC220V / AC110V	50	10	450W / 150W	2.5	25-100
hidigico-10	AC220V / AC110V	100	10	450W / 150W	3.5	80-150
hidigico-25	AC220V / AC110V	250	10	500W / 200W	7.3	150-200
hidigico-50	AC220V / AC110V	500	15	500W / 200W	7.3	200-300
hidigico-100	AC220V / AC110V	1000	35	600W / 300W	11.5	300-400
hidigico-200	AC220V / AC110V	2000	50	600W / 300W	11.5	400-500
hidigico-400	AC220V / AC110V	4000	50	800W / 500W	30	600-700
hidigico-600	AC220V / AC110V	6000	50	800W / 500W	30	800-1000

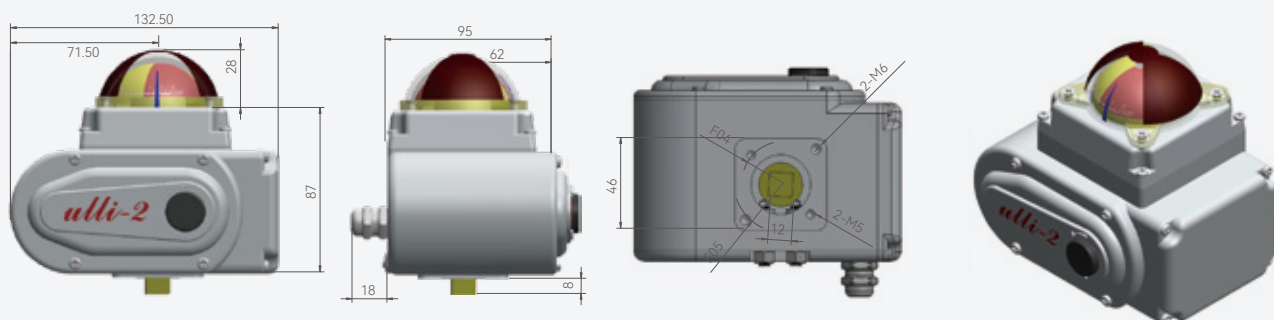
Data Sheet for Linear Option

Our Ulli-L and Digicon-L Series offers high-performance electric linear actuators from 50kgf to 2000kgf.

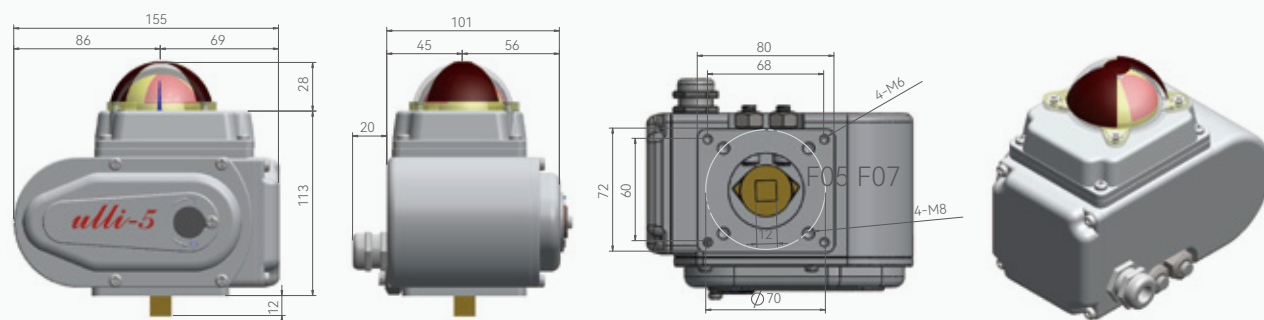
Model	Power Supply	Thrust (kgf)	Stroke	Stroke time for 50Hz (sec)	IP grade	Motor (in/out)	220V start current	220V rated current	Weight (kg)	Control Signal
ulli-L5	AC24V	50	20	60	IP68	20W/6W	0.8A,24V	0.7A,24V	1.2	
ulli-L10	AC24V	100	20	60	IP68	20W/6W	0.8A,24V	0.7A,24V	1.2	
ulli-L25	AC24V AC220V 110V	250	40	25/50	IP68	80W/23W	0.58A,220V 3.5A,24V	0.62A,220V 3.8A,24V	3.5	
ulli-L35	AC24V AC220V 110V	350	40	25/50	IP68	80W/23W	0.58A,220V 3.5A,24V	0.62A,220V 3.8A,24V	3.5	
ulli-L50	AC24V AC220V 110V	500	40	50	IP68	80W/23W	0.58A,220V 3.5A,24V	0.62A,220V 3.8A,24V	3.5	
ulli-L70	AC24V AC220V 110V	700	40	50	IP68	80W/23W	0.58A,220V 3.5A,24V	0.62A,220V 3.8A,24V	3.5	
ulli-L120	AC24V AC220V 110V	1200	80	50	IP68	200W/60W	0.9A,220V 5.3A,24V	0.95A,220V 5.8A,24V	7.8	
ulli-L200	AC24V AC220V 110V	2000	80	50	IP68	300W /90W	1.2A,220V	1.3A,220V	7.8	
digicon-L5	AC24V	50	20	60	IP68	20W/6W	0.8A,24V	0.7A,24V	1.3	0-10V 4-20mA
digicon-L10	AC24V	100	20	60	IP68	20W/6W	0.8A,24V	0.7A,24V	1.3	0-10V 4-20mA
digicon-L25	AC24V AC220V 110V	250	40	25	IP68	80W/23W	0.58A,220V 3.5A,24V	0.62A,220V 3.8A,24V	4	0-10V 4-20mA
digicon-L50	AC24V AC220V 110V	500	40	50	IP68	80W/23W	0.58A,220V 3.5A,24V	0.62A,220V 3.8A,24V	4	0-10V 4-20mA
digicon-L120	AC24V AC220V 110V	1200	60	60	IP68	200W /60W	0.9A,220V 5.3A,24V	0.95A,220V 5.8A,24V	7.8	0-10V 4-20mA
digicon-L200	AC24V AC220V 110V	2000	60	120	IP68	300W/90W	1.2A,220V	1.3A,220V	7.8	0-10V 4-20mA

Dimensioned Drawings for ULLI & DIGICON Series - Male Type

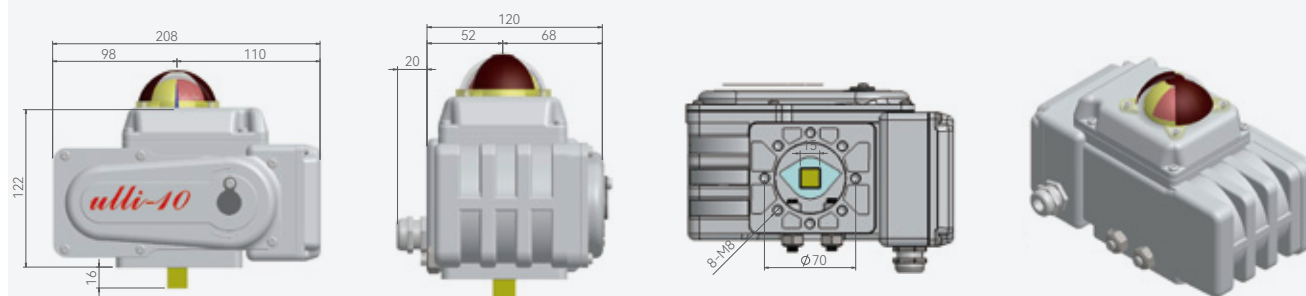
ulli-2



ulli-5

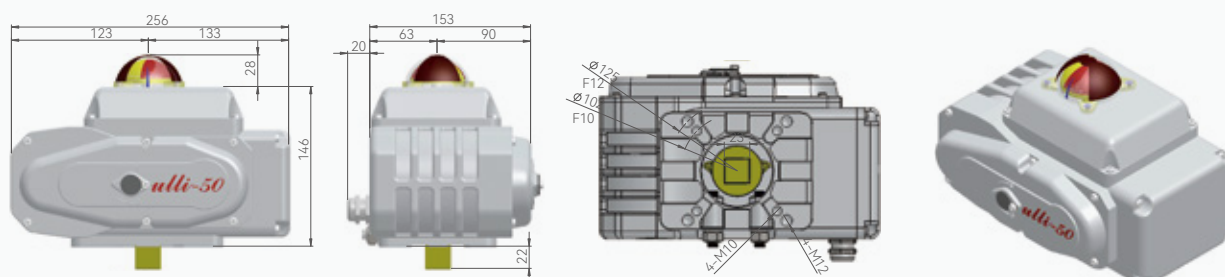


ulli-10 & digicon-10

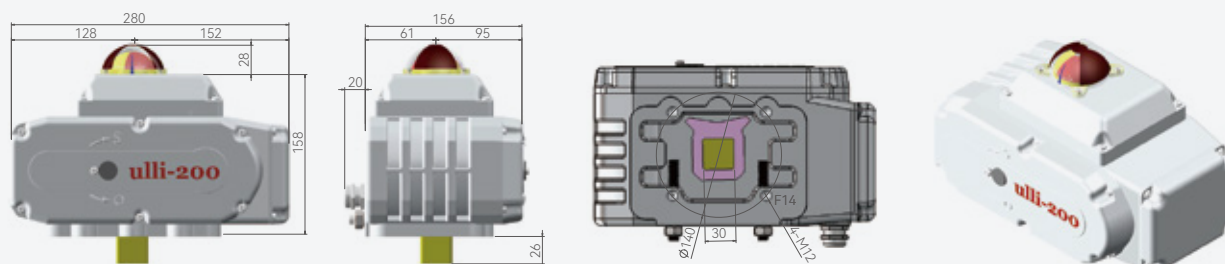


Dimensioned Drawings for ULLI & DIGICON Series - Male Type

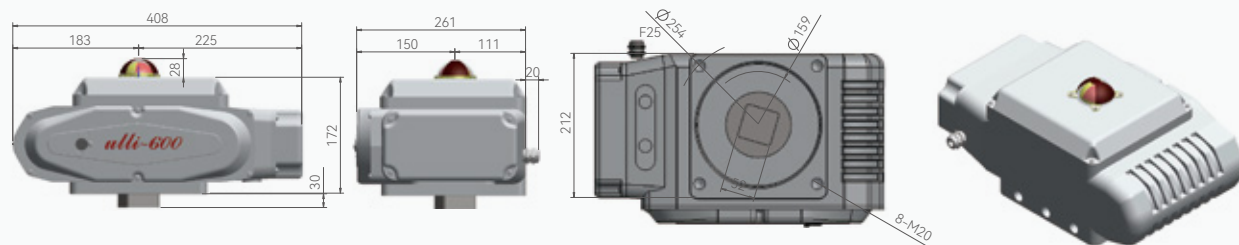
ulli-25/50 & digicon-25/50



ulli-100/200 & digicon-100/200

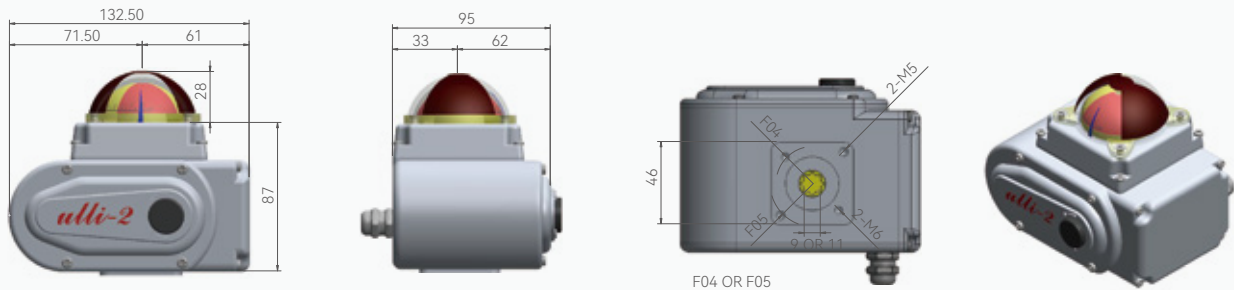


ulli-400/600 & digicon-400/600

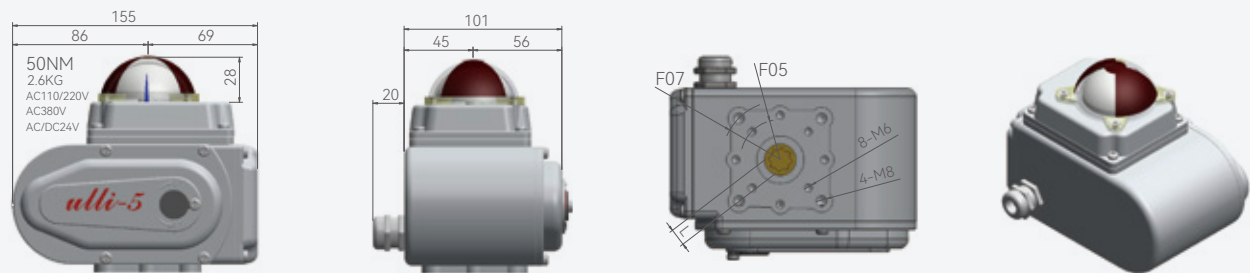


Dimensioned Drawings for ULLI & DIGICON Series - Female Type

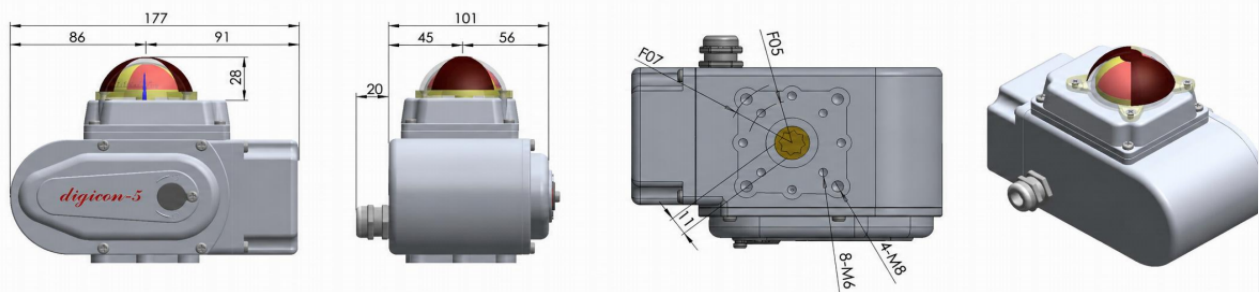
ulli-2



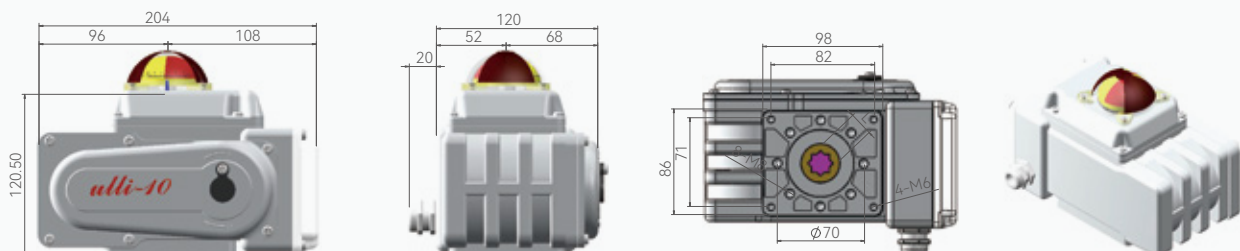
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digicon-5

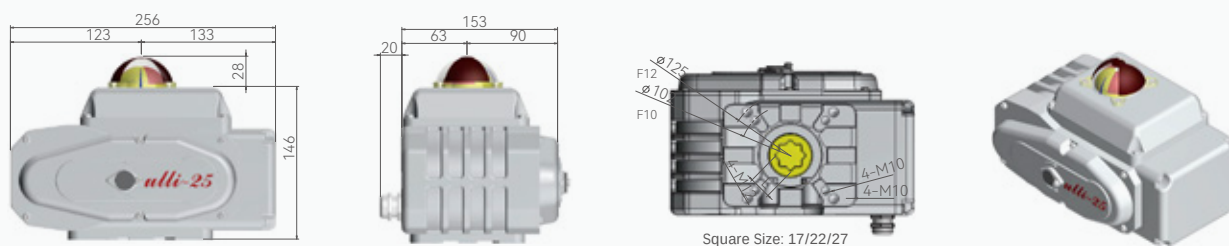


ulli-10 & digicon-10

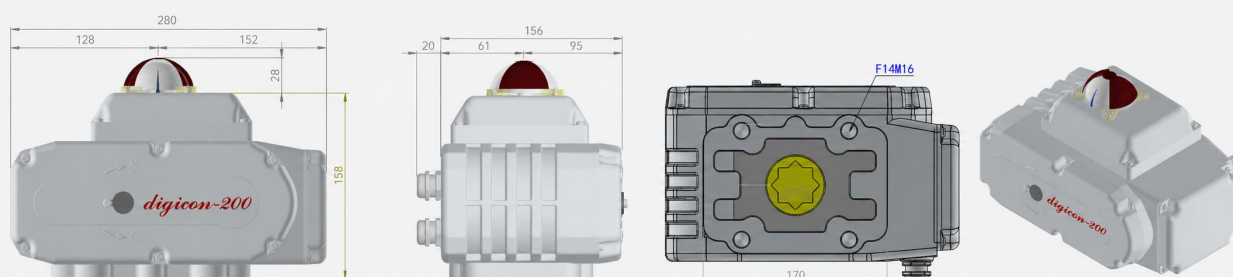


Dimensioned Drawings for ULLI & DIGICON Series - Female Type

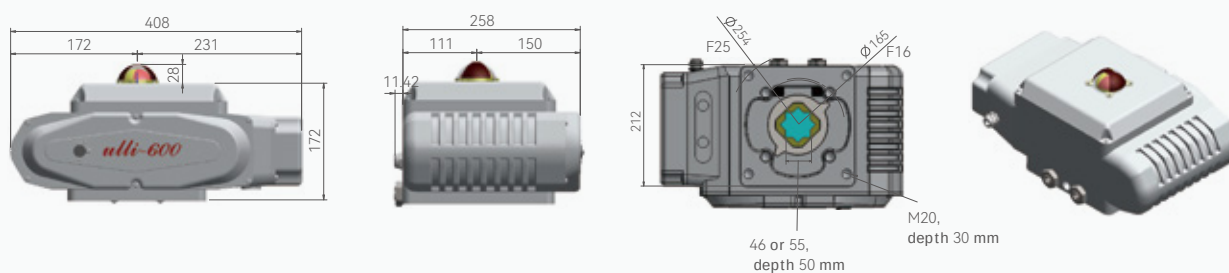
ulli-25/50 & digicon-25/50



ulli-100/200 & digicon-100/200

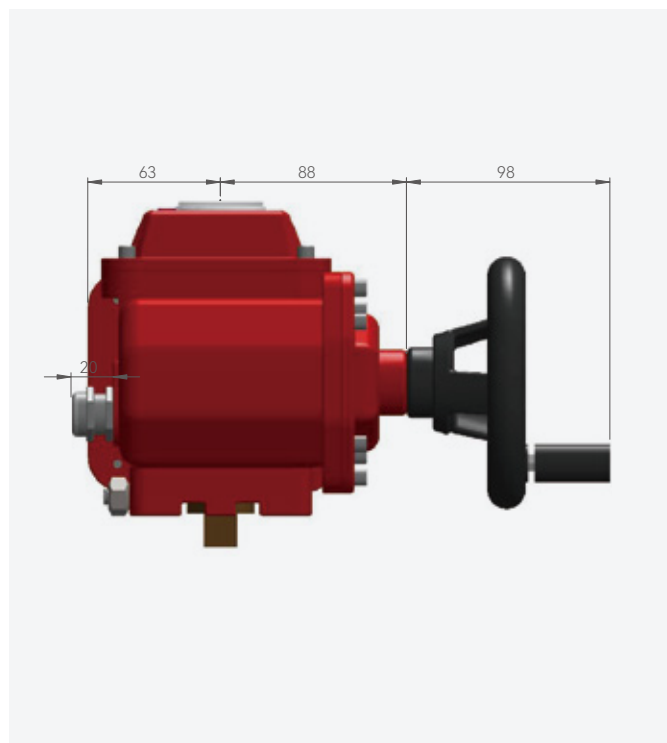
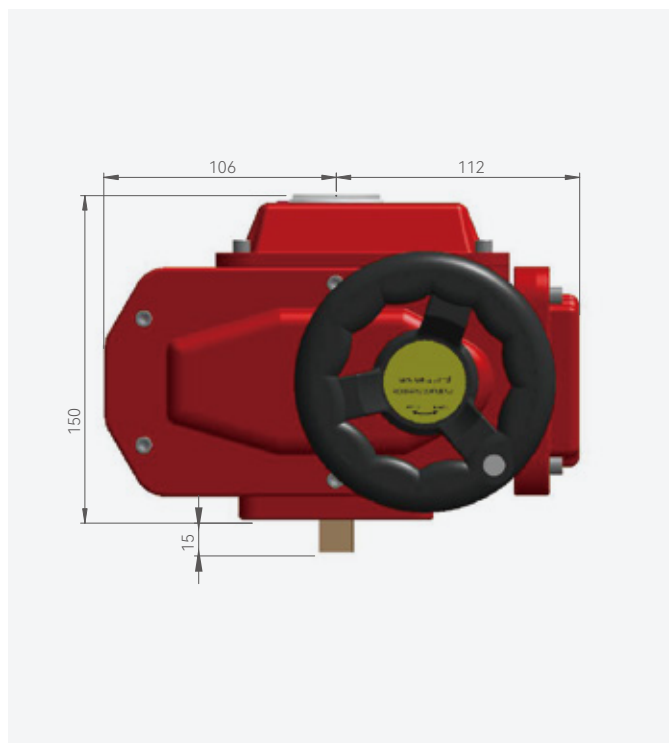


ulli-400/600 digicon-400/600



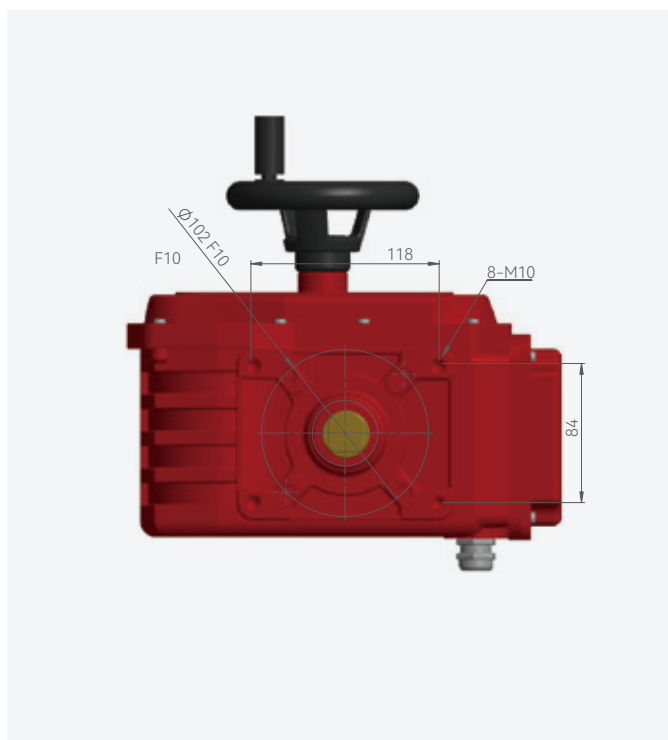
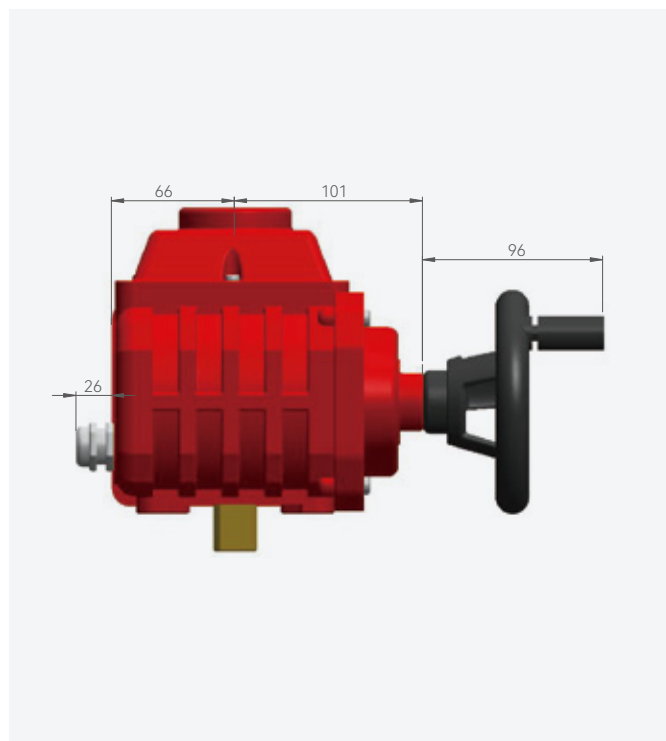
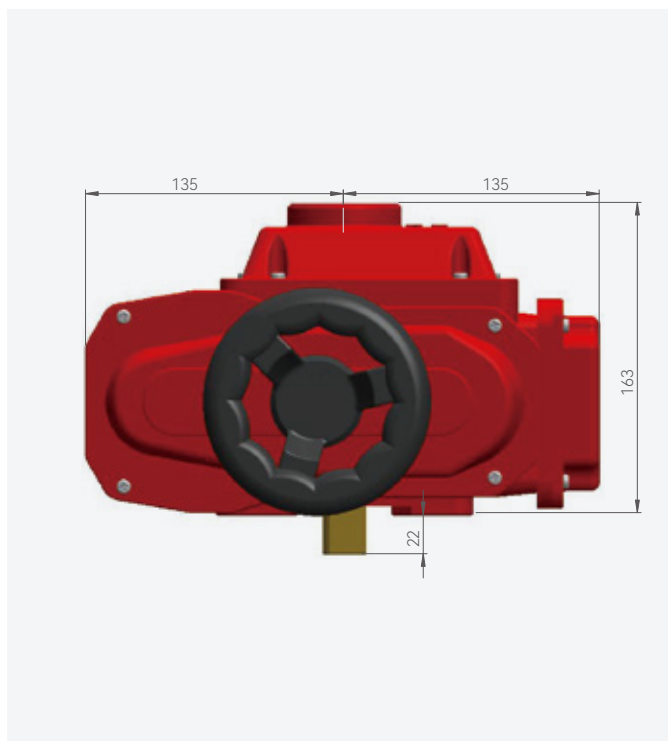
Dimensioned Drawings for Explosion-Proof Series

ulli-10/16EX digicon-10/16EX



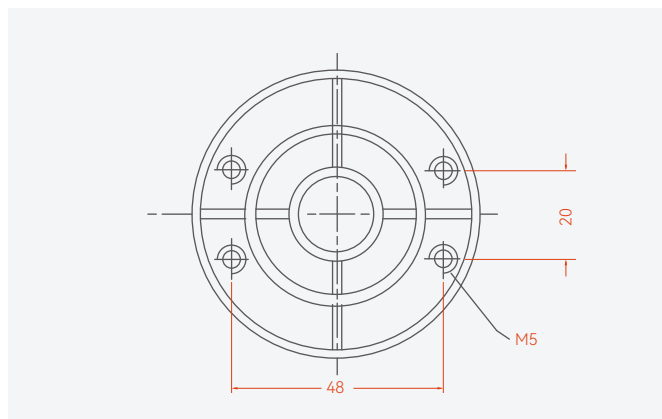
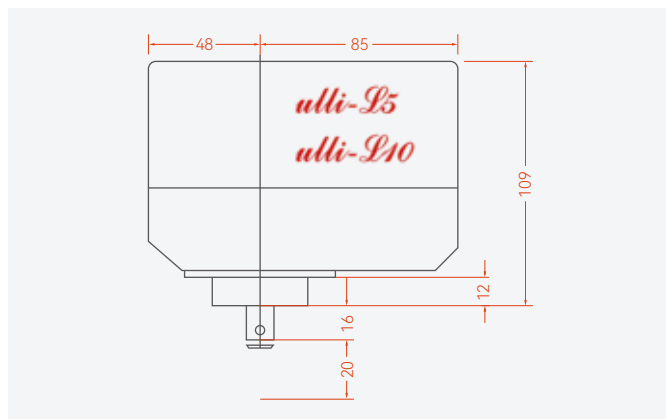
Dimensioned Drawings for Explosion-Proof Series

ulli-25/50EX digicon-25/50EX

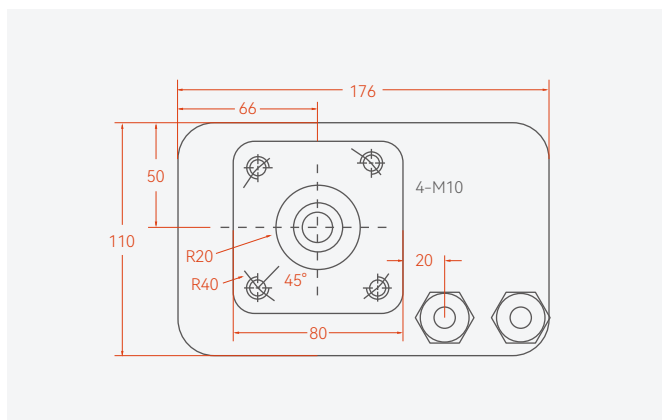
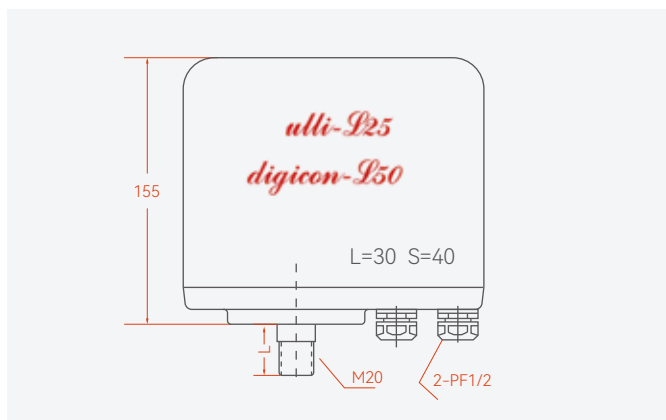


Dimension Drawing for Linear Option

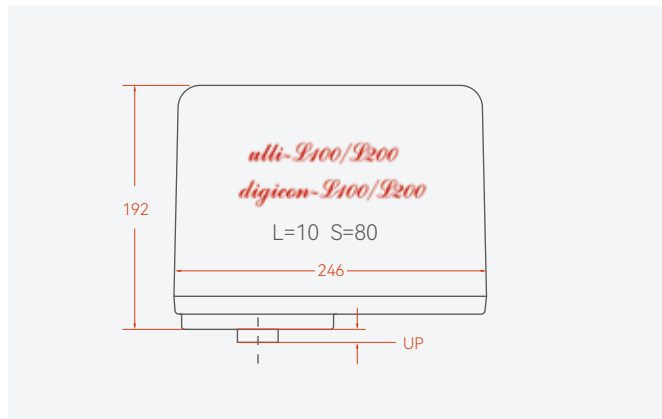
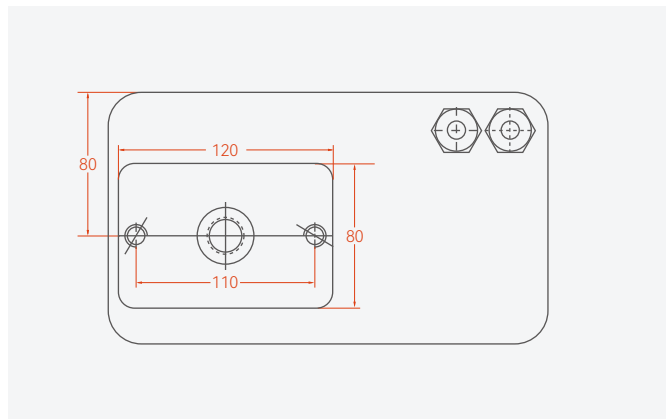
ulli-L5/L10 digicon-L5/L10



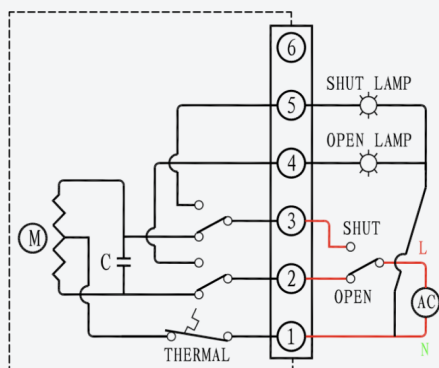
ulli-L25/L50 digicon-L25/L50



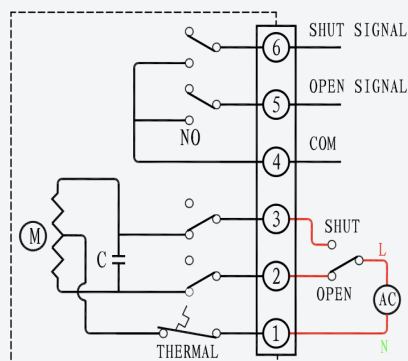
ulli-L100/L200 digicon-L100/L200



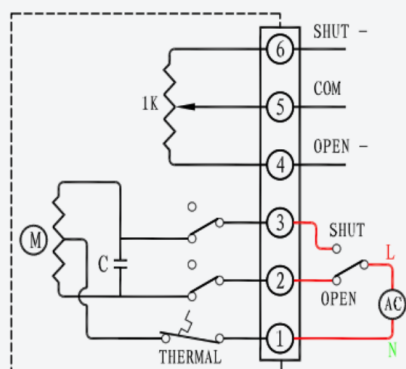
Wiring diagrams



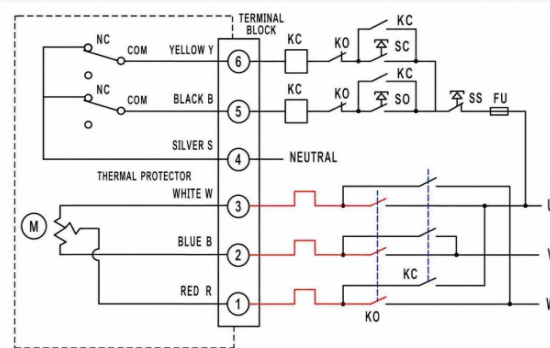
ulli-xx connection



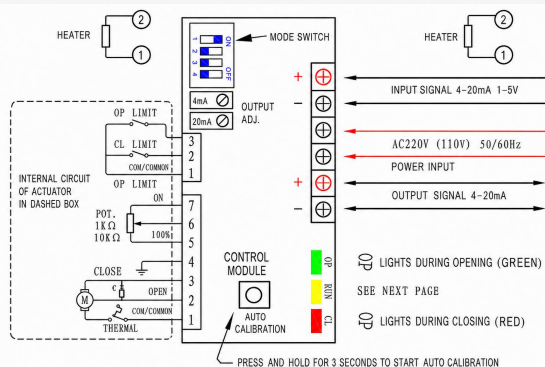
ulli-xxs connection(dry contact-std)



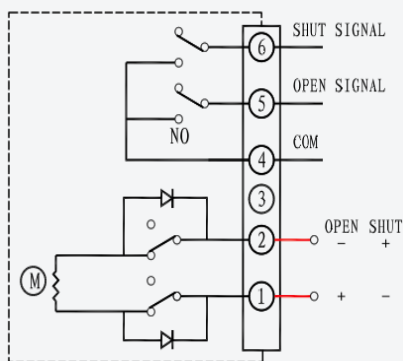
ulli-xxR connection



AC380V Three-Phase Connection



Digicon Connection



DC power connection

Note

-Standard Configuration Note : ulli-xxS is now our standard configuration for the ULLI Series, providing open and close position signal feedback as standard. Other configurations remain available upon request.

-Do not connect the power supply lines of multiple electric actuators in parallel. In other words, a single control contact point must not be used to operate multiple actuators simultaneously. Doing so may result in loss of control and motor overheating, which may cause control failure or motor overheating.-The wiring shown within the dashed box represents the internal circuitry of the electric actuator. Wiring outside the dashed area is for user reference only when planning external connections.

BLDC Actuator



Key Advantages of AOITEC BLDC Actuators

- **High Energy Efficiency Ratio**

Achieves energy savings of 20%–60%, offering significant cost reductions over long-term operation.

- **S1 100% Duty Cycle with Minimal Heat**

Designed to generate less heat, enabling uninterrupted operation without the need for overheating protection mechanisms.

- **Dual Overload Protection**

Equipped with advanced overload protection to ensure the safety and longevity of both the actuator and the valve.

- **Wide Voltage Range**

Supports a wide range of input voltages: DC12V, DC24V, and AC80V to 260V providing flexibility for diverse applications.

- **Extended Lifespan**

Brushless motor technology, combined with low heat output, results in superior durability and reliability.

- **Low Current Models**

Capable of producing low-current, low-speed models that reduce line losses and decrease the electrical burden, enhancing overall system reliability.

- **Compact and Lightweight Design**

Smaller size and reduced weight make transportation more cost-effective and installation easier.

- **Relay-Free Design for Extended Electrical Life**

Traditional actuators rely on relays with limited switching cycles. By adopting a relay-free design, electrical life is no longer constrained by mechanical contact wear.

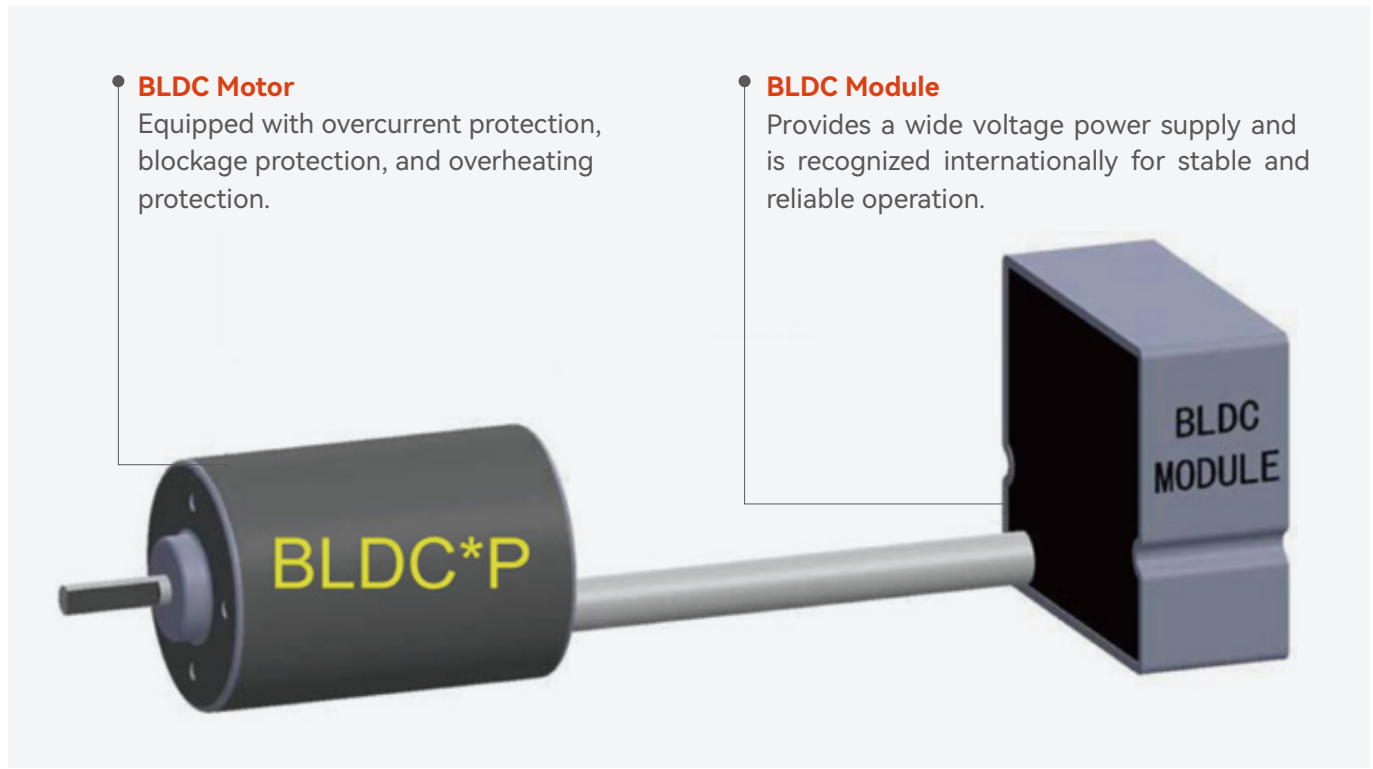
- **Ease of Maintenance**

DC motors are easier to replace and maintain compared to AC motors, reducing downtime and maintenance costs.

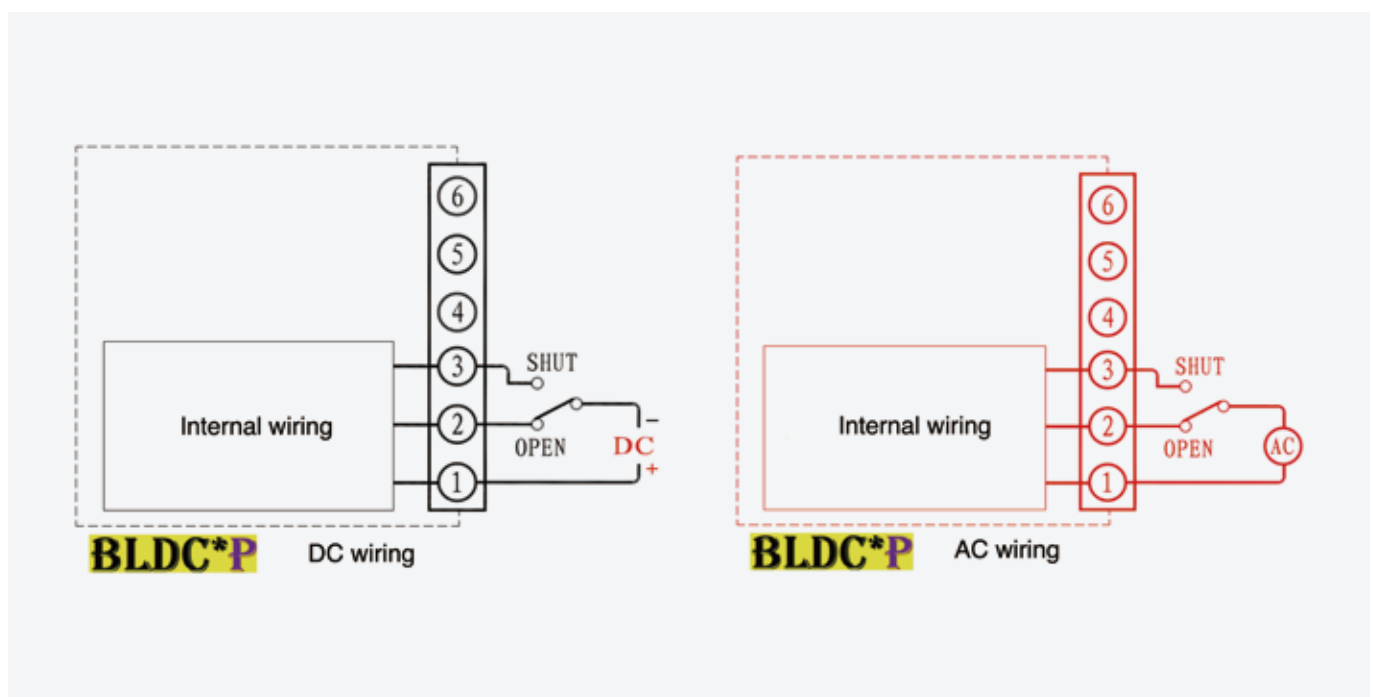
- **Enhanced Waterproofing**

The motor is suspended in the hollow section of the actuator, preventing water ingress even in the presence of minor internal condensation, effectively improving the waterproof performance.

Diagram



Wiring



Data Sheet for BLDC Actuator

Model	Power Supply	Torque (Nm)	Stroke Time (sec)	BLDC Motor Power (W)	Rated Current(A)/ Control Input	Stall Current(A)/ Feedback Output	Weight (kg)	IP Level
BLDC*P-2	DC24V only	20	5	3.6	0.15	0.8	1.5	IP68
BLDC*P-5	DC24V, AC24V AC80-260V	50	10	5	0.25	0.8	2.3	IP68
BLDC*P-10	DC24V, AC24V AC80-260V	100	30	11	0.5	1.5	3.3	IP68
BLDC*P-20	DC24V, AC24V AC80-260V	200	30	20	0.8	2	3.5	IP68
BLDC*P-40	DC24V, AC24V AC80-260V	400	30	30	1.2	2	7.2	IP68
BLDC*P-60	DC24V, AC24V AC80-260V	600	60	30	1.2	2	7.2	IP68
BLDC*P-100	DC24V, AC24V AC80-260V	1000	50	48	2	5	12	IP68
BLDC*P-200	DC24V, AC24V AC80-260V	2000	100	48	2	5	12	IP68
BLDC*P-400	DC24V, AC24V AC80-260V	4000	100	100	4	8	30	IP68
BLDC*P-600	DC24V, AC24V AC80-260V	6000	150	100	4	8	30	IP68
BLDC*M-5	DC24V only	50	20	5	4-20mA	4-20mA	2.6	IP68
BLDC*M-10	DC24V, AC24V AC80-260V	100	50	9.6	4-20mA	4-20mA	3.6	IP68
BLDC*M-20	DC24V, AC24V AC80-260V	200	50	20	4-20mA	4-20mA	3.7	IP68
BLDC*M-40	DC24V, AC24V AC80-260V	400	100	20	4-20mA	4-20mA	7.6	IP68
BLDC*M-60	DC24V, AC24V AC80-260V	600	150	20	4-20mA	4-20mA	7.6	IP68
BLDC*M-100	DC24V, AC24V AC80-260V	1000	50	48	4-20mA	4-20mA	12.5	IP68
BLDC*M-200	DC24V, AC24V AC80-260V	2000	100	48	4-20mA	4-20mA	12.5	IP68
BLDC*M-400	DC24V, AC24V AC80-260V	4000	100	100	4-20mA	4-20mA	30.5	IP68
BLDC*M-600	DC24V, AC24V AC80-260V	6000	150	100	4-20mA	4-20mA	30.5	IP68

Note

- BLDC*P refers to a 2-position actuator, designed for on-off operation.
- BLDC*M refers to a modulating actuator, designed for precise regulation.
- Wide Voltage Input Range: AC80 to 260V, supporting reliable operation across varying supply conditions and international applications.

SuperCap Failsafe Actuators

Key Features of AOITEC Supercapacitor Failsafe Actuator



Supercapacitor Energy Storage

Stores energy using supercapacitors for reliable operation without overcharge or over-discharge risks, delivering extended lifespan and high cycle durability of over 100,000 cycles.



Seamless Fail Safe Protection

Operates normally as an on off or modulating actuator, then automatically drives the valve to its preset fail safe position on power loss.



Consistent and controlled fail-safe movement

Unlike a spring return actuator's rapid mechanical release, the SuperCap delivers a controlled closing motion, reducing the risk of water hammer and pressure transients in liquid filled pipelines.



Equipped with Brushless DC Motor

No brushes to wear down means less friction, less heat, and a longer motor life. At idle, the actuator draws only 3W, making it energy efficient to run continuously in standby.



Wide Torque Range and Voltage Compatibility

Available in a variety of voltage and torque options, supporting DC 12V, 24V, 110V, 220V; AC 20 to 40V, 80 to 260V power input and torque ranges from 50 to 6000Nm.



Compact and lightweight

From 50 Nm at just 5 kg up to 6,000 Nm at only 32 kg, a fraction of the weight and size of comparable spring return actuators in the same torque class.



Fast recovery with no manual intervention

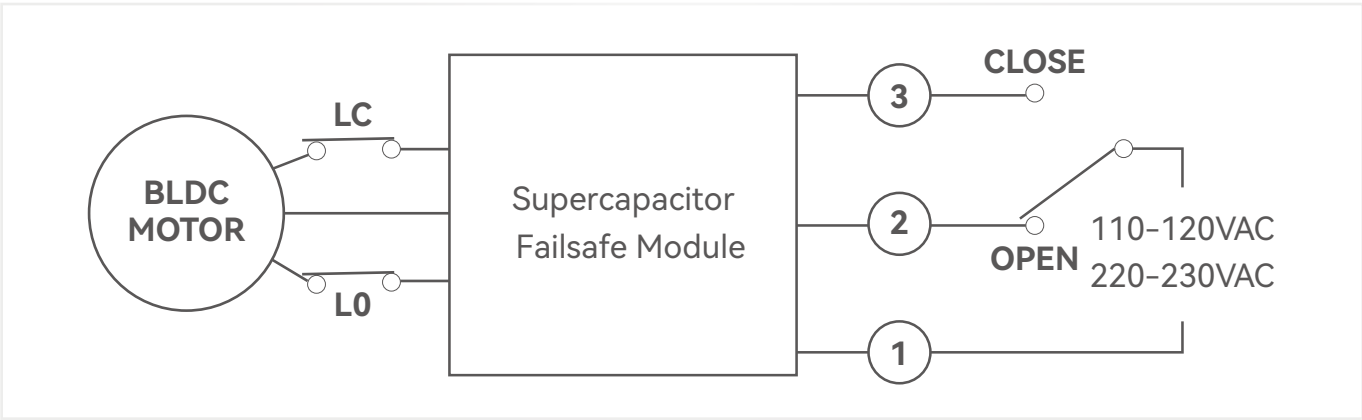
A fully discharged SuperCap recharges in only 15 minutes rather than hours, automatically restoring fail safe protection without manual intervention or prolonged valve vulnerability.

Data Sheet for SuperCap Failsafe Actuator

Model	Torque (Nm)	Torque (in-lb)	Operating Time (sec)	Weight (kg)	Motor Power (W), Class F	IP Rating	Compatible Ball Valve (mm)	Compatible Butterfly Valve (mm)
SECRET-05	50	442	6	2.6	20	IP68	15-40	50-80
SECRET-10	100	885	10	3.7	20	IP68	50-65	50-125
SECRET-25	250	2212	20	8	30	IP68	65-80	150-200
SECRET-50	500	4425	30	8.5	50	IP68	80-100	200-250
SECRET-100	1000	8850	60	13	50	IP68	125-150	300-400
SECRET-200	2000	17700	120	13	50	IP68	150-200	400-500
SECRET-400	4000	35400	100	31	100	IP68	200-250	600-700
SECRET-600	6000	53100	150	31	100	IP68	250-300	700-800

Wiring Setup:

The wiring method remains consistent with the configuration below, ensuring ease of installation.



Special Notes

- On initial power up, the supercapacitor requires 15 minutes to fully charge; however, this has no practical impact on operation, as the actuator typically has remained powered for days or even months before a failsafe movement is required.
- Two power outage modes - fail close or fail open.
- Valve compatibility is for reference only.

V-Series

2000 Nm in a 5.2 kg housing.
100 to 260 V AC, or 24 V AC/DC.

The V-Series is a compact rotary valve actuator built around our patented brushless DC control. It runs three times as efficiently as a conventional AC motor actuator, so it stays cool and delivers a 100% duty cycle. Lower weight and smaller size make it easier to install, cheaper to ship and simple to fit in confined spaces. Supplied for 100 to 260 V AC single phase mains worldwide, or for 24 V, where the same unit accepts AC or DC.



5000 Nm

Maximum torque

5.2 kg

At 2000 Nm

100 to 260 V

Single phase, or 24 V AC/DC

100%

Duty cycle, brushless DC

ADVANTAGES OF THE AOITEC V-SERIES

01 Lower weight, compact size

2000 Nm in a 5.2 kg housing, 50 to 5000 Nm from 2.6 to 10.8 kg. Lighter to handle, cheaper to ship, and fits in confined spaces.

02 100 to 260 V AC, or 24 V AC/DC

Runs on any single phase mains worldwide, or on 24 V, where the same unit accepts AC or DC without demanding high current.

03 Brushless DC, 100% duty

Patented brushless DC control gives three times the efficiency of a conventional AC motor actuator, so less heat and a 100% duty.

04 Protects the valve, mounts direct

Bidirectional overload protection guards both actuator and valve. ISO 5211 bolt holes and output bore fit the valve directly, no bracket.

05 Multi-turn option

With the rotation limit removed, the same actuator can be configured as a multi-turn actuator.

TYPICAL APPLICATION

Actuated valve packages, packaged and skid mounted equipment, HVAC and building services, water and wastewater, general industrial automation, and 24 V installations such as PLC controlled machines and battery or solar powered sites.

SPECIFICATIONS

Model	Power supply	Torque (Nm)	Stroke time 90° (s)	Motor, class F in / out (W)	Weight (kg)	IP rating
V1-5	100 to 260 V AC / 24 V AC/DC	50	5	15 / 12	2.6	IP68
V1-10	100 to 260 V AC / 24 V AC/DC	100	10	15 / 12	2.6	IP68
V1-20	100 to 260 V AC / 24 V AC/DC	200	20	15 / 12	2.6	IP68
V2-40	100 to 260 V AC / 24 V AC/DC	400	20	30 / 25	5.2	IP68
V2-60	100 to 260 V AC / 24 V AC/DC	600	30	30 / 25	5.2	IP68
V2-80	100 to 260 V AC / 24 V AC/DC	800	40	30 / 25	5.2	IP68
V2-100	100 to 260 V AC / 24 V AC/DC	1000	50	30 / 25	5.2	IP68
V2-150	100 to 260 V AC / 24 V AC/DC	1500	50	46 / 40	5.2	IP68
V2-200	100 to 260 V AC / 24 V AC/DC	2000	68	46 / 40	5.2	IP68
V3-300	100 to 260 V AC / 24 V AC/DC	3000	30	120 / 100	10.8	IP68
V3-400	100 to 260 V AC / 24 V AC/DC	4000	40	116 / 100	10.8	IP68
V3-500	100 to 260 V AC / 24 V AC/DC	5000	50	116 / 100	10.8	IP68

Note:

Torque in inch-pounds: multiply Nm by 8.85. Stroke time is for 90° of travel.

Parameters such as voltage, torque, stroke time and bore dimensions can be customised to suit the application.

SAFE Series

24 V safe-voltage electric actuators

Stores energy quietly.

Releases it the moment the valve has to move.

A 24 V safe-voltage actuator that gathers energy between operations and releases it in a burst when the valve needs it. Thin cable and a small power supply now deliver high torque and high speed. Engineers have wanted 24 V for personal safety for years, and the torque was never there. Now it is.



6000 Nm

Maximum torque

24 V

DC or AC, one unit

3.6 A

Largest supply any model needs

IP68

Every model

WHY SAFE

1 Safe voltage, safe people and equipment

Powered by 24 V safe voltage, so the major electrical risks to personnel are eliminated.

2 High torque at safe voltage

Up to 6000 Nm, all inside safe-voltage limits.

3 DC 24 V or AC 24 V, one unit

Connect to whichever supply the site has. Extremely convenient to use.

4 Low current, thin cable, small supply

No thick cables and no high-power power supplies. Even SAFE-600 runs from a 3.6 A supply.

5 Patented brushless DC control

Reliable and efficient drive from our patented brushless DC control technology.

6 Protected from thermal burnout

With no continuous high-energy influx, the motor is protected from burnout by excessive heat.

TYPICAL APPLICATION

Water and wastewater, HVAC and building services, marine, general industrial automation, and remote sites running on batteries or solar power.

SPECIFICATIONS

Model	Power supply	Torque (Nm)	Stroke time (s)	Motor power (W)	Supply required minimum	Weight (kg)	IP rating	Cable minimum
SAFE-5	24 V DC / AC	50	6	20	1 A	2.5	IP68	26 AWG
SAFE-10	24 V DC / AC	100	10	20	1 A	3.6	IP68	26 AWG
SAFE-25	24 V DC / AC	250	20	30	1 A	7.5	IP68	26 AWG
SAFE-50	24 V DC / AC	500	30	50	2 A	7.5	IP68	22 AWG
SAFE-100	24 V DC / AC	1000	60	50	2 A	12	IP68	22 AWG
SAFE-200	24 V DC / AC	2000	120	50	2 A	12	IP68	22 AWG
SAFE-400	24 V DC / AC	4000	100	100	3.6 A	31	IP68	16 AWG
SAFE-600	24 V DC / AC	6000	150	100	3.6 A	31	IP68	16 AWG

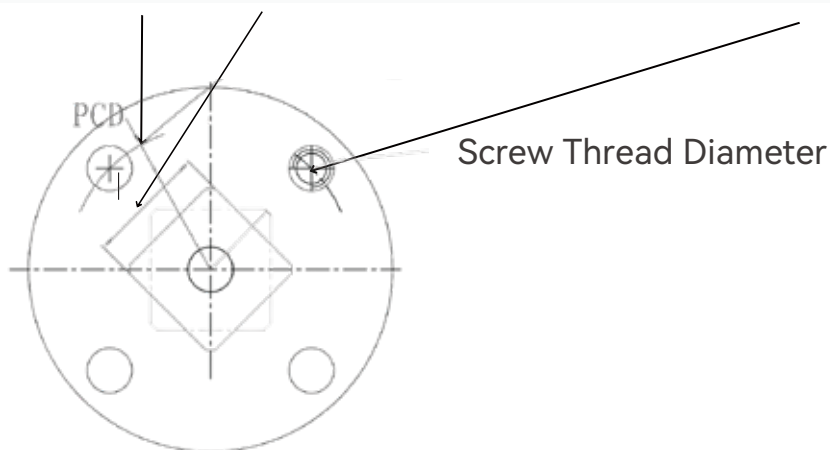
Note:

Torque in inch-pounds: multiply Nm by 8.85. Cable gauge is the minimum conductor size; confirm the maximum cable run for your installation with AOITEC. Parameters such as voltage, torque, stroke time and inner bore dimensions can be customised to meet specific application requirements.

Direct Mounted Dimensions for Butterfly Valve

Recommended Butterfly Valve Mounting Dimensions for Direct (bracket-free) Installation

Electric Actuator Model	Compatible Butterfly Valves (DN)	Flange Standard (ISO 5211)	Bolt Circle Diameter (PCD)	Stem Size	Extension Length	Chamfered Circular Diameter	Screw Thread Diameter
ulli-2	25-50	F05/F03	D50/D36	9*9	10-15	No restrictions	M6/M5
ulli-5	50-80	F07/F05	D70	11*11	10-20	No restrictions	M8/M6
ulli-10	100	F07	D70	14*14	15-25	No restrictions	M8
ulli-16	125-150	F07	D70	17*17	15-25	≤ Φ22	M8
ulli-25	200	F12/F10	D125/D102	22*22	20-30	≤ Φ30	M12/M10
ulli-50	250	F12/F10	D125/D102	27*27	25-40	≤ Φ36	M12/M10
ulli-100	300-400	F14	D140	27*27	25-40	≤ Φ37.6	M12
ulli-200	400-500	F14	D140	36*36	30-40	≤ Φ48	M12
ulli-400	600-700	F25	D254	38*38	35-50	≤ Φ75	M20
ulli-600	800	F25	D254	46*46	35-50	≤ Φ75	M20
ulli-600	900-1000	F25	D254	55*55	35-50	≤ Φ75	M20



Options and Add-Ons

1	Female OR Male Type	• Female(Direct Mount) – more compact, smaller diameter, high precision • Male (Bracket Mount) – Taller height, larger diameter, more flexible installation	Free
2	Output Shaft Types	• Four-Square Output Shaft • Round-Hole Output Shaft • Double-D Output Shaft • Keyed Output Shaft • Octagon Output Shaft	Free
3	ISO 5211 Mounting Flange	• F03, F05, F07, F10, F12, F14 and F25	Free
4	Voltage Options	• DC24V • Single-Phase: AC110V / AC120V / AC220V / AC230V / AC24V • Three-Phase: AC380V / AC400V / AC415V / AC480V • Wide-Voltage Options (AC20–40V, AC80–260V single unit) • AC24V/DC24V Dual-Voltage Model	Free
5	Brushless DC Motor Drive	• High efficiency, low heat output and long lifespan	Chargeable
6	Position Feedback, ON/OFF	• Active voltage output • Dry contact output (S type) • Potentiometer output (R type) • Current signal output	Chargeable
7	Control and Feedback, Modulating	• 4 to 20 mA, • 0 to 10 V DC, • 2 to 10 V DC, • Modbus RTU via RS-485 and more upon request	Chargeable
8	Stroke Time	• Standard stroke time or • a stroke time you specify, subject to technical confirmation	
9	Power Outage Return	• In case of power failure, follow preset instructions to open or close the valve to ensure safety and property protection	Chargeable
10	Handwheel	 • Manual disengagement supported across multiple models	Chargeable
11	Ambient Temperature	• –20 °C to 60 °C as standard • –80 °C to 60 °C with a heater fitted	Chargeable
12	Electronic Overload Protection	• Protection against bidirectional overload, overload output terminals, multiple voltage options	Chargeable
13	Viewing Window Type	 • Flat Viewing Window  • Spherical Viewing Window	Free
14	Advanced H-Class Configuration	 Precision gear train High-strength, wear resistant  Anti-counterfeit label Acid, alkali and UV resistant, high weatherability	Chargeable
15	Outer Cover Colour	 • Black  • Blue  • Gray More options upon request	Free

Note

All features and functionalities listed above can be mixed and matched to suit your specific requirements. We are continuously upgrading and adding new options to our offerings. For tailored solutions and further customization needs, please contact us directly to confirm availability.

03

Control Packs and Modules

Auto Setting Control Pack (FACP-11)

FACP-11 Interface, Operation and Indicator Guide

Multi-Function Valve Controller

On-Off Control Module

Auto-Calibrating R/I Converter Module

Torque Limiter Module (TORC-LMT)

Wireless Control Module

Auto Setting Control Pack (FACP-11)



The FACP-11 Auto Setting Control Pack accepts 4–20mA (or 1–5V) signals for precise valve angle control, with positioning accuracy up to 1/250. It supports automatic linear control across the full stroke range and includes enhanced features for a more convenient and efficient user experience

Features

Auto Calibration

Easy Installation and Wiring

Encapsulated for dust and shock resistance

Enhanced Functionalities

1. Fail mode (upon control signal loss)

- Open – fail to open
- Stop – fail to stop
- Close –fail to close

2. Self-Diagnosis

- Limit switches
- Potentiometer
- Motor

High Control Sensitivity up to 250:1 (adjustable)

Compact and Lightweight Design

Compatible with 1kΩ, 5kΩ, 10kΩ

Electrical Specifications

Power	110vac or 220vac 50/60Hz
Control Signal Input	4~ 20mA dc or 2~10vdc
Output Signal	4~20mA 1% DC (RL:250ohm)
Output Power	200W at 220V; 150W at 110V
Resolution	≥ 250:1
Power consumption	Max 150W @ 110vac or 200W @ 220vac

Auto Calibration

1) Connect the power supply wires, input signal wires and output signal wires correctly according to the markings on the module.

2) Press and hold the "Auto Calibration" button for 3 seconds until the "Run" light comes on. Auto calibration has then started, and the module will automatically drive the actuator through 2 full back and forth cycles to complete the calibration.

3) Once auto calibration is complete, the module switches to signal control mode.

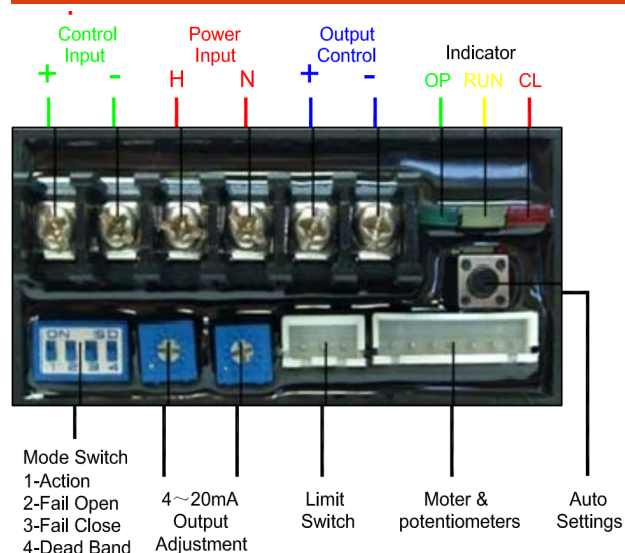
If any fault is present, the "Run" light will flash rapidly and the module will stop working to protect the actuator. The module cannot be put into service until the fault has been cleared.

New Feature 1. Protection has been added to the signal input and output ports. Even if the user connects AC 220 V or 110 V to the input or output port by mistake, the module will not burn out. This greatly improves the reliability of the product and user satisfaction.

New Feature 2. For better interference immunity and longer service life, the actuator stops for 3 seconds each time it reaches the target position before it will accept a new operating command.*

FACP-11 Interface, Operation and Indicator Guide

Module Terminal Layout

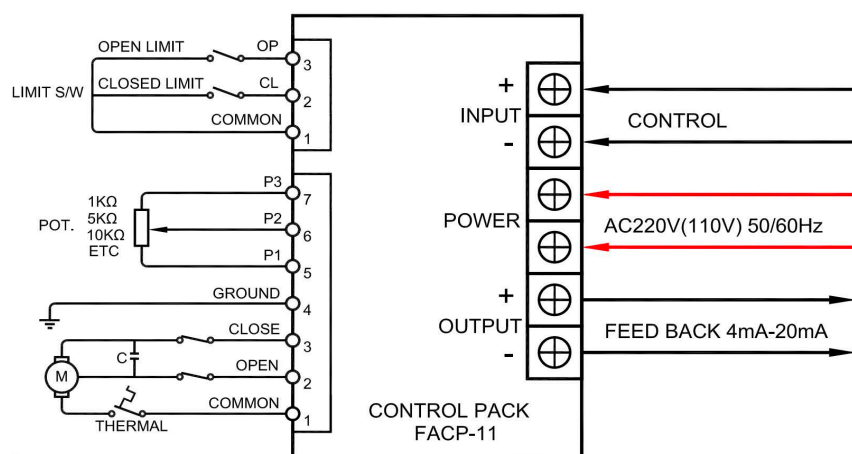


Indicator

Green Lamp On	Actuator is Opening
Yellow Lamp On	Actuator is Operating
Yellow Lamp Flashing Slowly	Fully open/ closed
Yellow Lamp Flashing Quickly	Fail, check limit switch, potentiometer, etc
Red Lamp On	Actuator is Closing

Press and hold the Auto Setting Switch for 3 seconds to start the actuator's auto-calibration, where it cycles twice to find and confirm its open and close limit positions for precise operation.

Wiring

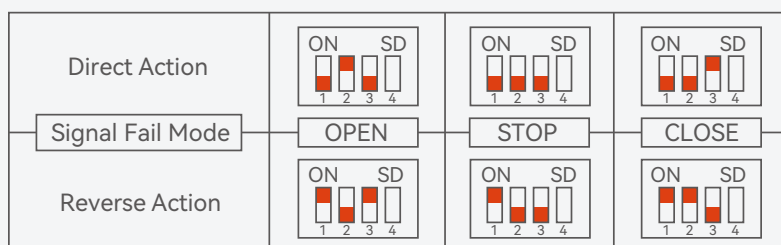


Blockage Protection

Our modulating module is equipped with a blockage protection feature. If the actuator encounters a blockage, the module will automatically shut off the motor approximately 7 seconds after detection. Simultaneously, the yellow indicator lamp will flash rapidly, signaling that the actuator has entered Blockage Protection Mode.

To exit this mode, a reverse input signal must be provided. Upon receiving this signal, the actuator will deactivate the Blockage Protection Mode and resume normal operation.

Mode Switch Operation & Setting



Feedback Output Adjustment (VR):
Sensitive adjustment of "feedback output"

Limit Switch: Input terminal for digital limit is active "A"

- Limit switch common
- Close limit switch
- Open limit switch

Motor & Potentiometer:

- Motor common
- Open motor
- Close motor
- Ground
- Potentiometer P1
- Potentiometer P2

Multi-Function Valve Controller

The multi-function valve controller is built onto the ulli actuator platform. It uses an integrated structural design and connects to the actuator through a dedicated interface to command actuator movement. The main control board acquires the proportional input signal; the output command signal is processed and drives the actuator motor directly to carry out the opening and closing actions. The controller also provides proportional signal feedback, proportional signal control and multiple field-programmable relay outputs.



Integrated controller on ulli actuator



Local display and control head

Control Types

On-Off Type

Accepts externally supplied switching (digital) signals only. The main control chip performs signal acquisition and status display processing; the output command is amplified and drives the actuator motor directly to carry out the opening and closing actions.

Modulating Type

Builds on the on-off type and additionally accepts an externally supplied proportional signal, allowing the valve to be positioned anywhere across the stroke.

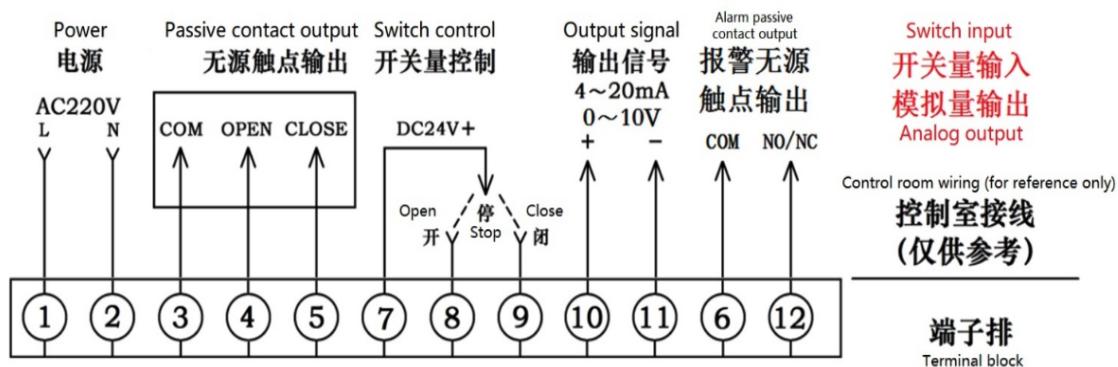
Technical Specifications

Parameter	Specification
Operating Voltage	AC 220V $\pm 10\%$, 50/60Hz
Maximum Power	$\leq 1000W$ motor
Ambient Temperature	-20 to $70\text{ }^{\circ}\text{C}$
Input Impedance	4–20mA: 150Ω 0–10V: $18k\Omega$
External Control Signal	4–20mA, 0–10V, switching (digital) signal, RS-485 communication (optional)
Position Sensor	Potentiometer $1k\Omega$ – $10k\Omega$
Position Signal	Feedback signal 4–20mA DC; output load $\leq 700\Omega$
Positioning Accuracy	Selectable between 0.5% and 10%
Flameproof Rating of Positioner	Exd II BT6
Protection Level	IP68

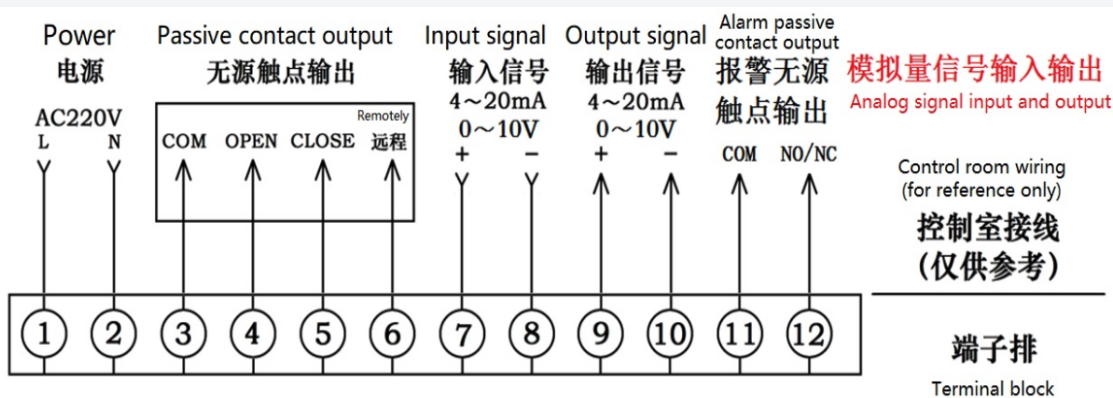
Multi-Function Valve Controller

Three terminal configurations are available. Control-room wiring shown outside the terminal block is for reference only.

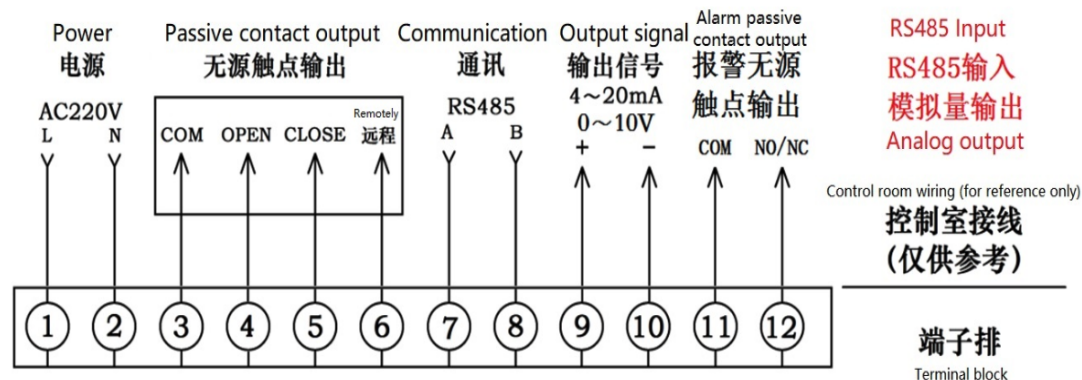
Switching Input / Analog Output



Analog Signal Input and Output



RS-485 Input / Analog Output



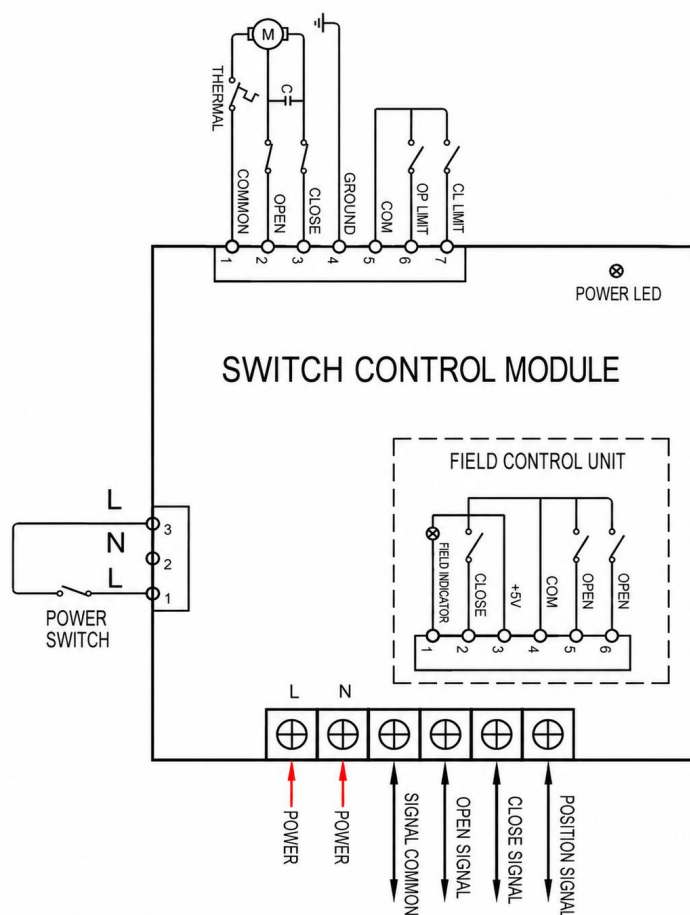
On-Off Control Module

The on-off control module drives the valve open or closed according to the external open and close control signals it receives (active high). It stops immediately when the control signal is removed, and on reaching the fully open or fully closed position it cuts power to the motor and outputs an in-position signal (active high).

Performance Features

- Supply voltage: AC160–280V or DC24V.
- Operates when a high level (greater than 4V) is applied to the open direction or the close direction individually; no action occurs in any other state.
- On reaching the open or closed position, the motor is de-energised in that direction and an in-position signal is output (active high).
- Built-in protection functions: reliable interface protection, reverse-action delay, action-signal width control and interference immunity.
- An optional local manual control function can be added. Press the Local/Remote button — while the indicator is lit the valve can be opened with the green button and closed with the red button. Press the Local/Remote button again and the indicator goes out, returning the module to remote control.

Interface



Auto-Calibrating R/I Converter Module

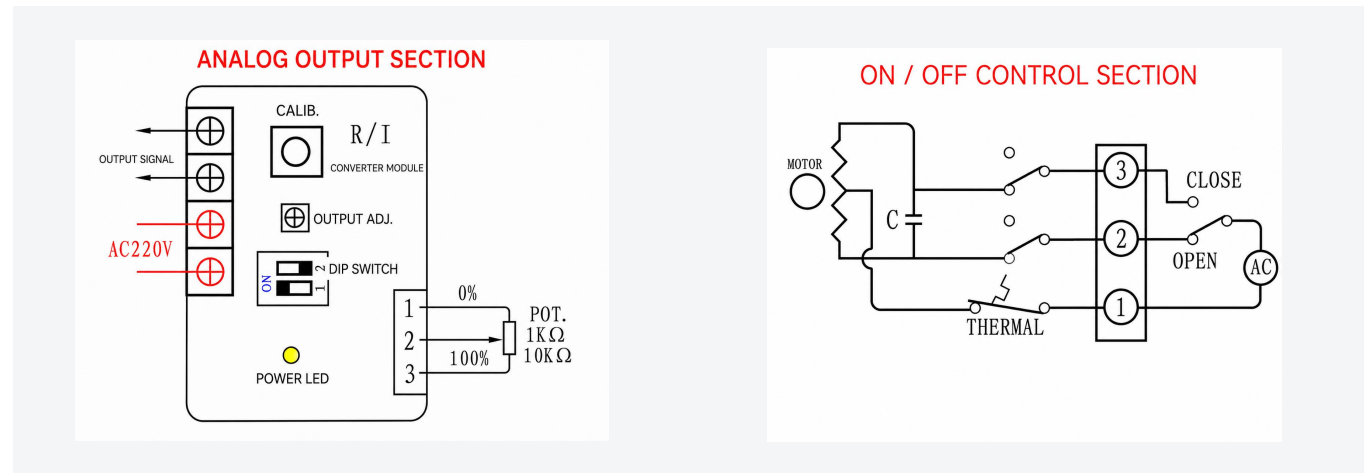
ulli-**RI

The auto-calibrating R/I converter turns the resistance (R) signal of the actuator's potentiometer into a 4–20mA output signal

Performance Features

- Intelligent calibration — convenient and reliable.
- High intelligent accuracy: 500:1.
- Easy to assemble and wire; small and light.
- Special encapsulation process — dust-proof and shock-proof.
- Self-adapting to a wide range of start and end resistance values.

Interface



DIP Switch Settings

DIP switch 1 sets the action direction: ON for reverse action, OFF for direct action.
DIP switch 2 sets the position being calibrated: ON for the fully open position, OFF for the fully closed position.

Electrical Parameters

Parameter	Specification
Power Supply	AC220V / 50Hz, 60Hz or AC110V / 50Hz, 60Hz
Output Signal	4–20mA ±1% (RL: 250Ω)

Calibration Procedure

- Connect the power leads and the potentiometer leads correctly, following the markings on the module.
- Stop the actuator at the fully open position, set DIP switch 2 to "ON" and hold the "Calibrate" button for 3 seconds; the indicator flashes to confirm that the fully open position has been recorded. Then stop the actuator at the fully closed position, set DIP switch 2 to "OFF" and hold the "Calibrate" button for 3 seconds; the indicator flashes to confirm that the fully closed position has been recorded.
- Once position calibration is complete the module enters signal output mode. The indicator flashes slowly whenever the actuator approaches either end position.

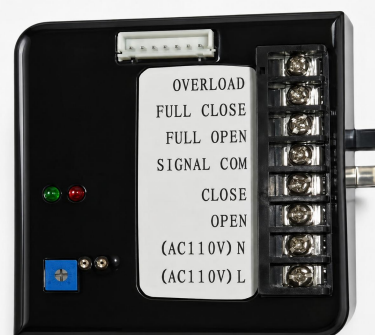
Torque Limiter Module

TORC-LMT

The valve actuator torque limiter module allows the maximum torque in both the opening and the closing direction to be adjusted to suit the characteristics of each actuator. When the module detects that the set maximum torque has been exceeded it automatically cuts the power, protecting both the actuator and the valve.

Performance Features

- Once the torque has been set, the torque limit value is accurate and stable.
- After an over-torque trip in the closing direction the module remains de-energised until power is applied in the opening direction, and vice versa.
- Using this module prevents overload damage to the actuator and the valve, greatly improving reliability and service life. It can also serve as a means of position control on metal-seated valves, comparable to the closing control of a linear actuator.

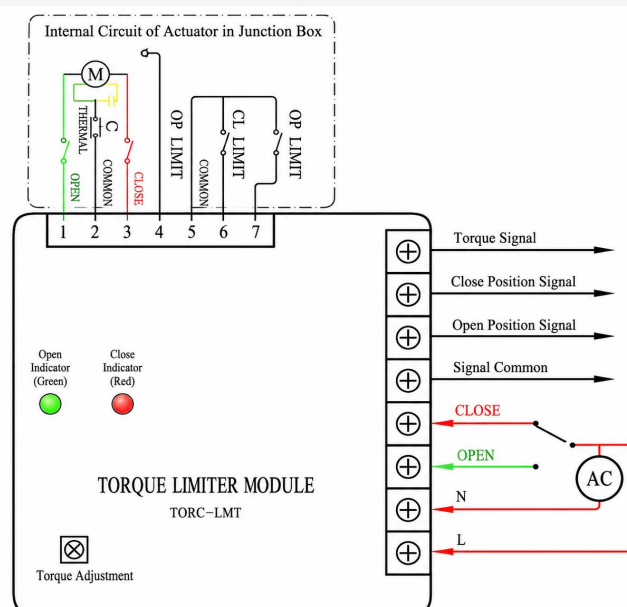


TORC-LMT module and terminal markings

Interface

Terminal	Function
OVERLOAD	Over-torque signal output
FULL CLOSE	Valve closed, in position
FULL OPEN	Valve open, in position
SIGNAL COM	Signal common
CLOSE	Close command
OPEN	Open command
(AC110V) N	Supply neutral
(AC110V) L	Supply live

- Green lamp: over-torque in the opening direction.
- Red lamp: over-torque in the closing direction.
- Torque adjustment trimmer on the module body.



Wireless Control Module

The module can be fitted to ulli-10 and every larger model to provide wireless control in either inching or maintained mode. Inching means the valve can be stopped at an intermediate angle to obtain the flow rate required.

What It Gives You

- Dual-mode control — remote and local — with easy switching between the two modes.
- Local control without installing a manual control box.
- Valve control from a kilometre away, at the touch of a button.
- No need to enter confined, hazardous or unclean spaces; the valve is operated with one finger.
- No need to shower, change and gown up before entering a cleanroom to open or close a valve.

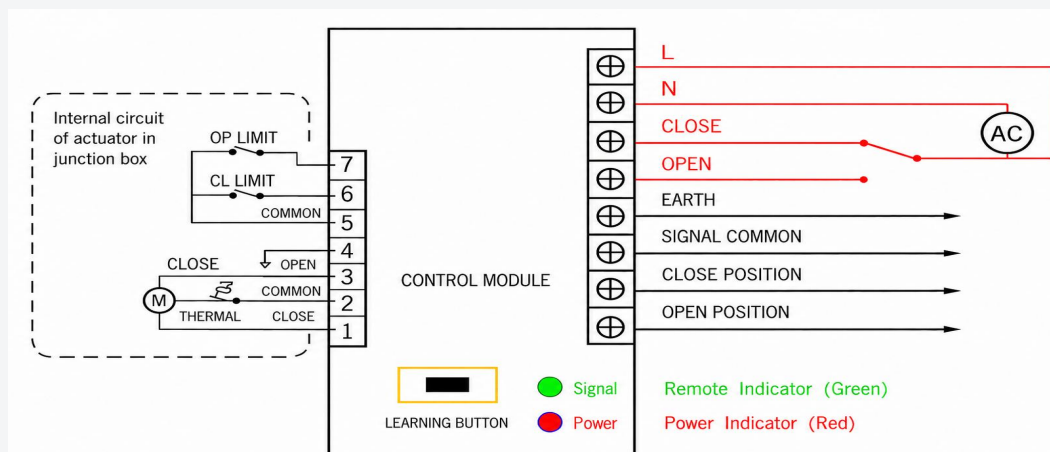


Remote Switching Control Module

The remote switching control module is available with an AC24V, 110V or 220V supply. It accepts switching commands from the handheld transmitter and also accepts conventional three-wire control, which makes it particularly suitable where temporary switching is needed during maintenance.

- 315M / 433M wireless signal, with a remote control range of up to 3,000 metres.
- The module can learn and clear transmitters — convenient and worry-free.
- Enhanced functions: a. defaults to wired control on power-up; b. press OPEN or CLOSE when remote operation is required; c. press the wired-control key to return to wired control; d. the remote keys can be set to inching or maintained operation; e. maximum current up to 5A.
- Easy to assemble and wire; small and light.
- Special encapsulation process — dust-proof and shock-proof.
- Suitable for ulli-10, 25, 50, 100, 200 and 400 actuators.

Interface



04

Electric Valves

Electric Ball Valve (Threaded Connection)

Electric Ball Valve (Flanged Design)

Electric High-Temperature V Control Ball Valve

Electric Butterfly Valve

Dynamic Balancing Electric Control Valve

Electric Ball Valve (Threaded Connection)



Key Advantages

Bracket-Free Design

Eliminates the need for external mounting brackets

Versatile Pressure Range

Available in normal and medium pressure types (1.6–4.0 MPa), suitable for various industrial applications

Exceptional Motor Characteristics

Designed for frequent operation without overheating, achieving a 100% duty cycle for continuous operation

Stainless Steel Valve Construction

Rapid operation with unmatched reliability and durability

Compact and Tight Structure

Strong connections with minimal deviation and space-saving design

Optimized Flow Control

Supports linear and equal-percentage flow profiles with multiple port sizes for diverse process control needs

Highly Reliable Design

Core components use imported brands, rated for over 100,000 cycles to ensure long-term stability

DN	Inch	Electric Actuator (For Reference)	Length L (mm)	Valve Height Hv (mm)	Head Height H (mm)	ISO5211 Flange	Stem Square (mm)
15	1/2"	ulli-2	65	42	125	F05	9
20	3/4"	ulli-2	70	49	125	F05	9
25	1"	ulli-5	85	58	143	F05	11
32	1.25"	ulli-5	94	63	143	F05	11
40	1.5"	ulli-10	105	71	150	F07	14
50	2"	ulli-10	125	78	150	F07	14
65	2.5"	ulli-16	155	102	150	F07	17
80	3"	ulli-25	173	110	176	F10	22

Electric Ball Valve (Flanged Design)



Key Features & Benefits

Ultra-Fast Response for high speed version
Reliable and lightning-fast operation without compromise

Proprietary Electric Actuator
Equipped with a patented electric actuator system, featuring a self-contained power source for superior performance

Strong Shaft Transmission
Four-sided shaft ensures stable torque transfer, secure connection, and improved safety

Stainless Steel Valve Construction
The valve is crafted from stainless steel, offering durability, corrosion resistance, and an aesthetically pleasing design

Compact and Robust Structure
The design ensures tight connections, minimal backlash, and space efficiency, making it ideal for precise industrial applications

DN	Inch	Electric Actuator (For reference)	Valve Height Hv (Hv)	Head Height H (H)	ISO5211 Flange	Stem Square (mm)
15	1/2"	ulli-2	46	135	F05	9
20	3/4"	ulli-2	51	135	F05	9
25	1"	ulli-5	62	143	F05	11
32	1.25"	ulli-5	72	143	F05	11
40	1.5"	ulli-10	78	150	F07	14
50	2"	ulli-10	86	150	F07	14
65	2.5"	ulli-16	108	150	F07	17
80	3"	ulli-25	116	176	F10	22
100	4"	ulli-50	139	176	F10	22
125	5"	ulli-50	176	176	F12	22
150	6"	ulli-100	192	186	F12	27

Electric High-Temperature V Control Ball Valve



Key Features & Benefits

Exceptional Control Capability

The V-port ball valve provides a flow characteristic approximating an equal percentage curve, achieving a high control ratio of up to 300:1 for precise flow regulation

Stable and Low-Friction Operation

The ball is supported by a robust axial bearing, ensuring minimal rotational resistance, stable performance, and quick response times

Superior Cutting Capability

The combination of a hardened sealing seat and V-shaped port delivers strong shearing force, allowing it to cut through fibers effectively, maintain smooth operation, and avoid blockages or jamming

Superior Sealing Performance

The spring-loaded metal seat offers self-compensation and excellent sealing, with leakage rates as low as 10^{-6} , meeting stringent sealing requirements

High-Temperature Resistance

Metal-sealed structure with enhanced support design enables outstanding resistance to high temperatures, ideal for steam and other demanding media

Size DN	Outer diameter OD (mm)	Valve Length (mm)	Valve Height H (mm)
25	68	62	330
32	78	62	350
40	85	62	370
50	100	75	390
65	120	80	410
80	130	100	430
100	158	115	460
125	180	130	490
150	216	160	520
200	268	200	550
250	406	240	600
300	460	335	650
350	520	415	700
400	580	490	750

Electric Butterfly Valve



Port diameter (mm)	Size (Inch)	Electric Actuator (For Reference)	Hv	Valve Body Thickness (mm)	Weight (kg)	Special Features
50	2	ulli-2	161	43	5	
65	2.5	ulli-5	175	46	6	
80	3	ulli-5	181	49	7	
100	4	ulli-10	200	56	9	
125	5	ulli-16	213	64	11	
150	6	ulli-16	226	70	13	
200	8	ulli-25	260	71	20	
250	10	ulli-50	292	76	26	Overload protection
300	12	ulli-100	337	83	40	Overload protection
350	14	ulli-100	368	92	62	Overload protection
400	16	ulli-100	400	102	83	Overload protection
450	18	ulli-200	422	114	106	Overload protection
500	20	ulli-200	480	127	155	Overload protection
600	24	ulli-400	560	154	217	Overload protection
700	28	ulli-400	624	165	322	Overload protection
800	32	ulli-600	672	190	422	Overload protection
900	36	ulli-600	756	203	550	Overload protection
1000	40	ulli-600	840	216	690	Overload protection

Dynamic Balancing Electric Control Valve



Overview

In HVAC systems, heating networks, or locations where remote operation is inconvenient or areas that are hard to reach during installation or maintenance, the KDZL dynamic balancing electric control valve offers a smart solution. Through its intelligent control module, it allows for convenient manual and automatic regulation of flow rates and temperatures across different circuits. This facilitates optimized energy use and intelligent energy management.

Control Methods: Intelligent Mode, Proportional Mode, On/Off Mode

Key Product Advantages

Stability

The flow rate changes at the end-user equipment are not affected by system pressure fluctuations, ensuring no mutual interference in flow adjustments.

Energy Efficiency

Saves 6–20% energy compared to traditional systems.

High Efficiency

Significantly reduces commissioning time, ensuring efficient system operation.

Comfort

Provides more precise temperature control, making the system more comfortable compared to traditional variable flow systems.

Actuator Compatibility

Excellent interchangeability with angle actuators.

Flow Characteristic Curve

Linear or equal-percentage options available.

Flow Accuracy

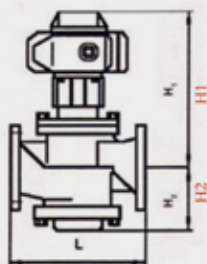
Error margin $\leq 5\%$.

Operating Temperature

0–150°C.

Operating Differential Pressure Range

20–500 kPa.



Model	DN (mm)	Connection Type	Length (mm)	H1 (mm)	H2 (mm)	Flow rate (m³/h)	Weight (kg)
EBV15-16	15	Threaded connection	80	60	50	0.2–1	2.6
EBV20-16	20	Threaded connection	80	60	50	0.3–1.5	2.6
EBV25-16	25	Threaded connection	90	60	50	0.5–2	2.7
EBV32-16	32	Flanged Connection	160	180	70	1–4	4
EBV40-16	40	Flanged Connection	200	200	100	1.5–6	11
EBV50-16	50	Flanged Connection	215	210	105	2–8	12
EBV65-16	65	Flanged Connection	230	240	110	3–12	15
EBV80-16	80	Flanged Connection	275	289	170	5–20	27
EBV100-16	100	Flanged Connection	290	305	185	10–30	30
EBV125-16	125	Flanged Connection	310	310	200	15–45	40
EBV150-16	150	Flanged Connection	350	340	220	30–70	63
EBV200-16	200	Flanged Connection	425	380	285	40–180	105
EBV250-16	250	Flanged Connection	480	470	385	100–300	189
EBV300-16	300	Flanged Connection	650	565	480	150–500	218
EBV350-16	350	Flanged Connection	700	580	545	200–700	265

Instructions For Use

Installation

1. Installation Location

1a. Indoor Installation Notes

- Non-explosion-proof and must not be installed in environments containing explosive gases.
- Ensure that the rubber sealing boot is properly secured to prevent malfunction.
- The ambient temperature should be within the range of -20°C to $+60^{\circ}\text{C}$.

1b. Outdoor Installation Notes

- Protective covers must be added, and the rubber sealing boot must be properly secured to prevent malfunction.

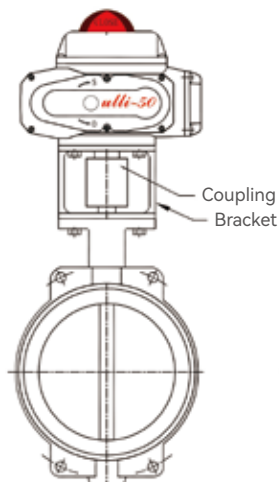
Note

- Direct sunlight can cause high internal temperatures, accelerating component aging.
- Rainwater can accelerate the aging of seals, leading to water ingress and equipment damage.

2. Connection to Valve (Bracket-Mounted Type)

1. Manually rotate the valve to confirm there are no abnormalities, and ensure the valve is in the fully closed position.
2. Gently secure the bracket to the valve using screws.
3. Fit the coupling onto the valve stem.
4. Rotate the actuator to the fully closed position.
5. Insert the actuator's output shaft into the coupling.
6. Gently secure the actuator to the bracket using screws.
7. Manually rotate the actuator to ensure there is no misalignment, jamming, or other abnormalities.
8. Tighten all screws on the bracket.

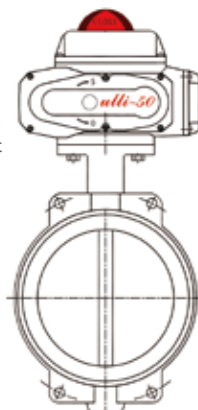
Traditional model



Bracket-free, coupling free

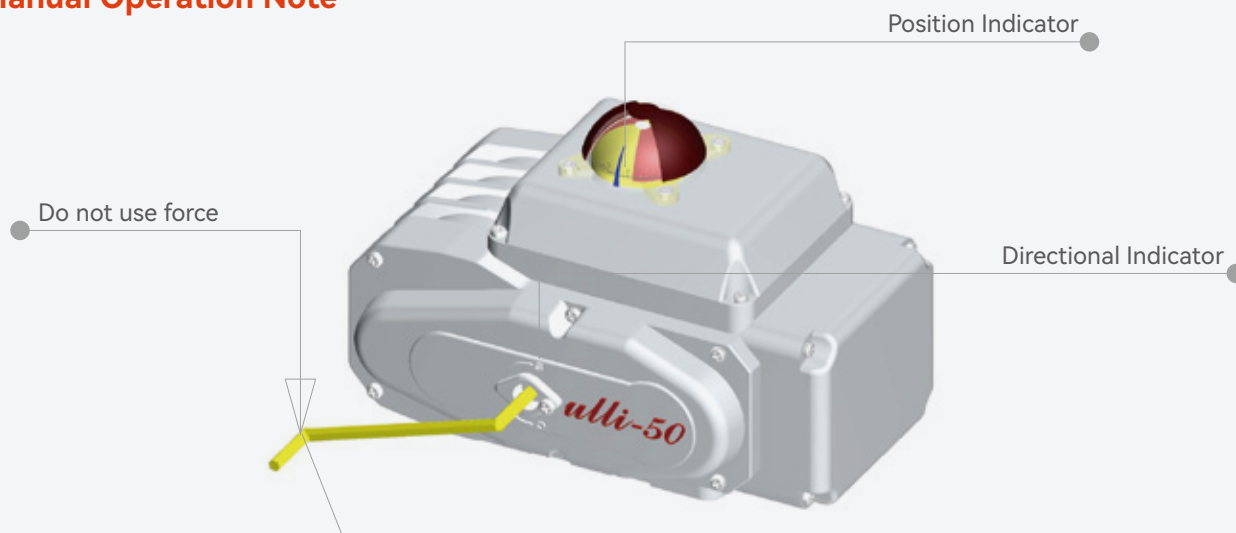
Compact, lightweight, user-friendly, cost-effective, and reliable.

New model



When installing the bracketless model, simply insert the valve stem into the corresponding hole of the electric actuator and tighten the flange screws.

Manual Operation Note



Instructions for manual operation

- This actuator is equipped with a dedicated s-shaped hand lever for convenient manual operation. To operate manually, gently rotate the lever to actuate the valve.
- Before beginning, refer to the position indicator to confirm the current valve position. Use the rotation direction indicator to determine the correct direction of movement.
- During operation, monitor the position change carefully. Do not exceed the 0 to 90 degree range to avoid potential damage. If you experience a significant increase in resistance, which indicates the actuator has reached its limit, stop manual operation immediately. Reverse operation may be performed if necessary.

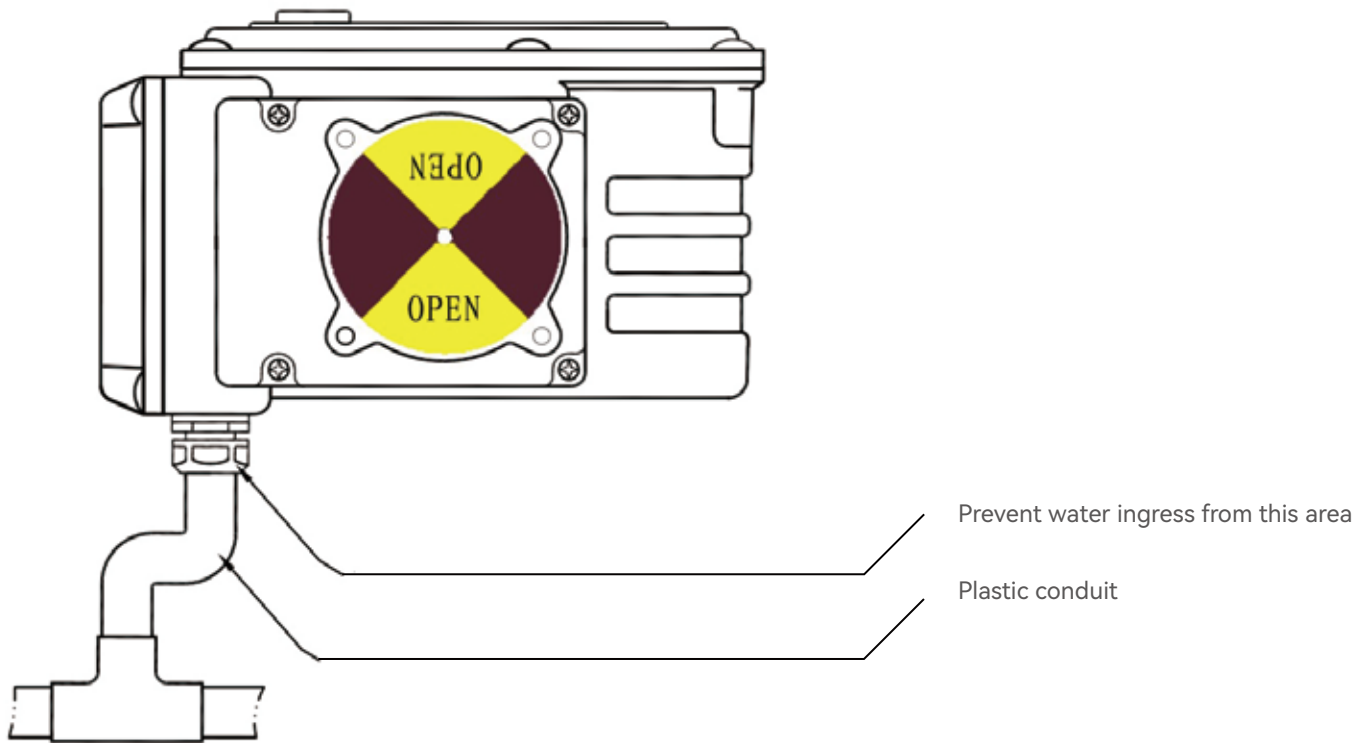
3. Wiring Connection

3-a Cable Wiring

- Use cable with an outer diameter of $\phi 9$ – $\phi 12$ mm to ensure reliable clamping and sealing.
- Pass the cable through the cable gland and secure the cable head to the terminal block according to the wiring diagram.
- Tighten the cable gland nut and its outer cover to securely lock the cable in place.
- The cross-sectional area of a single conductor should be greater than 1 mm^2 .

3-b Conduit Wiring

- Only conduits with an outer diameter of $\phi 9$ – $\phi 12$ mm are allowed, and proper waterproofing measures must be taken.
- As shown in the diagram, the actuator must be positioned higher than the conduit to prevent water from flowing into the actuator through the cable.



4. Connection

4-a Supply Voltage

Please confirm the power supply voltage according to the product nameplate or wiring diagram.

Possible voltage types include:

- AC220V $\pm 10\%$ 50/60Hz
- AC380V $\pm 10\%$ 50/60Hz
- AC110V $\pm 10\%$ 50/60Hz
- AC24V $\pm 10\%$ 50/60Hz
- DC24V–DC220V

4-b Fuse and Circuit Breaker Selection

A fuse or circuit breaker must be used.

Its rated capacity should be 2 to 3 times the actuator's normal operating current.

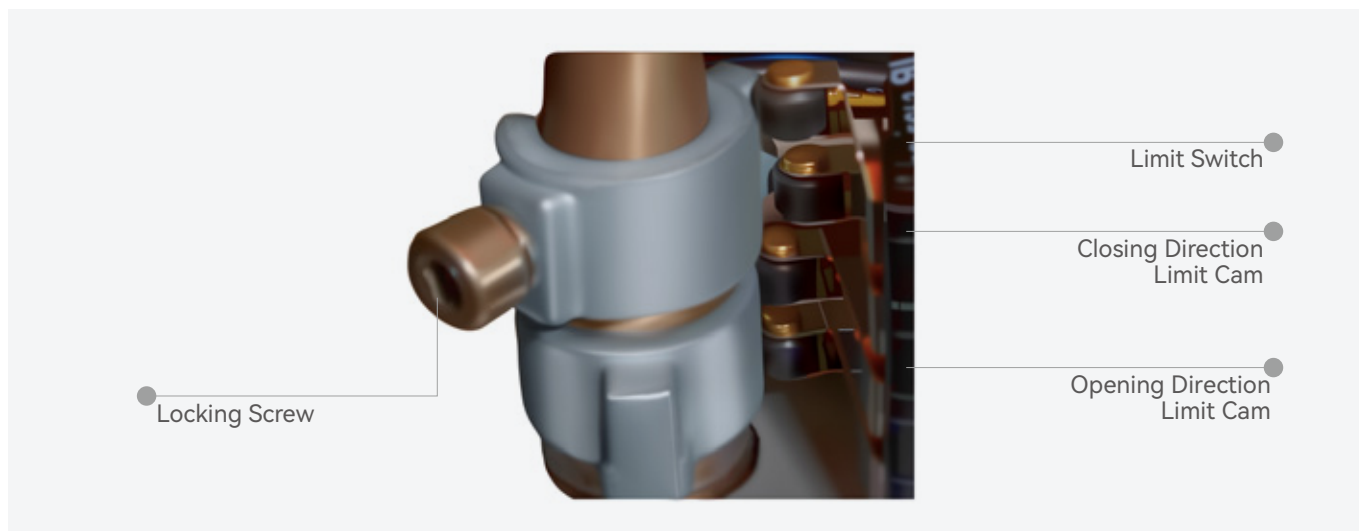
5. Adjustment of Opening and Closing Angles

5-a Electrical Limit Adjustment

1. Loosen the locking screw on the limit cam.
2. Insert a screwdriver into the side notch of the cam.
3. Gently rotate the cam to the desired position to modify the actuator's opening or closing angle.
4. Tighten the locking screw securely to fix the cam in place.

Warning: The adjustment range must not exceed -5 to $+95$ degrees, or it may lead to malfunction or damage.

Cam and Limit Switch Layout for ulli/digicon-02, 05, 10, 20:



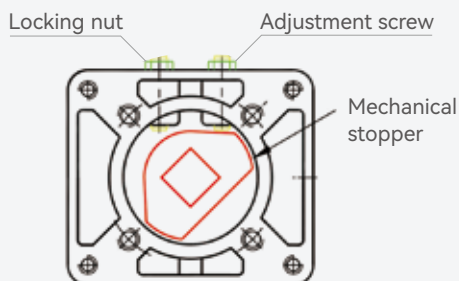
Cam and Limit Switch Layout for ulli/digicon-50, 100, 200, 400, 600:



Note

- For S-type models, after adjusting the electrical limit cam (lower cam), also adjust the signal cam (upper cam) accordingly.
- Ensure that the signal triggers approximately 3 degrees before the full-open or full-close position, so that the signal is sent in advance of the full stroke (for open or close action).

5.b Mechanical Limit Adjustment



- Turn the handle to the fully open position.
- Loosen the locknut (green line), then rotate the adjustment screw (yellow line) until it contacts the mechanical stop block (red line).
- Then, rotate the screw back half a turn, and tighten the locknut.
- Use the same method to adjust the fully closed position.

Note

After adjusting the electrical limit, the mechanical limit must be re-adjusted to ensure the electrical limit is activated before the mechanical limit is reached. This prevents gear damage and ensures the actuator's safety.



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