



## Product Catalogue

**AOITEC INTERNATIONAL PTE. LTD.**

Ultra-Compact Patented Actuators Engineered for the World



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**AOI**  
**AOITEC**

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## Instructions for Use

01

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# Company Overview

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Company Overview

Business Scope

Why Choose AOITEC

Achievements and Certifications

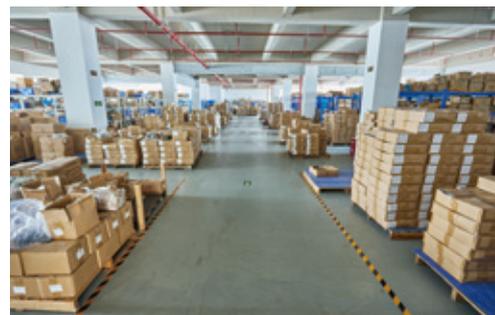
## Company Overview

### 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.

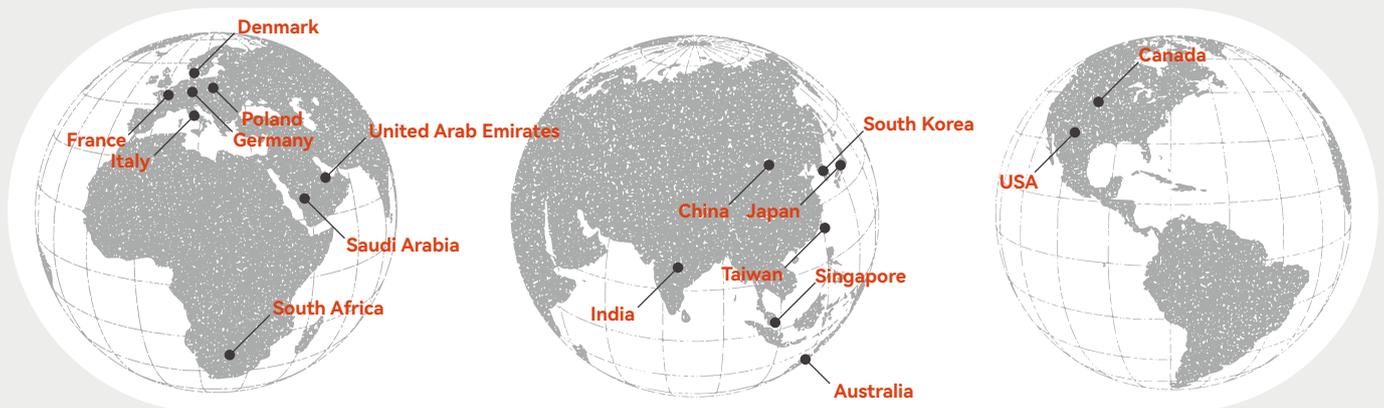


## Manufacturing Capabilities

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 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.

## 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.

## 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.

## 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



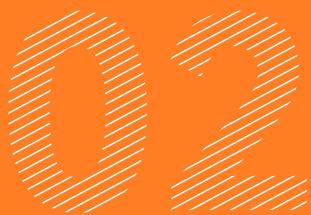
ISO 9001



Explosion Proof Certificate



IPX8 Test Report



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# Electric Actuators

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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 Return Actuator

Data Sheet for SuperCap Return 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**

Full travel time adjustable to 5s, 10s, 15s, 30s, or 60s. Proprietary patented design enables significantly increased speed and minimal heat generation.

- **Smart Control**

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

- **Versatile Power Option**

AC220V, AC110V, DC24V, AC24V, AC380V



### 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.

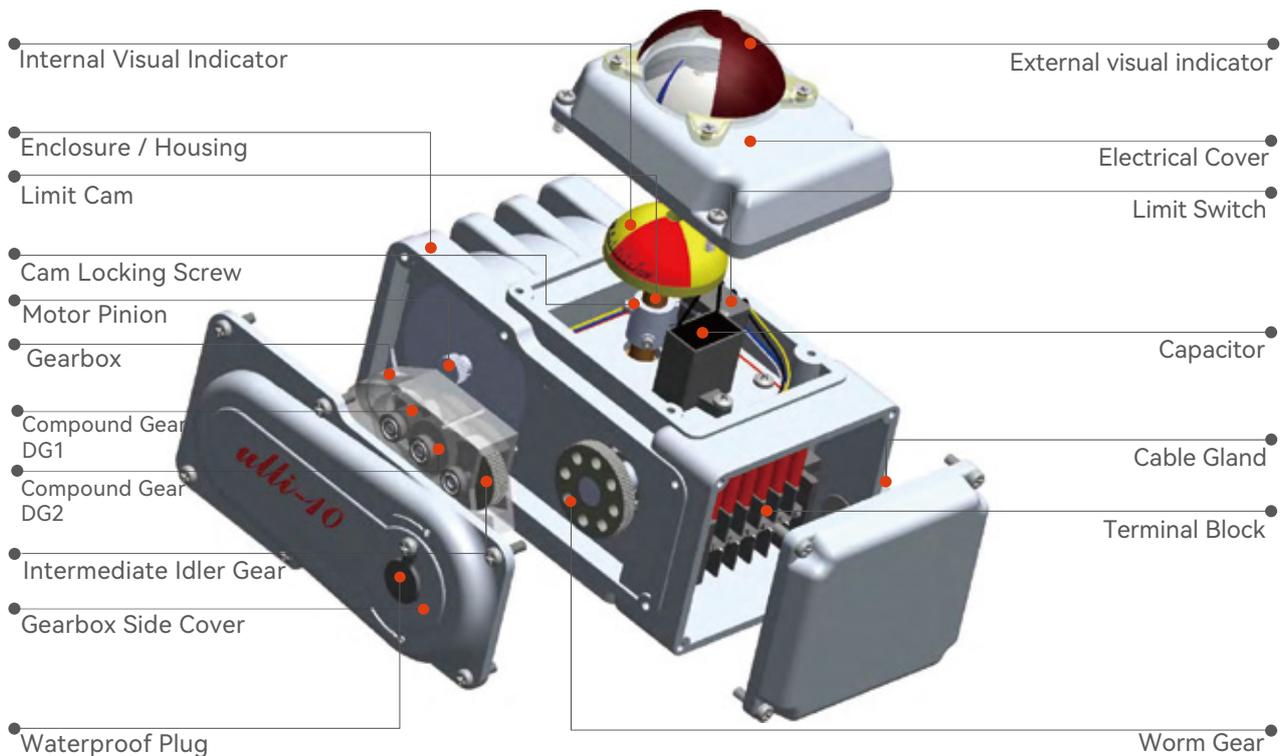
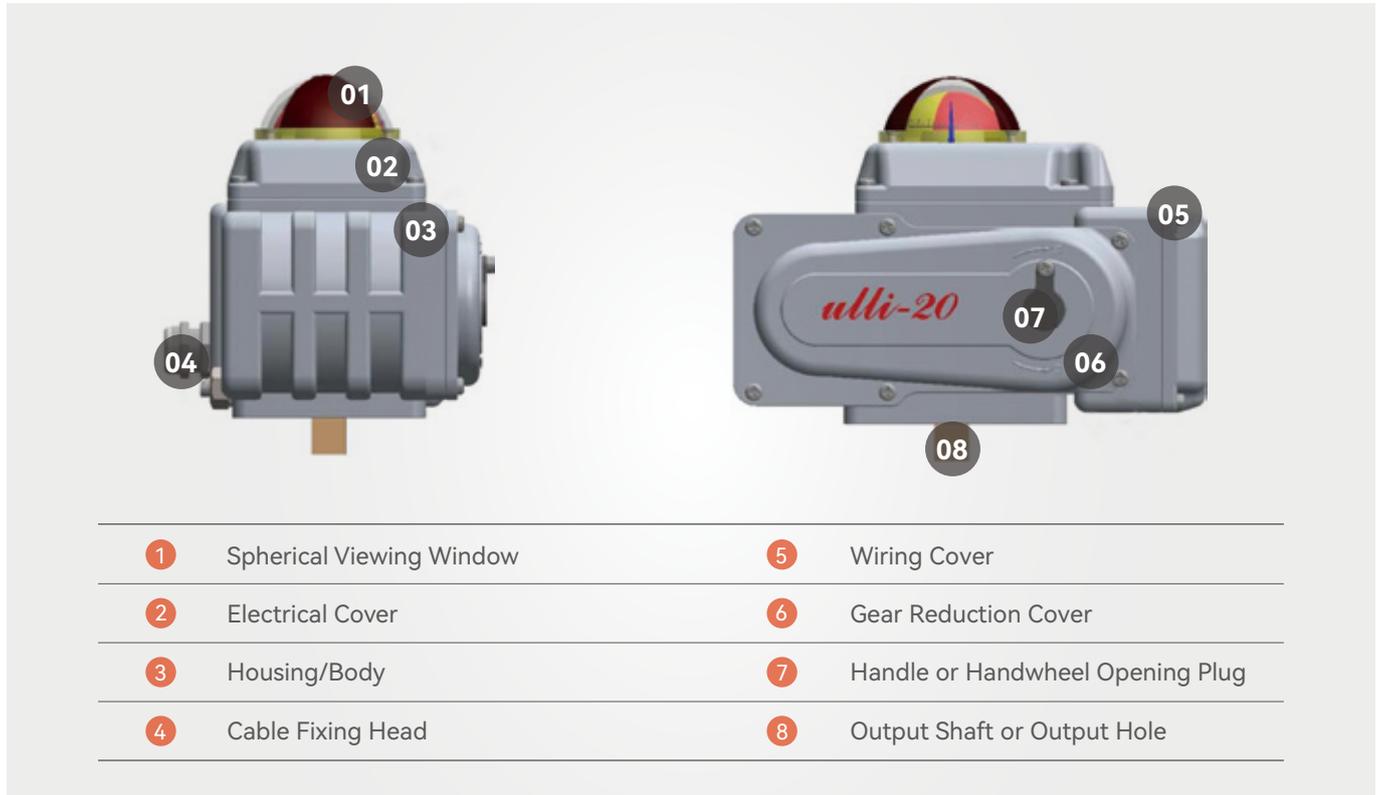
- **Wide Environmental Compatibility**

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



# Structure Diagram for ULLI & DIGICON Series

## Front View

**Spherical viewing window**

Allows for horizontal observation of the open/closed state from distance

**Electrical cover**

Various electrical components built in



**Wiring Cover**

Users open this cover to connect wires

**Gear reduction cover**

contains a gearbox inside

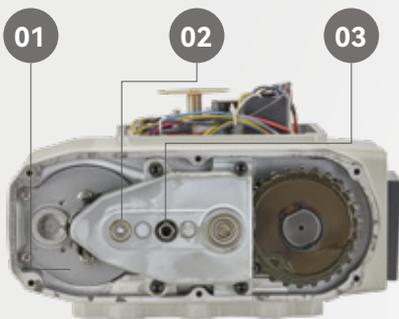
**Manual Override Port with Anti-Drop Feature**

For attaching a handle or installing a handwheel

**Stainless steel anti-drop screws**

A handle or handwheel can be installed here

## 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



**03 Internal Wiring**  
High-temperature resistant and anti-aging wiring for durability

**05 Electrical Limit Cam**  
Located below the indicator dial adjustable for open/close angles or signal output points.

**02 Japanese Potentiometer**  
High precision and wear resistance

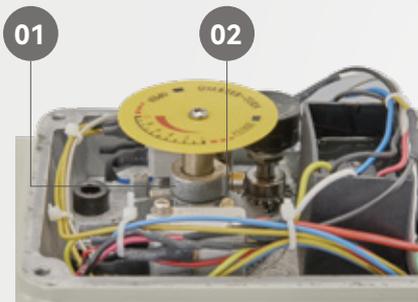
**01 Indicator Dial (Opening Plate):** Ball/flat

**06 Capacitor**  
Long lifespan with high-temperature resistance

**04 OMRON Micro Switch**  
Electrical limit position switch for precision control

## 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



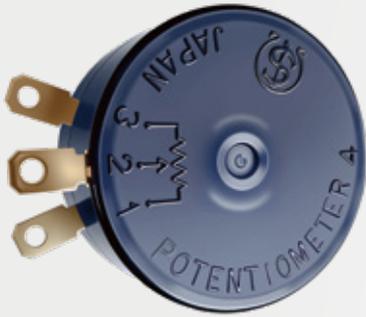
**Specially Designed Integrated Output Shaft**  
Integrates five positions into one, providing greater reliability and reducing gaps



**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 highstrength, 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



**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

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

## 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	45	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/90W	0.69A	0.6A	7.5	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	13	IP68
ulli-200	AC380V AC/DC24V AC220V AC110V	2000	100	300W/90W	1.38A	1.2A	13	IP68
ulli-400	AC380V AC/DC24V AC220V AC110V	4000	150	500W/150W	2.3A	2.0A	31	IP68
ulli-600	AC380V AC/DC24V AC220V AC110V	6000	150	500W/150W	2.3A	2.0A	31	IP68

# 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



-40°C (space heater required) to 55°C

-40°F (space heater required) to 131°F

### 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

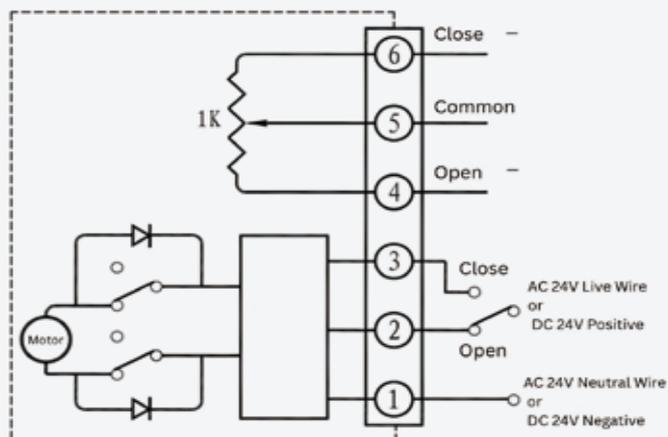
## AC24V / DC24V Dual Voltage Actuator

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	7.5	IP68
digicon-50	DC24V AC24V AC220V AC110V	500	30	300W/90W	4-20mA 0-10V	4-20mA 0-10V	8.7	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 torque, stroke time, inner bore dimensions, and other key metrics can be customized to meet specific application requirements.

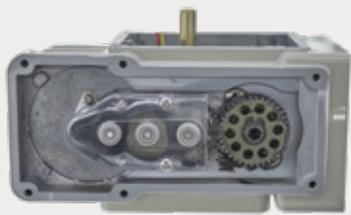
- Digicon-Lxx: Linear option with position indicator light.

## Explosion-Proof Series




Explosion-proof Certification: EX d II BT4

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




Standard model
Explosion-proof

**Reinforced for Safety**  
Standard Actuator vs Explosion-Proof

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

## 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	IP68
ulli-16EX	AC380V AC/DC 24V AC/DC 220V AC110V	160	30	110W/30W	0.72A	0.68A	10	IP68
ulli-25EX	AC380V AC/DC 24V AC/DC 220V AC110V	250	30	150W/45W	0.86A	0.8A	10	IP68
ulli-50EX	AC380V AC/DC 24V AC/DC 220V AC110V	500	30	300W/90W	1.38A	1.2A	10	IP68
ulli-60EX	AC380V AC/DC 24V AC/DC 220V AC110V	600	30	300W/90W	1.38A	1.2A	10	IP68
digicon-10EX	AC380V AC/DC 24V AC 220V AC110V	100	30	80W/23W	Input signal 4-20mA 0-10V	Output signal 4-20mA	11	IP68
digicon-16EX	AC380V AC/DC 24V AC 220V AC110V	160	30	80W/23W	Input signal 4-20mA 0-10V	Output signal 4-20mA	11	IP68
digicon-25EX	AC380V AC/DC 24V AC 220V AC110V	250	30	150W/45W	Input signal 4-20mA 0-10V	Output signal 4-20mA	11	IP68
digicon-50EX	AC380V AC/DC 24V AC 220V AC110V	500	30	300W/90W	Input signal 4-20mA 0-10V	Output signal 4-20mA	11	IP68
digicon-60EX	AC380V AC/DC 24V AC 220V AC110V	600	30	300W/90W	Input signal 4-20mA 0-10V	Output signal 4-20mA	11	IP68

## High Speed Series



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



Suitable for scenarios where solenoid valves are used but offers greater reliability, a wider range of applications, and compatibility with larger calibres.



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	100W / 50W	2.5	25-100
highspd-10	AC220V / AC110V	100	5	100W / 50W	3.5	80-150
highspd-25	AC220V / AC110V	250	5	200W / 100W	7.3	150-200
highspd-50	AC220V / AC110V	500	9	200W / 100W	7.3	200-300
highspd-100	AC220V / AC110V	1000	20	200W / 100W	11.5	300-400
highspd-200	AC220V / AC110V	2000	30	300W / 150W	11.8	400-500
highspd-400	AC220V / AC110V	4000	50	380W / 190W	30	600-700
highspd-600	AC220V / AC110V	6000	50	380W / 190W	30	800-1000
hidigico-5	AC220V / AC110V	50	10	100W / 50W	2.5	25-100
hidigico-10	AC220V / AC110V	100	10	100W / 50W	3.5	80-150
hidigico-25	AC220V / AC110V	250	10	200W / 100W	7.3	150-200
hidigico-50	AC220V / AC110V	500	15	200W / 100W	7.3	200-300
hidigico-100	AC220V / AC110V	1000	35	200W / 100W	11.5	300-400
hidigico-200	AC220V / AC110V	2000	50	300W / 150W	11.5	400-500
hidigico-400	AC220V / AC110V	4000	50	380W / 190W	30	600-700
hidigico-600	AC220V / AC110V	6000	50	380W / 190W	30	800-1000

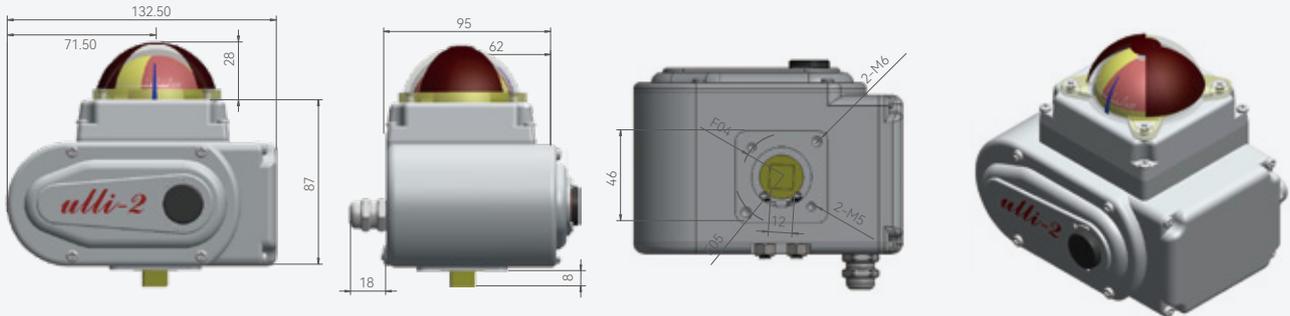
## Data Sheet for Linear Option

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

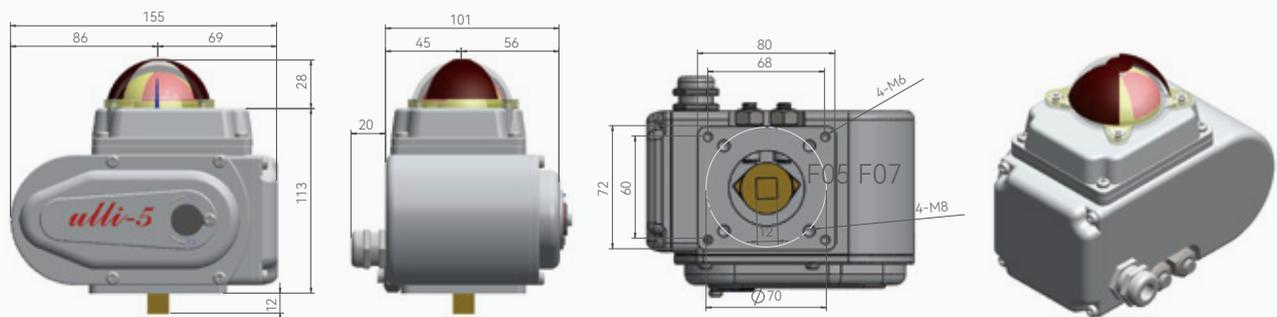
Model	Power Supply	Thrust (kgf)	Stroke	Stroke time for 50Hz (sec)	IP grade	Motor (in/out)	220V start current	220V rated current	Weight (kg)	Control Signal
ulli-L5	AC24V	50	20	60	IP65	20W/6W	0.8A,24V	0.7A,24V	1.2	
ulli-L10	AC24V	100	20	60	IP65	20W/6W	0.8A,24V	0.7A,24V	1.2	
ulli-L25	AC24V AC220V 110V	250	40	25/50	IP65	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	IP65	80W/23W	0.58A,220V 3.5A,24V	0.62A,220V 3.8A,24V	3.5	
ulli-L50	AC24V AC220V 110V	500	40	50	IP65	80W/23W	0.58A,220V 3.5A,24V	0.62A,220V 3.8A,24V	3.5	
ulli-L70	AC24V AC220V 110V	700	40	50	IP65	80W/23W	0.58A,220V 3.5A,24V	0.62A,220V 3.8A,24V	3.5	
ulli-L120	AC24V AC220V 110V	1200	80	50	IP65	200W//60W	0.9A,220V 5.3A,24V	0.95A,220V 5.8A,24V	7.8	
ulli-L200	AC24V AC220V 110V	2000	80	50	IP65	300W /90W	1.2A,220V	1.3A,220V	7.8	
digicon-L5	AC24V	50	20	60	IP65	20W/6W	0.8A,24V	0.7A,24V	1.3	0-10V 4-20mA
digicon-L10	AC24V	100	20	60	IP65	20W/6W	0.8A,24V	0.7A,24V	1.3	0-10V 4-20mA
digicon-L25	AC24V AC220V 110V	250	40	25	IP65	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	IP65	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	IP65	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	IP65	300W/90W	1.2A,220V	1.3A,220V	7.8	0-10V 4-20mA

# Dimensioned Drawings for ULLI & DIGICON Series - Male Type

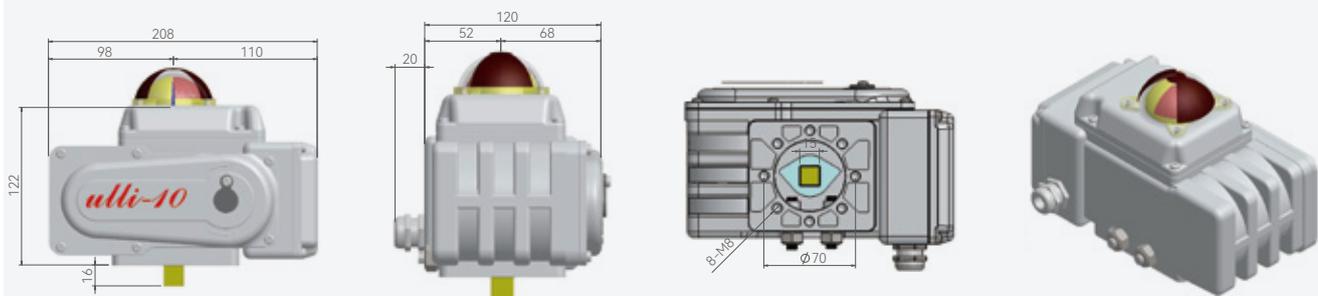
## ulli-2



## ulli-5 & digicon-5

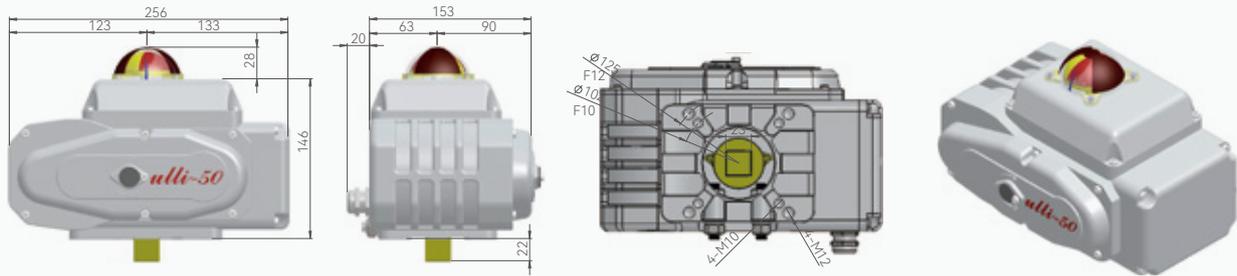


## ulli-10 & digicon-10

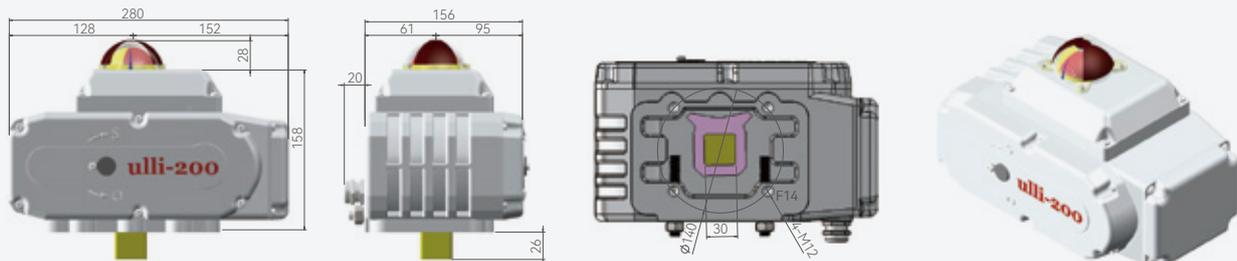


# Dimensioned Drawings for ULLI & DIGICON Series - Male Type

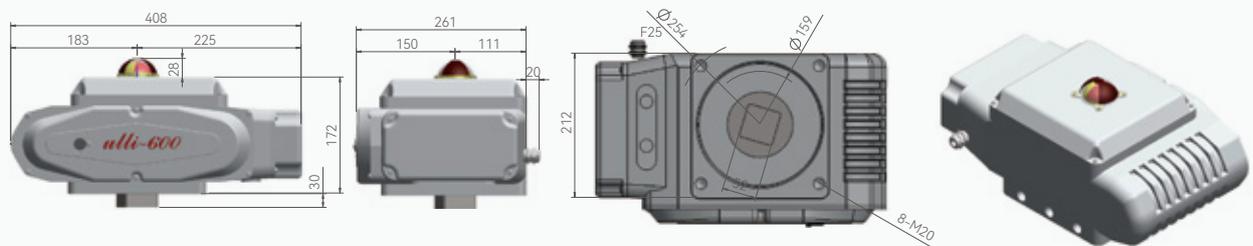
## ulli-25/50 & digicon-25/50



## ulli-100/200 & digicon-100/200

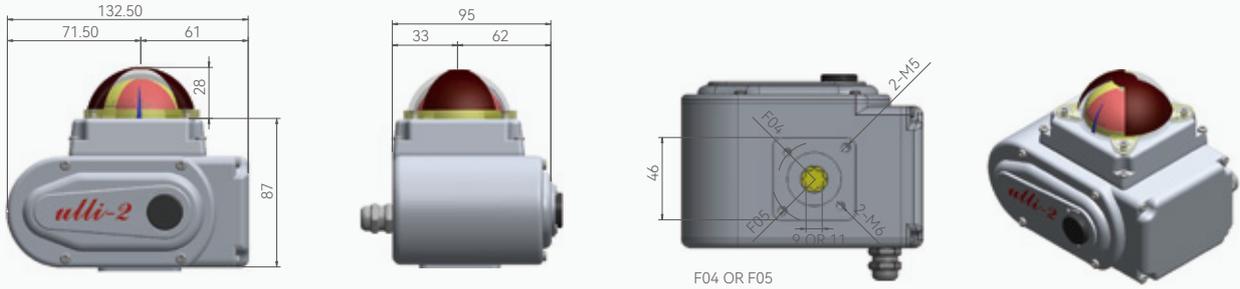


## ulli-400/600 & digicon-400/600

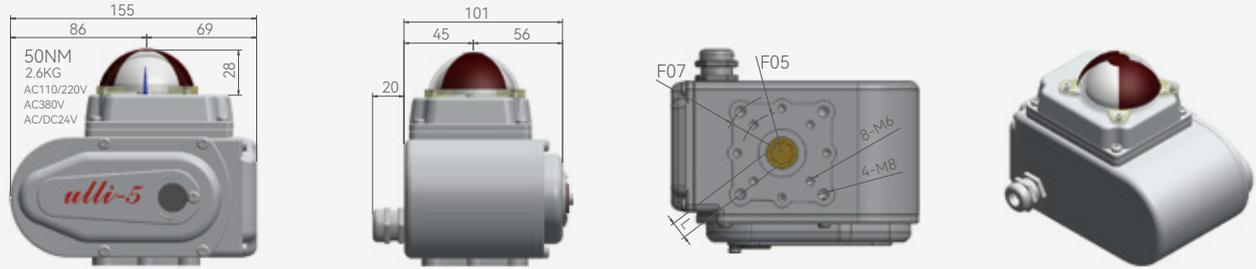


# Dimensioned Drawings for ULLI & DIGICON Series - Female Type

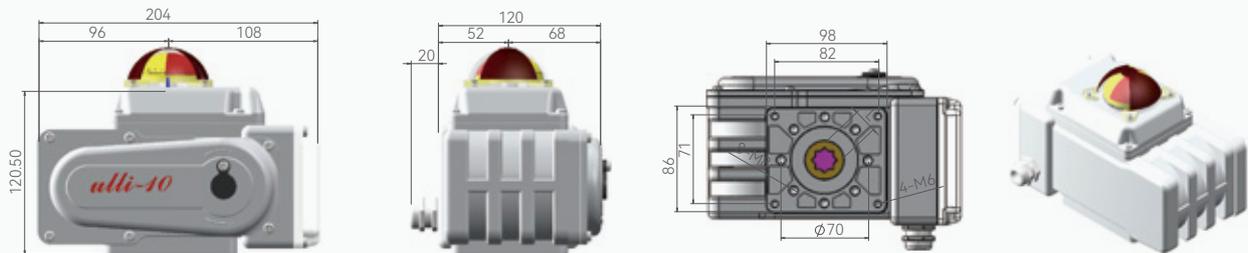
## ulli-2



## ulli-5

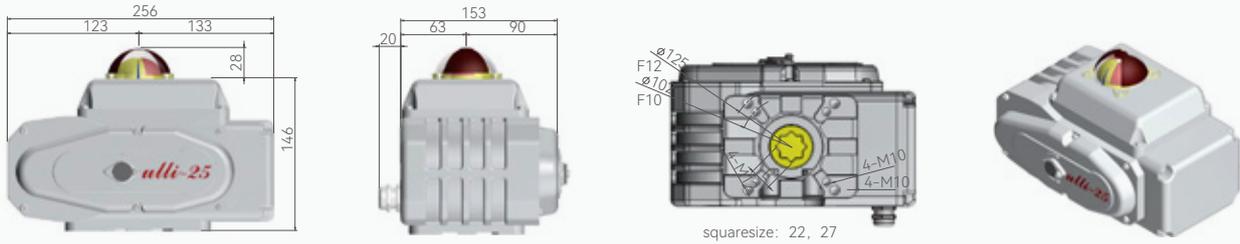


## ulli-10 & digicon-10

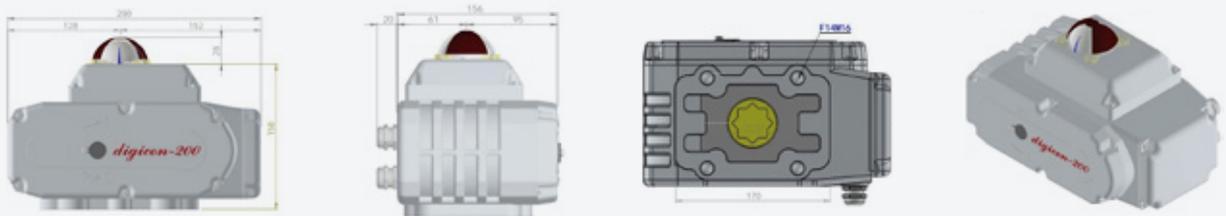


# Dimensioned Drawings for ULLI & DIGICON Series - Female Type

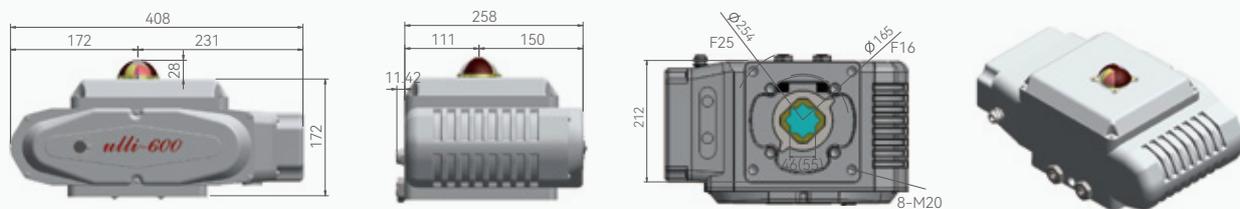
## ulli-25/50 & digicon-25/50



## ulli-100/200 & digicon-100/200

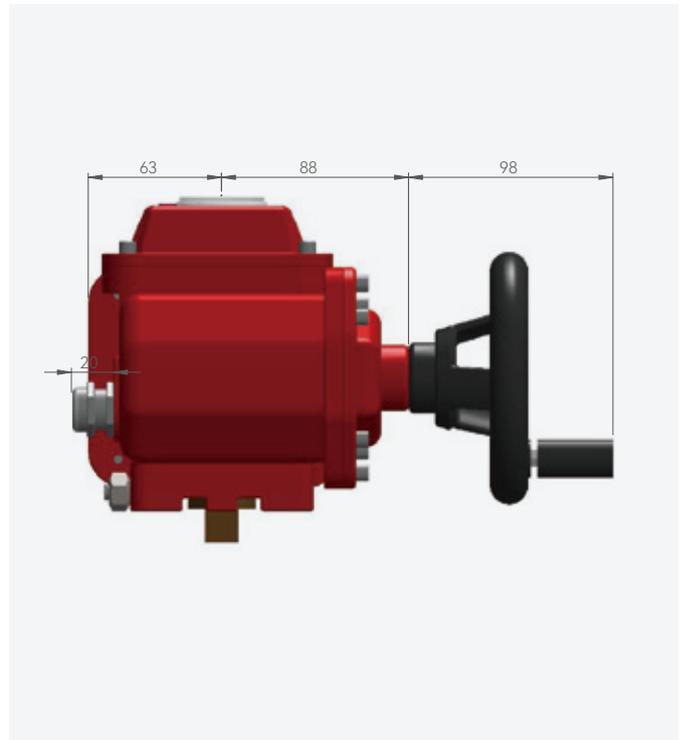
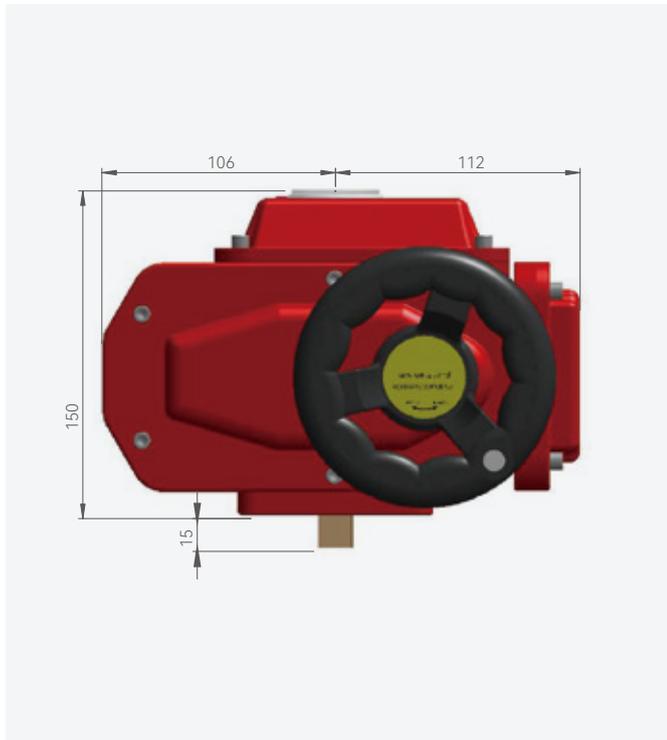


## ulli-400/600 digicon-400/600



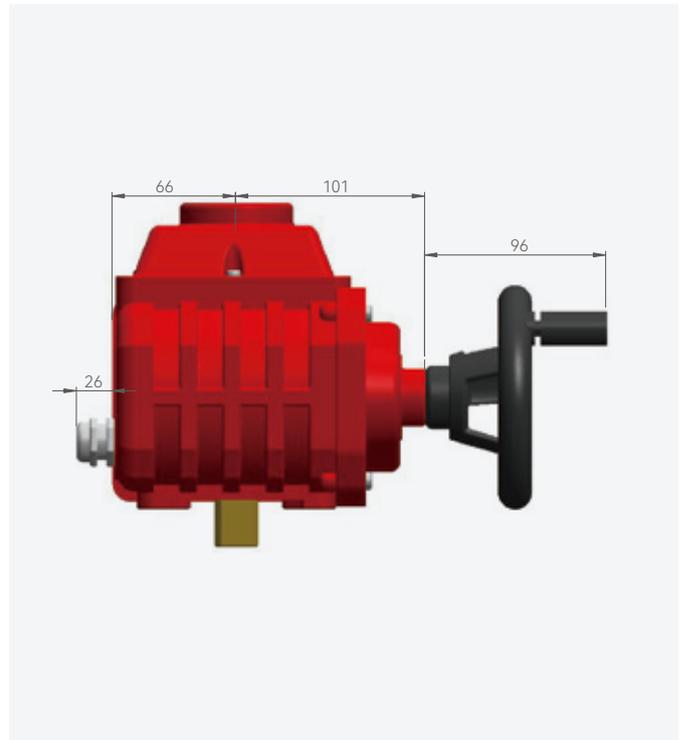
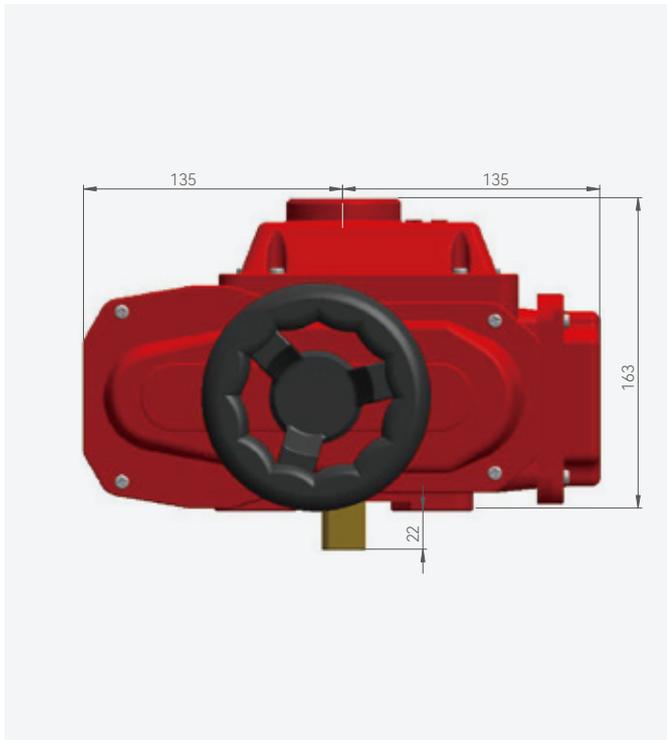
## Dimensioned Drawings for Explosion-Proof Series

### ulli-06/16EX digicon-06/16EX



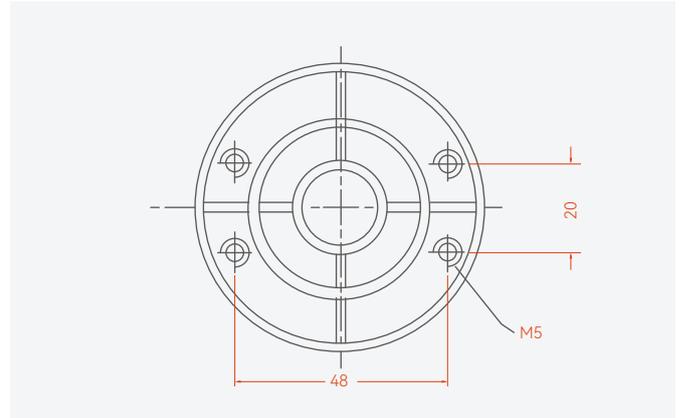
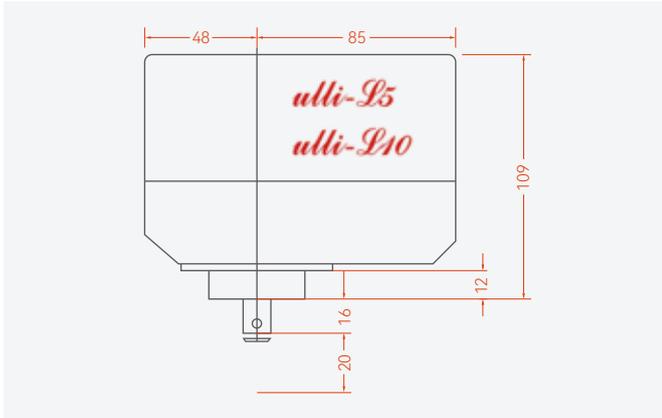
## Dimensioned Drawings for Explosion-Proof Series

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

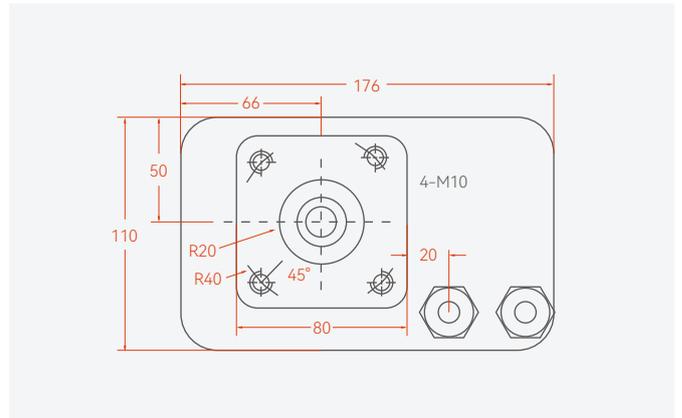
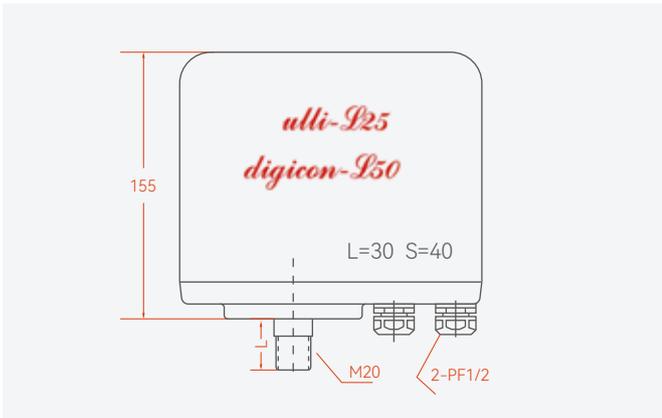


## Dimension Drawing for Linear Option

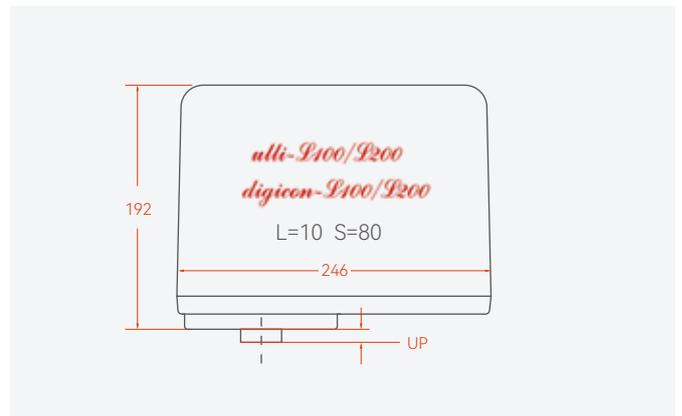
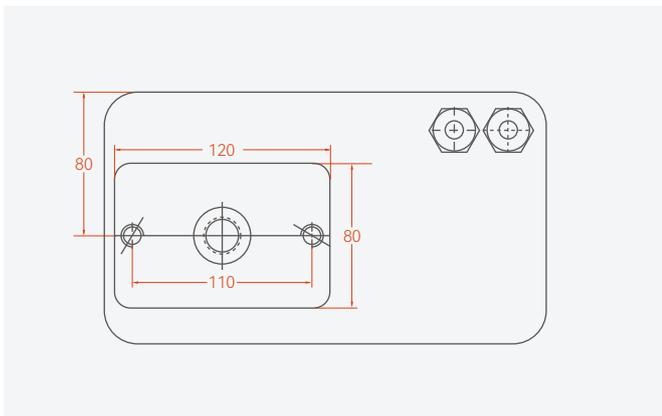
### *ulli-L5/L10 digicon-L5/L10*



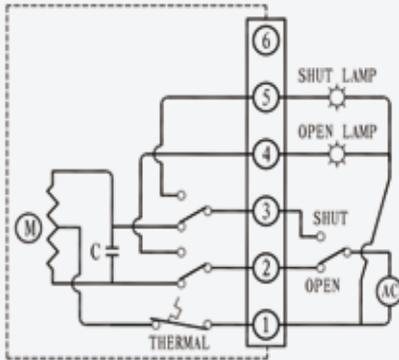
### *ulli-L25/L50 digicon-L25/L50*



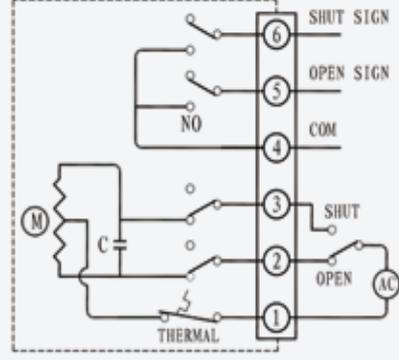
### *ulli-L100/L200 digicon-L100/L200*



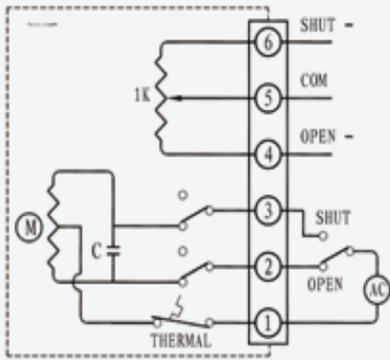
# Wiring diagrams



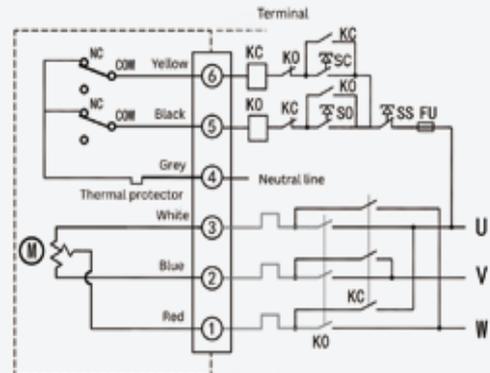
ulli-xx connection(std)



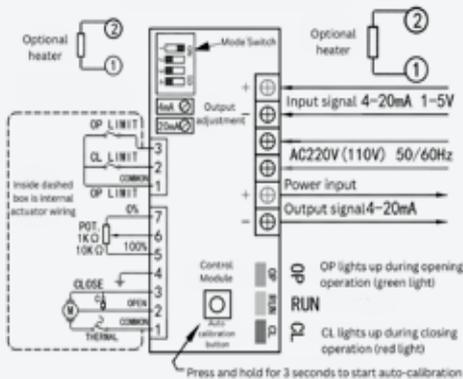
ulli-xxS connection



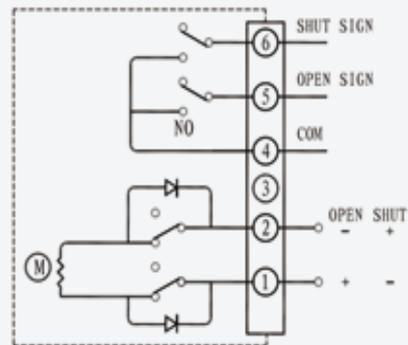
ulli-xxR connection



ulli-xxS connection



Digicon Connection



DC power connection

## Note

-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.

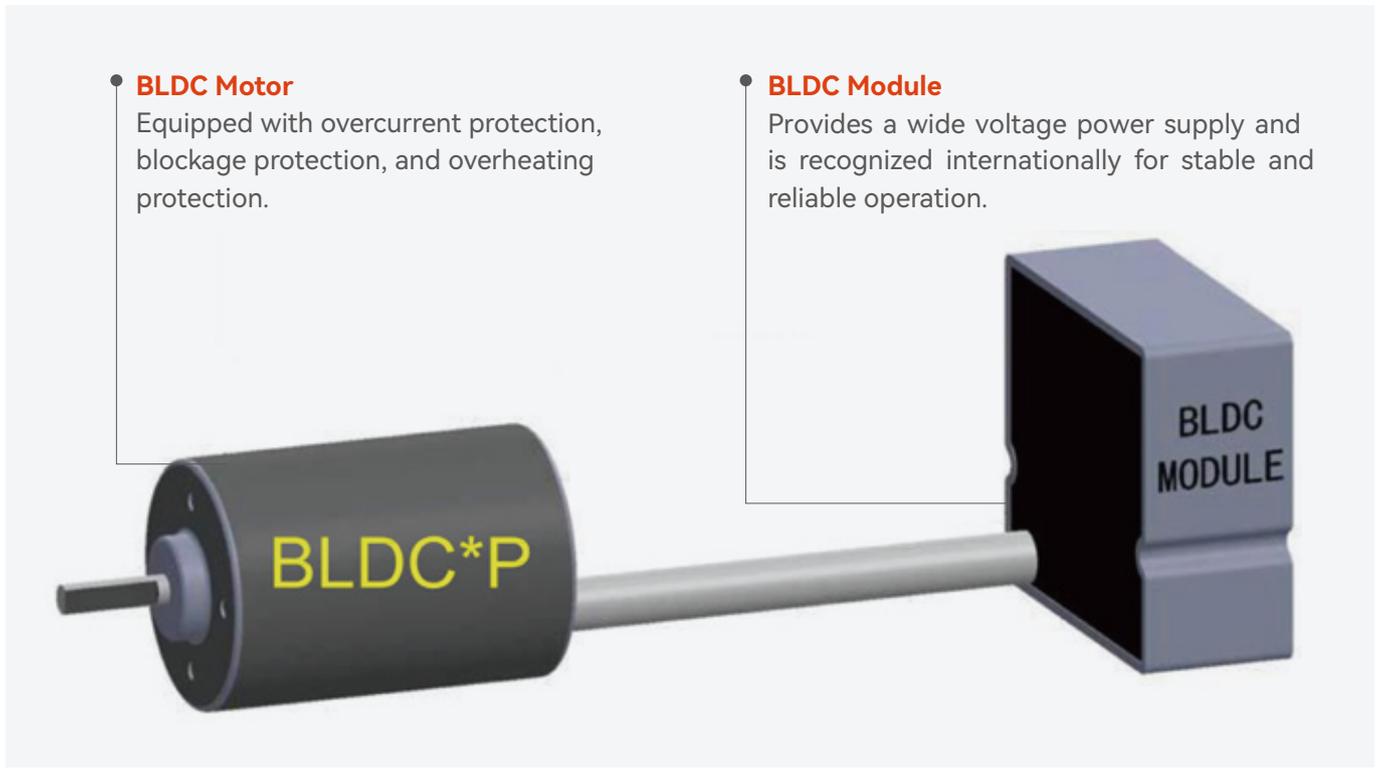
## BLDC Actuator



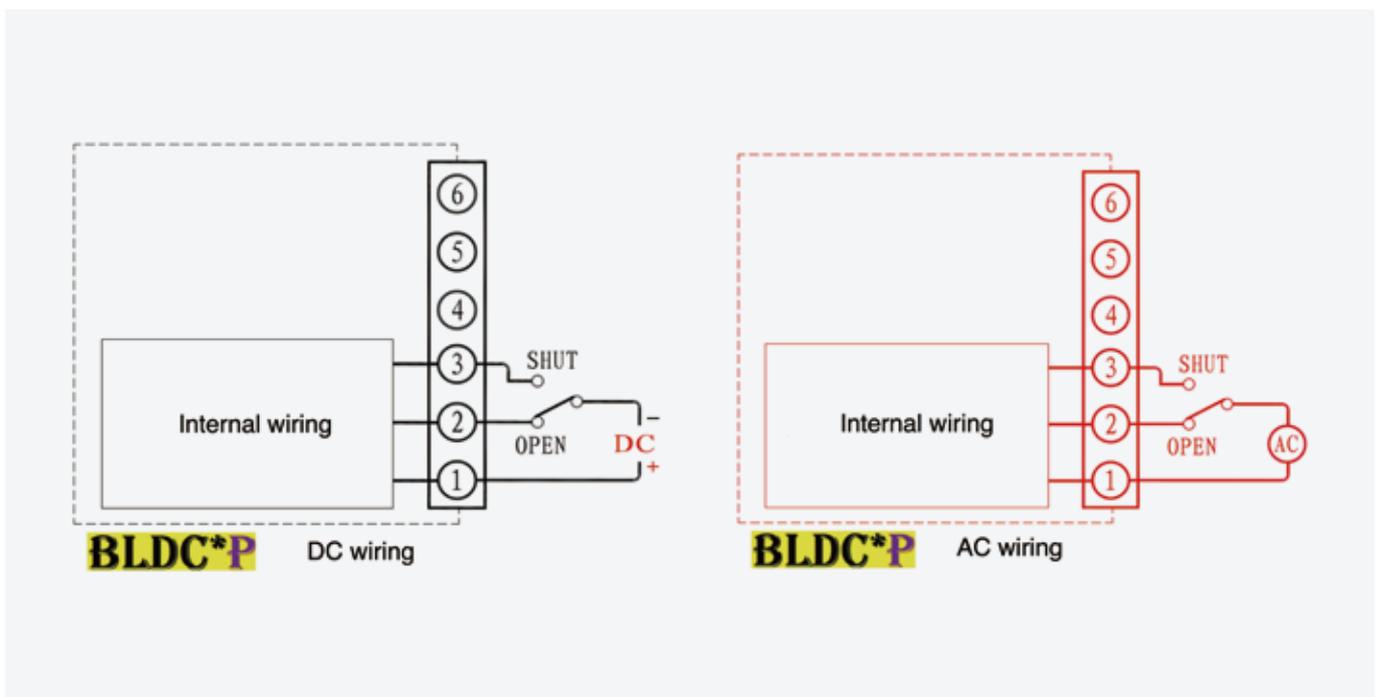
### Key Advantages of AOITEC BLDC Actuators

- **High Energy Efficiency Ratio**  
Achieves energy savings of 20%–60%, offering significant cost reductions over long-term operation.
- **100% Duty Cycle with Minimal Heat**  
Designed to generate less heat, enabling uninterrupted operation without the need for overheating protection mechanisms.
- **Overload Protection**  
Equipped with advanced overload protection to ensure the safety and longevity of both the actuator and the valve.
- **Multi-Power Source Compatibility**  
Supports a wide range of input voltages: DC12V, DC24V, AC24V, AC110V, and AC220V, 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.
- **Improved Safety**  
Unlike traditional DC motors, BLDC actuators eliminate sparks, and compared to AC motors, they generate less heat, ensuring safer operation.
- **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)	Stall Current (A)	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	0.25	0.8	2.6	IP68
BLDC*M-10	DC24V, AC24V AC80-260V	100	56	9.6	IN 4-20mA	OUT 4-20mA	3.6	IP68
BLDC*M-20	DC24V, AC24V AC80-260V	200	50	20	IN 4-20mA	OUT 4-20mA	3.7	IP68
BLDC*M-40	DC24V, AC24V AC80-260V	400	50	20	IN 4-20mA	OUT 4-20mA	7.6	IP68
BLDC*M-60	DC24V, AC24V AC80-260V	600	150	20	IN 4-20mA	OUT 4-20mA	7.6	IP68
BLDC*M-100	DC24V, AC24V AC80-260V	1000	50	48	IN 4-20mA	OUT 4-20mA	12.5	IP68
BLDC*M-200	DC24V, AC24V AC80-260V	2000	100	48	IN 4-20mA	OUT 4-20mA	12.5	IP68
BLDC*M-400	DC24V, AC24V AC80-260V	4000	100	100	IN 4-20mA	OUT 4-20mA	30.5	IP68
BLDC*M-600	DC24V, AC24V AC80-260V	6000	150	100	IN 4-20mA	OUT 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.

# SuperCap Return Actuators

## Key Features of AOITEC Supercapacitor Return Actuator



### Supercapacitor Energy Storage

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



### Automatic Reset on Power Loss

In case of sudden power outage, the actuator auto-opens or closes the valve as preset, protecting personnel and property



### Bistable Operation

Operates valves 2–5 times faster than conventional actuators for quick opening and closing



### DC Brushless Motor

High-efficiency brushless motor offers long life, zero maintenance, and superior reliability



### Wide Torque Range and Voltage Compatibility

Available in a variety of options, supporting AC18V to AC260V power input and torque ranges from 50NM to 6000NM



### Stable Torque, Compact Design

Compared to spring-return types, offers steadier torque in a smaller size



### Standby Power as Low as 3W

Consumes just 3W at rest. Energy-saving and eco-friendly, ideal for long-term operation.

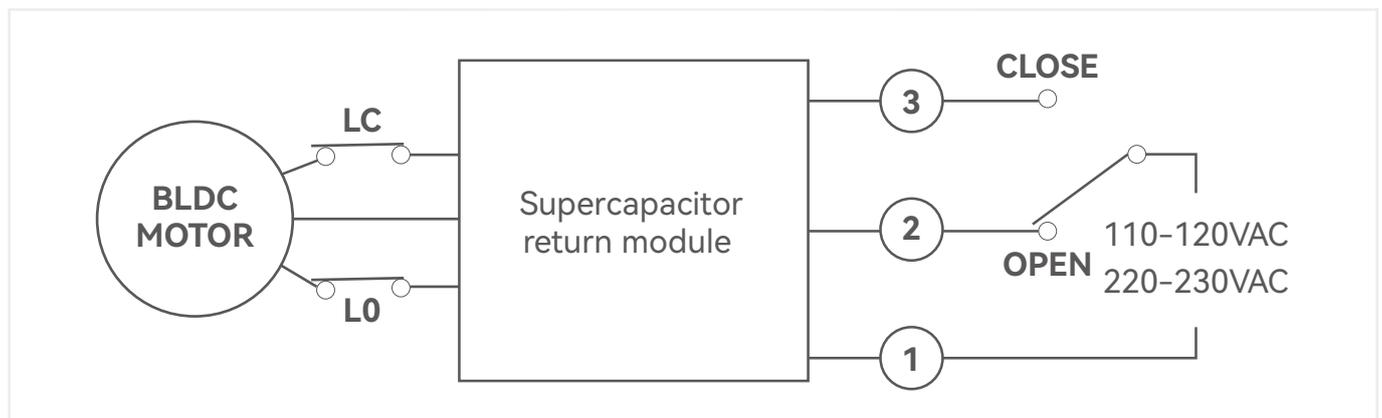
# Data Sheet for SuperCap Return Actuator

## Instructions and Reminders for Use

### Wiring Setup:

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

Model	Torque (Nm)	Torque (in-lb)	Time (sec)	Weight (kg)	Compatible Ball Valve (mm)	Compatible Butterfly Valve (mm)
SCRET-05	50	442	6	5	15-40	50-80
SCRET-10	100	885	10	5	50-65	50-125
SCRET-25	250	2212	20	10	65-80	150-200
SCRET-50	500	4425	30	12	80-100	200-250
SCRET-100	1000	8850	50	12	125-150	300-400
SCRET-200	2000	17700	100	12	150-200	400-500



### Special Notes

- On initial power-up after wiring, operation may take several seconds—this is normal, not a malfunction.
- Customers can choose between two power outage modes when placing an order.

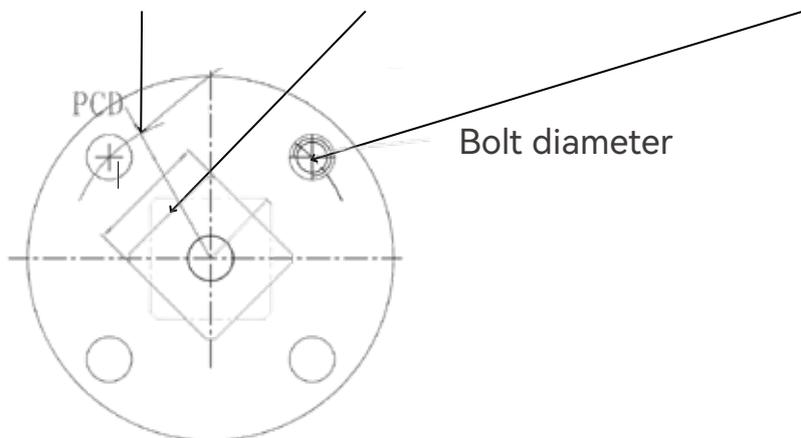
**Default Option:** Valve closes during a power outage.

**Alternate Option:** Valve opens during a power outage.

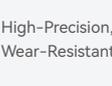
# Direct Mounted Dimensions for Butterfly Valve

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

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



## Options and Add-Ons

1	Viewing Window Type	 	Free
		Flat Viewing Window Spherical Viewing Window	
2	Female OR Male Type	<ul style="list-style-type: none"> <li>• Female(recessed connection) <ul style="list-style-type: none"> <li>- more compact, smaller diameter, high precision</li> </ul> </li> <li>• Male (protruding connection) <ul style="list-style-type: none"> <li>- Taller height, larger diameter, more flexible installation</li> </ul> </li> </ul>	Free
3	Outer Cover Colour	  	Free
		Black Blue Gray	
4	Output Shaft Types	<ul style="list-style-type: none"> <li>• Four-Square Output Shaft</li> <li>• Round-Hole Output Shaft</li> <li>• Double-D Output Shaft</li> <li>• Keyed Output Shaft</li> </ul>	Free
5	Voltage Options	<ul style="list-style-type: none"> <li>• AC220V Single-Phase</li> <li>• AC380V Three-Phase</li> <li>• AC110V Single-Phase</li> <li>• AC24V Single-Phase</li> <li>• DC24V 220V etc.</li> </ul>	Free
6	Handwheel		Chargeable
		Manual disengagement supported across multiple models	
7	Power Outage Return	In case of power failure, follow preset instructions to open or close the valve to ensure safety and property protection	Chargeable
8	Electronic Overload Protection	<ul style="list-style-type: none"> <li>• Protection against bidirectional overload</li> <li>• Overload output terminals</li> <li>• Multiple voltage options</li> </ul>	Chargeable
9	Brushless DC Motor Drive	<ul style="list-style-type: none"> <li>• High efficiency</li> <li>• Low heat output</li> <li>• High configuration and long lifespan</li> </ul>	Chargeable
10	Current Position Feedback (Current Position Transducer)	<ul style="list-style-type: none"> <li>• Protection against bidirectional overload</li> <li>• Overload output terminals</li> <li>• Multiple voltage options</li> </ul>	Chargeable
11	Advanced H-Class Configuration	<ul style="list-style-type: none"> <li>• Includes advanced protective labels with high standards</li> </ul>   	Chargeable
		High-Precision, Wear-Resistant	Acid and Alkali Resistant, UV Resistant, Highly Weather-Resistant

### 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.

# 03

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## Control Packs and Modules

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Auto Setting Control Pack (FACP-11)

FACP-11 Interface, Operation and Indicator Guide

## 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

High Control Sensitivity up to 250:1 (adjustable)

Easy Installation and Wiring

Compact and Lightweight Design

Encapsulated for dust and shock resistance

Compatible with 1k $\Omega$ , 5k $\Omega$ , 10k $\Omega$

#### 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

### Electrical Specifications

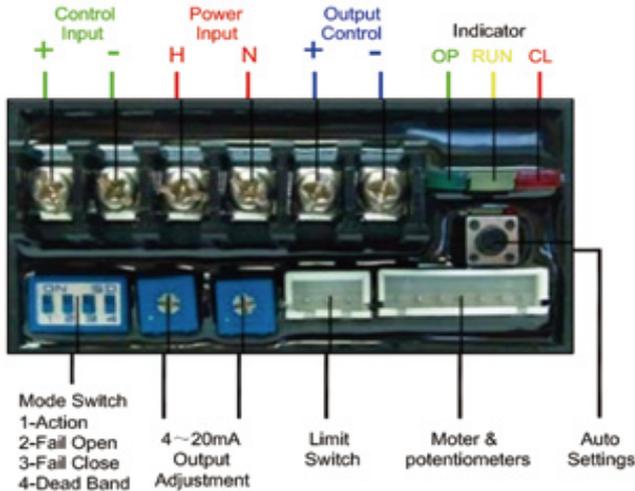
Power	110vac or 220vac 50/60Hz
Control Signal Input	4~ 20mA dc or 2~10vdc
Output Signal	4~20mA 1% DC (RL:250ohm)
Output Power	200W at 220V; 150W at 110V
Resolution	≥ 250:1

### Power consumption

Max 150W @110vac or 200W @220vac

# FACP-11 Interface, Operation and Indicator Guide

## Module Terminal Layout

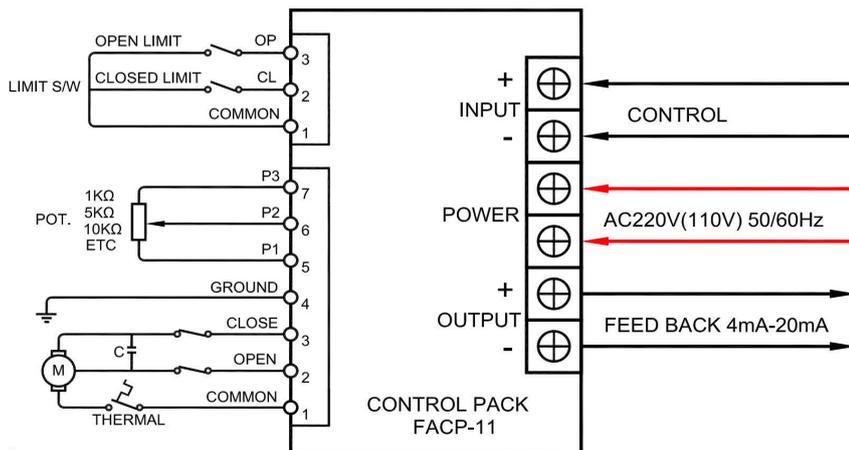


### Indicator

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

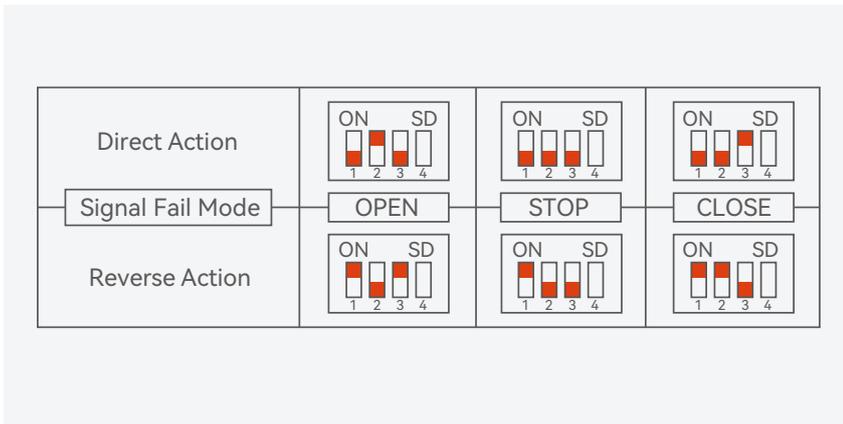


## Blockage Protection

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
- Potentiometer P2

# 04

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## Electric Valves

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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)	Valve height (Hv)	Head height (H)	IS05211 (P)	IS05211 (P)
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)	Head height (H)	ISO5211 (P)	ISO5211 (P)
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	Valve Length L	Valve Height H
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	H	Valve Body Thickness (mm)	Weight (kg)	Special Features
50	2	ulli-2	161	230	43	5	
65	2.5	ulli-5	175	244	46	6	
80	3	ulli-5	181	250	49	7	
100	4	ulli-10	200	114	56	9	
125	5	ulli-16	213	127	64	11	
150	6	ulli-16	226	139	70	13	
200	8	ulli-25	260	175	71	20	
250	10	ulli-50	292	203	76	26	Overload protection
300	12	ulli-60	337	242	83	40	Overload protection
350	14	ulli-100	368	267	92	62	Overload protection
400	16	ulli-100	400	309	102	83	Overload protection
450	18	ulli-200	422	328	114	106	Overload protection
500	20	ulli-200	480	361	127	155	Overload protection
600	24	ulli-400	560	459	154	217	Overload protection
700	28	ulli-400	624	520	165	322	Overload protection
800	32	ulli-400	672	591	190	422	Overload protection
900	36	ulli-600	756	660	203	550	Overload protection
1000	40	ulli-600	840	730	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

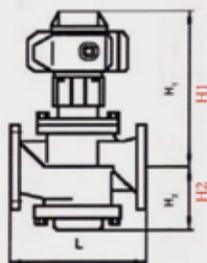
Error margin  $\leq 5\%$ .

### 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 (m <sup>3</sup> /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  $-20^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$ .

#### 1b. Outdoor Installation Notes

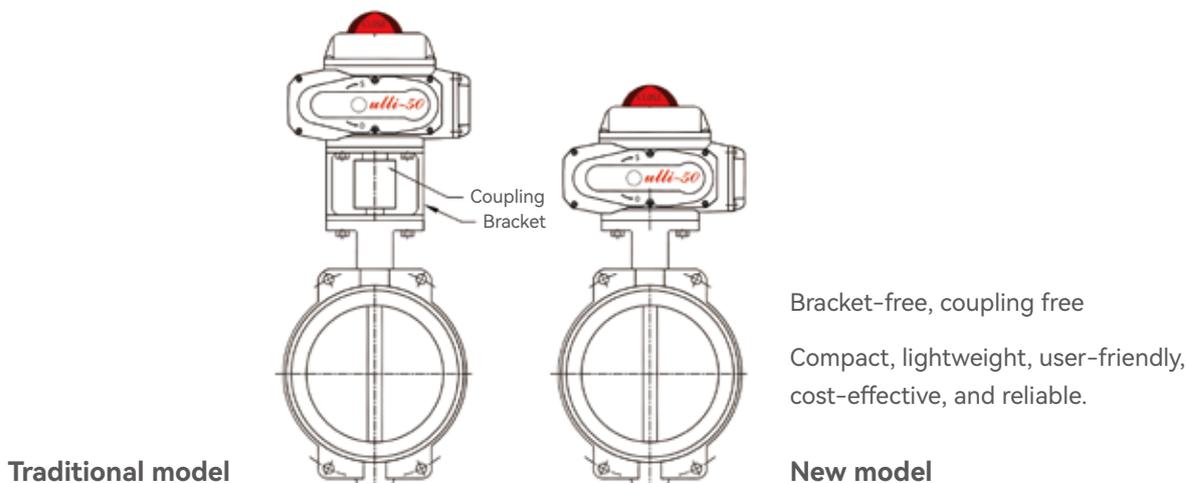
- Protective covers must be added, and the rubber sealing boot must be properly secured to prevent malfunction.

#### 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.

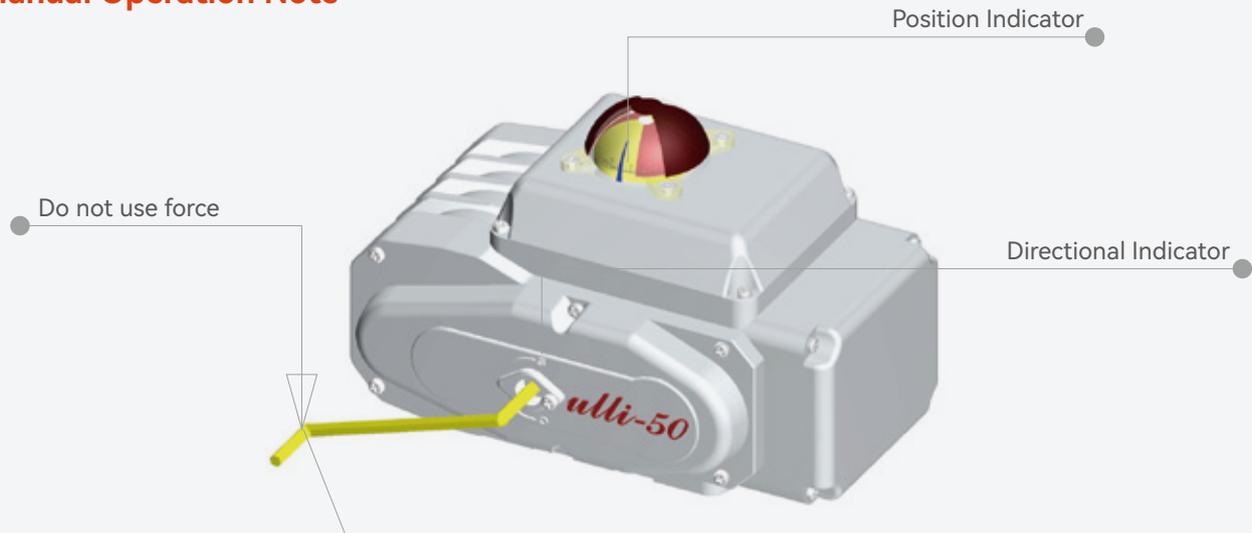
### 2. Connection to Valve (Bracket-Mounted Type)

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.



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.

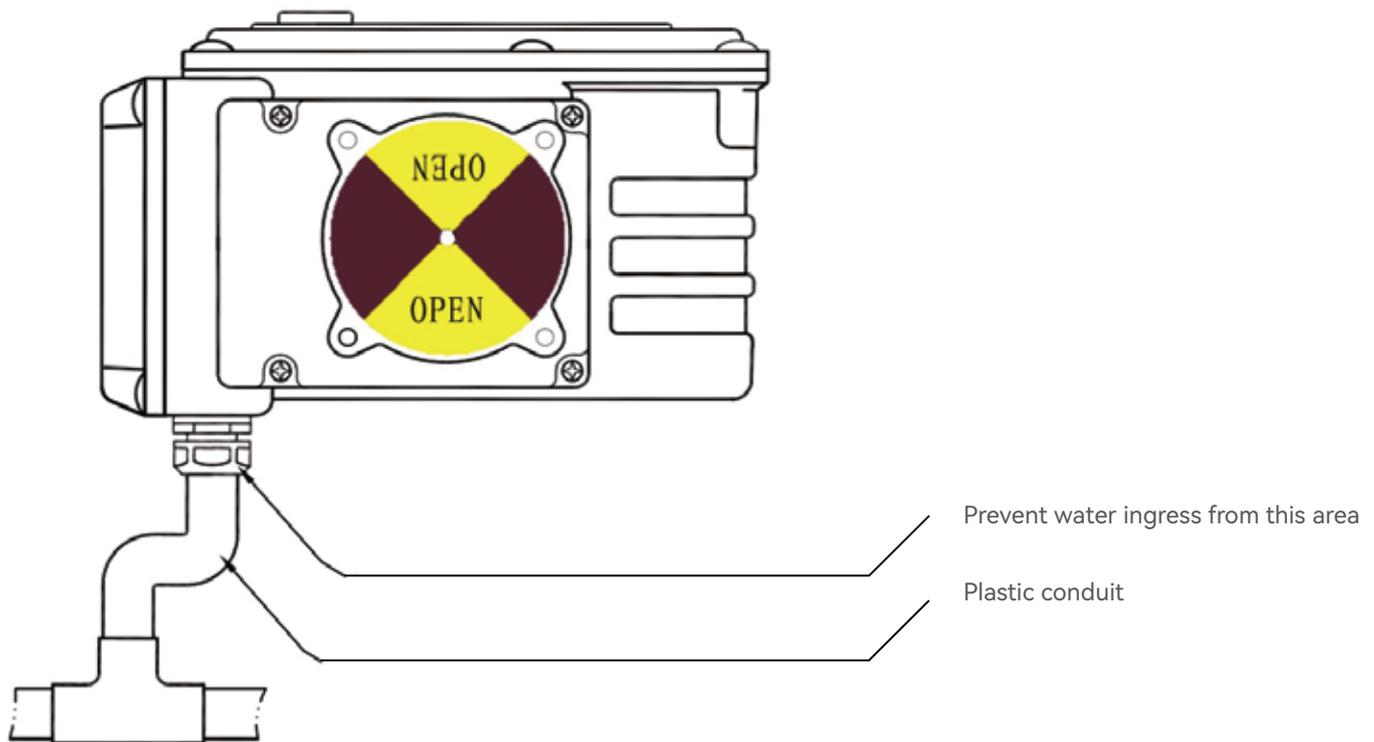
## 3. Wiring Connection

### 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  $1 \text{ mm}^2$ .

### 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.

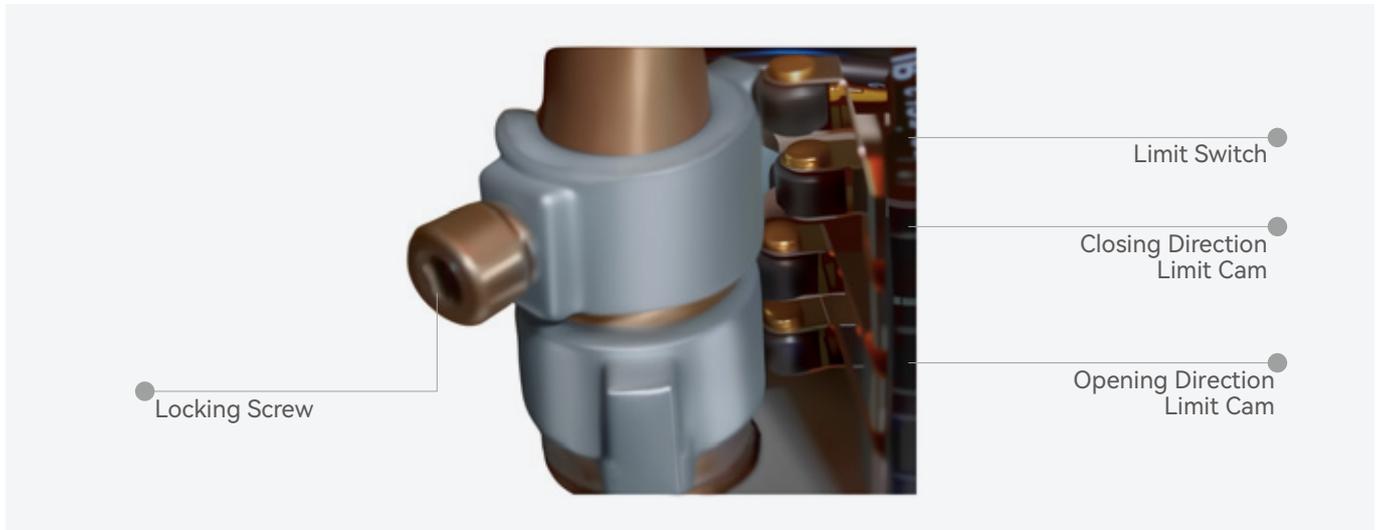
## 5. Adjustment of Opening and Closing Angles

### 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:



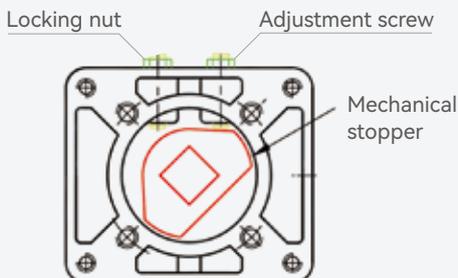
### Cam and Limit Switch Layout for ulli/digicon-50, 100, 200, 400, 600:



**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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