Product Catalogue

AOITEC INTERNATIONAL

Smart and reliable automation

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Company Overview:

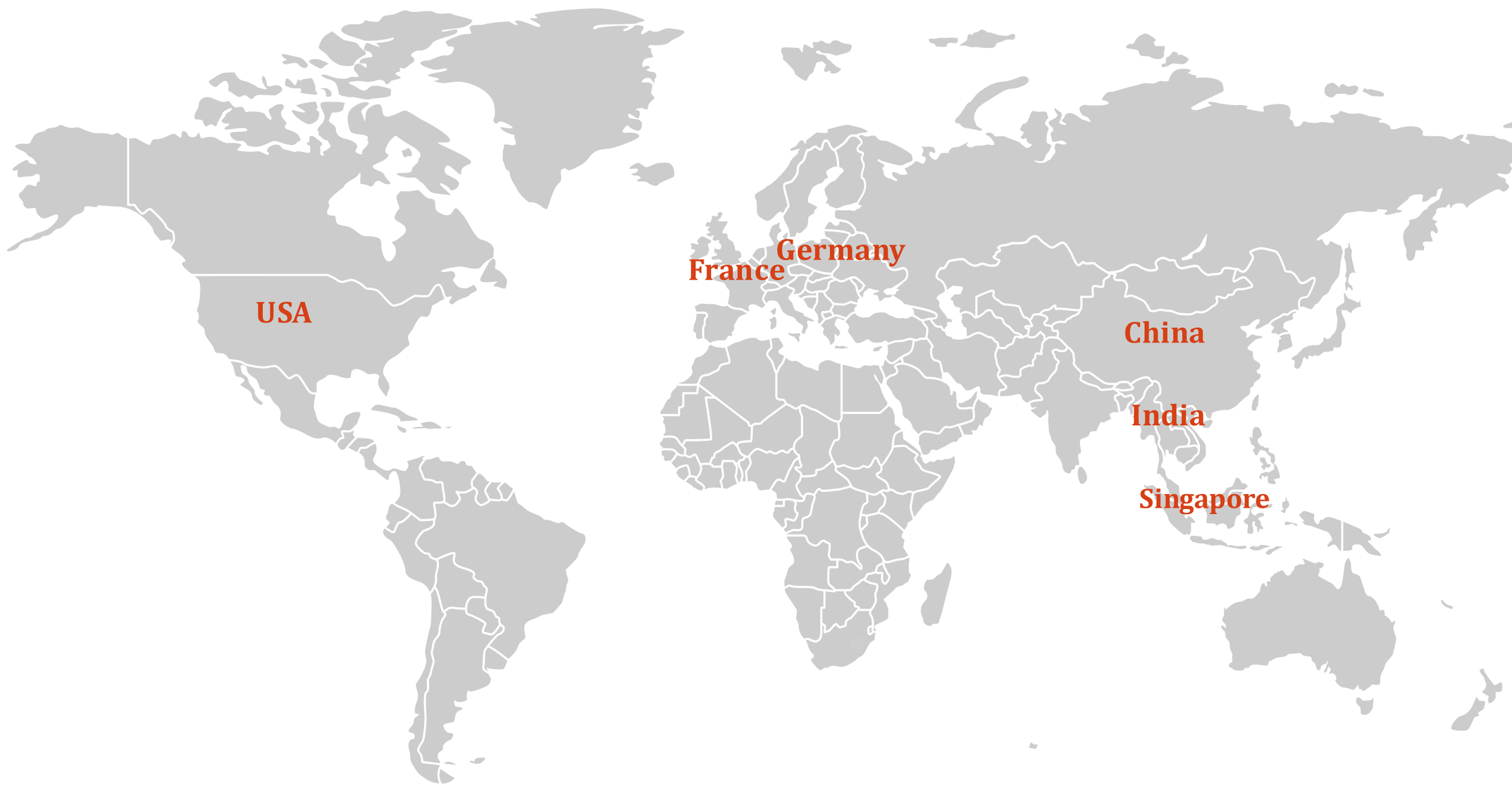
AOITEC INTERNATIONAL is strategically based in Singapore and holds exclusive sales rights for products from AOITEC (GD) Co., Ltd. AOITEC has over 30 years of expertise in the design and manufacturing of valve electric actuators. The parent company's products are highly regarded in high-end global markets. AOITEC's professional team brings extensive experience in fluid automation control, electric and pneumatic valves, turnkey equipment solutions, and the industrial automation sector.

Technology leadership

AOITEC is a high-tech company specializing in the development, production, and marketing of a wide range of actuators and automatic control system equipment. As a leader in mechanical and electrical integration, the company designs and manufactures its products in strict accordance with the JB/T8219-1999 standard. It adheres to the ISO9001 quality management system and has obtained internationally recognized certifications, including CE and CSA, ensuring the highest quality standards.

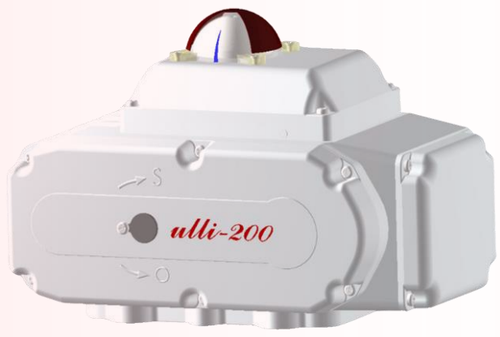
Global presence

At AOITEC, we combine a strong domestic foundation with a robust global presence, exporting our products to key markets such as the United States, Japan, Europe, South Korea, Taiwan, Russia, Hong Kong, and many other countries and regions. This extensive reach enables us to deliver both standard and custom-engineered solutions with full technical and application support, meeting the needs of customers worldwide. Our long-standing partnerships with distributors and industry stakeholders allow us to serve a diverse range of industries effectively, ensuring reliable service and innovative solutions tailored to each market.



Business Scope:

Electric rotary actuators (Switch and modulating)



ulli series
Switch Type Actuators
with a torque range of
20Nm to 6000Nm

digicon series
Modulating Type Actuators
with a torque range of 20Nm
to 6000Nm

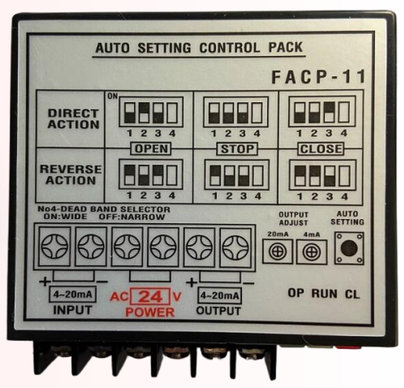
highspd® series
5-20x faster
than traditional actuators

Brushless DC
Actuators

SuperCap Return
Actuators
…….

Electric Linear Actuators (Switch and modulating)

Control packs and Modules



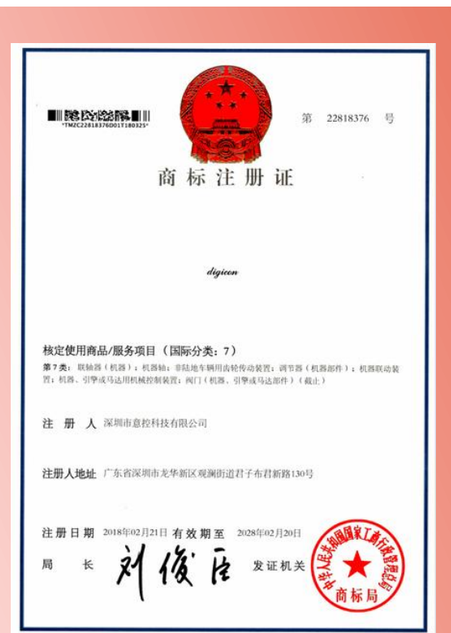
Electric Valves

Butterfly Valve

Ball Valves

AOITEC's achievement and certifications

Business License



Trademark Registration Certificate

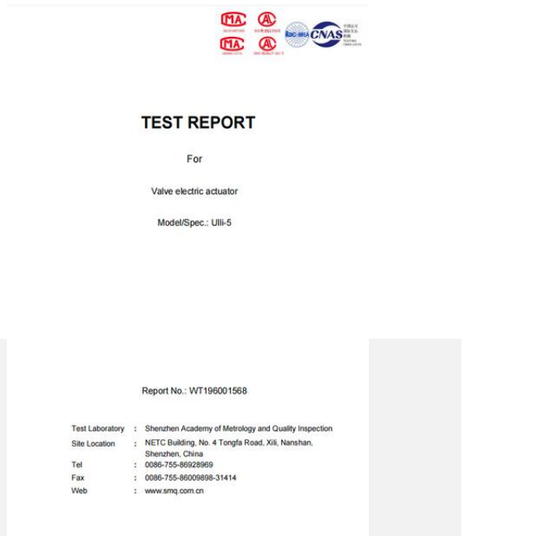
CE Certificate

Patents

Conformity Certificate Of Explosion

Software Copyright Registration Certificate

ISO 9001 Quality Management Certification



IPX8 Test Report

Chapter 1

Rotary Actuators

Introduction

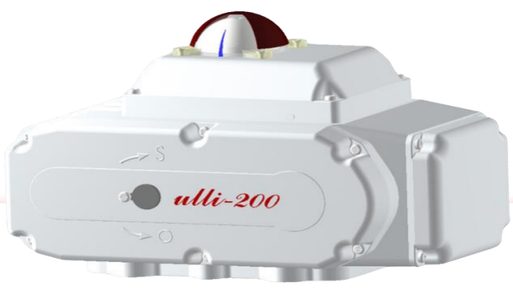
Under the Rotary Actuators, we proudly offer three specialized series designed to meet diverse operational requirements with precision and reliability:

- Ulli Series: Switch actuators designed for robustness and reliability.
- Digicon Series: Modulating actuators tailored for precise adjustments and control.
- Highspeed Series: Cutting-edge high-speed actuators that deliver unparalleled speed and performance, redefining industry standards.

Among these, the Ulli Series Valve Electric Actuators stand out with their patented, distinctive design that combines external elegance with internal robustness. Refined through years of meticulous development and optimization, they offer exceptional reliability and durability, making them a trusted choice for a wide range of applications. Our products are certified to CE international quality standards and compliant with JB/T8219-1999, ensuring consistent quality and regulatory compliance. A key innovation is our bracket-free models, exclusively developed to provide a compact, lightweight, stable, and precise design. These models deliver a superior solution for modern industrial needs, offering seamless performance across a variety of applications.

Switch/ Modulating:

ulli ®



- The **ulli® series** represents the company's **switch 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:

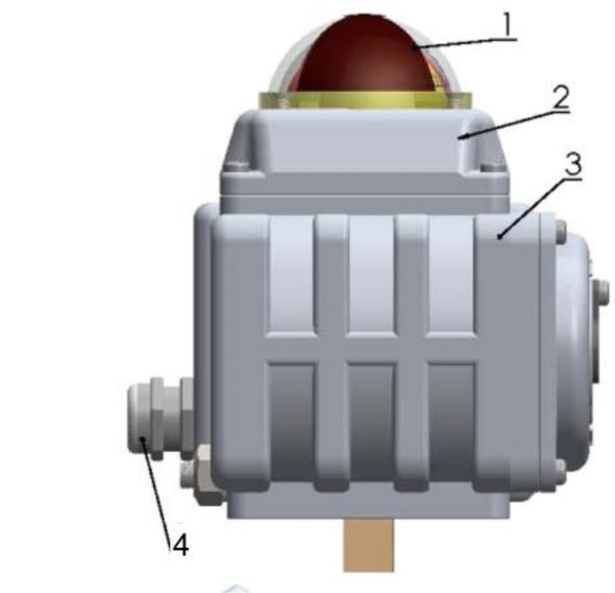
"Digi" stands for "digital" , "Con" for "control.
"Digicon" symbolizes control technology centered around digital technology.

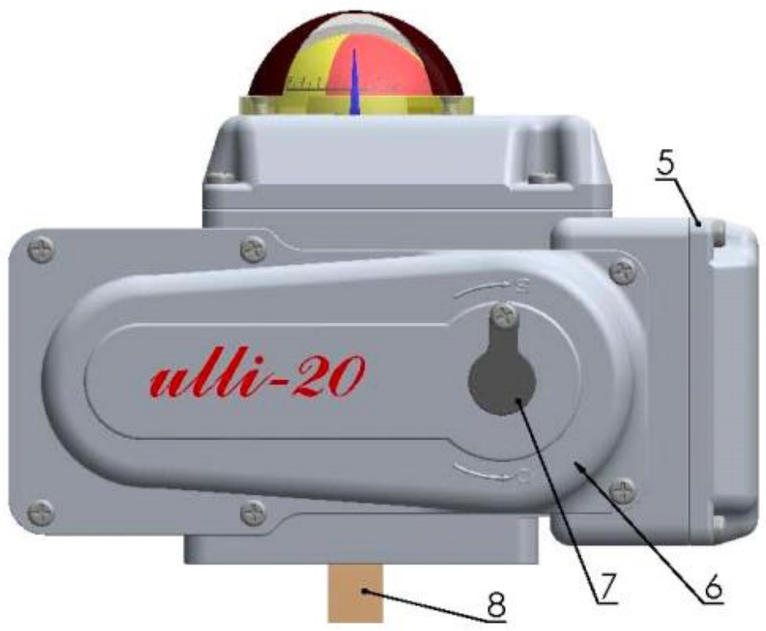
- 20NM-6000NM

Features and Functionalities

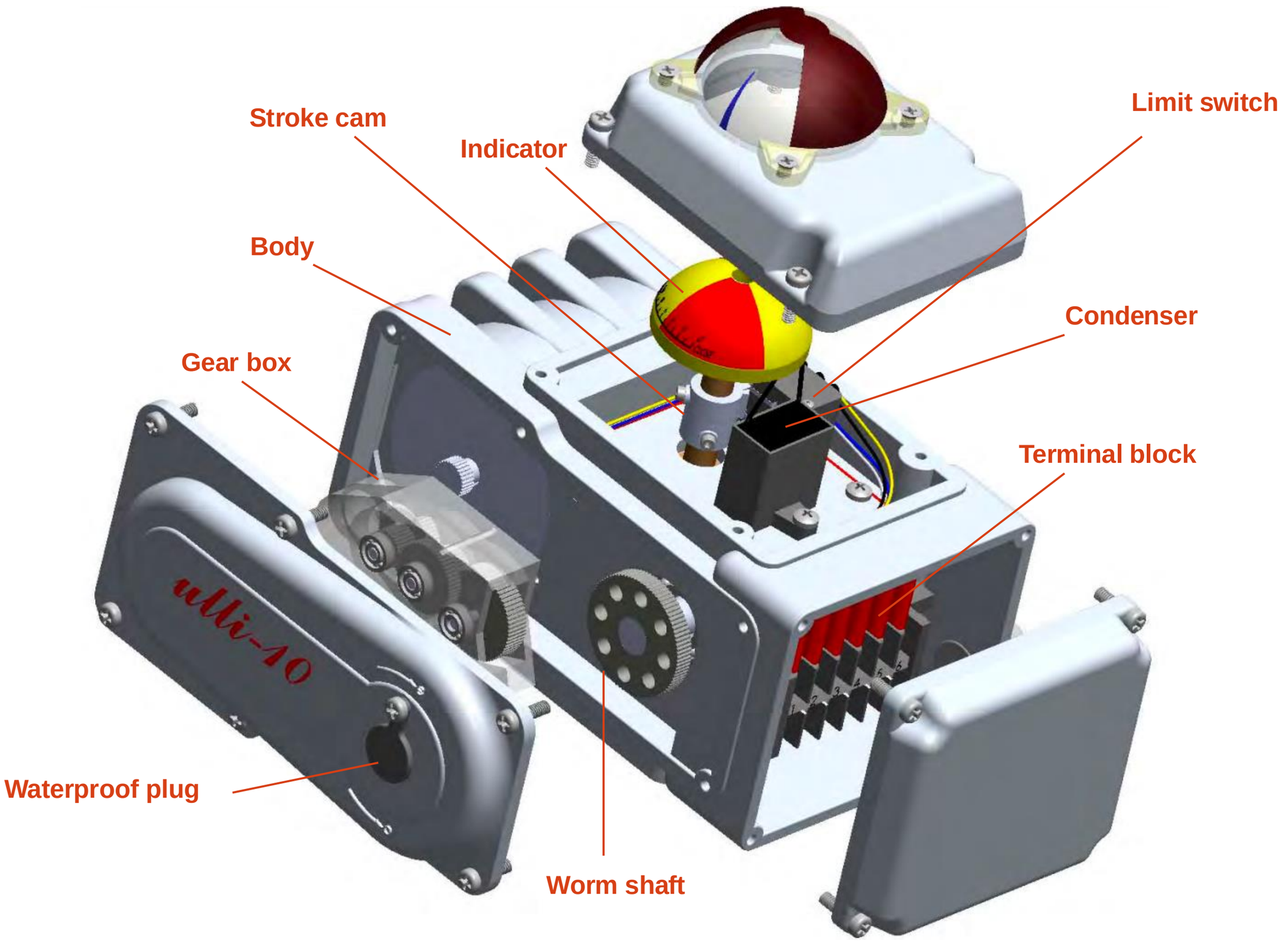
1. **Powerful Functionality**: Available in various types, including regulating, on/off, explosion-proof, emergency shut-off, and brushless DC models.
2. Wide Environmental Compatibility: Operates within a broad temperature range (-20 ° C to +60 ° C); an external protective cover is required for outdoor use.
3. **Reliable Performance**: Critical components like bearings and electrical elements use imported premium brands.
4. **Elegant and Practical**: Die-cast aluminum housing with a refined, smooth finish that also minimizes electromagnetic interference.
5. **Precision and Durability**: Integrated worm gear output shaft made of specially forged copper alloy, providing high strength and excellent wear resistance.
6. **High-Speed Advantage**: Proprietary patented product with significantly increased speed and minimal heat generation.
7. **Safety Assurance**: Tested with 1500V withstand voltage, F-class insulated motors, and CE international certification for guaranteed safety.
8. **Versatile Power Options**: In addition to standard models (AC220V, AC110V), options include DC24V, AC24V, and AC380V.
9. **Ease of Use**: No lubrication or inspections required, waterproof, rustproof, and can be installed at any angle.
10. **Variable Speeds**: Full travel times available in 5 seconds, 10 seconds, 15 seconds, 30 seconds, or 60 seconds (specify when ordering).
11. **Integrated Design**: Highly integrated smart control module embedded within the actuator body, eliminating the need for external positioners.

Structure diagram for ulli® series





No	Descriptions
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



Front View

Spherical viewing window:
Allows for horizontal observation of the open/closed state from distance

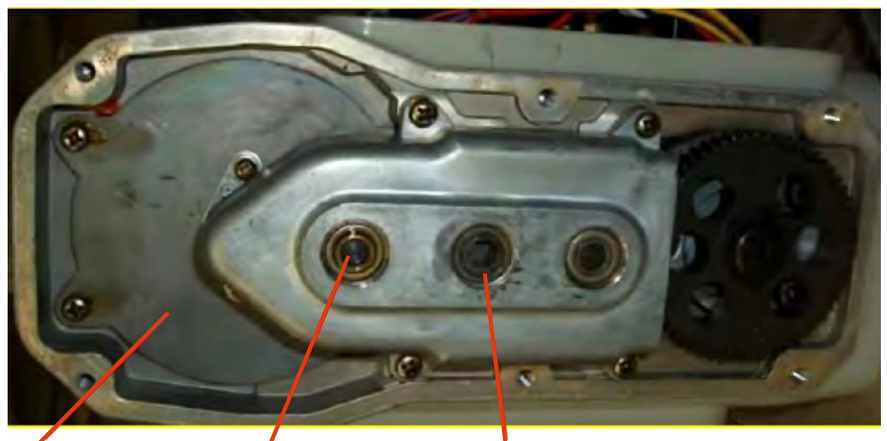
Electrical cover:
Various electrical components built in

Wiring Cover:
Users open this cover to connect wires

Gear reduction cover
(contains a gearbox inside)

Stainless steel anti-drop screws:
A handle or handwheel can be installed here

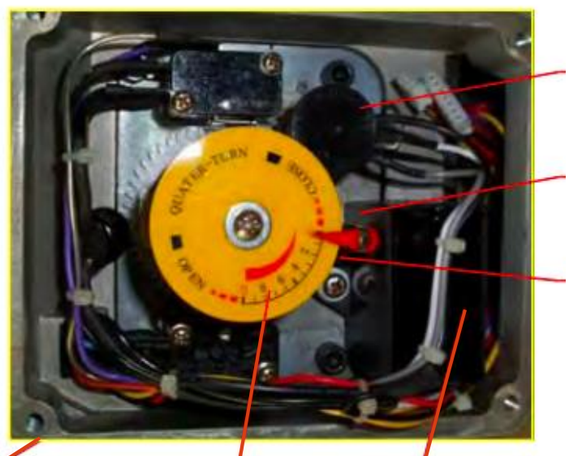
Detailed diagrams



Motor cover
(contains an F-class high-temperature-resistant motor))

Fully rolling bearings
(Designed for Permanent Durability)

Manual Operation Port:
Standardized dimensions for compatibility



Japanese Potentiometer:
High precision and wear resistance

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

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

OMRON Micro Switch:
Electrical limit position switch for precision control

Indicator Dial (Opening Plate):
Ball/flat

Capacitor :
Long lifespan with high-temperature resistance

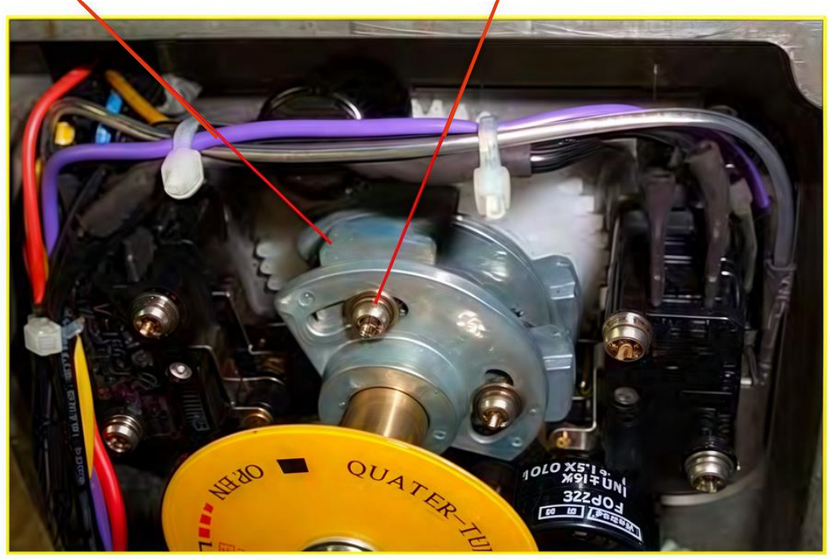
Electrical Limit Cam:
Located below the indicator dial; adjustable for open/close angles or signal output points

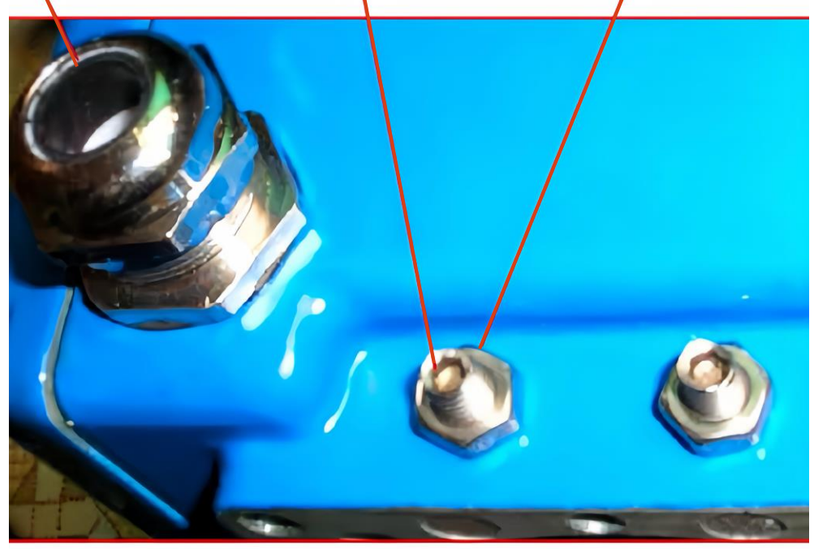
Electrical Limit Cam Fixing Screw :
Loosen to adjust cam angles for fine-tuning

Copper Electrical Cable Clamp:
High-strength, fully sealed, and anti-aging for reliable cable management.

Limit Screw:
For mechanical limit position adjustment

Lock Nut :
Secures the mechanical limit adjustment screw





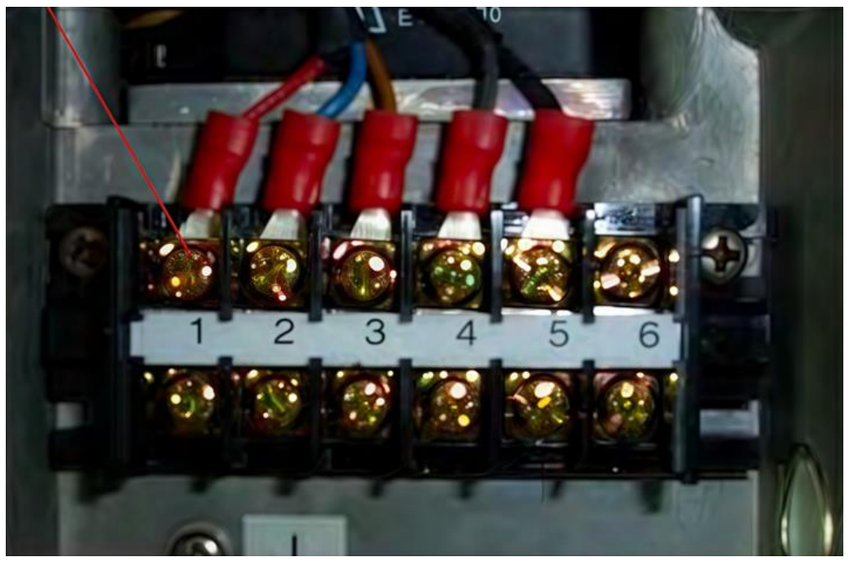
Specially Designed Integrated Output Shaft :
integrates five positions into one, providing greater reliability and reducing gaps

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

Bidirectional Overload Protection Module (Optional)

On-Site/Remote Control Switch (Optional)

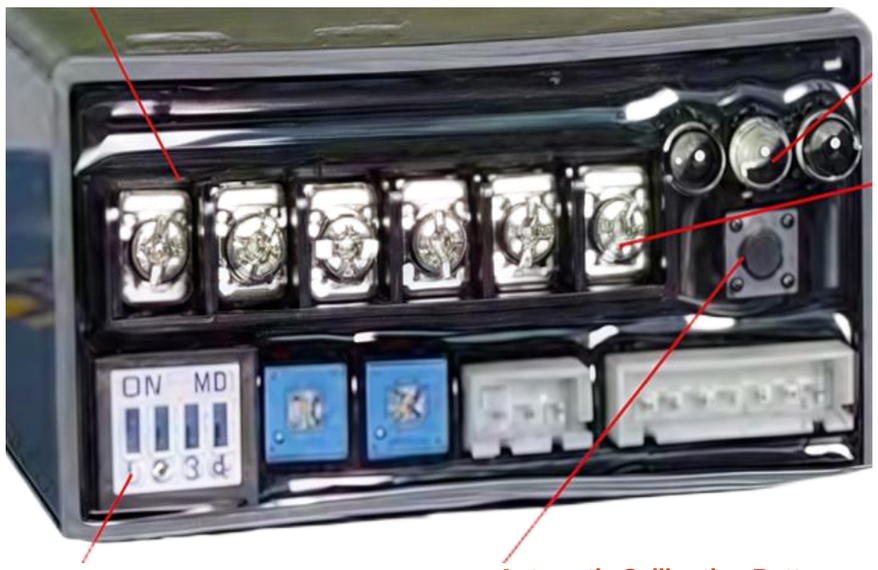
Internationally Certified Terminal Block:
Features high capacity and strength; screws are impossible to break, ensuring reliable connection safety



Conductive Plastic Position Indicator:
Japanese brand, precision-made, and highly durable

Waterproof Design (IP68)

Intelligent Control Module (Optional):
High reliability, supports large currents, and offers high precision.



Status or Fault Indicator:
Clear status feedback for system monitoring

Reinforced Stainless Steel Terminals:
Durable and corrosion-resistant terminal connectors

Handwheel with Clutch (Optional) :
unique design with a standardized size, compatible with the entire actuator series

Mode Selection Switch:
Allows easy switching between operation modes

Automatic Calibration Button:
Simplifies configuration and system calibration

Data sheet (ulli series) :

Ulli Series (On-Off Rotary)

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-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-20	AC380V AC/DC24V AC220V AC110V	200	45	100W/30W	0.72A	0.68A	3.7	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 AC220V AC110V	2000	100	300W/90W	1.38A	1.2A	12	IP68
ulli-400	AC380V AC220V AC110V	4000	150	500W/150W	2.3A	2.0A	31	IP68
ulli-600	AC380V AC220V AC110V	6000	150	500W/150W	2.3A	2.0A	31	IP68

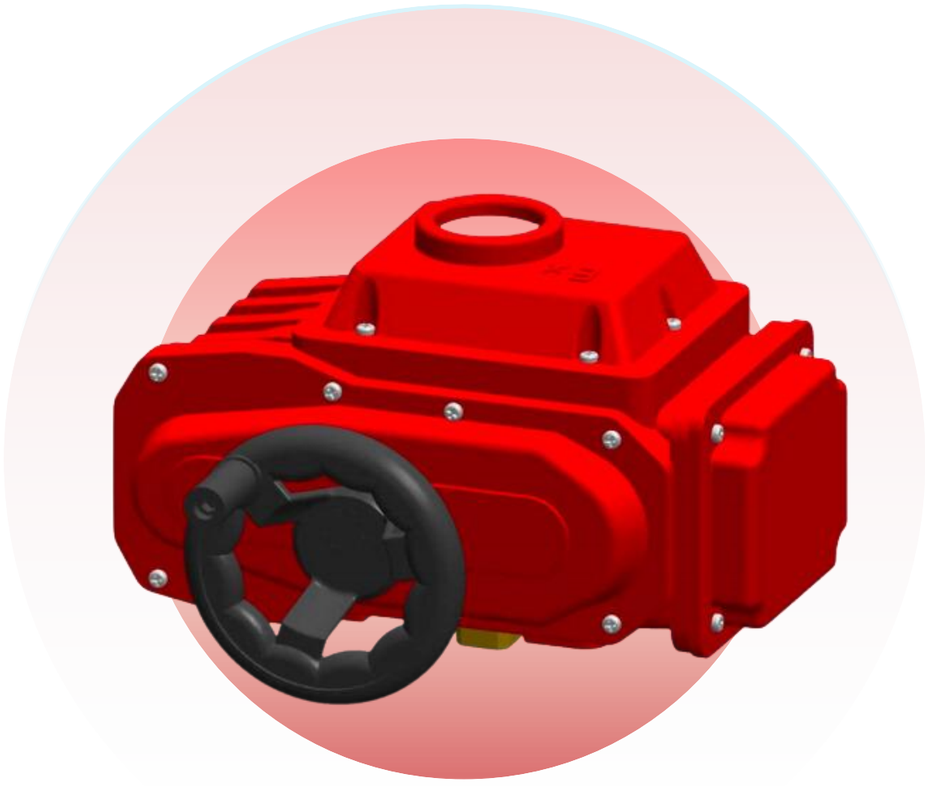
Data sheet (digicon series) :

Rotary actuator – Digicon (Modulating)

Model	Power Supply	Torque (NM)	Stroke Time for 50Hz (Sec)	Motor F Class In/Out	220VAC Start Current	220VAC Rated Current	Weight (g)	IP CLASS
dogicon-5	DC24V AC24V AC220V AC110V	50	30	30W/10W	Input signal 4-20mA 0-10V	Output signal 4-20mA	3	IP68
digicon-10	DC24V AC24V AC220V AC110V	100	30	80W/23W	Input signal 4-20mA 0-10V	Output signal 4-20mA	4.5	IP68
digicon-25	DC24V AC24V AC220V AC110V	250	30	150W/45W	Input signal 4-20mA 0-10V	Output signal 4-20mA	7.5	IP68
digicon-50	DC24V AC24V AC220V AC110V	500	30	300W/90W	Input signal 4-20mA 0-10V	Output signal 4-20mA	8.7	IP68
digicon-100	DC24V AC24V AC220V AC110V	1000	50	300W/90W	Input signal 4-20mA 0-10V	Output signal 4-20mA	12.8	IP68
digicon-200	AC220V AC110V	2000	100	300W/90W	Input signal 4-20mA 0-10V	Output signal 4-20mA	12.8	IP68
digicon-400	AC220V AC110V	4000	150	500W/150W	Input signal 4-20mA 0-10V	Output signal 4-20mA	32	IP68
digicon-600	AC220V AC110V	6000	150	500W/150W	Input signal 4-20mA 0-10V	Output signal 4-20mA	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.

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: EXD

Specifications :

Explosion Proof Type Actuator EXB II actuator

Model	Power Supply	Torque (NM)	Stroke Time 50Hz (SEC)	Motor F Class in/out	220V Start Current	220V Rated Current	Weight	IP class
ulli-10EX	AC380V 24V AC220V AC110V	100	30	80W/23W	0.58A	0.5A	10	IP68
ulli-16EX	AC380V 24V AC220V AC110V	160	30	110W/30W	0.72A	0.68A	10	IP68
ulli-25EX	AC380V 24V AC220V AC110V	250	30	150W/45W	0.86A	0.8A	10	IP68
ulli-50EX	AC380V 24V AC220V AC110V	500	30	300W/90W	1.38A	1.2A	10	IP68
ulli-60EX	AC380V 24V AC220V AC110V	600	30	300W/90W	1.38A	1.2A	10	IP68
digicon-10EX	DC24V AC24V AC220V AC110V	100	30	80W/23W	Input signal 4-20mA 0-10V	Output signal 4-2 OmA	11	IP68
digicon-16EX	DC24V AC24V AC220V AC110V	160	30	80W/23W	Input signal 4-20mA 0-10V	Output signal 4-2OmA	11	IP68
digicon-25EX	DC24V AC24V AC220V AC110V	250	30	150W/45W	Input signal 4-2OmA 0-10V	Output signal 4-2OmA	11	IP68
digicon-50EX	DC24V AC24V AC220V AC110V	500	30	300W/90W	Input signal 4-2OmA 0-10V	Output signal 4-2OmA	11	IP68
digicon-60EX	DC24V AC24V AC220V AC110V	600	30	300W/90W	Input signal 4-2OmA 0-10V	Output signal 4-2 OmA	11	IP68

Highspd 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

•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.

Model	Power Supply	Torque (Nm)	Stroke Time (Sec)	Motor (In/Out)	Weight (kg)	Compatible Valve (DN Reference)
highspd-5	AC220V / AC110V	50	2.5	450 W / 150 W	2.5	25–100
highspd-10	AC220V / AC110V	100	5	450 W / 150 W	3.5	80–150
highspd-25	AC220V / AC110V	250	5	500 W / 200 W	7.3	150–200
highspd-50	AC220V / AC110V	500	9	500 W / 200 W	7.3	200–250
highspd-100	AC220V / AC110V	1000	20	600 W / 300 W	11.5	300–400
highspd-200	AC220V / AC110V	2000	30	600 W / 300 W	11.5	400–500
highspd-500	AC220V / AC110V	5000	20	1500 W / 500 W	30	500–800
highspd-1000	AC220V / AC110V	10000	30	1500 W / 500 W	30	800–1000

Integrating patented high-speed actuator technology

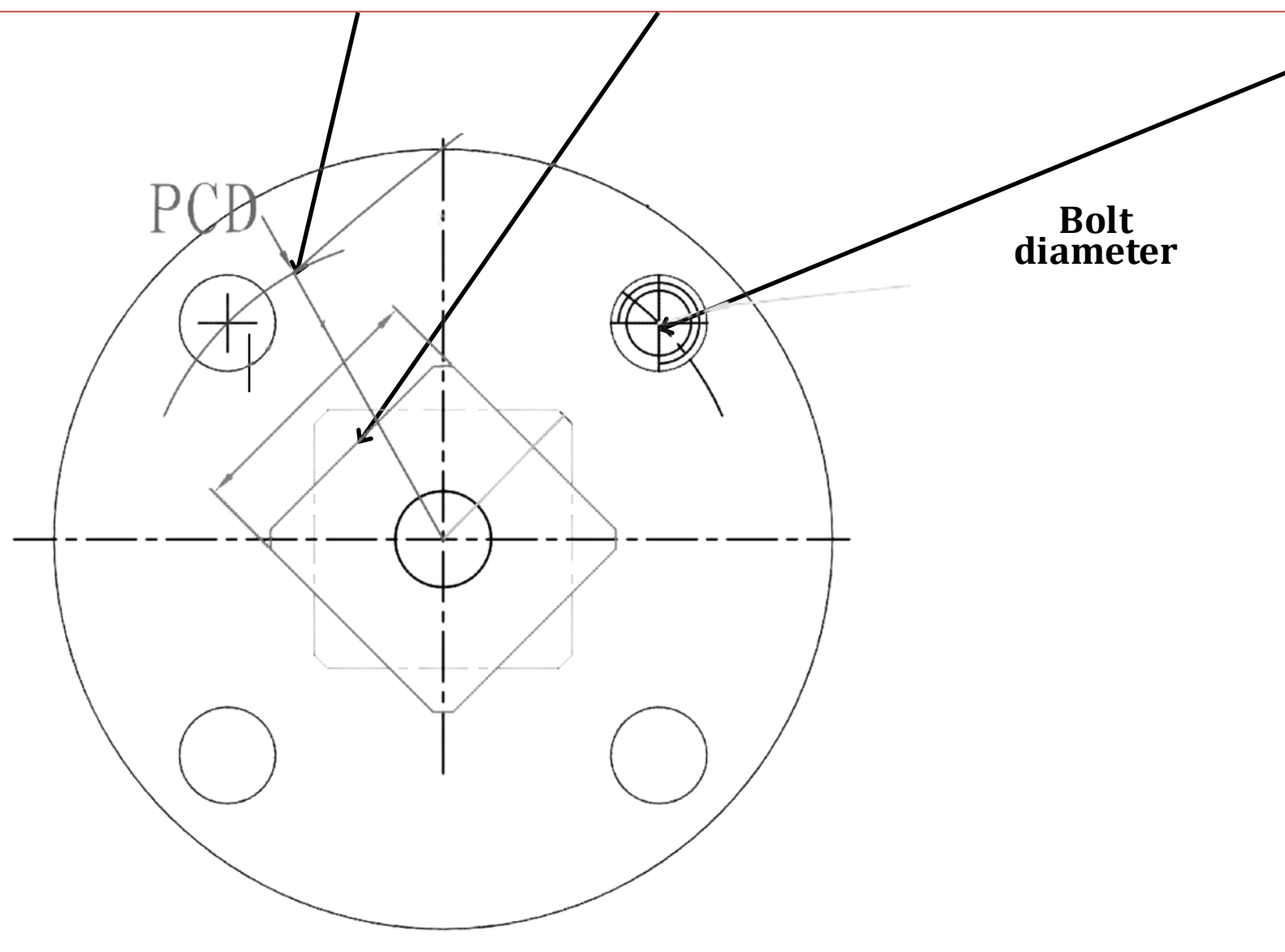
-Achieves high speed and stability, combining precision and efficiency,

with 100% duty cycle and zero downtime

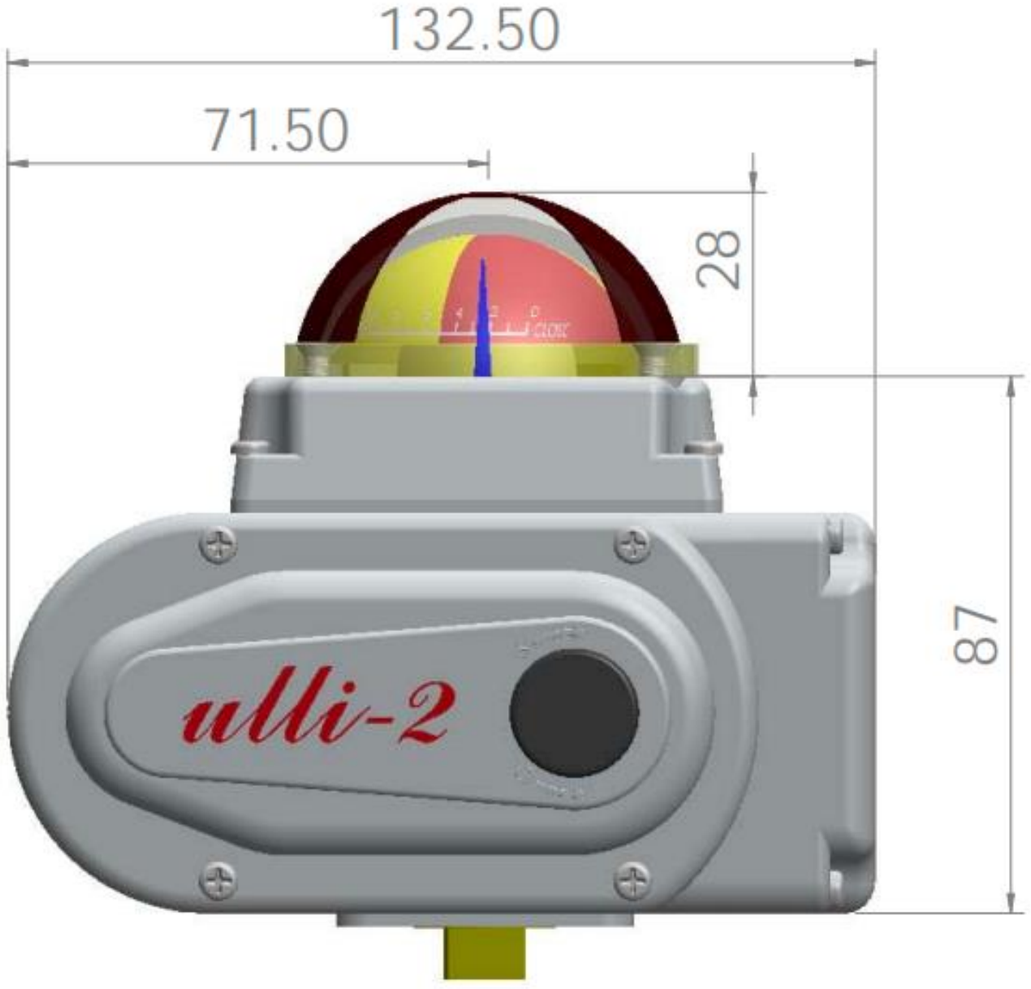
Model	Power Supply	Torque (Nm)	Stroke Time (sec)	Motor (In/Out)	Weight (kg)	Compatible Valve (DN Reference)
highspd-5	AC220V / AC110V	50	5	450 W / 150 W	2.5	25–100
highspd-10	AC220V / AC110V	100	10	450 W / 150 W	3.5	80–150
highspd-25	AC220V / AC110V	250	9	500 W / 200 W	7.3	150–200
highspd-50	AC220V / AC110V	500	15	500 W / 200 W	7.3	200–300
highspd-100	AC220V / AC110V	1000	35	600 W / 300 W	11.5	300–400
highspd-200	AC220V / AC110V	2000	50	600 W / 300 W	11.5	400–500
highspd-400	AC220V / AC110V	5000	20	800 W / 500 W	30	600–700
highspd-600	AC220V / AC110V	10000	30	800 W / 500 W	30	800–1000
hidigi-5	AC220V / AC110V	50	5	450 W / 150 W	2.5	25–100
hidigi-10	AC220V / AC110V	100	10	450 W / 150 W	3.5	80–150
hidigi-25	AC220V / AC110V	250	9	500 W / 200 W	7.3	150–200
hidigi-50	AC220V / AC110V	500	15	500 W / 200 W	7.3	200–300
hidigi-100	AC220V / AC110V	1000	35	600 W / 300 W	11.5	300–400
hidigi-200	AC220V / AC110V	2000	50	600 W / 300 W	11.5	400–500
hidigi-500	AC220V / AC110V	5000	20	800 W / 500 W	30	600–700
hidigi-1000	AC220V / AC110V	10000	30	800 W / 500 W	30	800–1000

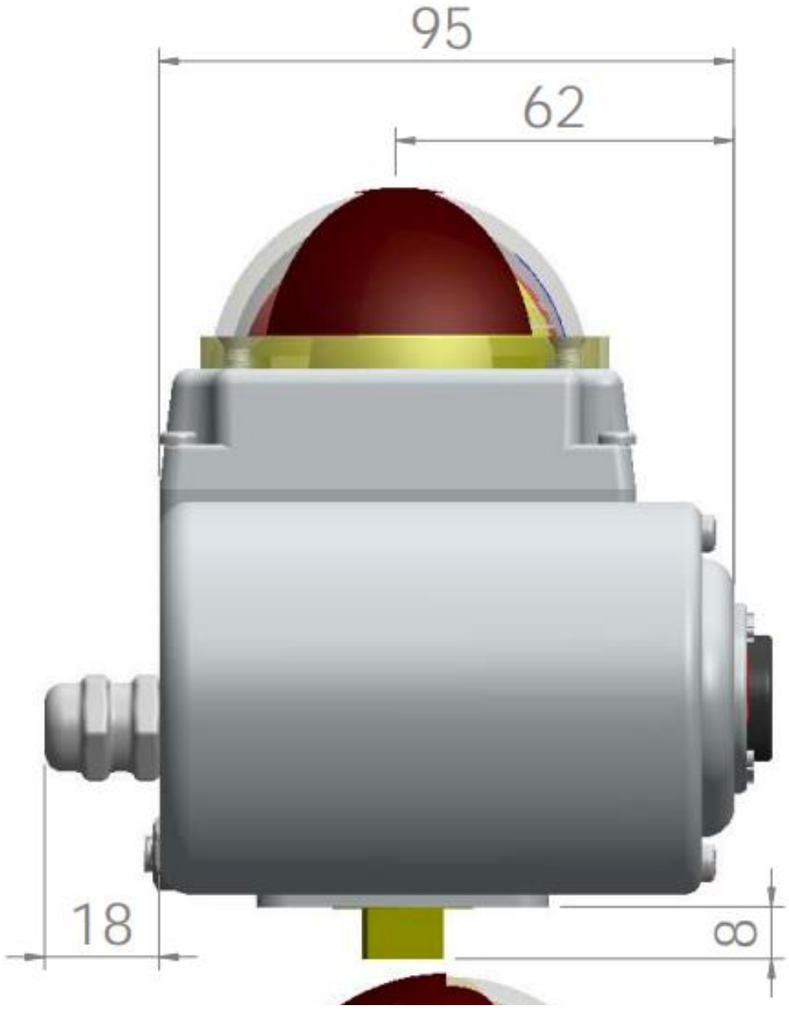
Recommended butterfly valve mounting dimensions for direct (bracket-free) installation

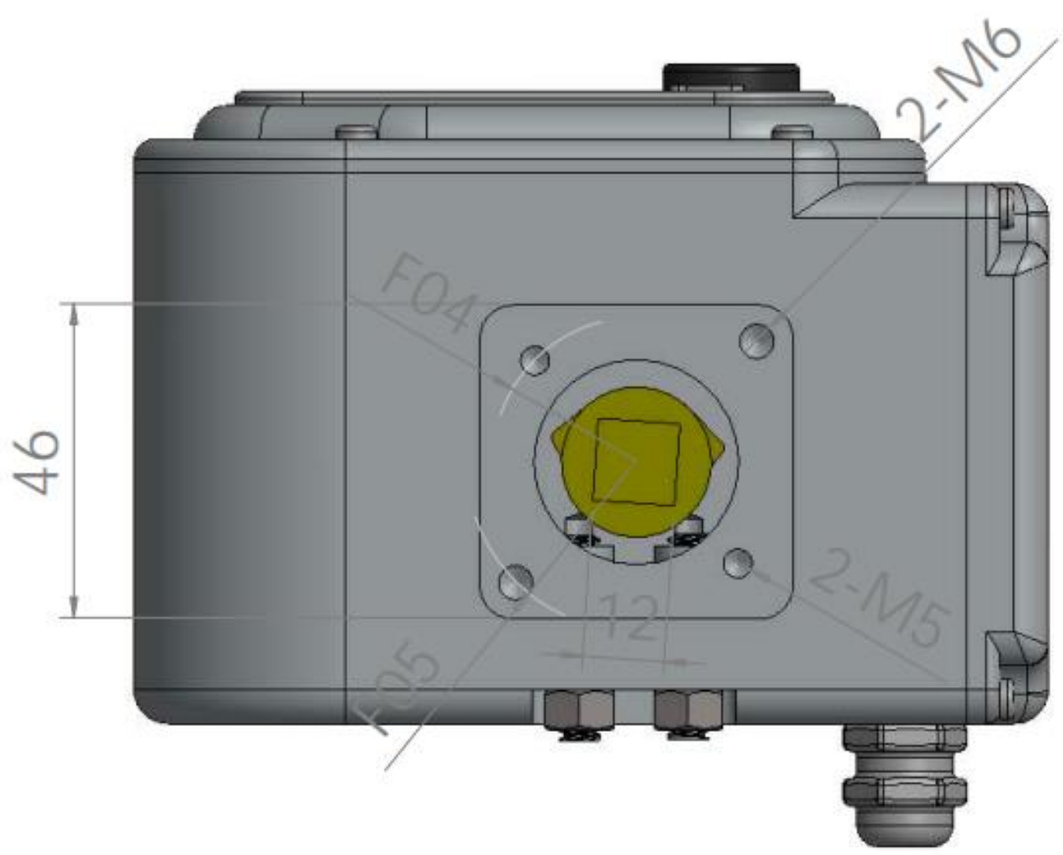
Electric Actuator Model	Compatible Butterfly Valves (For Reference Only)	Referenced Flange Standard	Flange Hole Pattern Diameter PCD (Any One)	Recommended Valve Stem Square Dimensions and Extension Length	Recommended Chamfered Circular Diameter	Screw Thread Diameter
ulli-2	25-50	F05/F03	D50/D36	9*9 Height:10-15	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 Height15-25	≤ 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

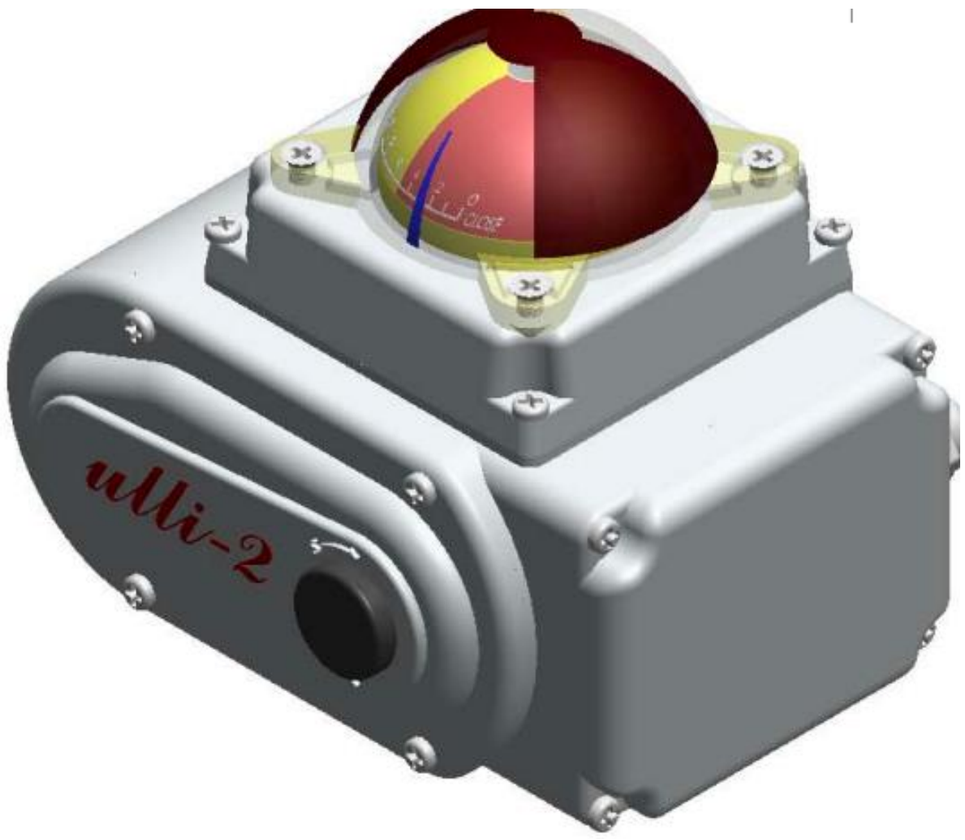


Dimensioned drawings:
ulli-2 (male type)

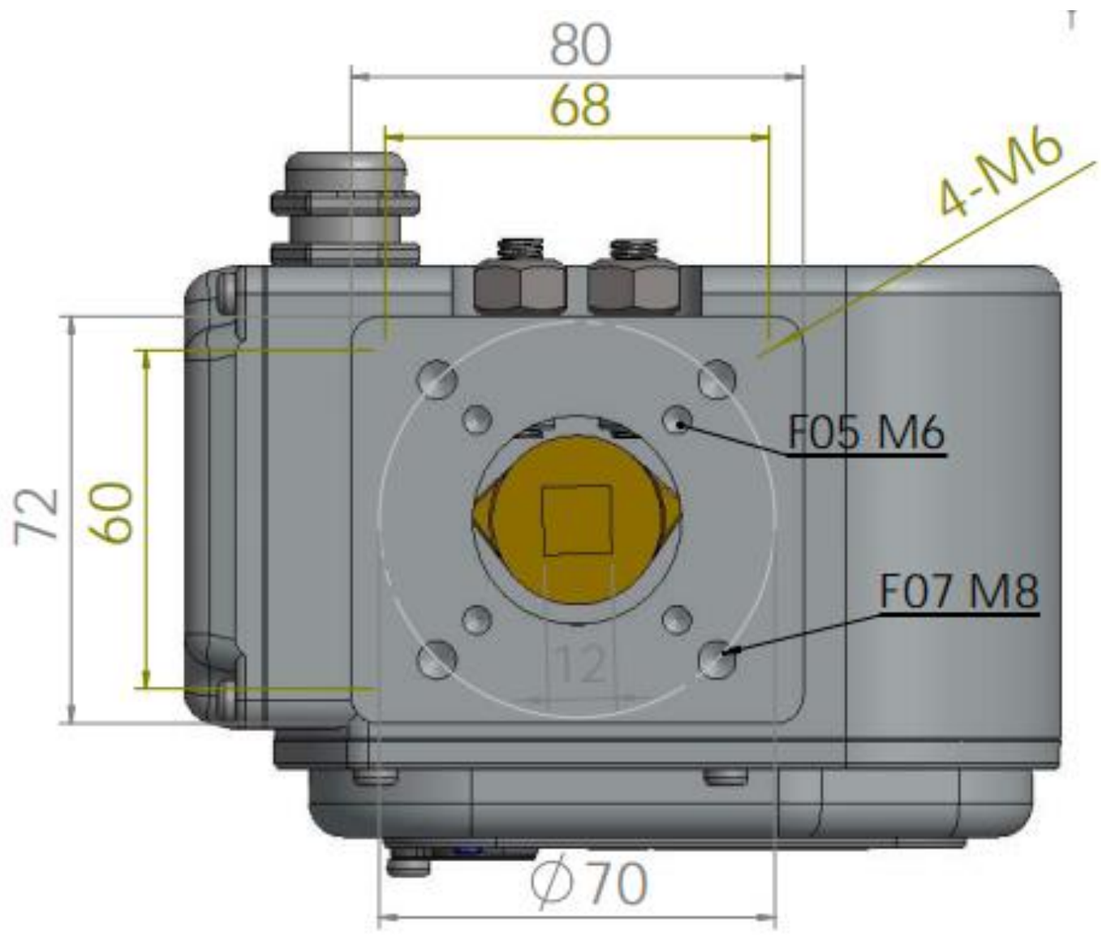


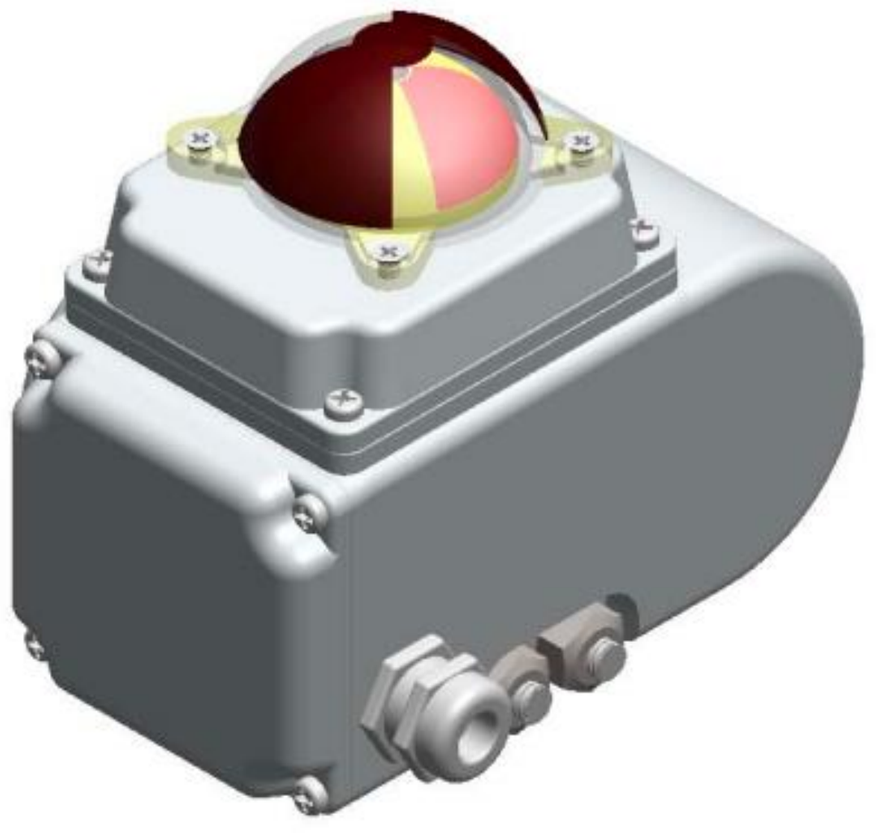






ulli-5 & digicon-5 (male type)





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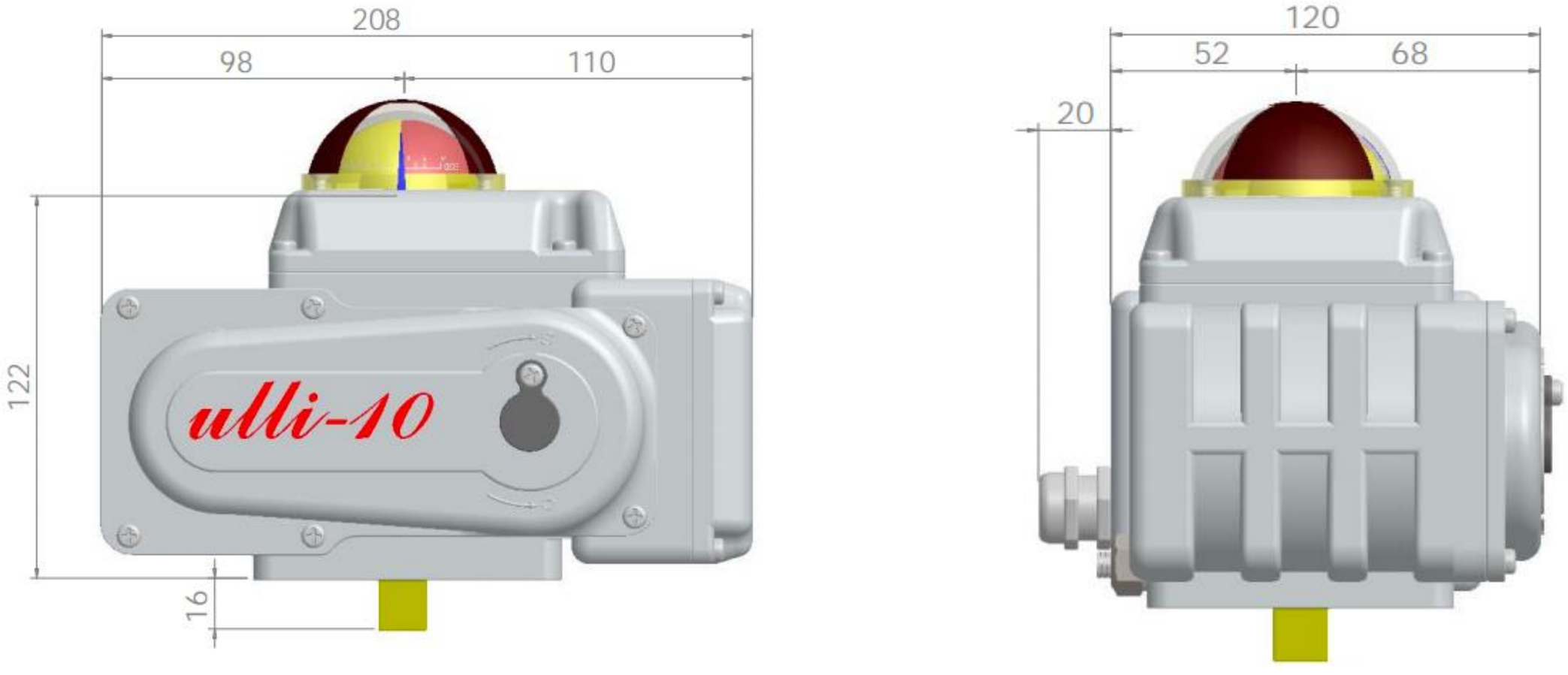

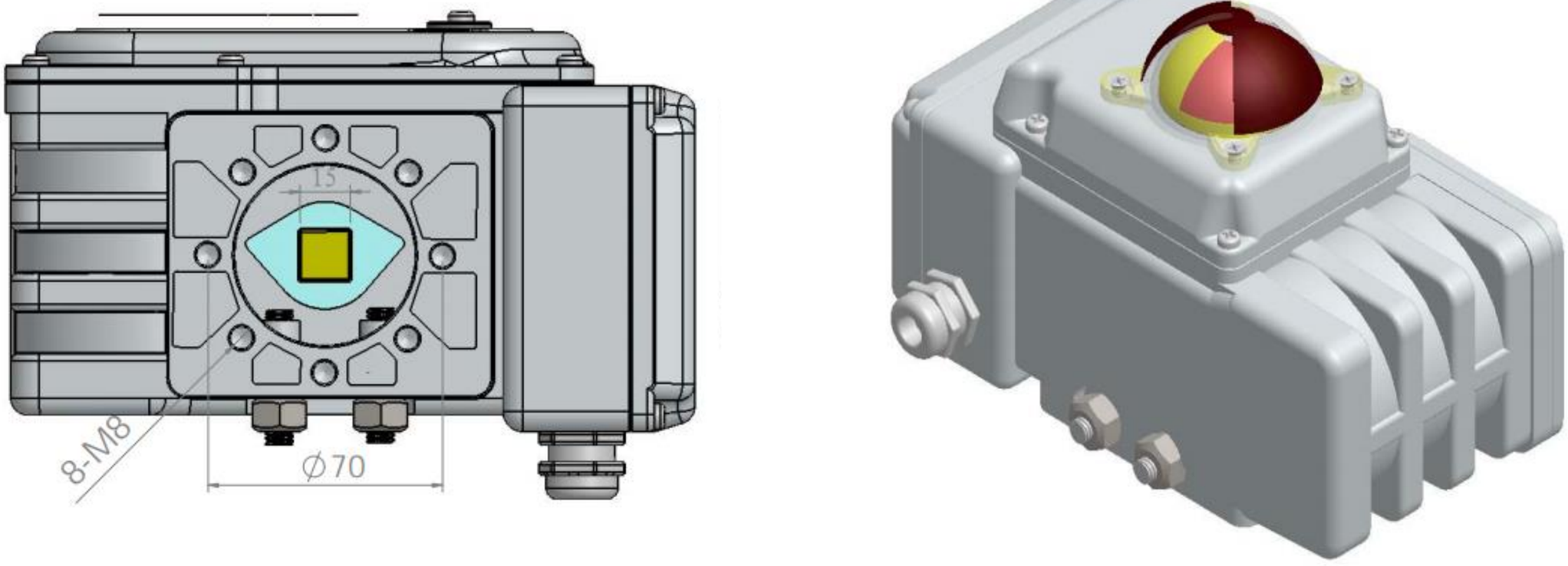

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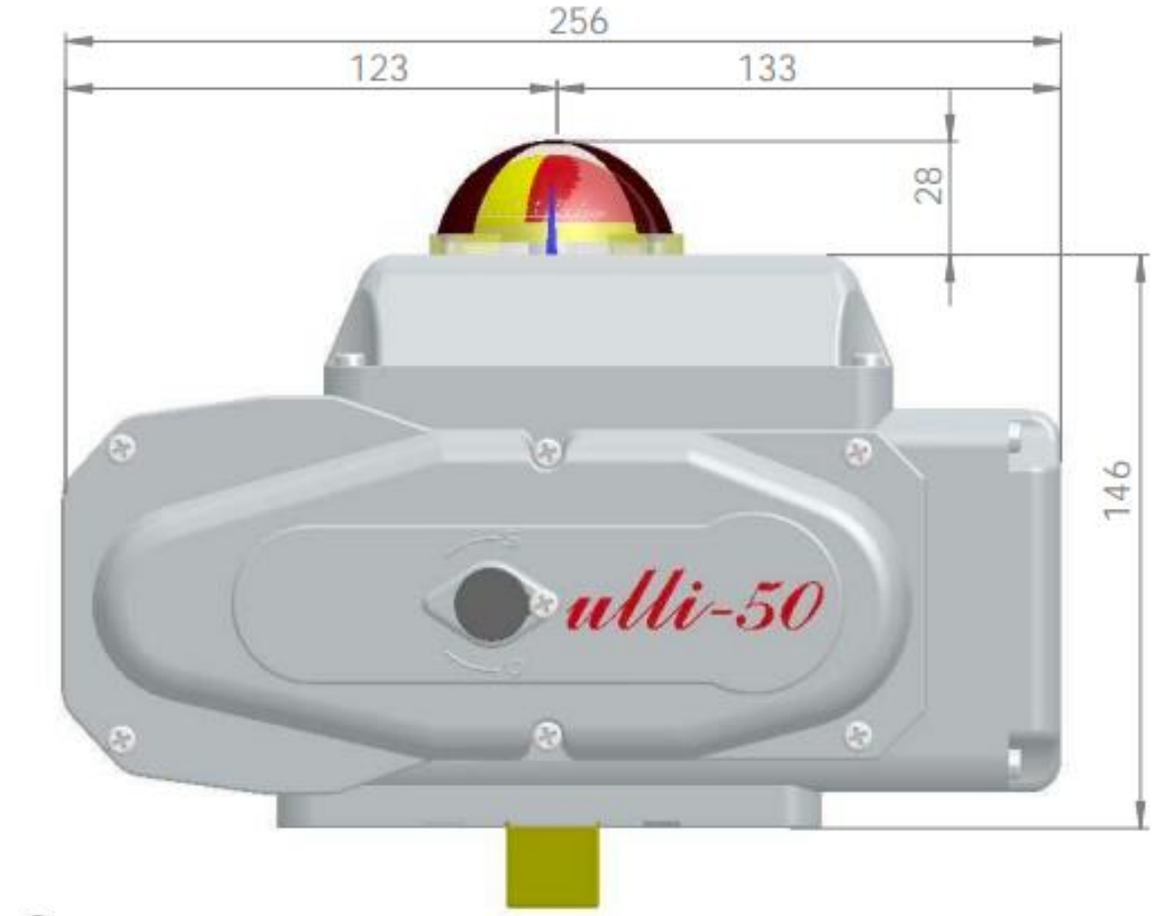

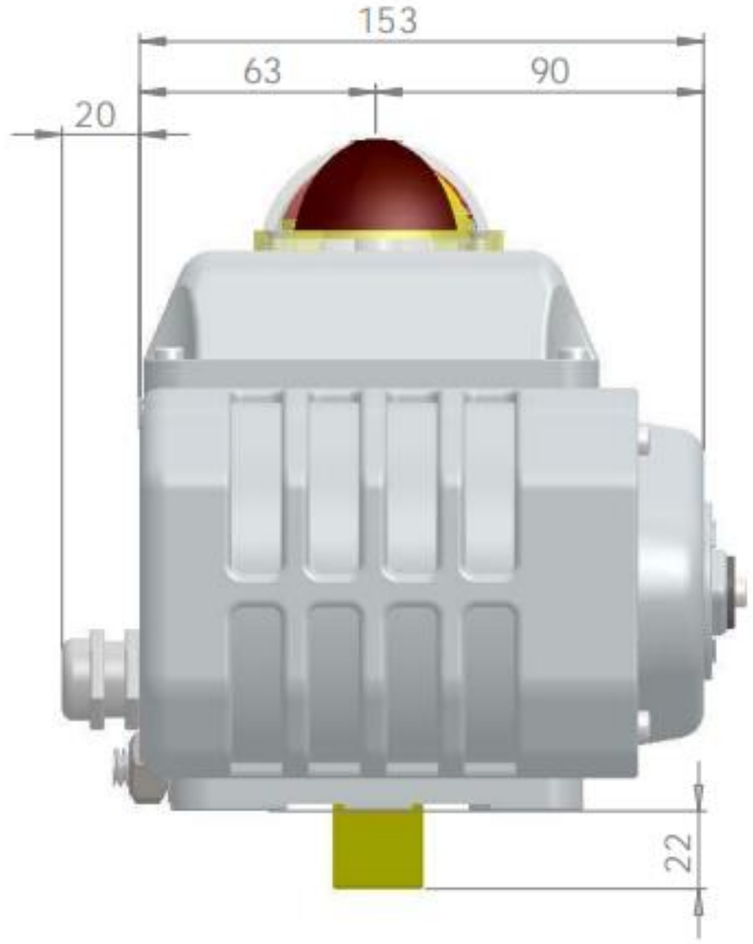

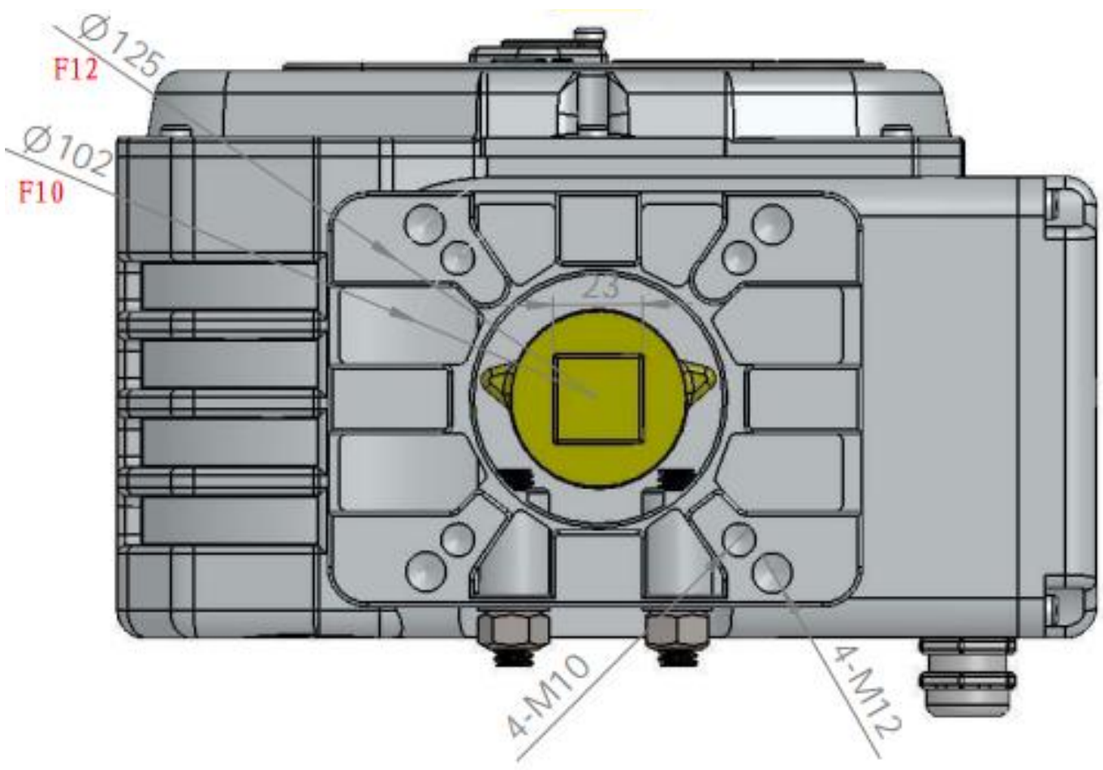

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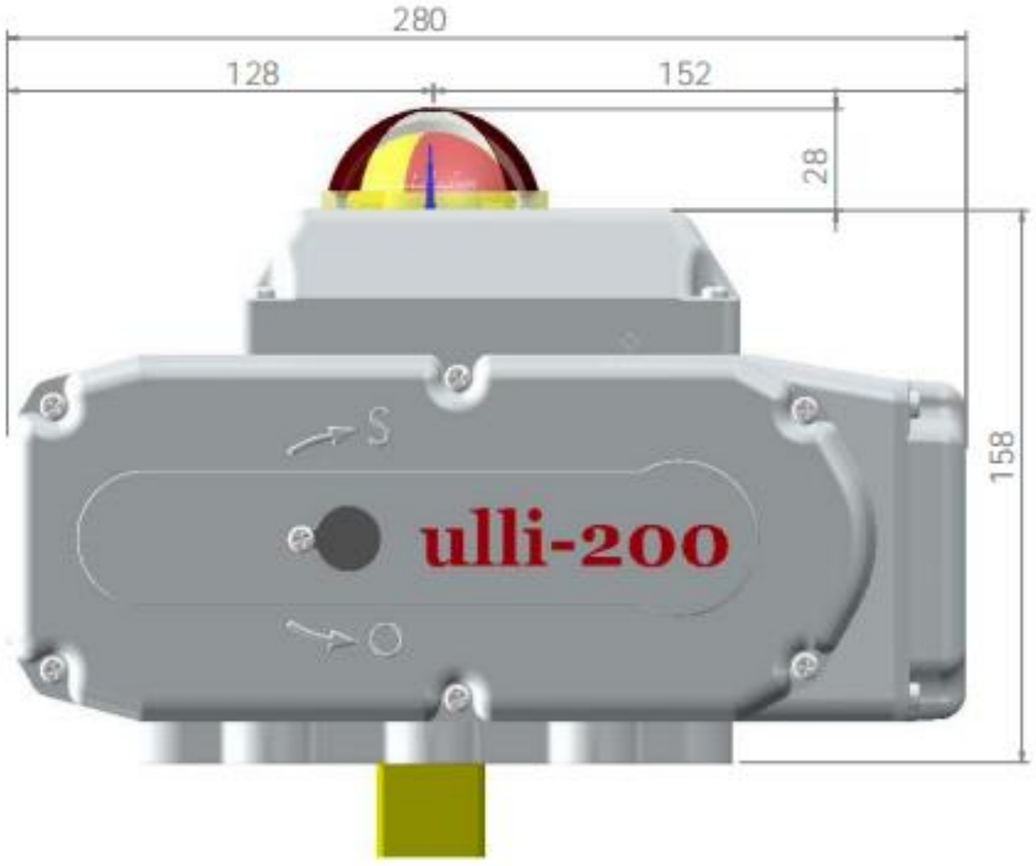

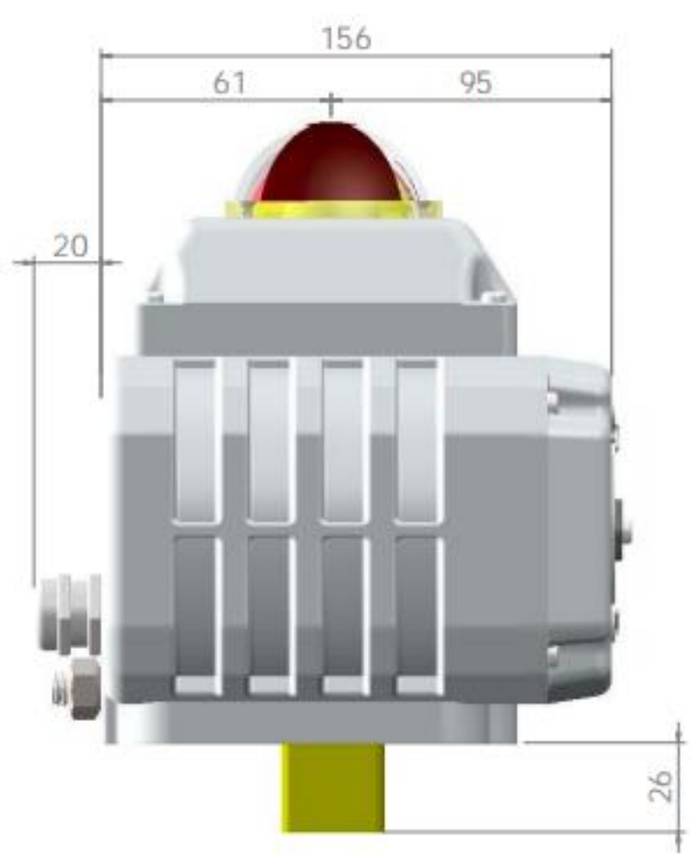

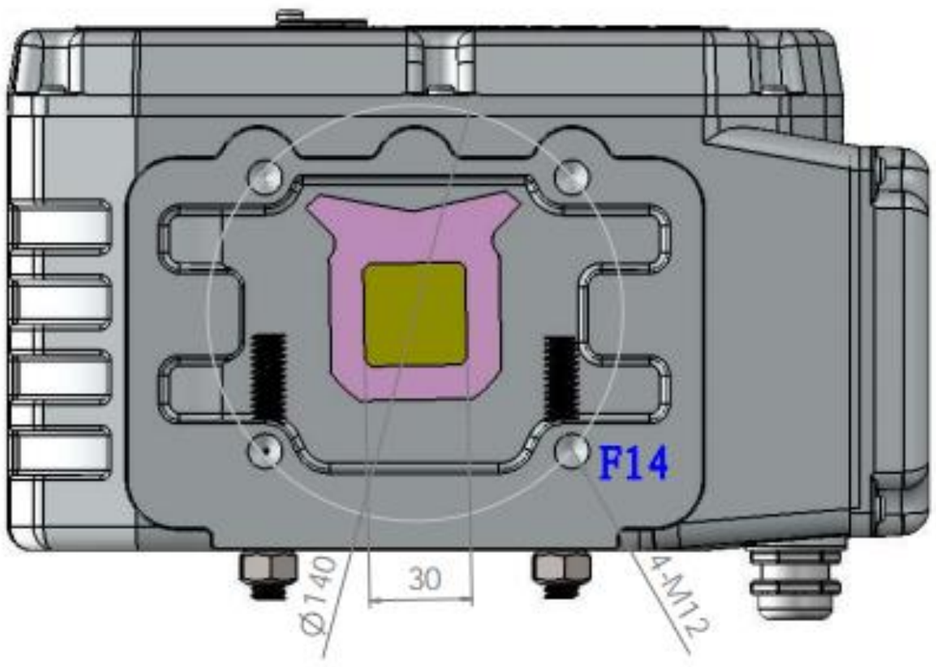

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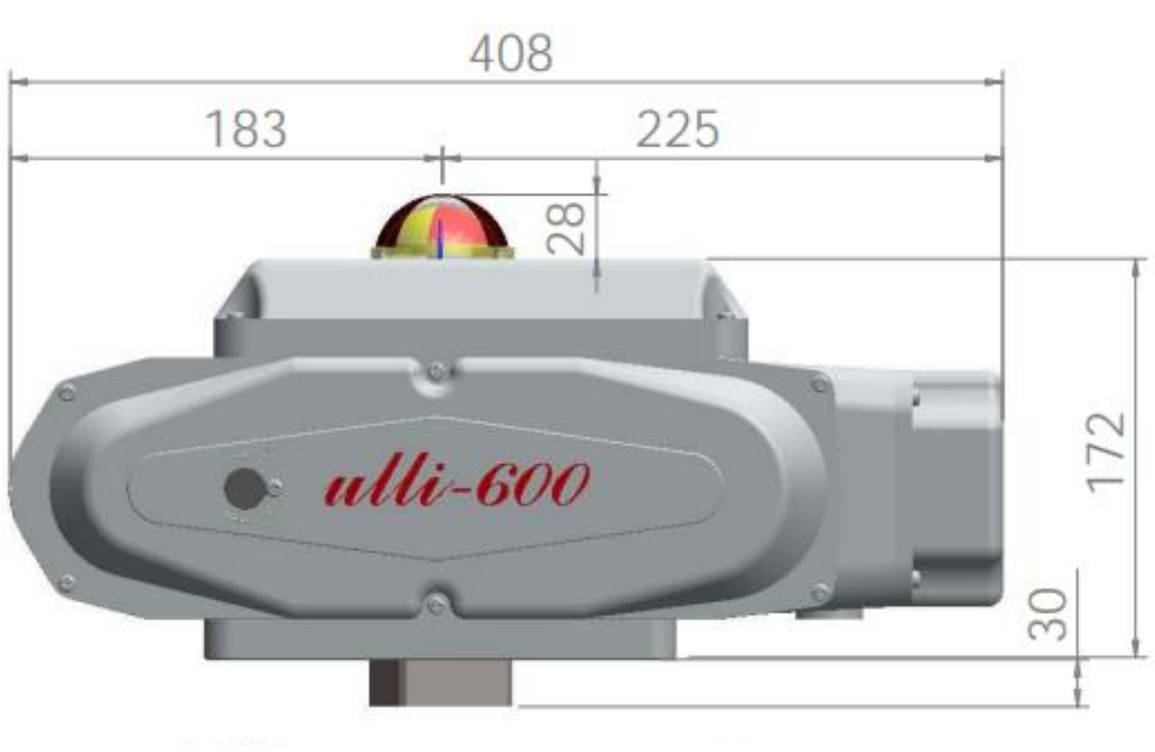

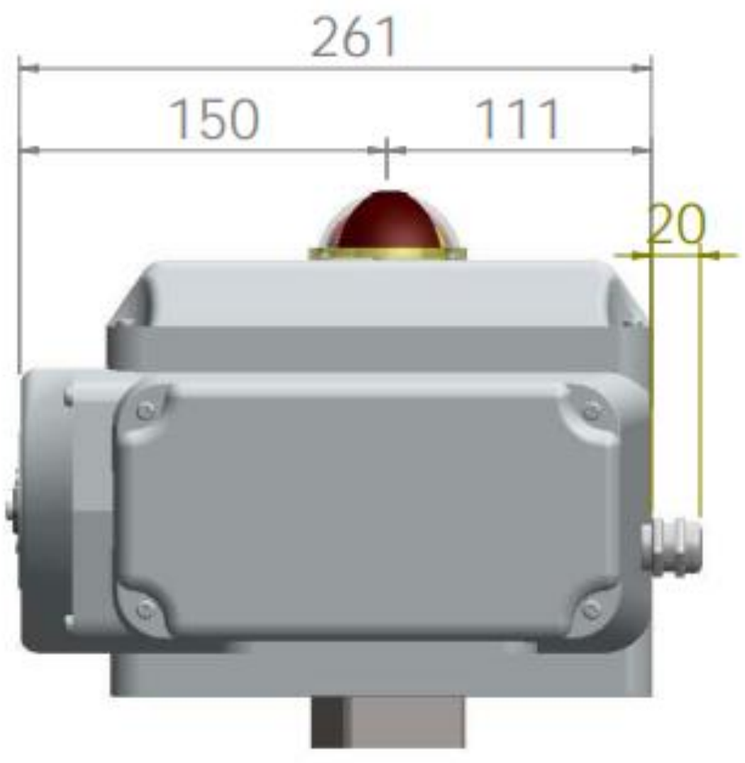

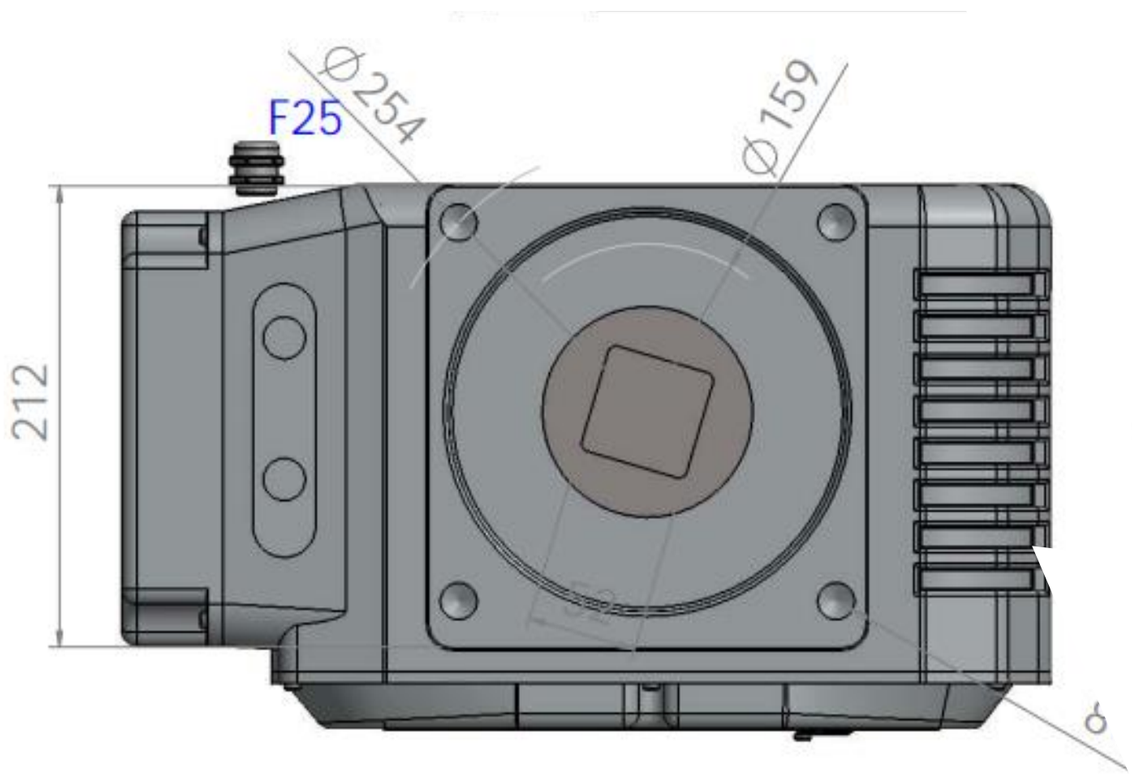

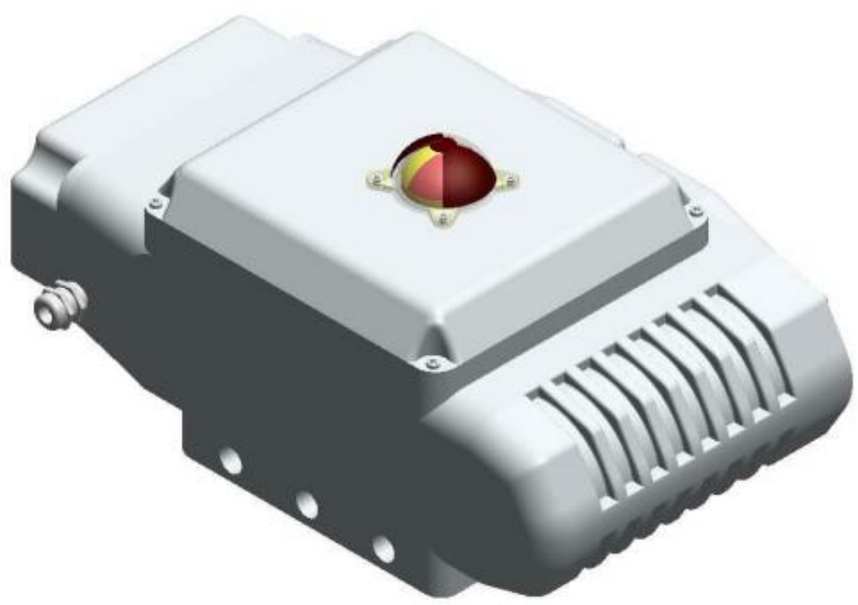

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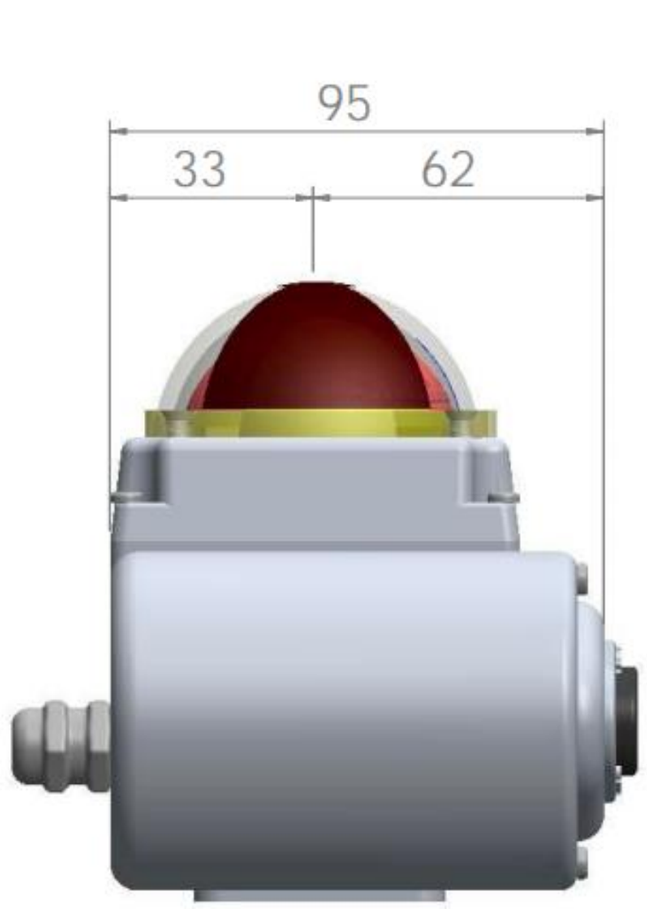

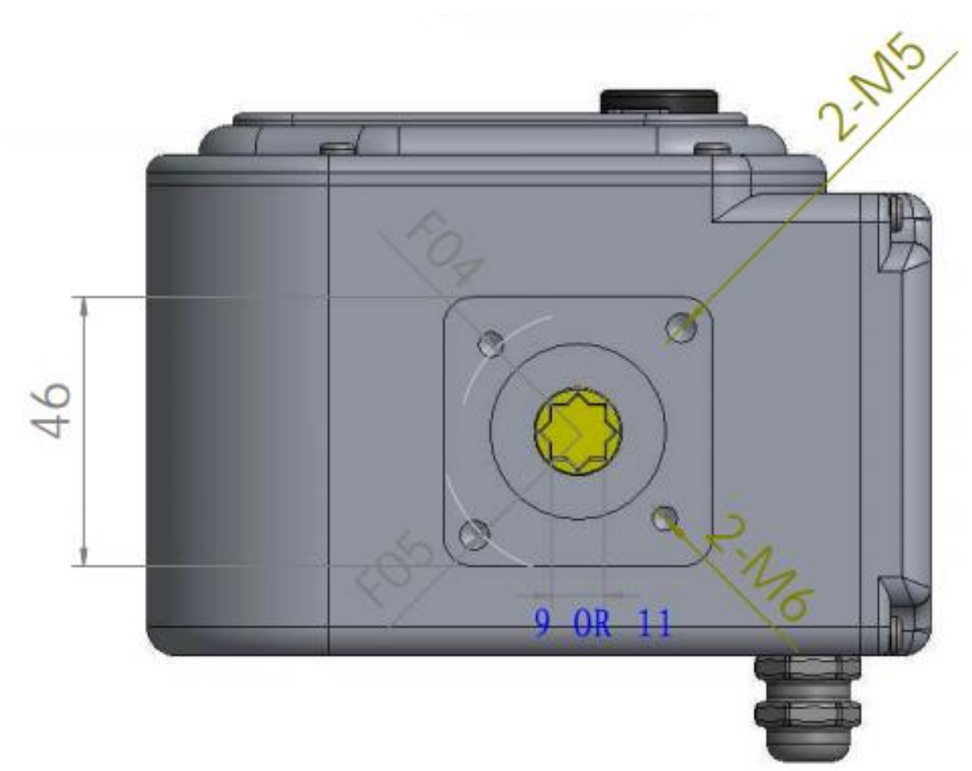

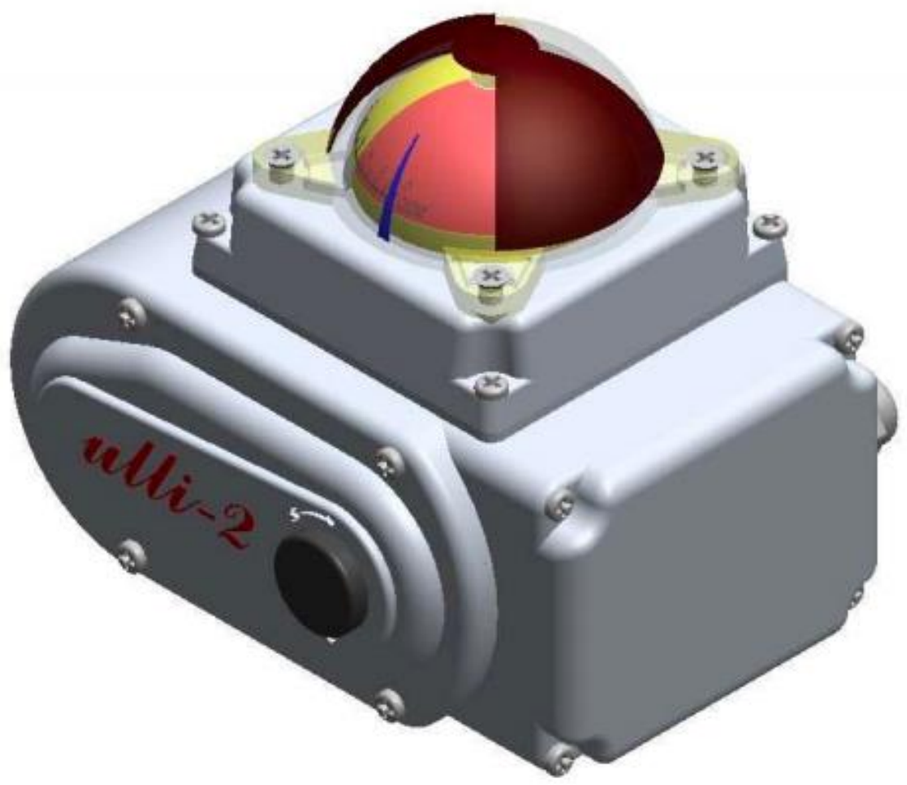

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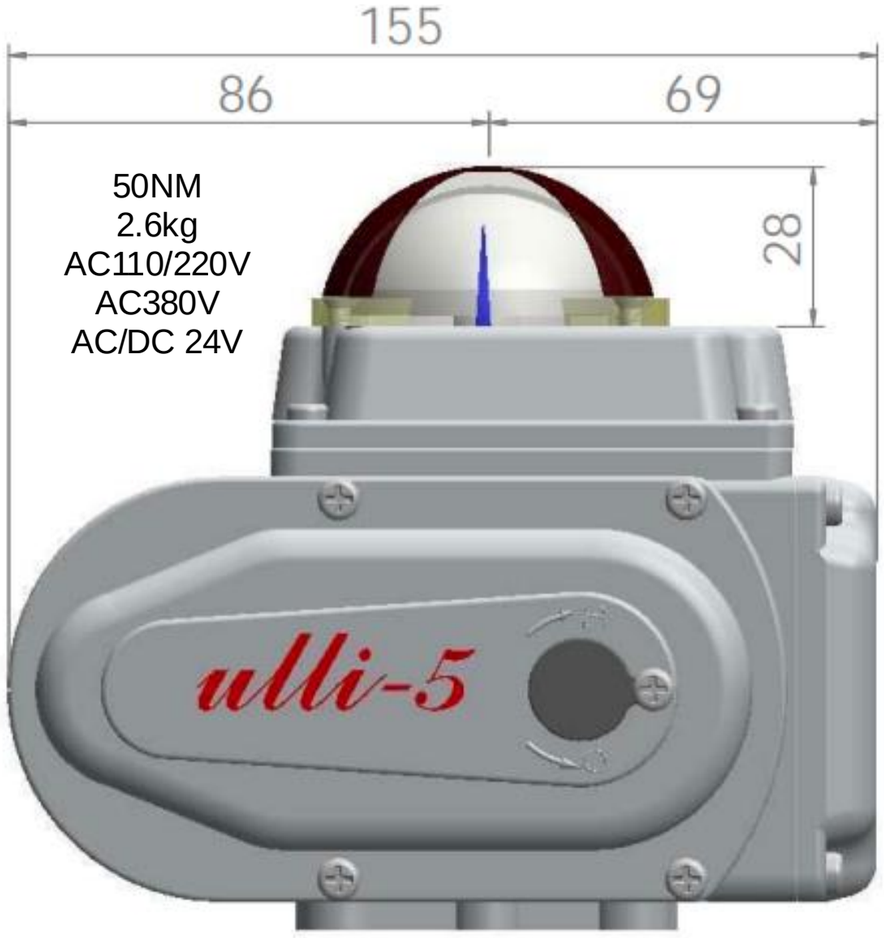
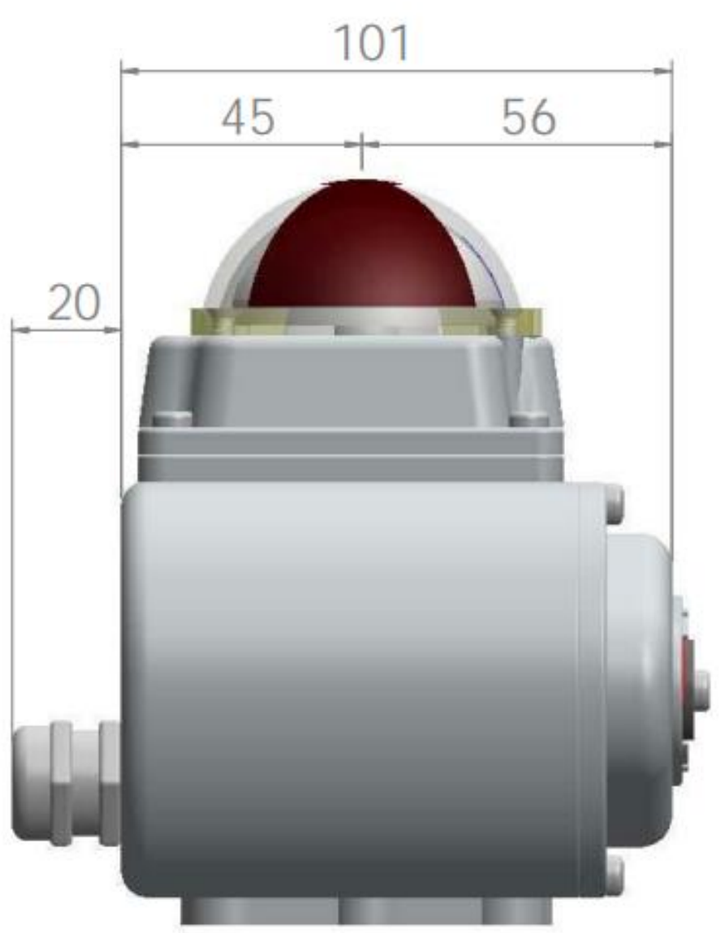
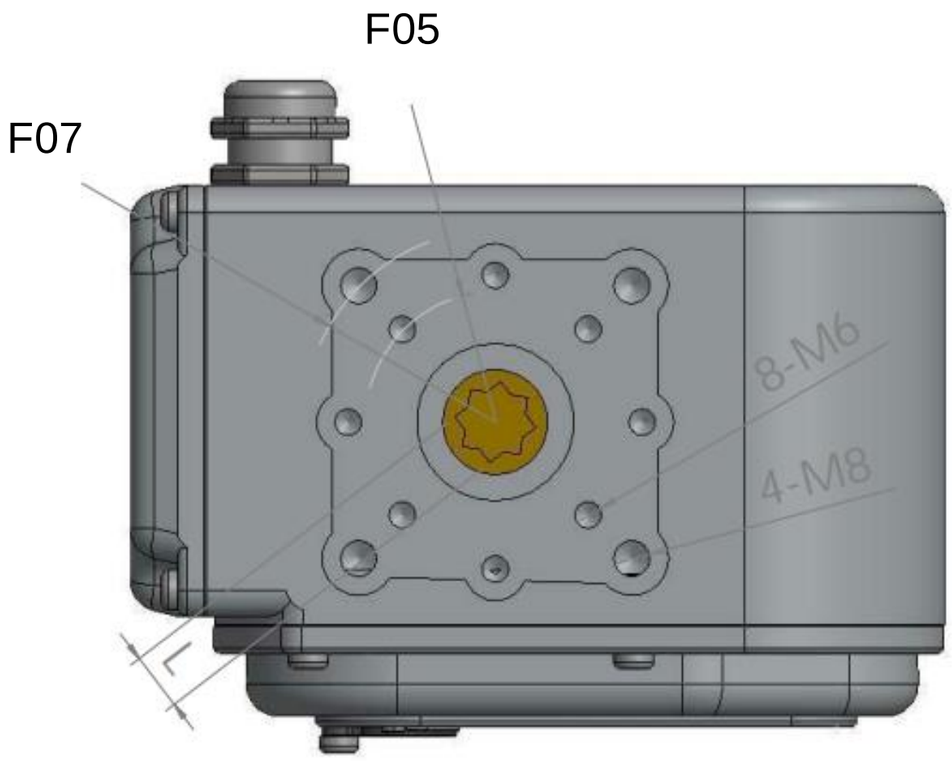
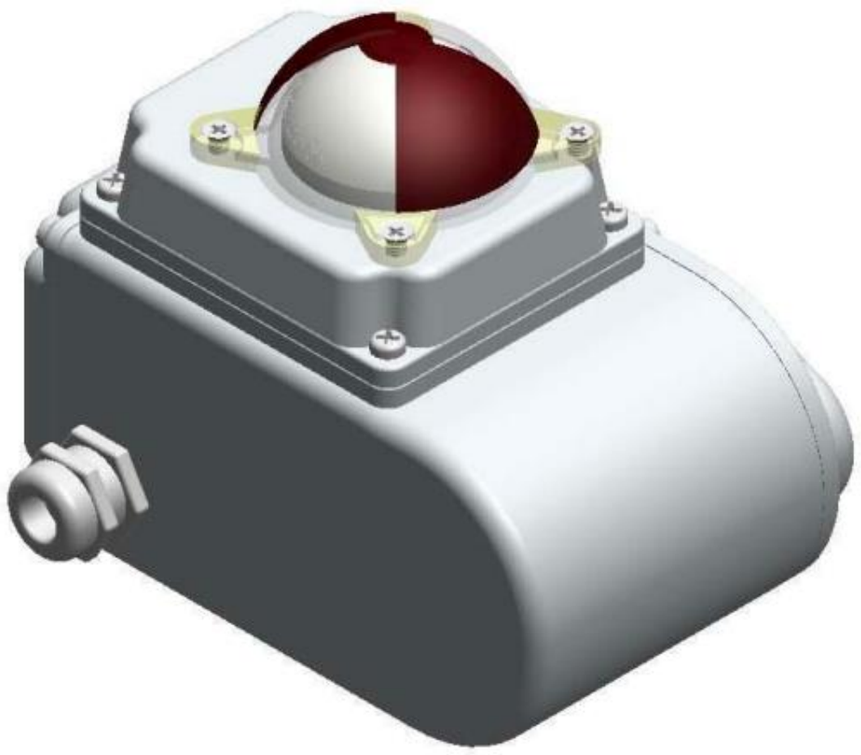
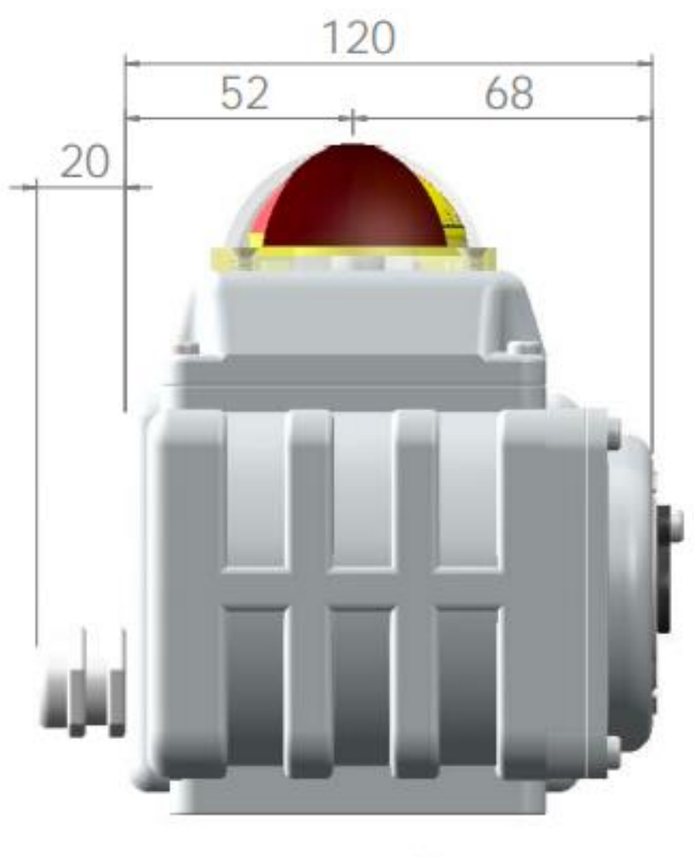


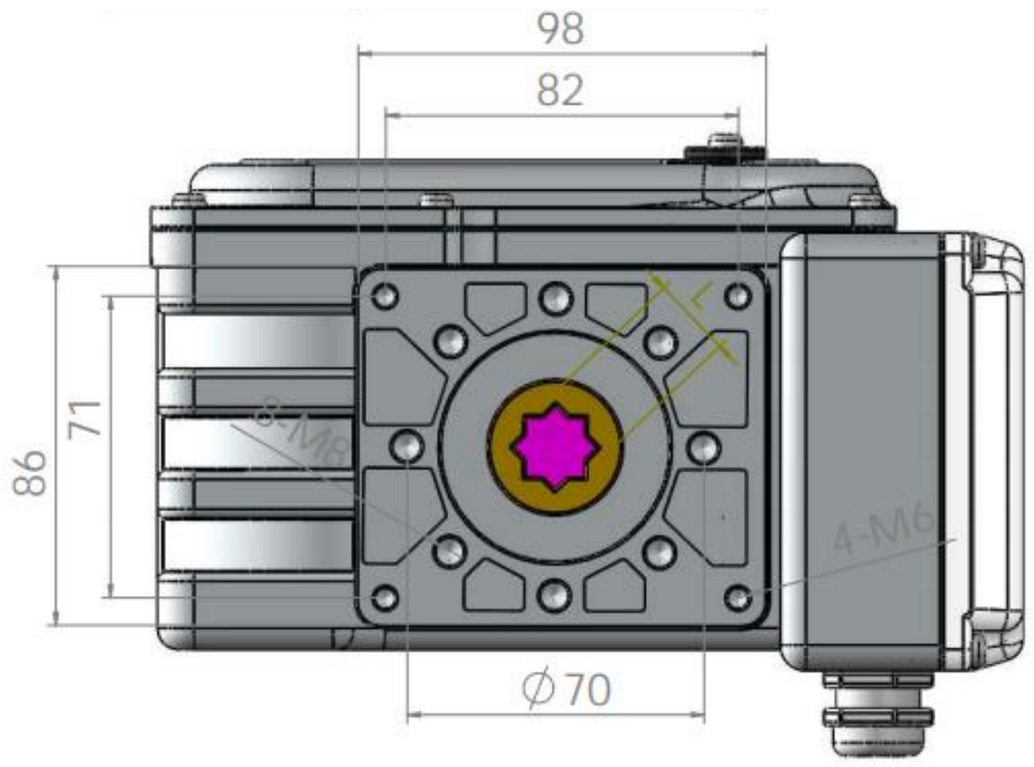


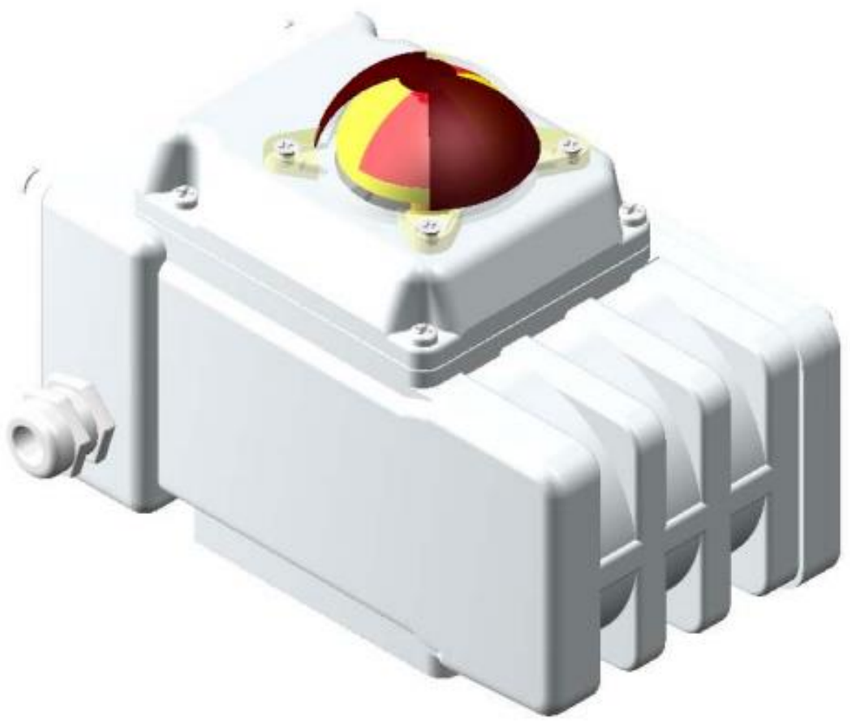




ulli-10 digicon-10 (female type）







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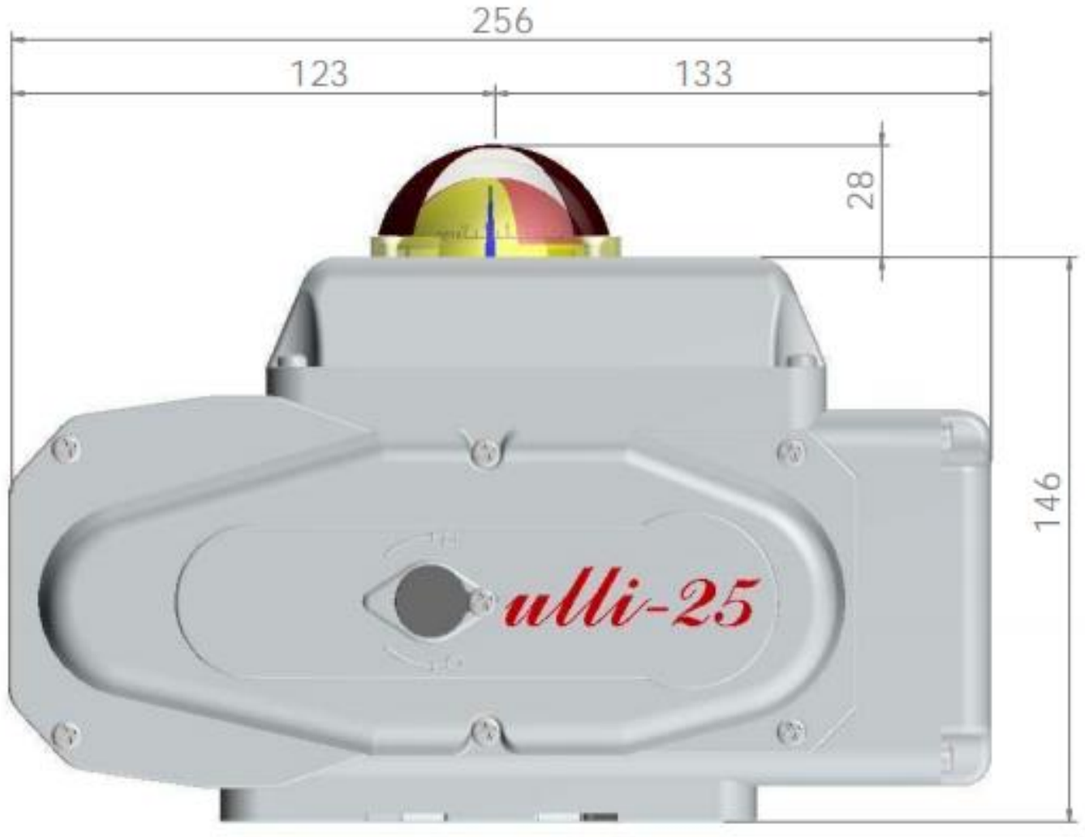

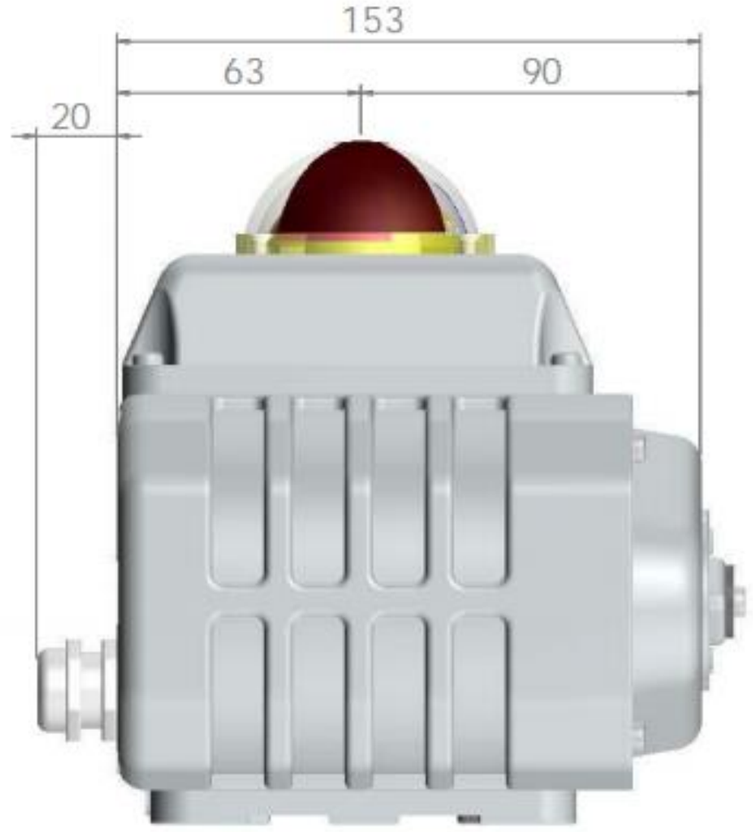

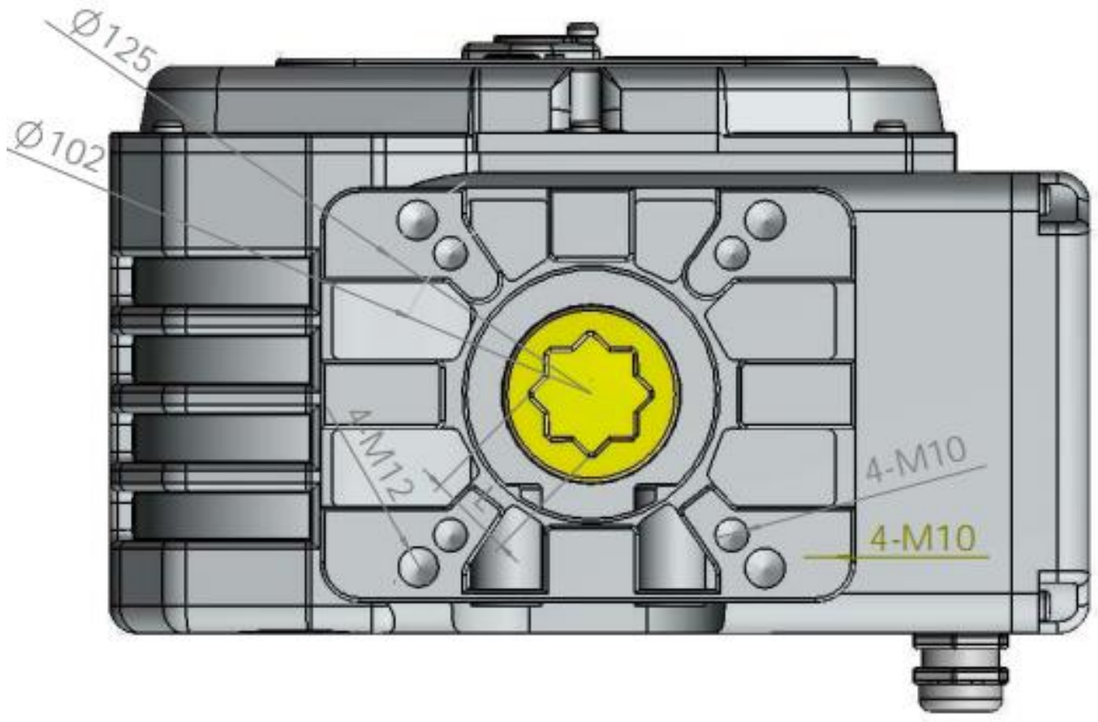

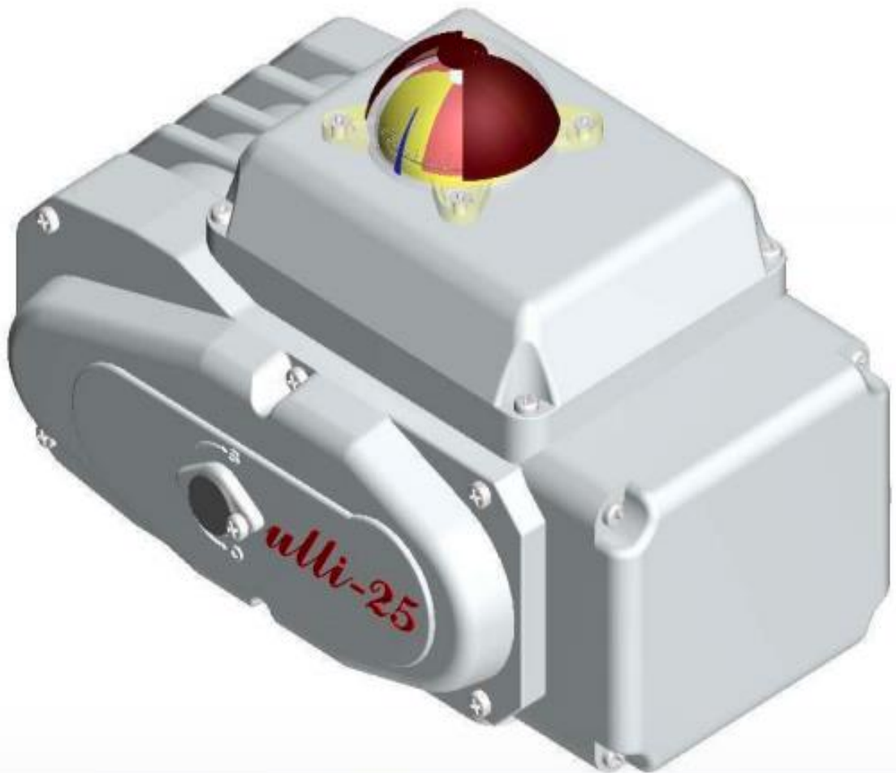

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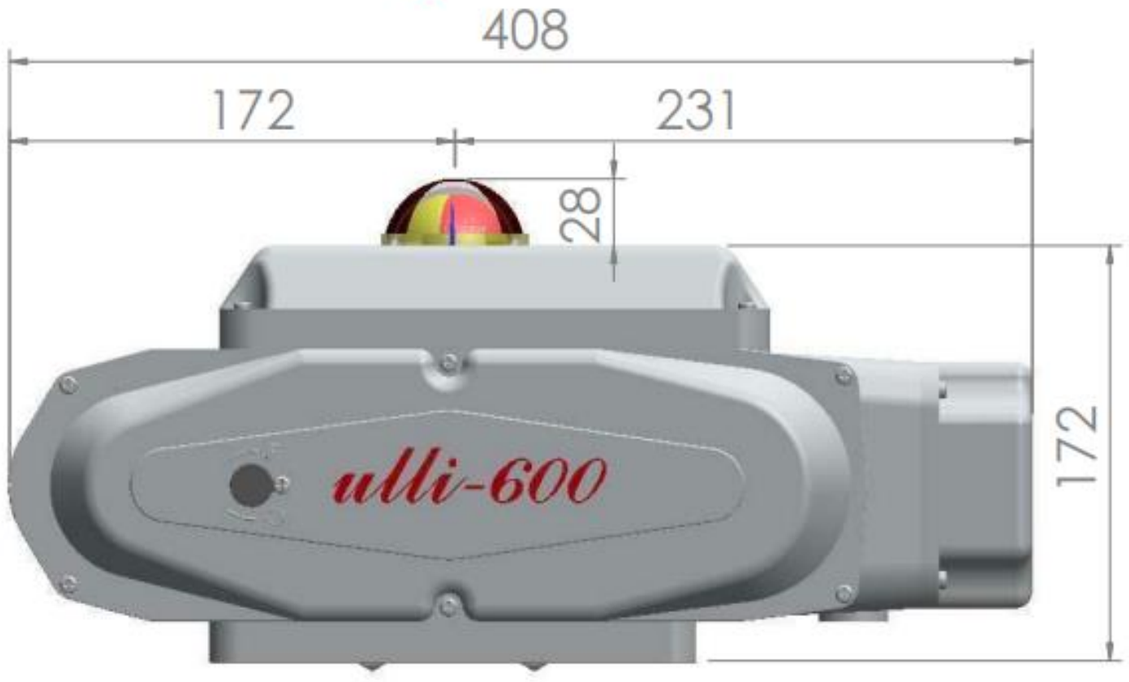
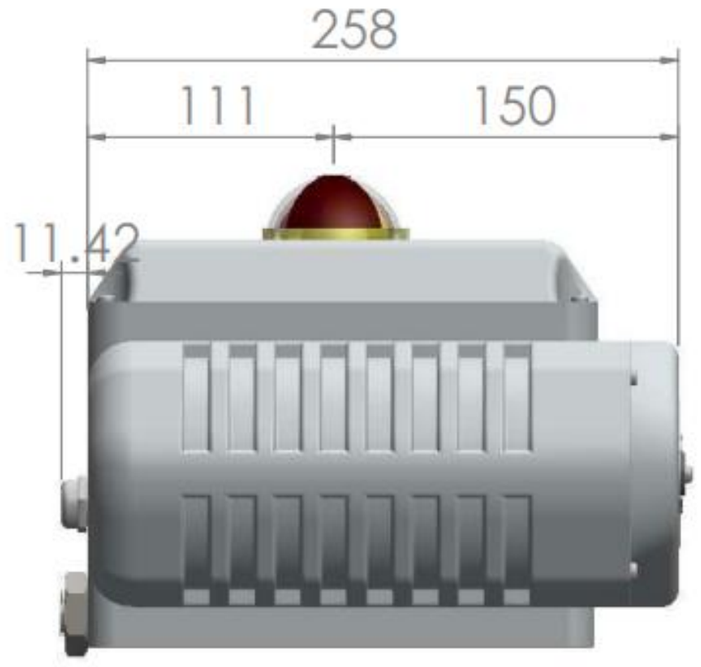
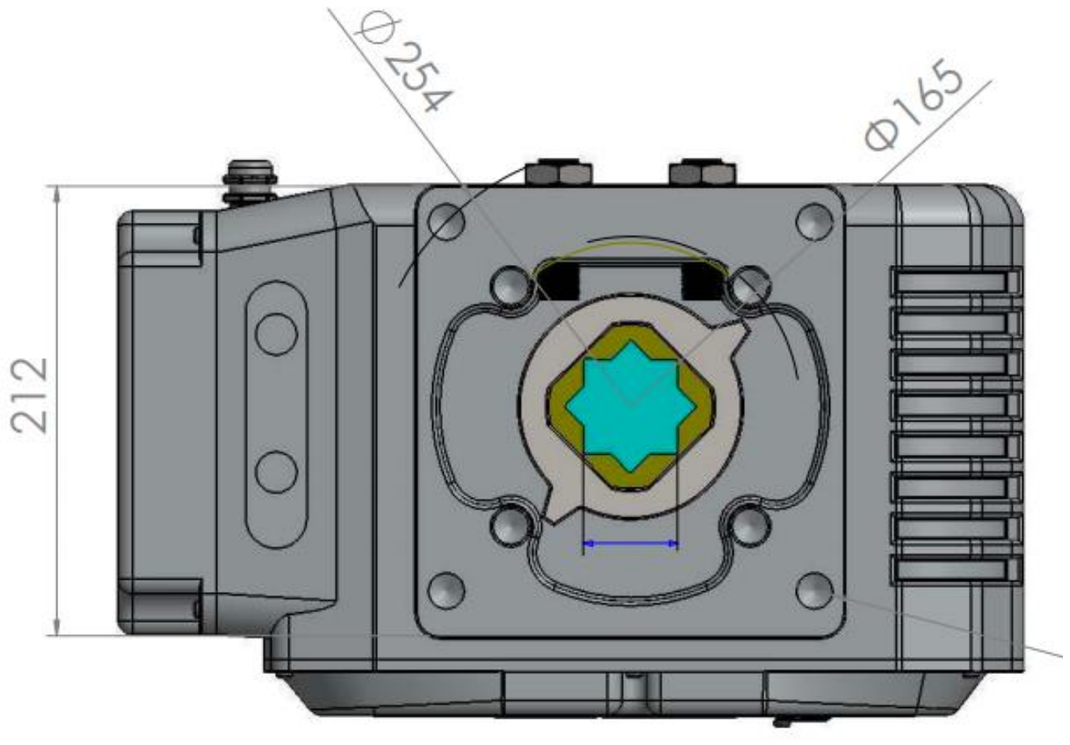
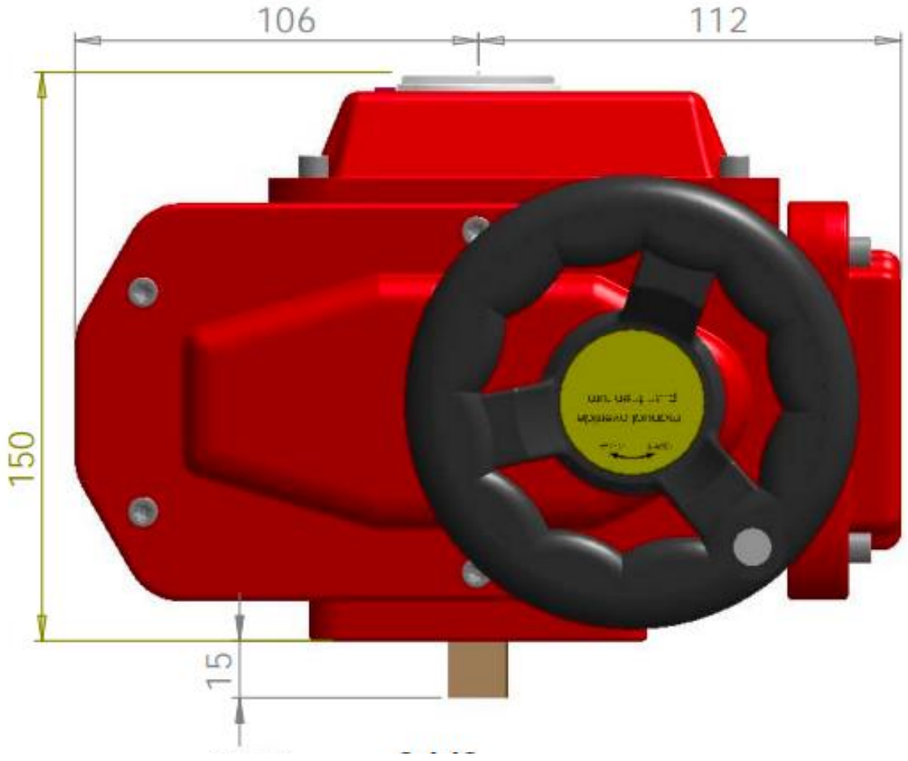
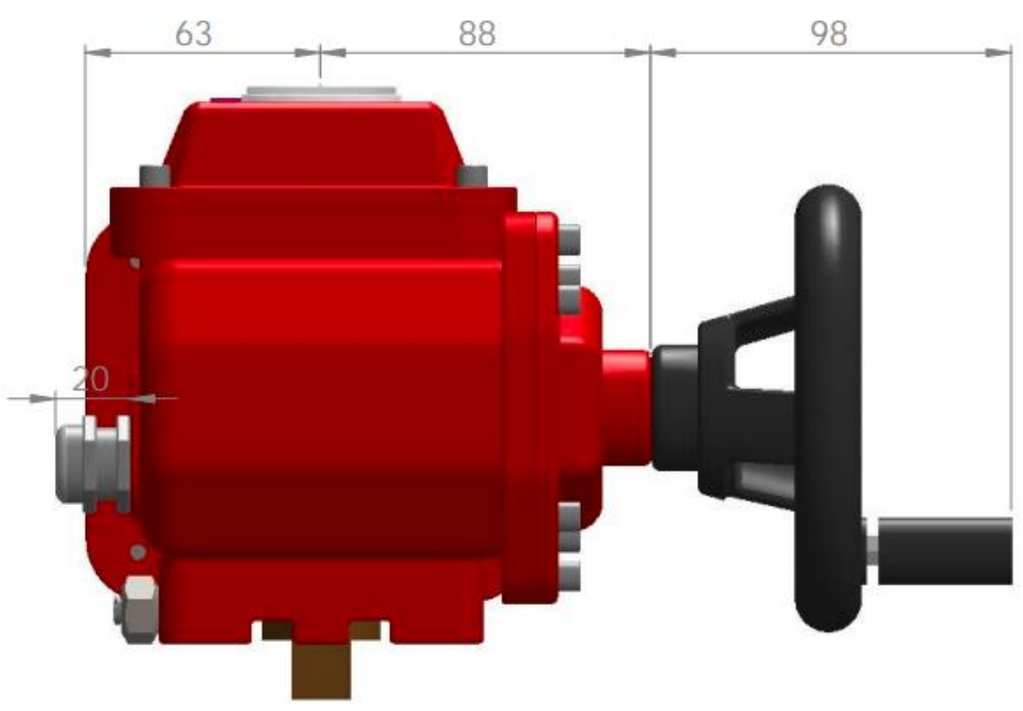


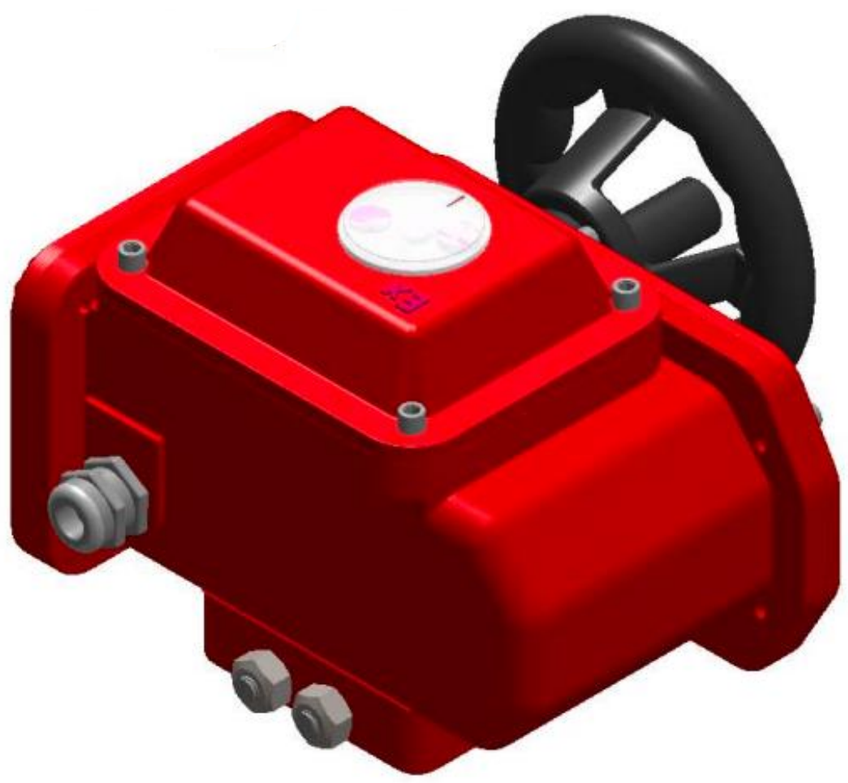




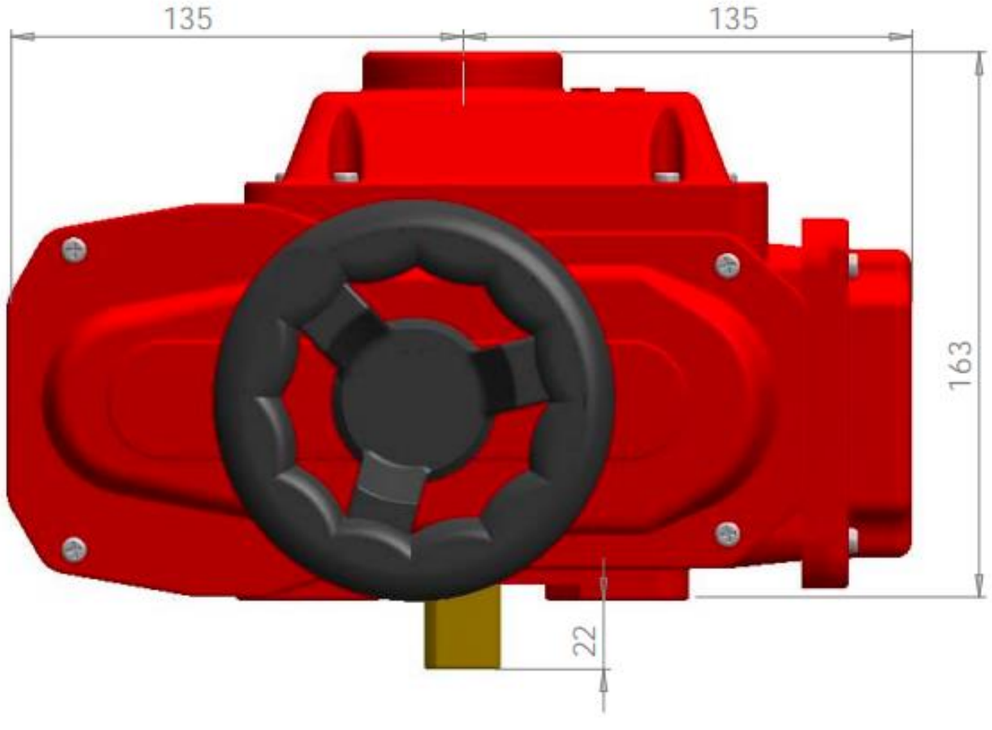
ulli-06/16EX *digicon*-06/16EX

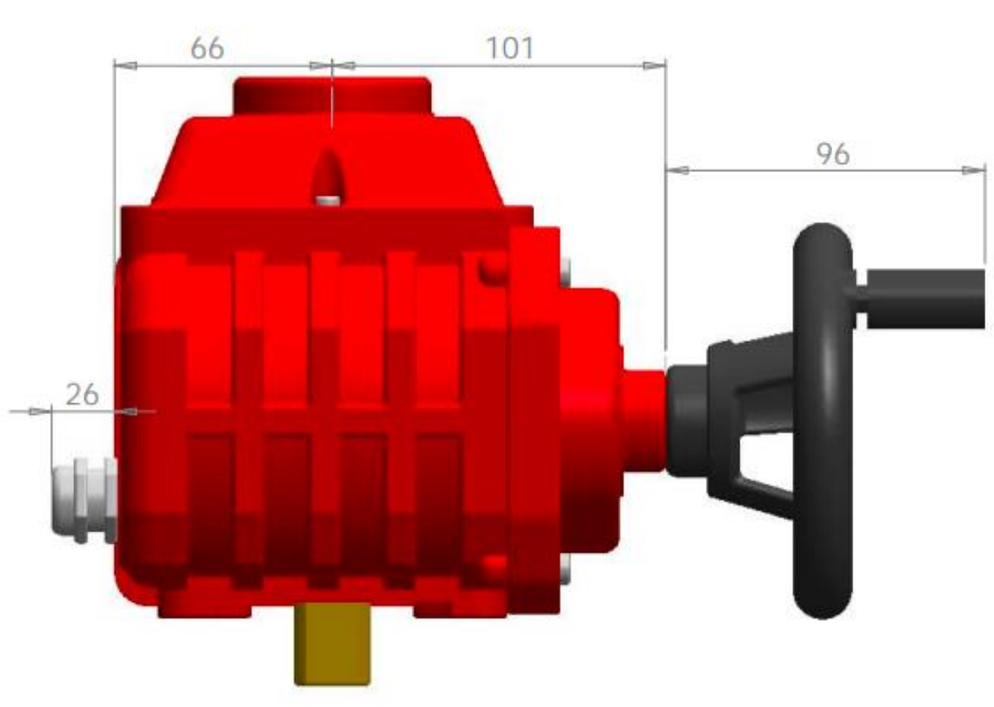


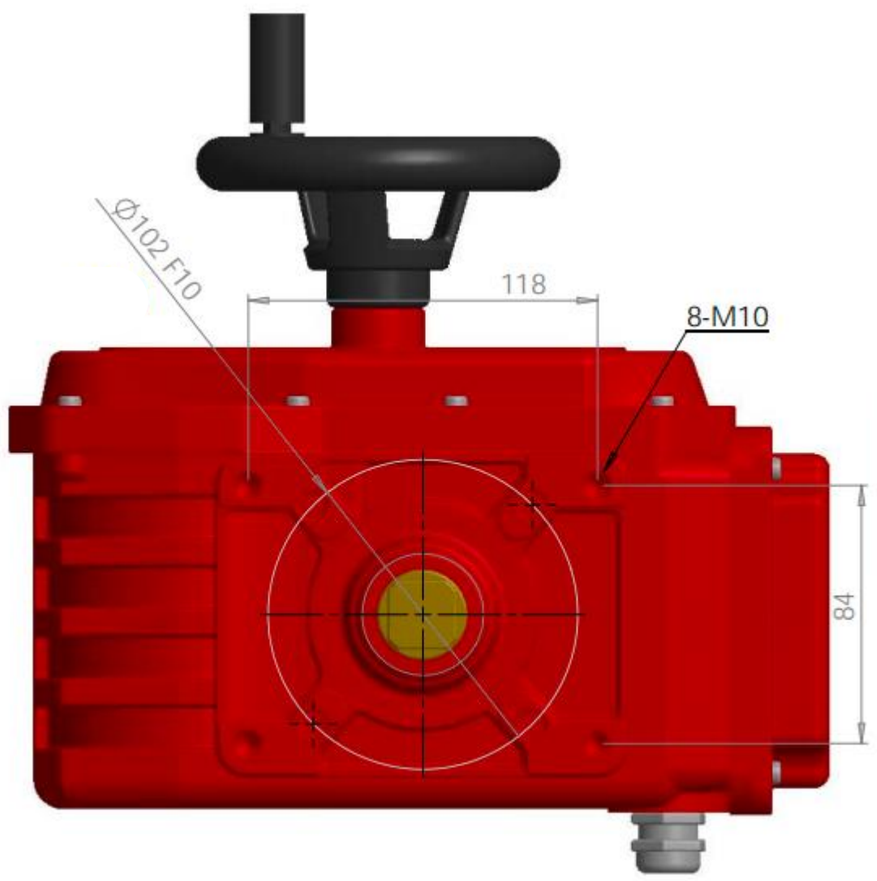


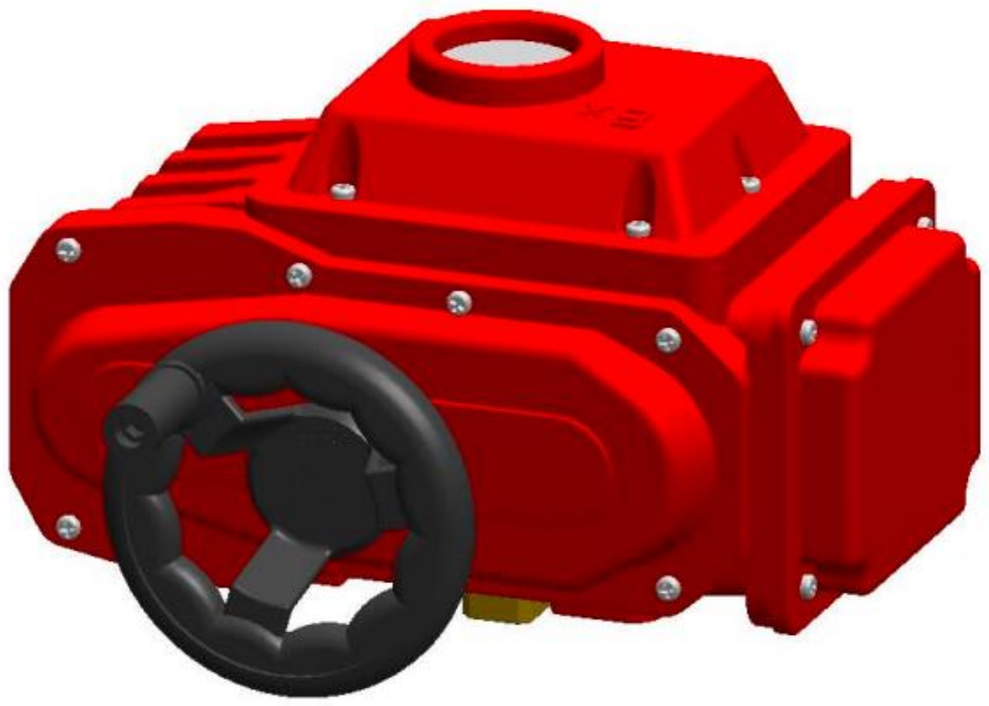


ulli-25/50EX digicon-25/50EX

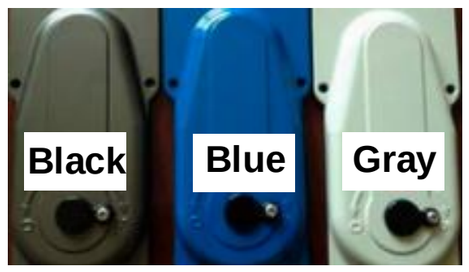








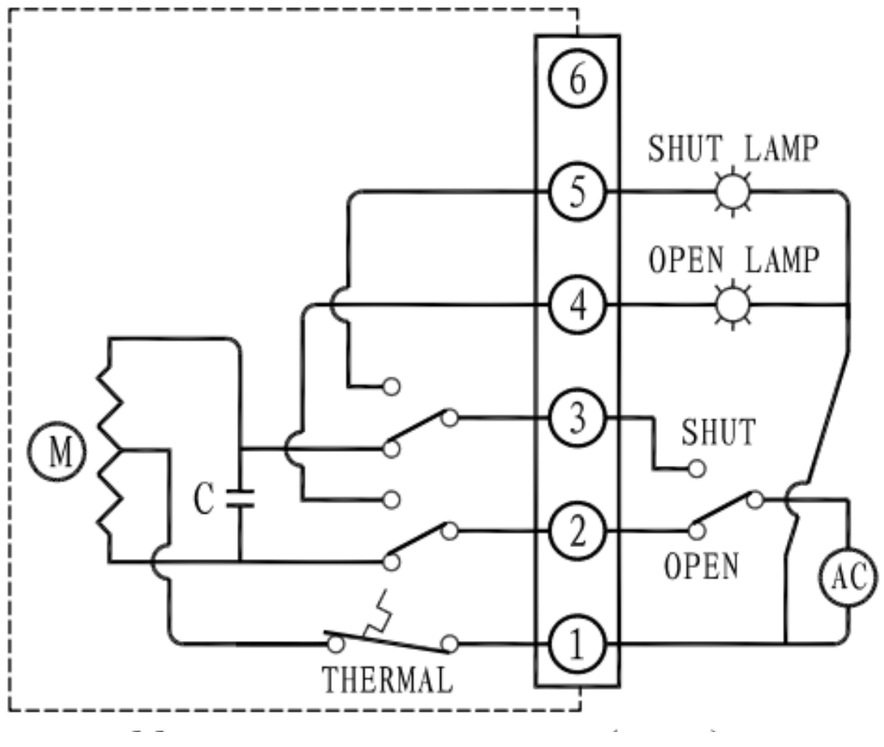
Customise your products:

1	Viewing Window Type	 Flat Viewing Window  Spherical Viewing Window	Free
2	Female OR Male Type	• Female(recessed connection) - more compact, smaller diameter, high precision • Male (protruding connection) - Taller height, larger diameter, more flexible installation	Free
3	Outer Cover Colour		Free
4	Output Shaft Types	• Four-Square Output Shaft • Round-Hole Output Shaft • Double-D Output Shaft • Keyed Output Shaft	Free
5	Voltage Options	• AC220V Single-Phase • AC380V Three-Phase • AC110V Single-Phase • AC24V Single-Phase • DC24V 220V etc.	Free
6	Handwheel	 • Disengagement functionality. • Shared across multiple models	Chargeable
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	• Protection against bidirectional overload • Overload output terminals • Multiple voltage options	Chargeable
9	Brushless DC Motor Drive	• High efficiency. • Low heat output. • High configuration and long lifespan.	Chargeable
10	Current Position Feedback (Current Position Transducer)	• Protection against bidirectional overload • Overload output terminals • Multiple voltage options	Chargeable
11	Advanced H-Class Configuration	• Includes advanced protective labels with high standards. • For details, please refer to the H-Class configuration page	Chargeable

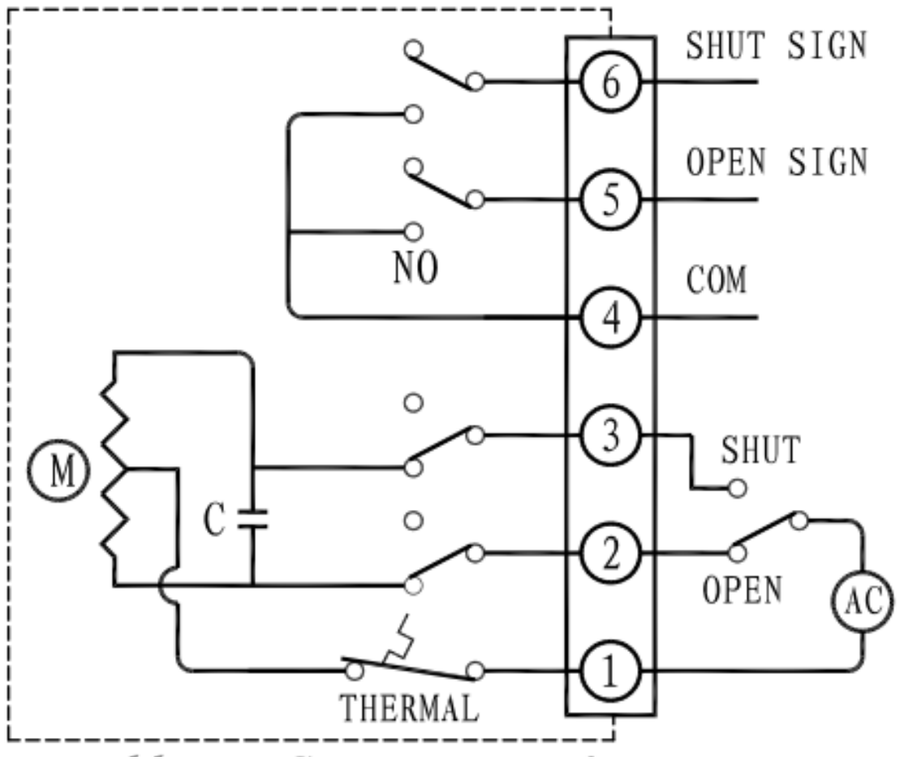
Note:
All features and functionalities listed above can be mixed and matched to suit your specific requirements. We are continuously upgrading and adding new options to our offerings. For tailored solutions and further customization needs, please contact us directly.

Wiring:

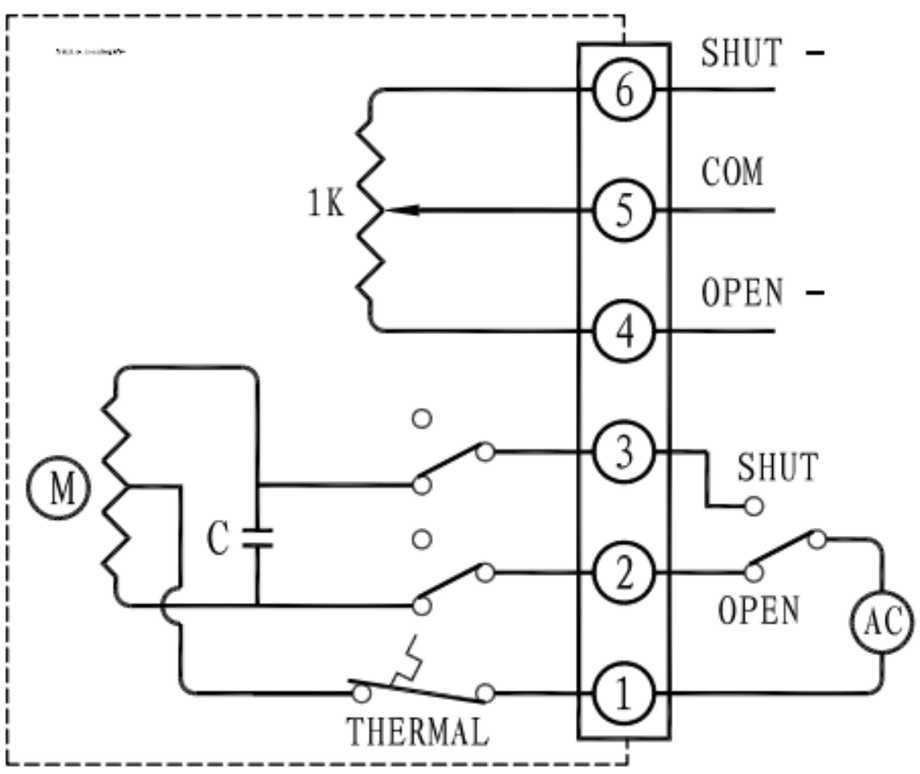
ulli-xx connection(std)



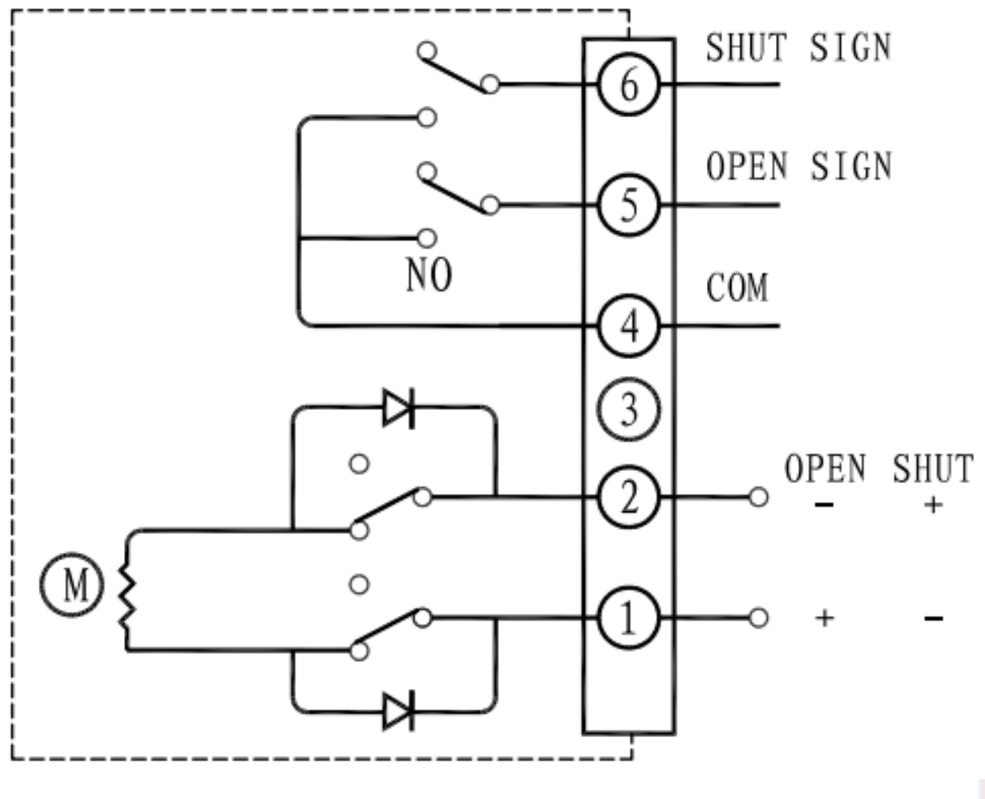
*ulli-xx*S connection



*ulli-xx*R connection)



DC power connection



Performance Benchmark: *ulli* vs Competitor

Comparison table with competing brand:

Parameter	ulli-5	-05 (Competitor)	Summary
Torque (N·m)	65	52	+25% Performance
Lifespan (Million Cycles)	10.7	0.36	+2972% Longevity
Pressure Resistance (V)	2200	1350	+63% Durability
Temperature Resistance (°C)	155	130	+19% Heat Endurance
Noise (dB)	53	55	2 dB Quieter
IP Rating	IP68	IP54	Superior Waterproofing

Conclusion
The ulli-5 surpasses the competitor (-05) in all critical performance metrics, including torque, durability, and safety features such as temperature and pressure resistance (heat tolerance and waterproofing).
With a significantly longer lifespan compared to competing products, the ulli-5 delivers exceptional value to end-users. This aligns with AOITEC 's commitment to providing superior performance and reliability without imposing the highest costs. Although priced similarly, the ulli-5 offers multiple times the efficiency and dependability, making it a highly worthwhile investment for professionals seeking quality and durability.

Detailed Comparison

1
Competing Brand's Flat Rubber Gasket**:** Its waterproof capability and aesthetic design are slightly lacking.
ulli's Enhanced Gasket: With an IP68 waterproof rating, it seamlessly fits and excels in performance.

2
Competing Brand's Cable Clamp: Plastic materials lack sufficient strength and may damage during tightening.
ulli's High-Strength Clamp: Made of copper alloy, 10 times more durable, offering 100% reliability.

3
Competing Brand's Flat Viewing Window: Can only be viewed from above.
ulli's Dome-Shaped Viewing Window: High-strength, waterproof, with superior aesthetics and visibility.

4
Competing Brand's Sliding Bearings: Shows clear inadequacies in wear resistance, affecting lifespan.
ulli's Fully Enclosed Bearings: Resembling diamond-like hardness, they ensure long-lasting durability

Extroadinary performance, trusted worldwide

BLDC Actuator

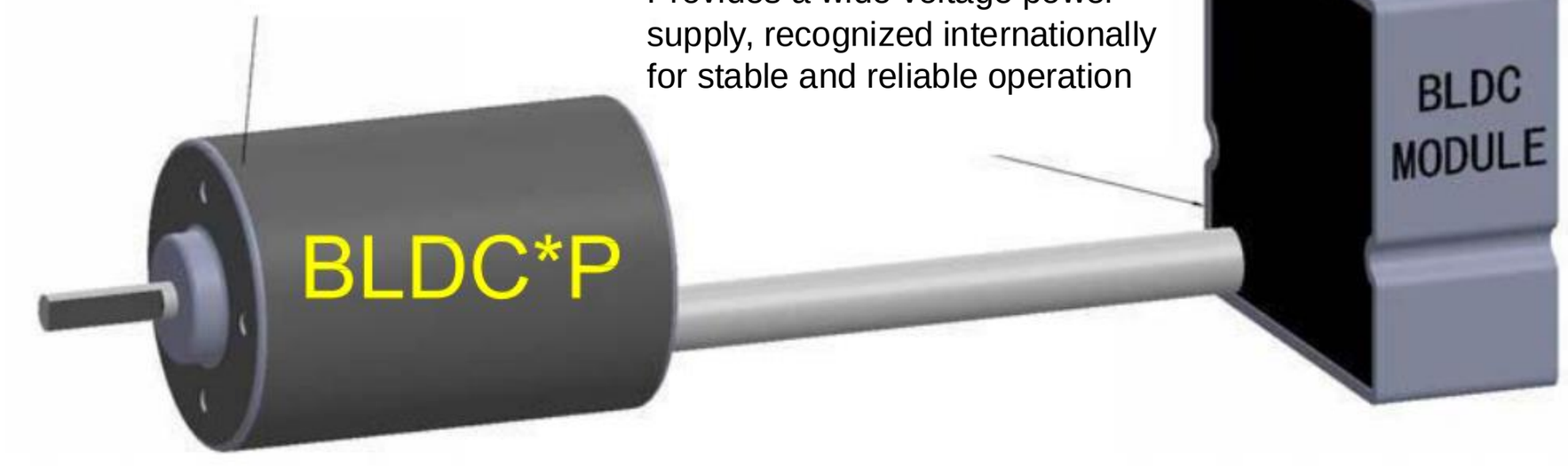
Key Advantages of AOITEC BLDC Actuators

1. **High Energy Efficiency Ratio**
   - Achieves energy savings of 20%–60%, offering significant cost reductions in long-term operation.
2. **Continuous Operation with Minimal Heat**
   - Designed to generate less heat, enabling uninterrupted operation without the need for overheating protection mechanisms.
3. **Overload Protection**
   - Equipped with advanced overload protection to ensure the safety and longevity of both the actuator and the valve.
4. **Multi-Power Source Compatibility**
   - Supports a wide range of input voltages: DC12V, DC24V, AC24V, AC110V, and AC220V, providing flexibility for diverse applications.
5. **Extended Lifespan**
   - Brushless motor technology, combined with low heat output, results in superior durability and reliability.
6. **Low Current Models**
   - Capable of producing low-current, low-speed models that reduce line losses and decrease the electrical burden, enhancing overall system reliability.
7. **Compact and Lightweight Design**
   - Smaller size and reduced weight make transportation more cost-effective and installation easier.
8. **Improved Safety**
   - Unlike traditional DC motors, BLDC actuators eliminate sparks, and compared to AC motors, they generate less heat, ensuring safer operation.
9. **Ease of Maintenance**
   - DC motors are simpler to replace and maintain compared to AC motors, reducing downtime and maintenance costs.
10. **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.

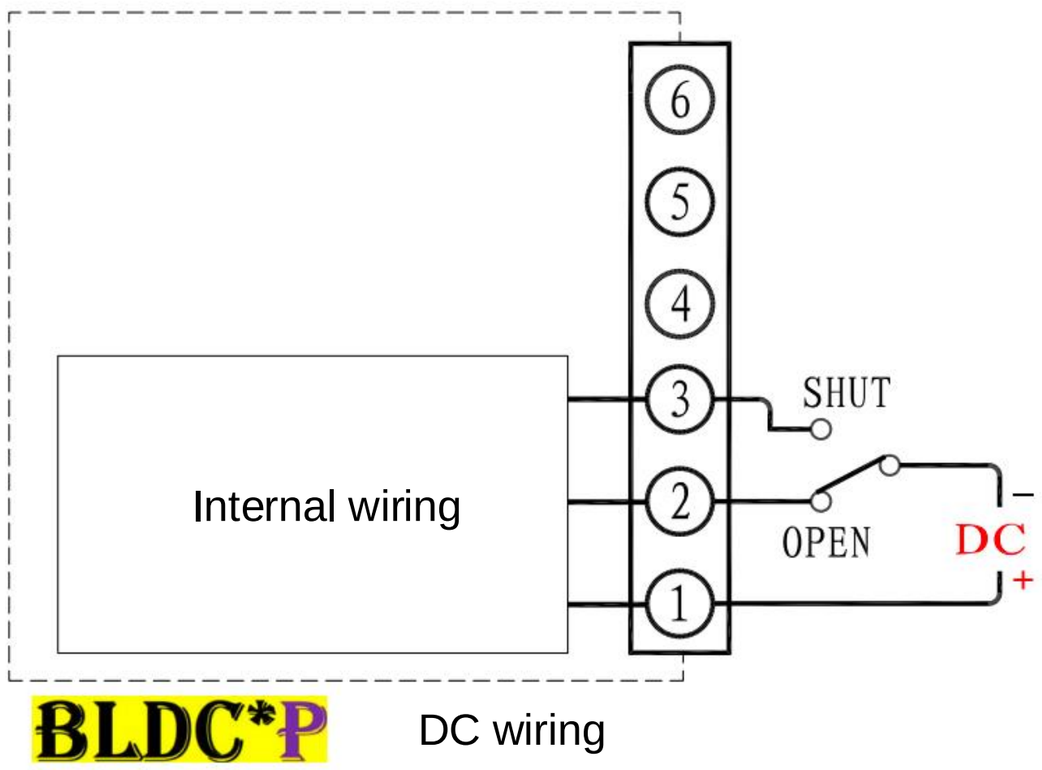
Diagram:

BLDC Motor:
Equipped with overcurrent protection, blockage protection, and overheating protection

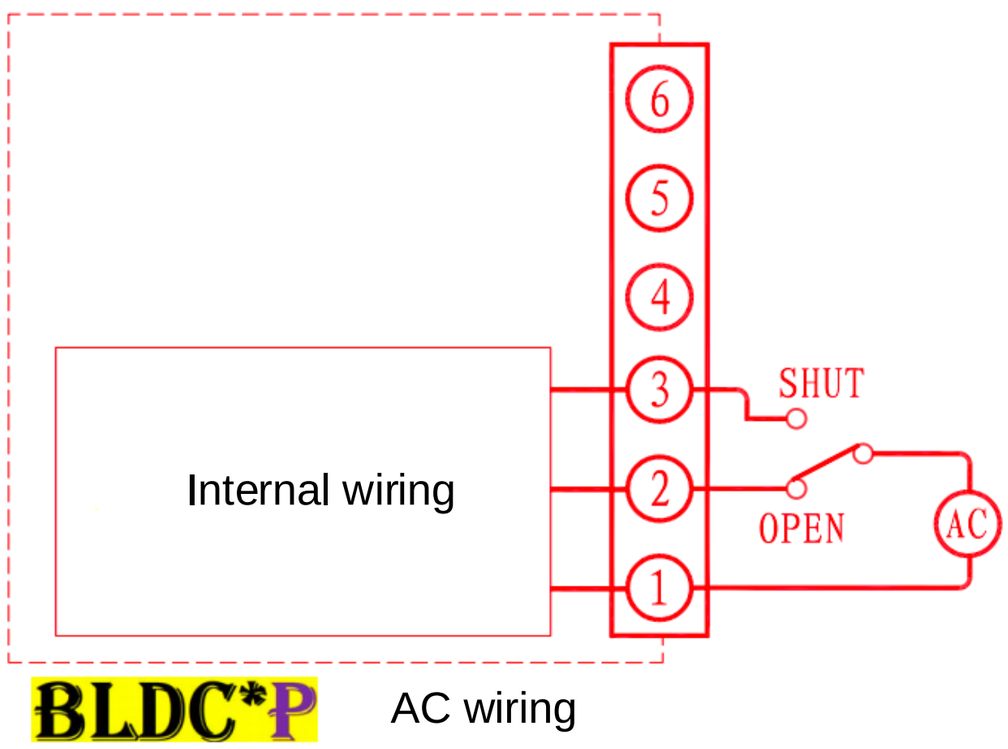
BLDC Module:
Provides a wide voltage power supply, recognized internationally for stable and reliable operation



Wiring:



DC wiring



AC wiring

BLDC Actuator

Model	Power Supply	Torque (Nm)	Stroke Time (Sec)	BLDC Motor (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 Wide Voltage	50	10	5	0.25	0.8	2.3	IP68
BLDC*P-10	DC24V, AC24V Wide Voltage	100	30	11	0.5	1.5	3.3	IP68
BLDC*P-20	DC24V, AC24V Wide Voltage	200	30	20	0.8	2	3.5	IP68
BLDC*P-40	DC24V, AC24V Wide Voltage	400	30	30	1.2	2	7.2	IP68
BLDC*P-60	DC24V, AC24V Wide Voltage	600	60	30	1.2	2	7.2	IP68
BLDC*P-100	DC24V, AC24V Wide Voltage	1000	50	48	2	5	12	IP68
BLDC*P-200	DC24V, AC24V Wide Voltage	2000	100	48	2	5	12	IP68
BLDC*P-400	DC24V, AC24V Wide Voltage	4000	100	100	4	8	30	IP68
BLDC*P-600	DC24V, AC24V Wide Voltage	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 Wide Voltage	100	56	9.6	IN 4–20mA	OUT 4–20mA	3.6	IP68
BLDC*M-20	DC24V, AC24V Wide Voltage	200	50	20	IN 4–20mA	OUT 4–20mA	3.7	IP68
BLDC*M-40	DC24V, AC24V Wide Voltage	400	50	20	IN 4–20mA	OUT 4–20mA	7.6	IP68
BLDC*M-60	DC24V, AC24V Wide Voltage	600	150	20	IN 4–20mA	OUT 4–20mA	7.6	IP68
BLDC*M-100	DC24V, AC24V Wide Voltage	1000	50	48	IN 4–20mA	OUT 4–20mA	12.5	IP68
BLDC*M-200	DC24V, AC24V Wide Voltage	2000	100	48	IN 4–20mA	OUT 4–20mA	12.5	IP68
BLDC*M-400	DC24V, AC24V Wide Voltage	4000	100	100	IN 4–20mA	OUT 4–20mA	30.5	IP68
BLDC*M-600	DC24V, AC24V Wide Voltage	6000	150	100	IN 4–20mA	OUT 4–20mA	30.5	IP68

NOTES:
- 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: Supports AC85–265V, internationally certified for stable performance under both undervoltage and overvoltage conditions.

Supercapacitor Return Actuators

Key Features of AOITEC Supercapacitor Return Actuators

Supercapacitor Energy Storage
Utilizes supercapacitors for energy storage, ensuring reliability without failures due to overcharging or over-discharging.

DC Brushless Motor
Equipped with a brushless motor design, eliminating the risk of failure caused by carbon brush wear.

Overload Protection
Built-in overload protection prevents damage from blockages.

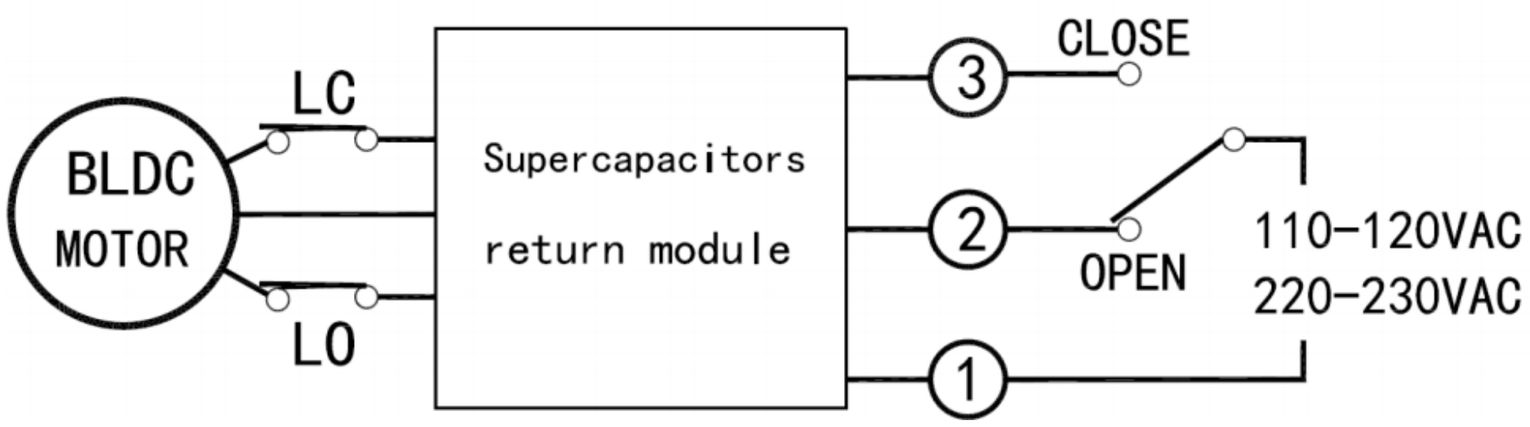
Wide Torque Range
Available in a variety of options, supporting torque ranges from 50NM to 2000NM.

Rapid Valve Operation
Operates valves 2–5 times faster than conventional actuators for quick opening and closing.

Consistent Performance
Delivers strong torque that remains steady during acceleration.

Instructions and Reminders for Use

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



Special Notes:
1.On initial power-up after wiring, operation may take several seconds—this is normal, not a malfunction.
2.Customers can choose between two power outage modes when placing an order:
1. **Default Option**: Valve closes during a power outage.
2. **Alternate Option**: Valve opens during a power outage.

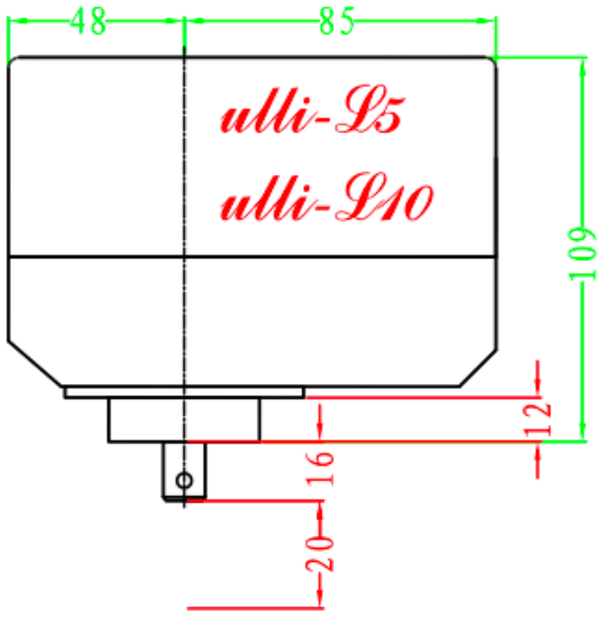
Chapter 2:
Linear Actuator

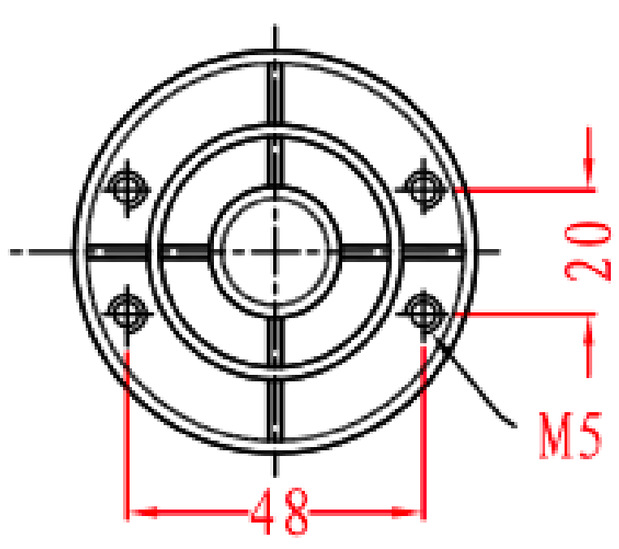
Linear Valve Actuators- Data sheet

Model	Power supply	Thrust (kgf)	Stroke	Stroke time 50Hz SEC	IP grade	Motor F Class 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	
dogicon-L5	AC24V	50	20	60	IP65	20W/6W	0.8A, 24V	0.7A, 24V	1.3	0-10v 4-20mA
dogicon-L10	AC24V	100	20	60	IP65	20W/6W	0.8A, 24V	0.7A, 24V	1.3	0-10v 4-20mA
dogicon-25	AC24V AC220V 110V	250	40	25	IP65	80W/23W	0.58A, 220V 3.5A24V	0.62A, 220V 3.8A, 24V	4	0-10v 4-20mA
dogicon-50	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
dogicon-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
dogicon-L200	AC24V AC220V 110V	2000	60	120	IP65	300W/90W	1.2A,220V	1.3A, 220V	7.8	0-10v 4-20mA

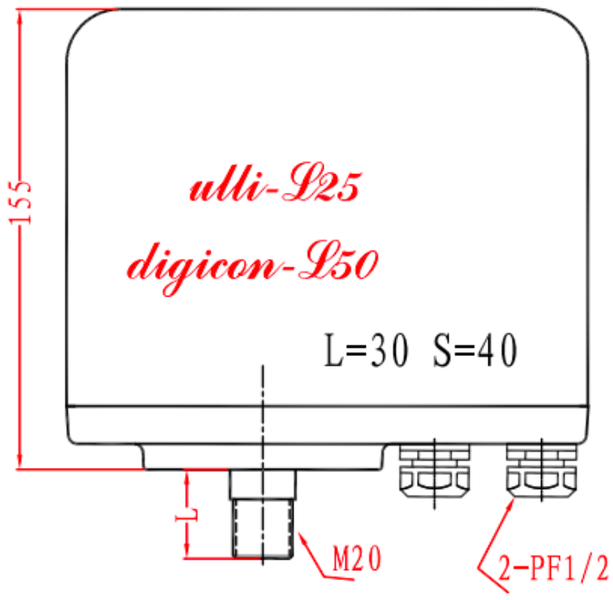
Diagrams

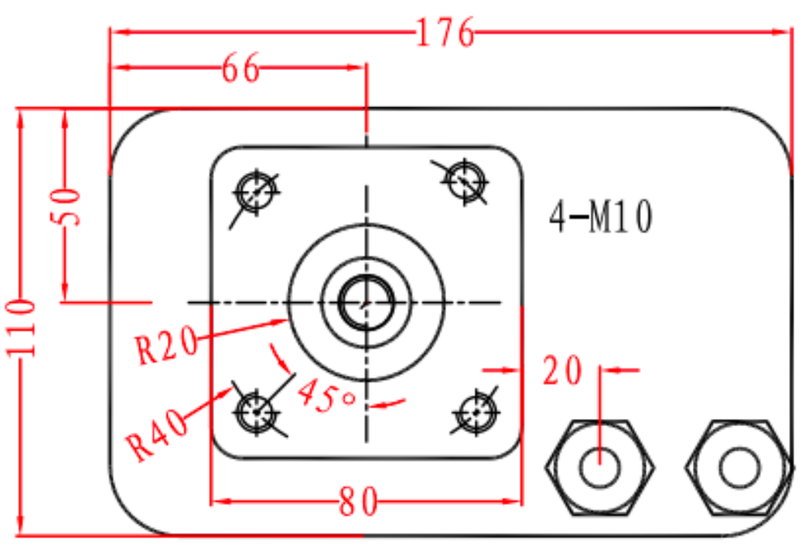
ulli-L5/L10 digicon-L5/L10



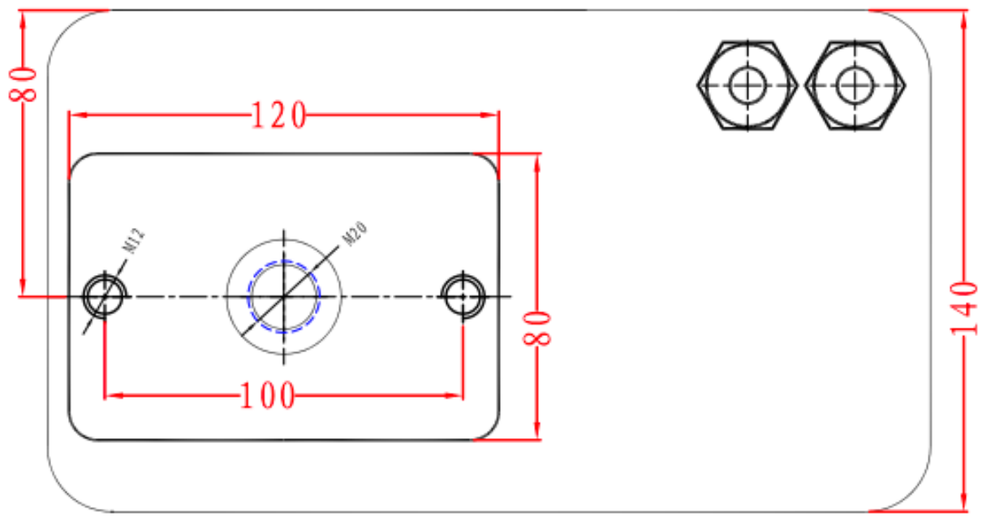


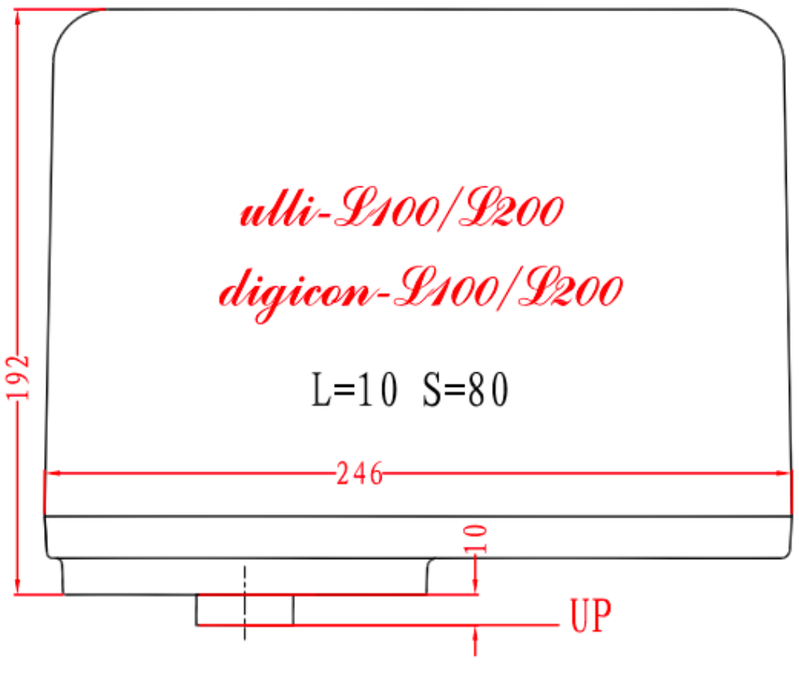
ulli-L25/L50 digicon-L25/L50





ulli-L100/L200 digicon-L100/L200

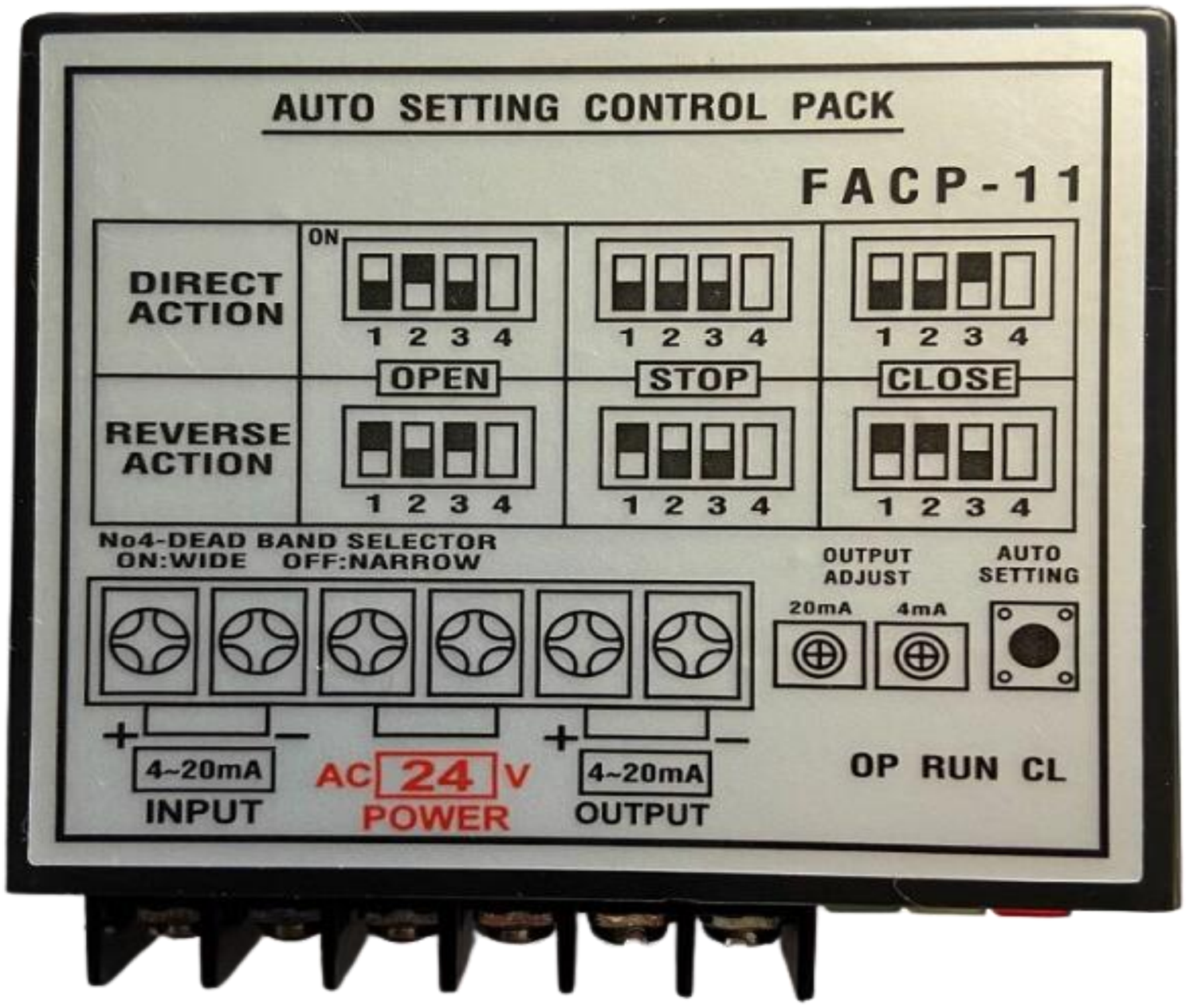




Chapter 3:
Control Pack and Modules

Auto Setting Control Pack (FACP-11)

The FACP-11 Auto Setting Controll Pack is capable of controlling the actuator's open/close degree over a resolution of 200:1 by a control signal of 4-20mA dc or 2-10vdc.



Features

- Needless to adjust- fully automated
- High rangeability of control - over 200:1 resolution
- Additional function
  1. Fail mode (upon control signal loss)
     - Open - fail to open • Stop - fail to stop
     - Close -fail to close
  2. Self checking function
     - checking for limit switch • checking for pot
     - checking for motor
  3.lectronic brake control
  4. feedback output : 4~20mA 1%DC(RL:250ohm)
  5.small & lightweight

Electrical Specifications

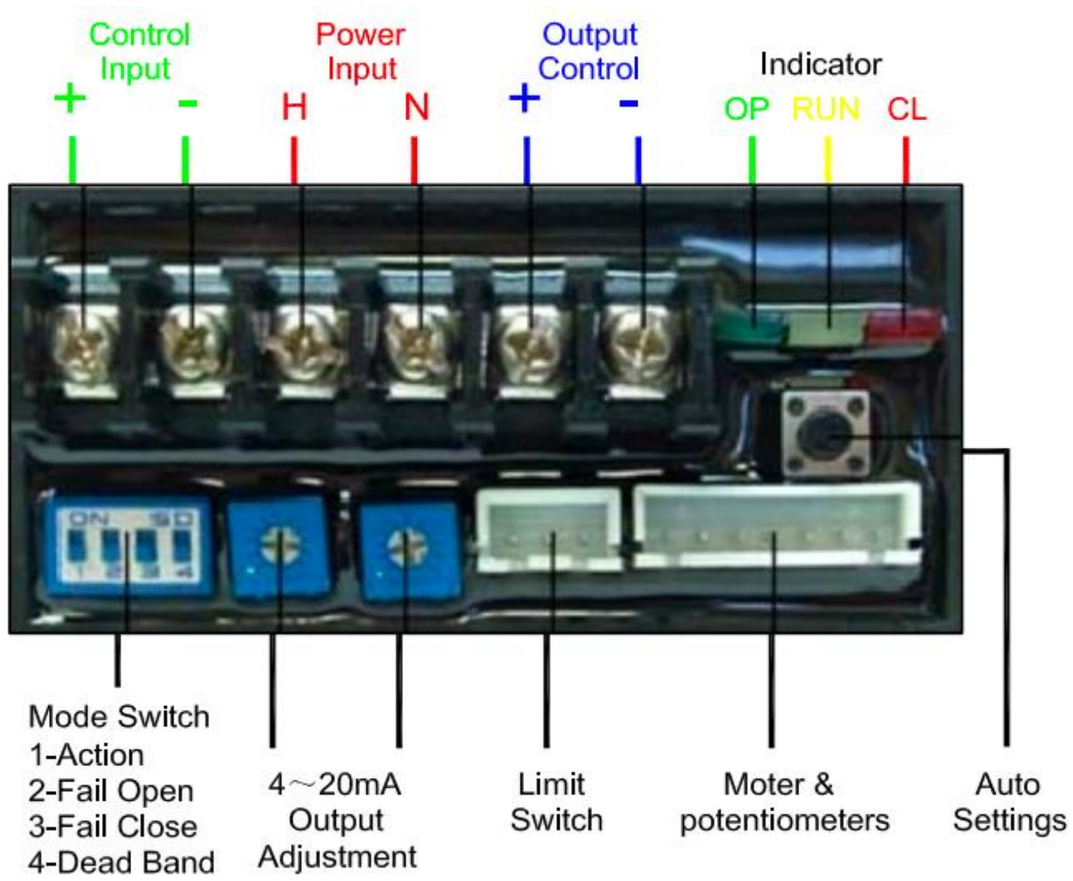
- Power: 110vac or 220vac 50/60Hz
- Control Signal Input : 4~ 20mA dc or 2~10vdc
- Output Sibnal : 4~20mA 1%DC(RL:250ohm)
- Calibration: Auto setting
- Resolution: over 200:1

Power consumption

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

Auto Setting Control Pack (FACP-11)

Operation



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.

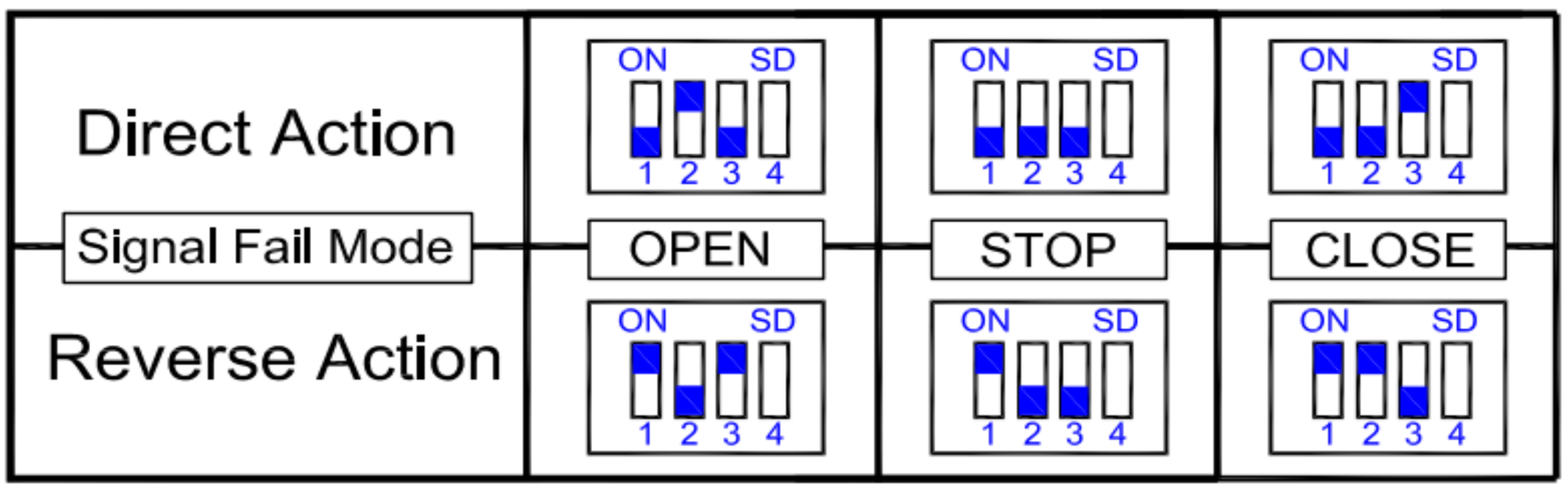
To exit this mode, a reverse input signal must be provided. Upon receiving this signal, the actuator will deactivate the Blockage Protection Mode and resume normal operation.

1.Indicator explanations：

- 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

2. Auto Setting Switch:
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.

3. Mode Switch Operation & Setting:



4. Output Adjust VR: Fine-tune the "feedback output" for precise adjustment.

5. Limit Switch: Input terminal where the digital limit is activated, indicated as "A."

• Limit switch common • Close limit switch • Open limit switch

6. Motor & Potentiometer

• Motor common • Open motor • Close motor • Ground

• Potentiometer P1 • Potentiometer P2 • Potentiometer P3

Capacitor-Based Safety Control Pack

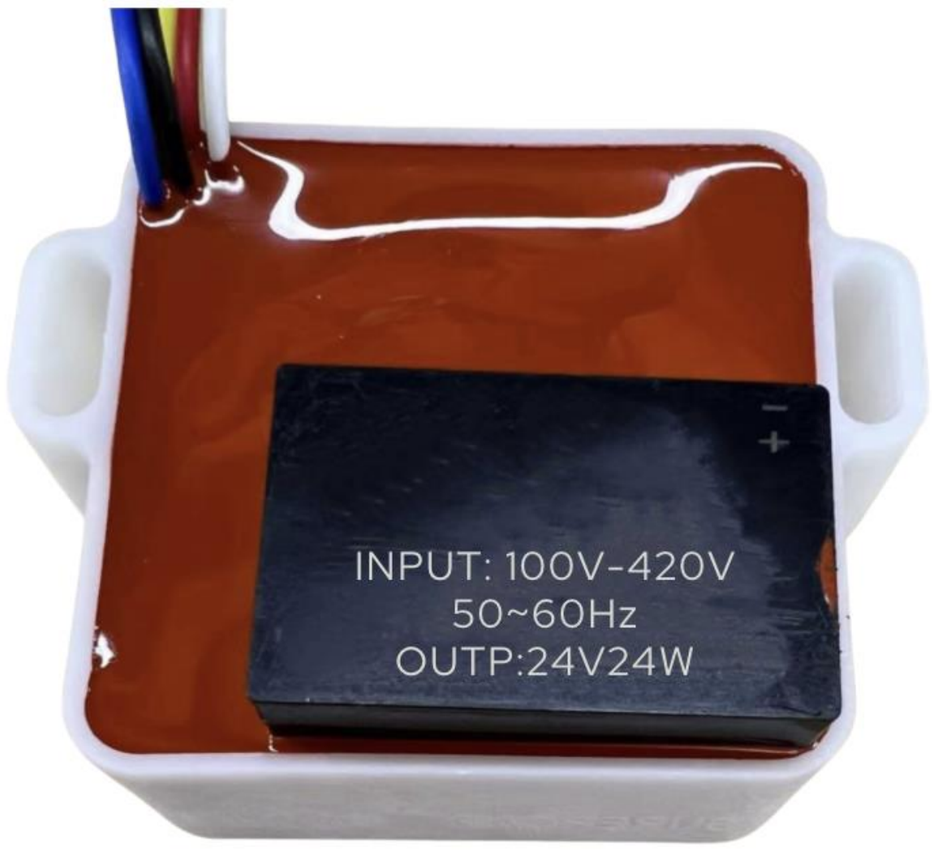
1. Introduction

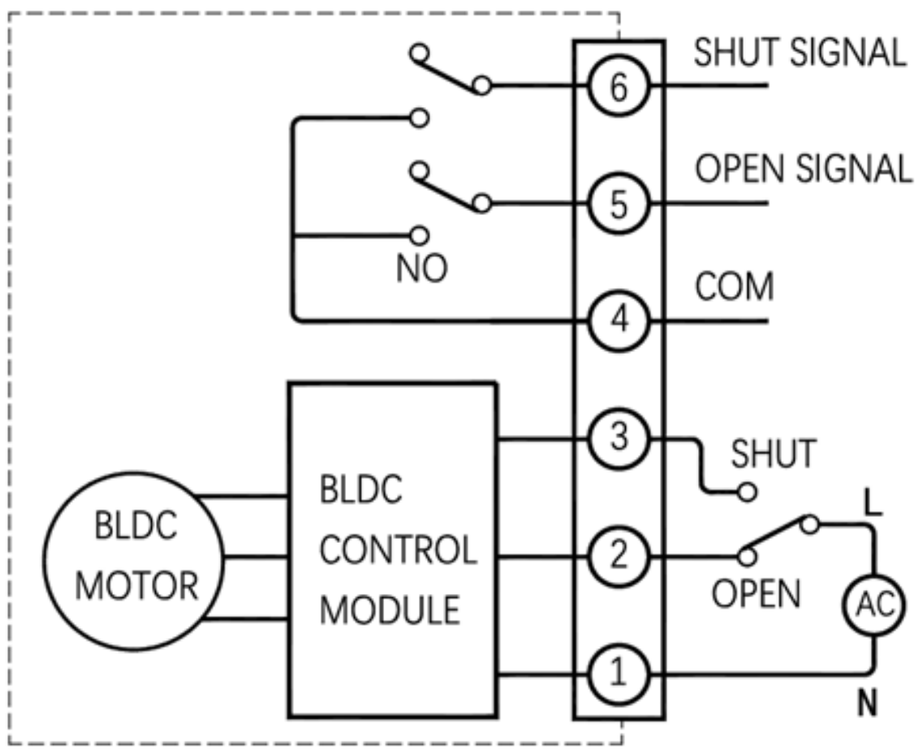
The capacitor-based safety actuator is designed for various equipment requiring emergency valve opening or closing during sudden power outages. It utilizes advanced capacitors to store energy and, during normal operation, charges via AC power. In case of a power failure, it triggers a pre-set action to fully open or close the valve, safeguarding lives and property.

2. Product Advantages

1) **Dual Functionality**:
   - Operates as a standard on-off electric actuator during normal conditions.
2) **Emergency Safety**:
   - In the event of an accident (e.g., power failure), the actuator executes pre-defined actions to open or close the valve, ensuring safety for life and assets.
   - Examples: Prevention of fire spread or hazardous gas accumulation.
3) **Enhanced Stability**:
   - Compared to spring-return actuators, it offers higher stability, smaller footprint, and is more cost-effective, making it easier to adopt.
4) **Power-Efficient Design**:
   - The capacitors only activate during power failure (discharge mode) with minimal operational load, ensuring high reliability.
5) **Energy Saving**:
   - When idle, the motor consumes only 3W of power, contributing to environmental sustainability.
6) **Wide Voltage Range**:
   - Accepts a broad input range of 85–240V AC, ensuring robust adaptability for different environments.

3. Interface





Wireless Control Module:
Freedom and Efficiency Combined

1. Overview

The Ulli-10 and larger models can be equipped with this advanced wireless control module, enabling remote operation with both inching and holding modes. It supports multiple power supply options (AC 24V, 110V, or 220V) and can execute remote control commands. It also features the ability to switch to a 3-wire control mode, providing greater flexibility for various use cases, enhancing both security and convenience. This innovative feature delivers the following key benefits:

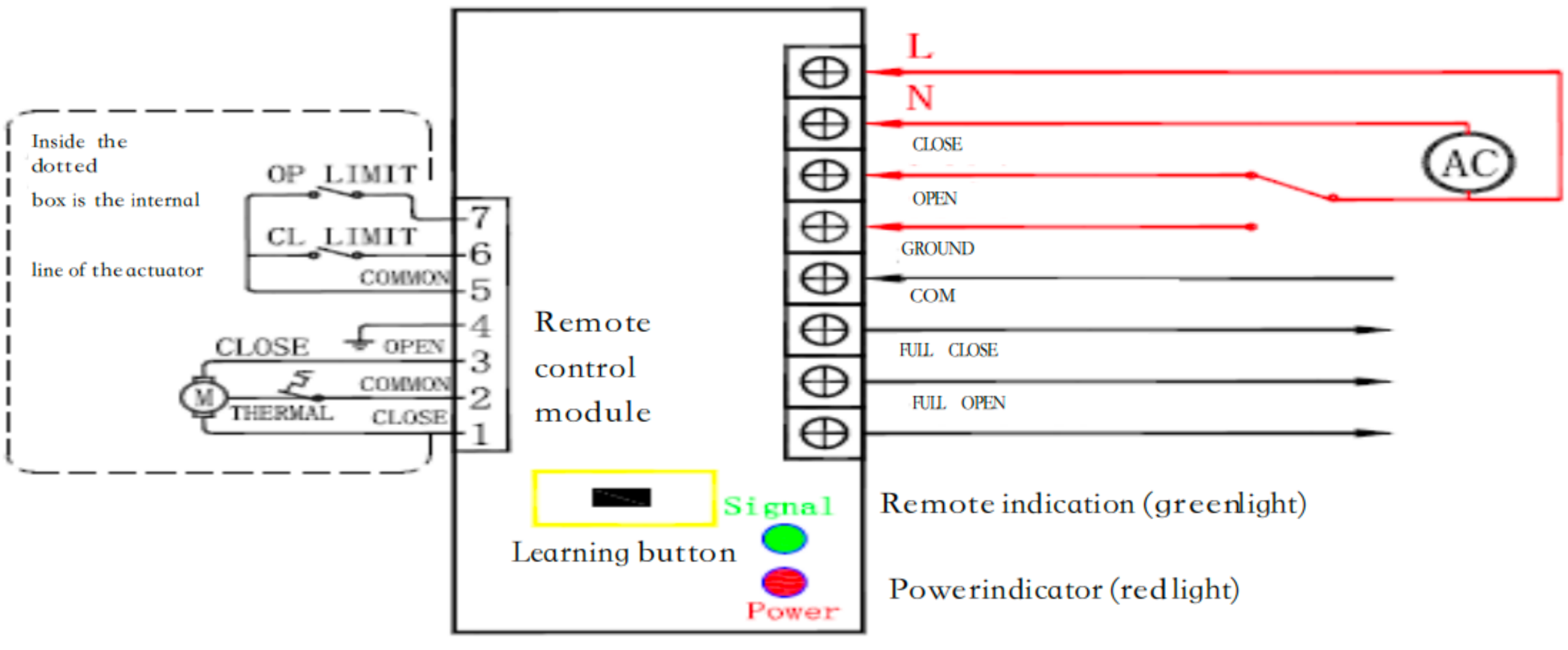
a. **Seamless Control Flexibility**: Effortlessly switch between remote control and local control modes, ensuring operational convenience.
b. **Elimination of Additional Hardware**: No need to install a local control box or rely on a handwheel, significantly simplifying setup.
c. **Long-Distance Operation**: Control valves from kilometers away with just a flick of a finger—fast, efficient, and incredibly comfortable.
d. **Enhanced Safety**: Avoid physical risks in narrow, high-risk, or contaminated spaces by operating the valve remotely.
e. **Cleanroom Compatibility**: Operate valves without the hassle of changing clothes or donning protective layers in sterile environments—simply use the wireless control

2. Performance Characteristics

- Supports remote control distances of up to kilometers (unobstructed).
- Features learning and clearing functions for remote controls.

Includes enhanced functionalities:
1) Default wireless control is activated upon power-on.
2) Manual override (press to close or open) is available if wireless control is required.
3) Wired control is optional and only needed in specific scenarios.
4) Remote buttons can be set for click (momentary) or hold (continuous) operation.
5) Maximum allowable current: 5A.
6) Specially designed for ease of assembly, lightweight wiring, and compact form.
7)Built with dustproof and vibration-resistant packaging for durability.
8) Compatible with models Ulli-10, 25, 50, 100, 200, 400, and 600.

3. Interface



Control Module for On-Off Actuators

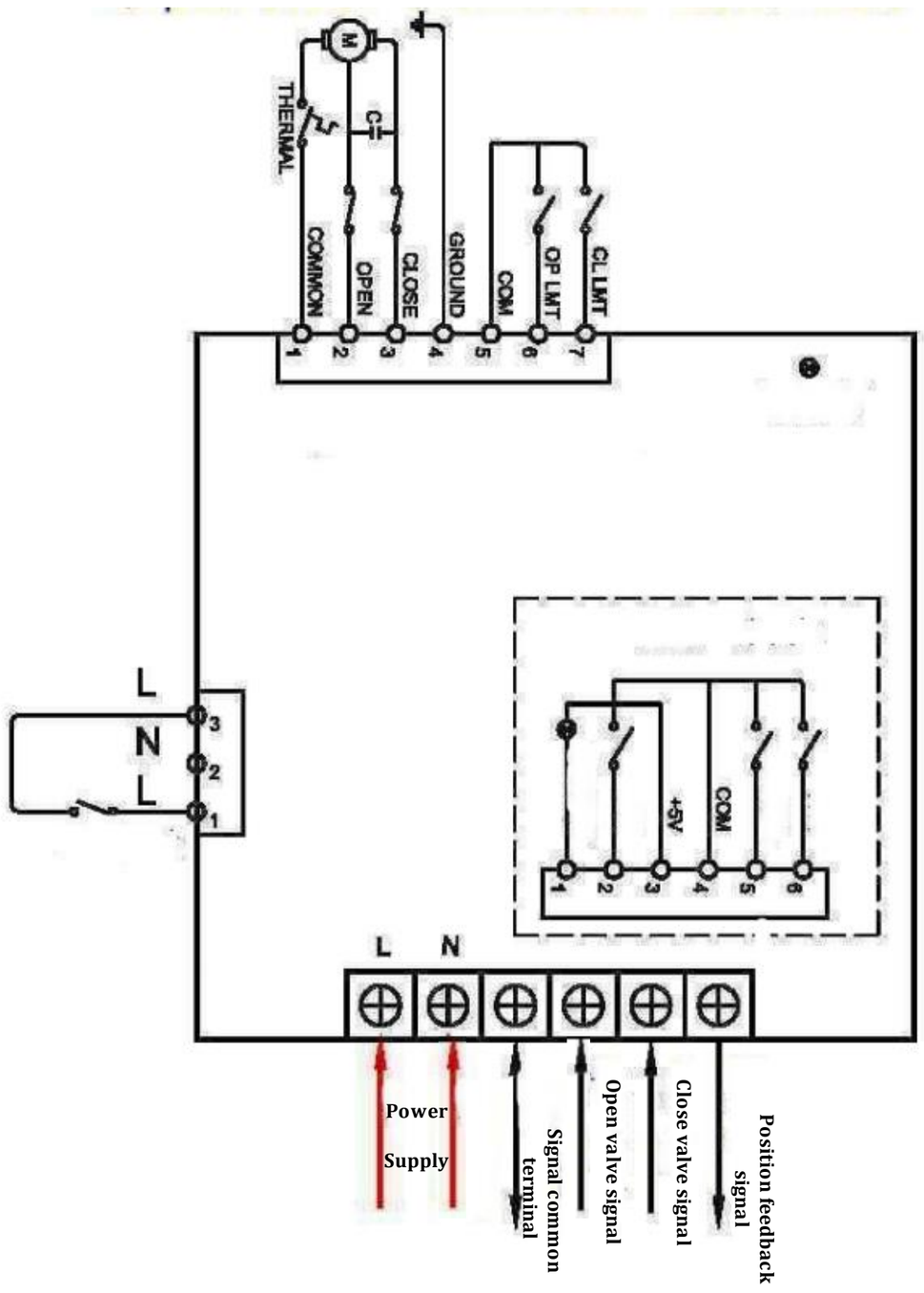
1. Introduction

The on-off control module drives the valve to open or close based on the input control signal (valid at high-level signal). When the control signal disappears, the valve operation stops immediately. Simultaneously, when the valve reaches fully open or fully closed positions, the module outputs a position feedback signal (valid at high-level signal).

2. Features and Specifications

a. Power Supply: Supports AC 160–280V or DC 24V.
b. Independent Directional Control: Activates when a high-level signal (>4V) is applied to either the open or close direction; no action occurs in other states.
c. Position Feedback: Outputs a signal when the valve reaches the fully open or fully closed position, and the actuator power for that direction is cut off.
d. Reliable Protection: Equipped with interface protection to delay reverse actions, ensure signal width, and prevent interference.
e. Enhanced Local Control: Allows the addition of manual control functionality. Use the local/remote button to switch modes, with indicator lights to show operational status:
   - Green Light: Indicates open.
   - Red Light: Indicates closed.
   - Press the remote button to deactivate local mode and enter remote operation mode.

3. Interface



Overload Protection Module

1. Introduction

The overload protection module for valve actuators is designed to adjust the maximum torque in both the opening and closing directions of the valve based on the actuator's characteristics. When the detected torque exceeds the set maximum limit, the control module will automatically cut off power to protect the actuator and the valve.

2. Features and Specifications

1) **Accurate and Stable Torque Limit Settings**:

- The torque limit values can be precisely calibrated and maintained.

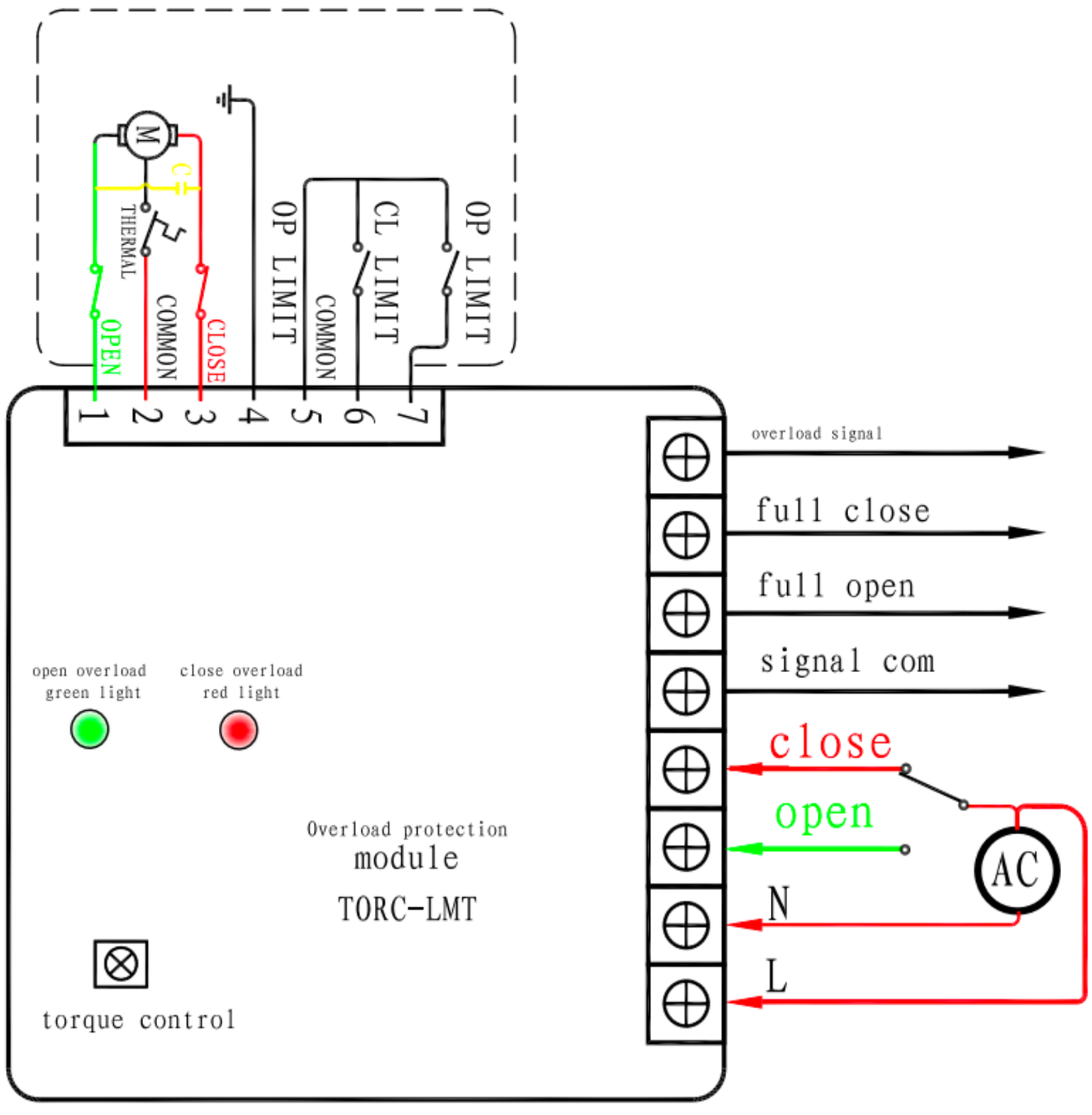
2) **Continuous Protection During Overload**:

- When an overload occurs in the closing direction, the module will maintain the power-off state until power is restored in the opening direction. The reverse applies to the opening direction.

3)**Enhanced Equipment Longevity**:

- By preventing damage caused by excessive torque, the module significantly improves reliability and extends the service life of the valve and actuator.
- This module can also function as a position control mechanism for hermetically sealed valves, serving as a safety measure for automated actuators in valve operations.

3. Interface

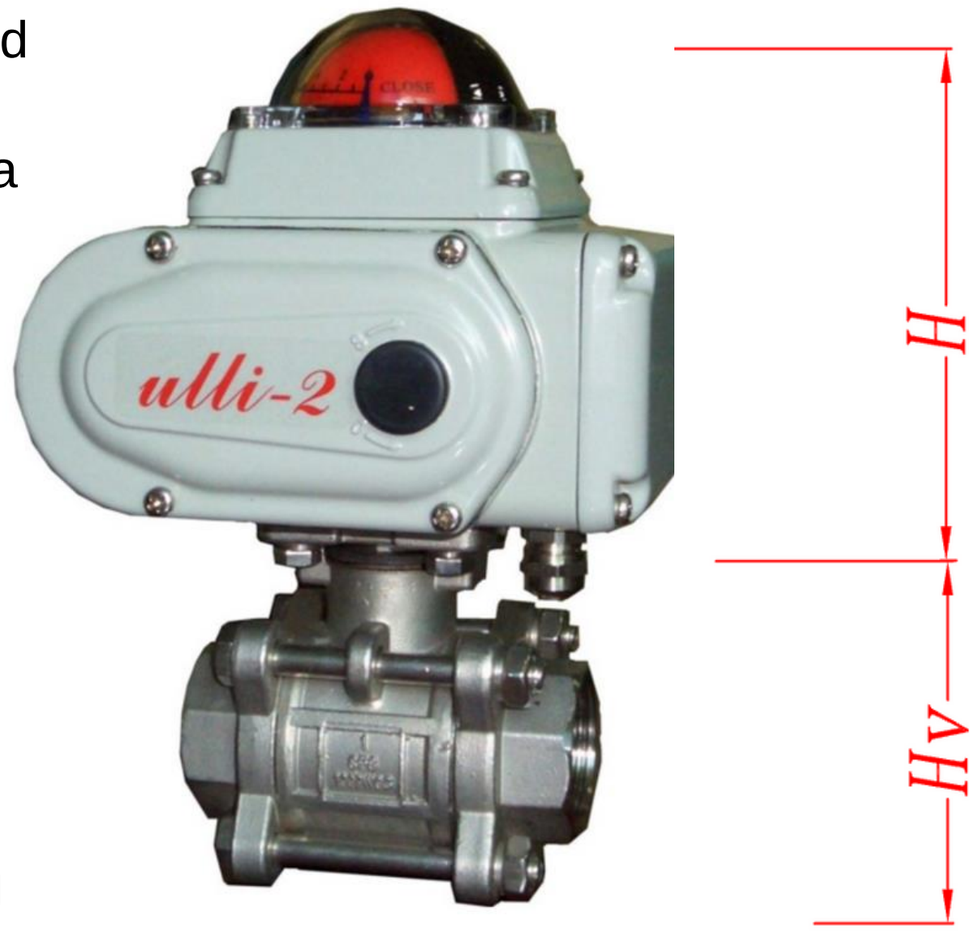


Chapter 3:
Electric Valves

High-Speed Electric Ball Valve (Threaded Connection)

Key Advantages

1. **Ultra-Fast Response**: Rapid operation with unmatched reliability and durability.
2. **Exclusive Electric Actuator**: Proprietary design with a self-contained power source for optimal performance.
3. **Exceptional Motor Characteristics**: Designed for frequent operation without overheating, achieving a 100% duty cycle for continuous operation.
4. **Stainless Steel Valve Construction**: Durable and aesthetically pleasing with corrosion resistance.
5. **Compact and Tight Structure**: Strong connections with minimal deviation and space-saving design.
6. **No External Air Source Required**: Simplifies system setup and reduces installation complexity.
7. **Highly Reliable Design**: Built to withstand demanding industrial applications with consistent precision.



DN	INCH	Electric device	Travel time (Sec)	Valve height (Hv)	Head height (H)	IS05211 (P)	IS05211 (S)
15	1/2〃	highspd-5	3.6	46	135	F05	9
20	3/4〃	highspd-5	3.6	51	135	F05	9
25	1〃	highspd-5	3.6	62	143	F05	77
32	1.25〃	highspd-5	3.6	72	143	F05	77
40	1.5〃	highspd-5	3.6	78	150	F07	14
50	2〃	highspd-10	5	86	150	F07	14
65	2.5〃	highspd-16	6.6	108	150	F07	17
80	3〃	highspd-25	5	116	176	F10	22

High speed Electric Ball Valve- Flanged Design

Key Features & Benefits

1. **Ultra-Fast Response:** Reliable and lightning-fast operation without compromise.
2. **Proprietary Electric Actuator:** Equipped with a patented electric actuator system, featuring a self-contained power source for superior performance.
3. **Outstanding Motor Performance:** Designed for frequent operation with no overheating, delivering a 100% duty cycle for continuous and reliable use.
4. **Stainless Steel Valve Construction:** The valve is crafted from stainless steel, offering durability, corrosion resistance, and an aesthetically pleasing design.
5. **Compact and Robust Structure:** The design ensures tight connections, minimal backlash, and space efficiency, making it ideal for precise industrial applications.

DN	INCH	Electric device	Travel time (Sec)	Valve height (Hv)	Head height (H)	IS05211 (P)	IS05211 (S)
15	1/2〃	highspdS	3.6	46	135	F05	9
20	3/4〃	highspd-5	3.6	51	135	F05	9
25	1〃	highspd-5	3.6	62	143	F05	77
32	1.25〃	highspd-5	3.6	72	143	F05	77
40	1.5〃	highspd-5	3.6	78	150	F07	14
50	2〃	highspd-10	5	86	150	F07	14
65	2.5〃	highspd-16	6.6	108	150	F07	17
80	3〃	highspd-25	5	116	176	F10	22
100	4〃	highspd-50	9	139	176	F10	22
125	5〃	highspd-50	9	176	176	F12	22
150	6〃	highspd-100	18	192	186	F12	27

High-Speed Electric High-Temperature V Control Ball Valve

DN	OD	L	H	Compatible Electric Device
25	68	62	330	hidigi-5
32	78	62	350	hidigi-5
40	85	62	370	hidigi-10
50	100	75	390	hidigi-10
65	120	80	410	hidigi-10
80	130	100	430	hidigi-25
100	158	115	460	hidigi-25
125	180	130	490	hidigi-50
150	216	160	520	hidigi-50
200	268	200	550	hidigi-50
250	406	240	600	hidigi-100
300	460	335	650	hidigi-100
350	520	415	700	hidigi-200
400	580	490	750	hidigi-200

Key Features:

1. **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.
2. **Stable and Low-Friction Operation**:
   - The ball is supported by a robust axial bearing, ensuring minimal rotational resistance, stable performance, and quick response times.
3. **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.
4. **Outstanding Sealing Performance**:
   - Equipped with a replaceable metal sealing seat that includes self-compensation capabilities, ensuring excellent sealing properties with leakage rates less than 10^{-6}.
5. **Proprietary High-Speed Actuator**:
   - Utilizes a patented, high-speed electric actuator for rapid control response, enabling frequent operation without any risk of overheating.
6. **High-Temperature Resistance**:
   - The valve's metal seal, combined with a high-strength bracket, allows it to withstand high-temperature conditions, making it suitable for applications such as steam control.

Electric Butterfly Valves

Port diameter (mm)	Size (Inch)	Electric Actuator (For Reference)	Hv	H	Valve body thickness L	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	highspd-600	756	660	203	550	Overload protection
1000	40	highspd-600	840	730	216	690	Overload protection

High speed Electric Butterfly Valves

Port diameter (mm)	Size (Inch)	Electric Actuator (For Reference)	Hv	Ha	L	Weight (kg)	Special Features
50	2	highspd-5	175	135	43	5	
65	2.5	highspd-5	175	143	46	6	
80	3	highspd-5	181	143	49	7	
100	4	highspd-10	200	150	56	9	
125	5	highspd-16	213	150	64	11	
150	6	highspd-16	226	150	70	13	
200	8	highspd-25	260	176	71	20	
250	10	highspd-50	292	176	76	26	Overload protection
300	12	highspd-60	337	176	83	40	Overload protection
350	14	highspd-100	368	186	92	62	Overload protection
400	16	highspd-100	400	186	102	83	Overload protection
450	18	highspd-200	422	186	114	106	Overload protection
500	20	hjghspd-200	480	186	127	155	Overload protection
600	24	highspd-400	560	200	154	217	Overload protection
700	28	highspd-400	624	200	165	322	Overload protection
800	32	highspd-400	672	200	190	422	Overload protection
900	36	highspd-600	756	200	203	550	Overload protection
1000	40	highspd-600	840	200	216	690	Overload protection

Dynamic Balancing Electric Control Valve

Overview:

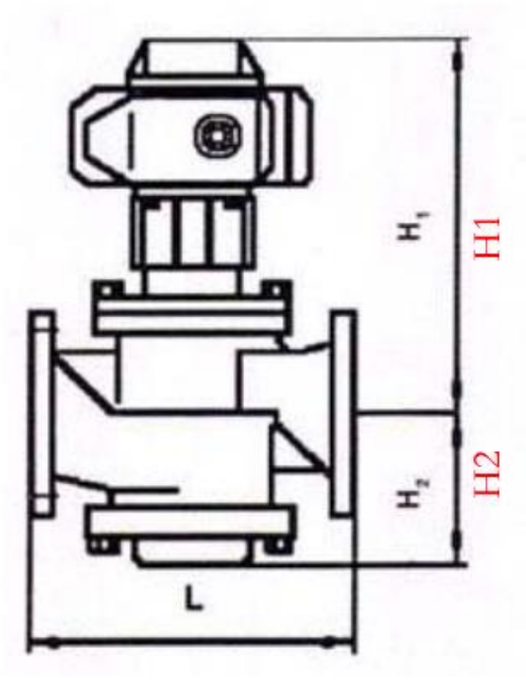
In HVAC systems, heating networks, or locations where remote operation is inconvenient or areas that are hard to reach during installation or maintenance, the KDZL dynamic balancing electric control valve offers a smart solution. Through its intelligent control module, it allows for convenient manual 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:

1. **Stability**: The flow rate changes at the end-user equipment are not affected by system pressure fluctuations, ensuring no mutual interference in flow adjustments.
2. **Energy Efficiency**: Saves 6–20% energy compared to traditional systems.
3. **High Efficiency**: Significantly reduces commissioning time, ensuring efficient system operation.
4. **Comfort**: Provides more precise temperature control, making the system more comfortable compared to traditional variable flow systems.
5. **Actuator Compatibility**: Excellent interchangeability with angle actuators.
6. **Flow Characteristic Curve**: Linear or equal-percentage options available.
7. **Flow Accuracy**: Error margin ≤ 5%.
8. **Operating Temperature**: 0–150° C.
9. **Operating Differential Pressure Range**: 20–500 kPa.



Model	DN(mm)	Connection Type	Length(mm)	H1 (mm)	H2 (mm)	Flow rate (m^3/h)	Weight (kg)
EBV15-16	15	Threaded connection	80	60	50	0.2-1	2.6
EBV20-16	20		80	60	50	0.3-1.5	2.6
EBV25-16	25		90	60	50	0.5-2	2.7
EBV32-16	32	Flanged Connection	160	180	70	1-4	4
EBV40-16	40		200	200	100	1.5-6	11
EBV50-16	50		215	210	105	2-8	12
EBV65-16	65		230	240	110	3-12	15
EBV80-16	80		275	289	170	5-20	27
KBV100-16	100		290	305	185	10-30	30
EBV125-16	125		310	310	200	15-45	40
EBV150-16	150		350	340	220	30-70	63
EBV200-16	200		425	380	285	40-180	105
EBV250-16	250		480	470	385	100-300	189
EBV300-16	300		650	565	480	150-500	218
EBV350-16	350		700	580	545	200-700	265

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