

Actuators and Controls

The Trusted, Passionate and focused Partner in Valve Automation

At UNOX FLOW, The founding principle of Unox flow is simple: to Listen our customers needs first, to develop the innovative valve actuators solutions, to meet the unique needs of our customers, Along the way, To help our customers to solve the problems in Valve Automation. We are growing our brand in Pneumatic and Electric Actuators, Accessories..

WHY WE ARE DIFFERENT

We offer a complete valve automation solution by the applications experience and customization capabilities, with an experienced support team to guide you in selection, installation, and project support. In addition we maintain an extensive supply of product inventory on hand so that we can quickly fulfill orders and reduce wait times. Our sales and support staff are readily available and accessible so that customers get the answers they need quickly.



Experienced team



Large inventory



Convenient consultation



THE TARGET WE ARE PURSUING



High-quality



low cost



Reliable solution

- To build A strong Reputation in Providing Quality, Cost Effective, Reliable And Robust Performance Solutions for Valve Automation,
- Included Pneumatic Actuators, Electrically Actuators, Actuated Valves.

COMMITMENT TO QUALITY

At UNOX FLOW means performance, All products manufactured by UNOX FLOW are warranted against defects in material and workmanship for a period of 18 months from the day of startup. Each of our products are tested at the factory. we are confident that our products meet or exceed all applicable standards before they ever leave our facility. We are an ISO 9001-2008 certified company. Our Valve Actuators Has Applied for SIL3 Certificate, ATEX Certificate, CE, Explosion-proof Certificate, IP68 Weather proof etc....

HUSR Series Electric Actuator Spring Return Design

Description

HUSR series spring return electric actuator is designed for fail-safe positioning of valves or dampers upon loss of supply voltage. Mechanical spring return design is used to position controlled devices to either fully open or fully closed positions without any external power source.

Under normal power supply conditions, the actuator is launched by motor driven equipment and the spring stores energy in the mean time. When emergency power is off, the spring releases the energy to drive the actuator and ensures that the equipment and device return to the safe position (full open or full close). The whole process is secure and stable to eliminate the bursting pipes (hammer-blow effect). The interior mechanical part of the spring return electric actuator includes a driver unit, energy storage unit and energy locking unit. The three units constitute an integrated transmission chain system by gear drive.

In addition, the optional manual override ensures that operators can manually rotate the equipment or device to a precise position and get locked with a lock-up button. Manual release is not required during the electric control operation. Fully approved and tested with a series features and advantages, such as:

- High performance with trusted and engineered reliability
- Fully compliant with the latest international standards and regulations
- Applicable to a wide range of specifications and higher cost performance
- Compact design that facilitates the most demanding industrial applications

Testing For All Actuators

All actuators manufactured by UNOX are individually tested. Testing is carried out to check the leakage in both internal and external, The angle of rotation and Torque values. All bodies are stamped with year, month of production, size and serial number.

Structure

1. Product Construction

Compact and designed for small spaces

2. Low Maintenance

Durable hassle-free operation. Spring effectively drives a 90° full stroke. Emergency on/off model employs a mechanical buffer without impacting pipes.

3. Secure And Stable

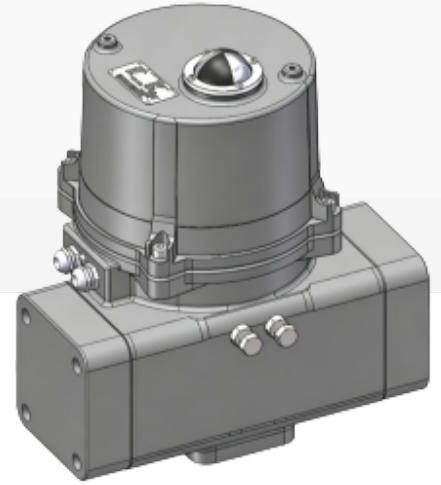
Spring return electric actuator complies with SIL2/SIL3 standard regulations and is maintenance-free with anti-explosive applications.

5. Position Detection

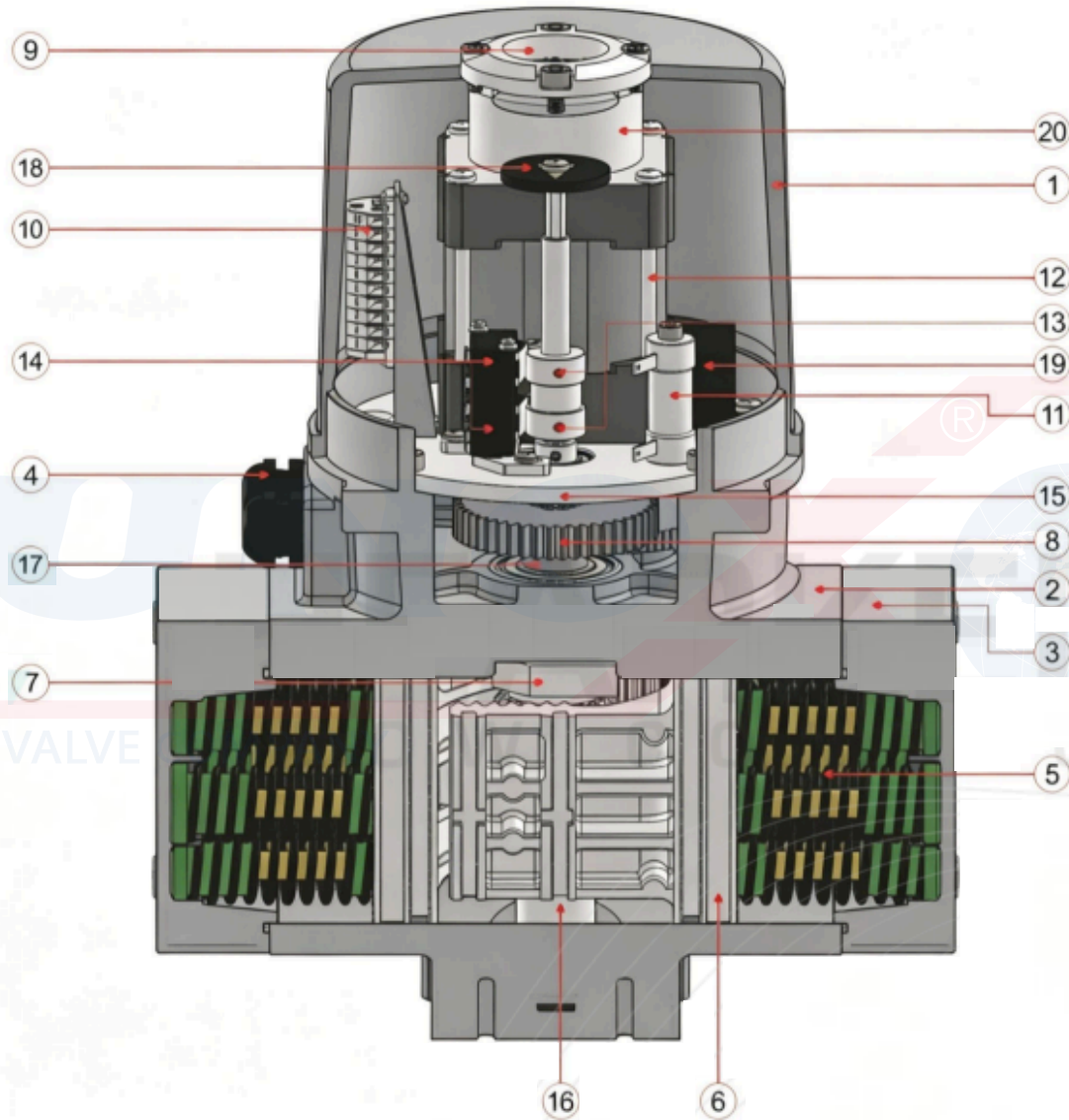
Stroke control switch with quick set up and reliability. Three dimensional indicator can be monitored in multi angles. Optional with switching value and analog quantity control.

6. Adaptive Connection

Parts Actuator flange and drive sleeves comply with ISO5211 standards. A versatile design that offers its replacement.



Parts and Material



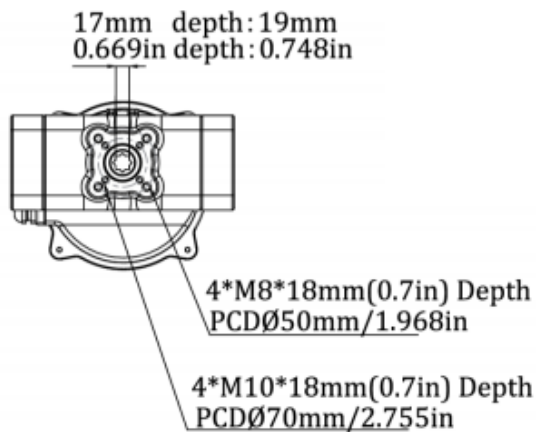
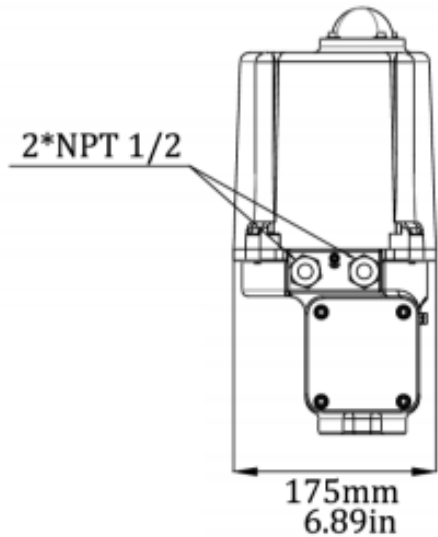
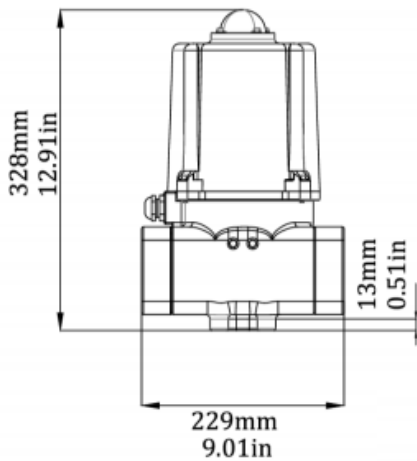
No.	Part Name	Material	No.	Part Name	Material
1	Upper Cap	ADC12	11	Space Heater	Ceramic
2	Body	AL104	12	Electrical Motor	Integrated Set
3	Side Cap	ADC12	13	Adjustment Cam	ADC12
4	Connection Lock	Nylon	14	Microswitch	Integrated Assembly
5	Safety Spring	Spring Steel	15	Mounting Retaining Plate	Q235
6	Piston	ADC12	16	Output Shaft	45# Steel
7	Spacing Block	45# steel	17	Locating Bearing	Bearig Steel
8	Driving Gear	40CR	18	Position Indicator	Nylon
9	Display Window	Tempered Glass	19	Capacitor	Composite Material
10	Wiring Terminal	Flame-retarded Nylon	20	Brake	Integrated Set

- 1.Body: UNOX Material: aluminium alloy coated with polyester powder.IS012944-6 C3 corrosionproof grade, CSA test, NEMA 4X/5 outdoor application and IP67 protection grade tested.
2. Convex Position Indicator: Continuous mechanical position indicator is available at the top of the body on all models for convenient readings of actuator functions.
3. Lubrication: All the gearing sets are factory lubricated. ♦Additional lubrication oil is unnecessary during the product's service life.
- 4.Starting Frequency: 50% starting frequency (as per IEC standard)
- 5.Certifications: CE/CSA/ROHS/REACH
- 6.Working Condition: ♦Working Temperature:-25°C~65°C ♦Humidity(25°C)95%
- 7.Safety Integrity Grade: SIL2
- 8.Conduit Entry: Standard:2×M20*1.5 Optional:2×3/4"NPT、 2×1/2"NPT
- 9.Heater: ♦The heater will keep the temperatures at a proper level to avoid freezing lubrication oil caused by low temperature and keep the interior actuator dry to avoid product failure caused by moisture exposure. Heater is not recommended if the working temperature is above 35°C(95°F). ♦A temperature control switch of 25°C±5°C (77±9°F) is recommended to be placed in front of the heater in case of large temperature fluctuations between day and night as well as summer and winter.This will allow the heater function to operate properly.
- 10.Temperature Control Switch: Temperature control switch for the heater will cut off the circuit to halt the heating process when the interior temperature of the actuator exceeds 25°C+15°C(77±9°F)
- 11.Supporting Microswitch: The series comes equipped with a standard full open/full close microswitches (LS1& LS2) and additional two supporting microswitches (LS3 &LS4) can be added to feedback passive contact.
- 12.Proportional Control: During the proportional control process, the flow is effectively controlled and output to valve position and then to the central control room by the valve open/close positions control through analog signal.
13. Variable Resistor: Apply to on/off type or three-point floating type actuator. Resistance value of 1K ohm or 5K ohm are selectable to provide output signal to position indicator.
- 14.Analog Signal Output Panel: ♦Designed for three-point floating type actuator ♦Output signal: 0-20mA/4-20mA/0-5V/0-10V/1-5V/ 2-10V
15. Floating Control: ♦The actuator can be controlled to open, close or stop functions at intermediate positions between 0° and 90° via external signal. ♦In case of a power outage, the actuator can still operate clockwise or counter-clockwise to the end position and then stop via spring drive.
- 16.Operating Direction: The actuator rotation direction is not adjustable and comes equipped with factory settings. Customer needs to clarify in PO the preferred operating direction, clockwise or counterclockwise. ♦Standard: the spring is released in power failure condition and drive output shaft rotate clockwise. ♦Optional: the spring is released during a power failure situation and the drive output shaft will

HUSR2 Standard Specifications

Power Supply	24VDC、110VAC-120VAC 50/60Hz、220VAC-240VAC 50/60Hz
Motor	DC motor
Limit Switches	Mechanical Limiter + Electrical Limiter
Stall Protection	Built in overheat protector
Travel Angle	90°
Pointer Dial	For valve position indication,it will rotate with the valve
Space Heater	2~4w Anti-Condensation
Cable Conduit	NPT1/2
Lubrication	grease
Shell	Aluminum alloy,anodized and coated with polyester powder
Ambient Temp.	-20°C~+60°C(-4°F~140.00°F)

Spring End Torque		Power (W)	Running Time (Sec)	Return Time (Sec)	Running Current			Weight
N.m	In.ibs				24VDC	110VAC-120VAC	220VAC-240VAC	Kg
40	353	23	15	7	4A	1A	0.5A	8



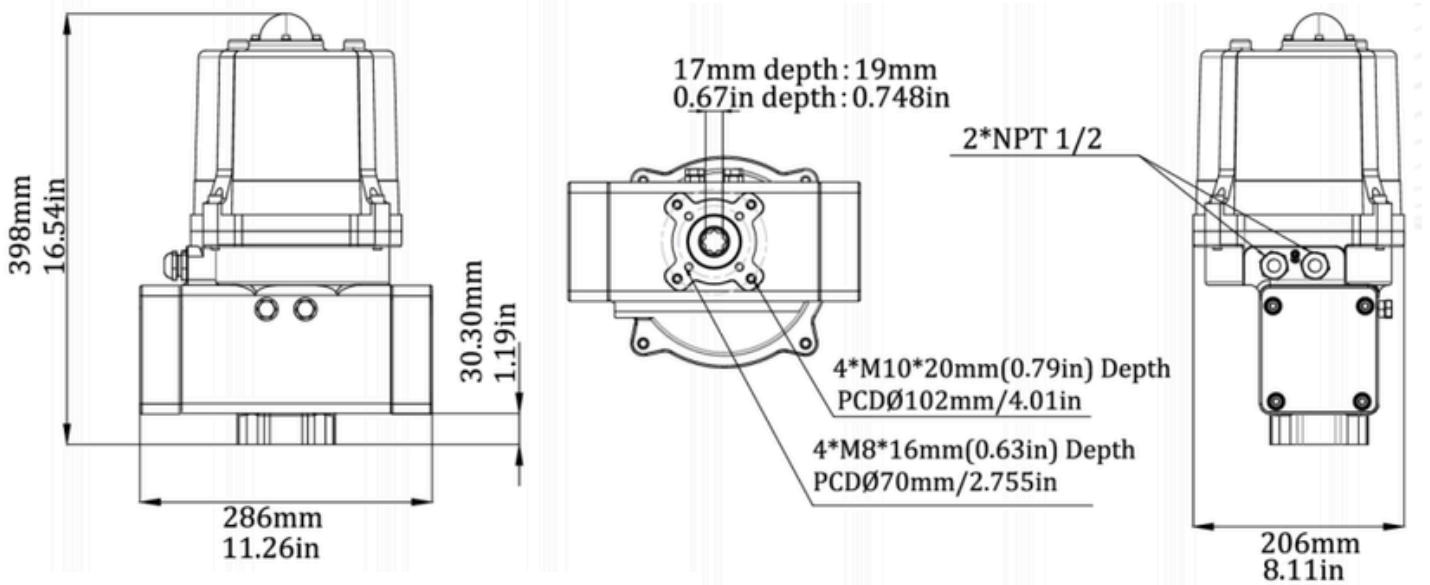
HUSR3 Standard Specifications

Power Supply	24VDC、110VAC-120VAC 50/60Hz、220VAC-240VAC 50/60Hz
Motor	DC motor
Limit Switches	Mechanical Limiter + Electrical Limiter
Stall Protection	Built in overheat protector
Travel Angle	90°
Pointer Dial	For valve position indication, it will rotate with the valve
Space Heater	2~4w Anti-Condensation
Cable Conduit	NPT1/2
Lubrication	grease
Shell	Aluminum alloy, anodized and coated with polyester powder
Ambient Temp.	-20°C~+60°C(-4°F~140.00°F)

Spring End Torque		Power (W)	Running Time (Sec)	Return Time (Sec)	Running Current			Weight
N.m	In. lbs				24VDC	110VAC-120VAC	220VAC-240VAC	Kg
90	885	36W	15	7	2.8A	0.7A	0.34A	18

*The AC frequency that this product can withstand is 50-60Hz. This table shows the performance at 50Hz.

HUSR3 Dimensions



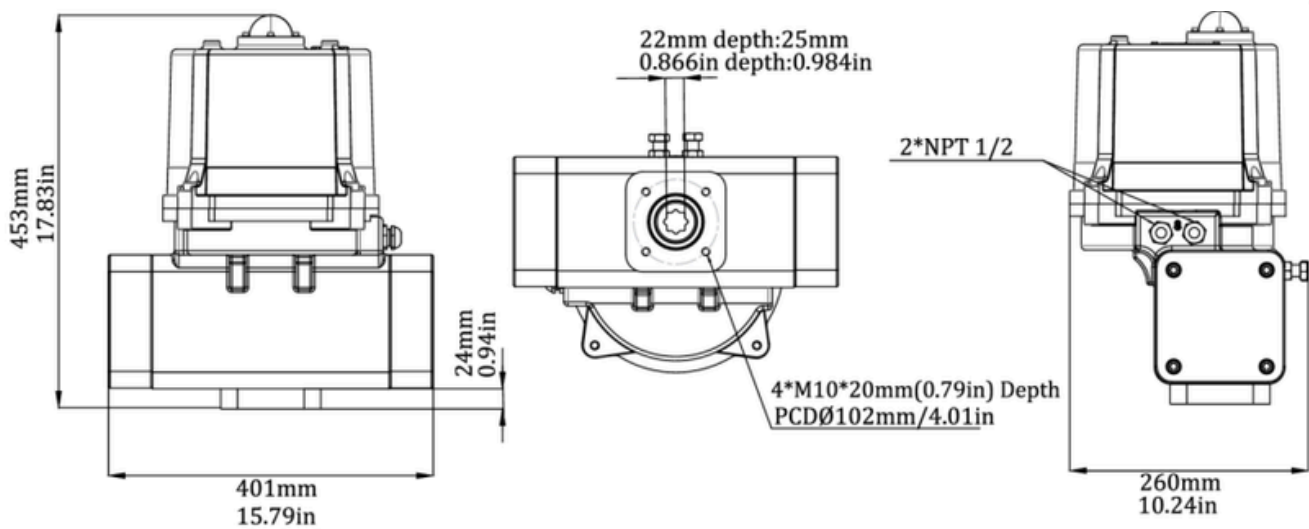
HUSR4 Standard Specifications

Power Supply	24VDC、110VAC-120VAC 50/60Hz、 220VAC-240VAC 50/60Hz
Motor	DC motor
Limit Switches	Mechanical Limiter + Electrical Limiter
Stall Protection	Built in overheat protector
Travel Angle	90°
Pointer Dial	For valve position indication,it will rotate with the valve
Space Heater	2~4w Anti-Condensation
Cable Conduit	NPT1/2
Lubrication	grease
Shell	Aluminum alloy,anodized and coated with polyester powder
Ambient Temp.	-20°C~+60°C(-4°F~140.00°F)

Spring End Torque		Power (W)	Running Time (Sec)	Return Time (Sec)	Running Current			Weight
N.m	In.ibs				24VDC	110VAC-120VAC	220VAC-240VAC	Kg
140	1239	90W	15	7	7A	1.7A	0.85A	31
300	2655	131W	15	7	9.6A	2.3A	1.2A	31

*The AC frequency that this product can withstand is 50-60Hz.This table shows the performance at 50Hz.

HUSR4 Dimensions



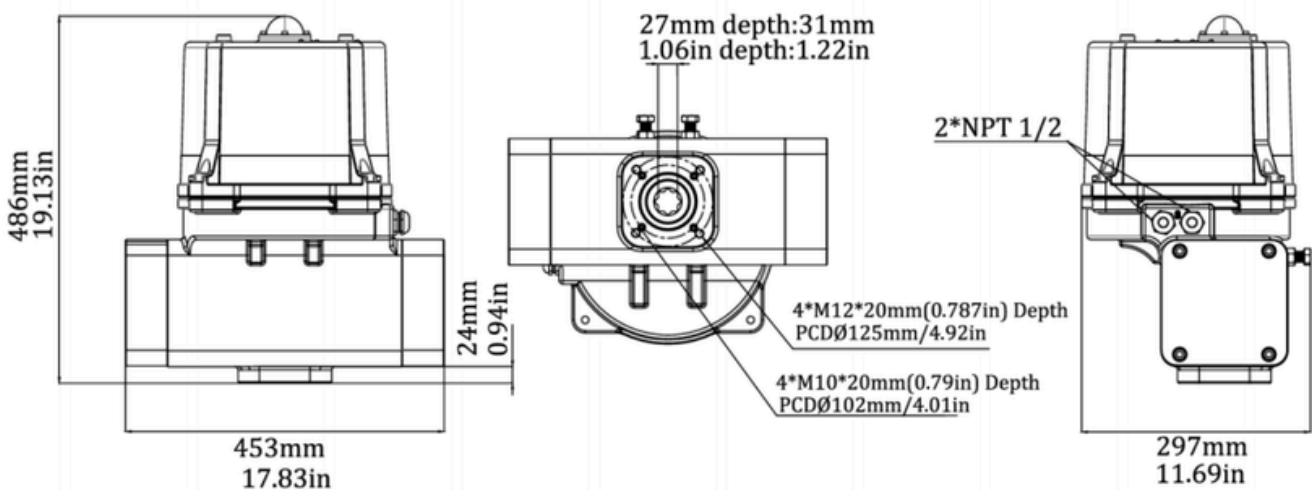
HUSR5 Standard Specifications

Power Supply	24VDC、110VAC-120VAC 50/60Hz、220VAC-240VAC 50/60Hz
Motor	DC motor
Limit Switches	Mechanical Limiter + Electrical Limiter
Stall Protection	Built in overheat protector
Travel Angle	90°
Pointer Dial	For valve position indication,it will rotate with the valve
Space Heater	2~4w Anti-Condensation
Cable Conduit	NPT1/2
Lubrication	grease
Shell	Aluminum alloy,anodized and coated with polyester powder
Ambient Temp.	-20°C~+60°C (-4°F~140.00°F)

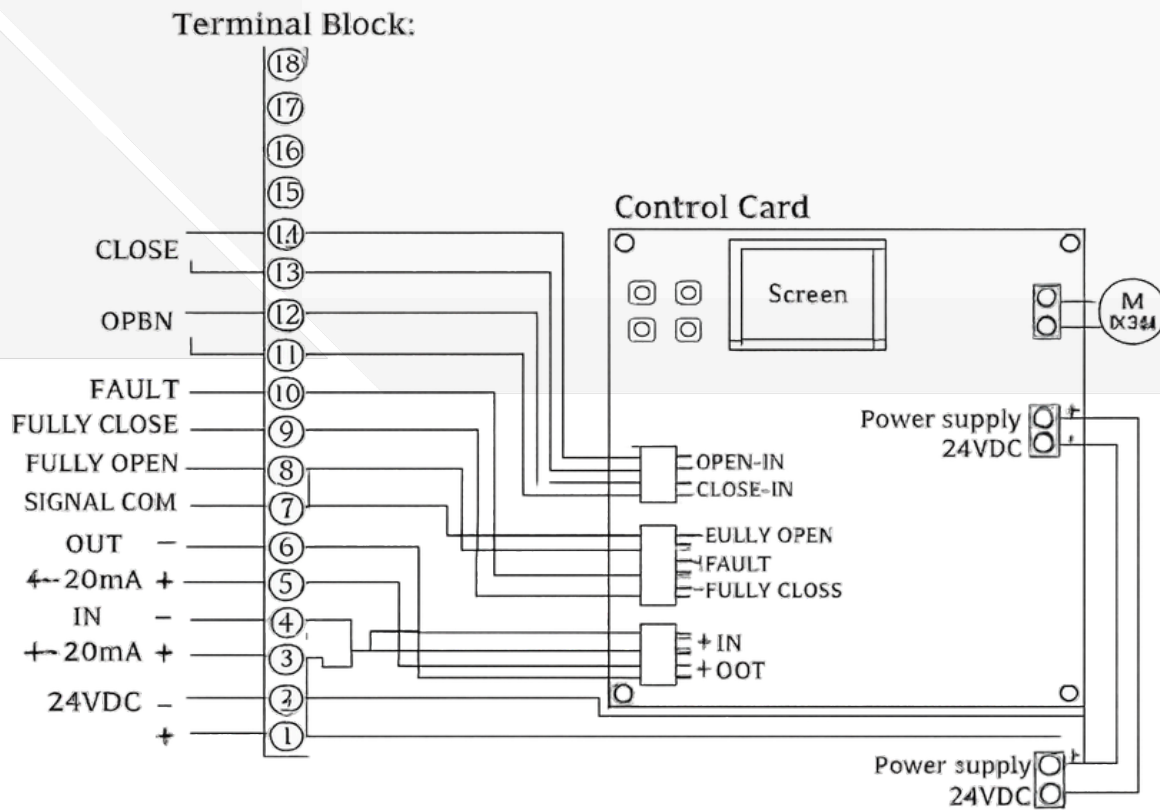
Spring End Torque		Power (W)	Running Time (Sec)	Return Time (Sec)	Running Current			Weight Kg
N.m	In.lbs				24VDC	110VAC- 120VAC	220VAC- 240VAC	
420	3717	150W	15	7	11A	2.7A	1.4A	44.5

*The AC frequency that this product can withstand is 50-60Hz.This table shows the performance at 50Hz.

HUSR5 Dimensions



Wiring Diagram (24VDC)



Power Supply

Port 2 & Port 3:

Port 2 connect with 24VDC+, port 3 connect with 24VDC- to power supply;

Modulating Control(4-20mA)

(Need to switch control mode in setting menu first)

Port 4 & Port 5:

This port(4 and 5) is used to input 4-20mA analog quantity control signal;

Port 6 & Port 7:

This port(6 and 7) is used to output 4-20mA analog control signal;

ON/OFF Control

(Need to switch control mode in setting menu first)

Port 12 & Port 13:

Connect this port(12 and 13) to open the valve;

Port 14 & Port 15:

Connect this port(14 and 15) to close the valve;

ON/OFF Control

Port 8 & Port 9:

This port(8 and 9) will connect when the valve position reaches full Open.

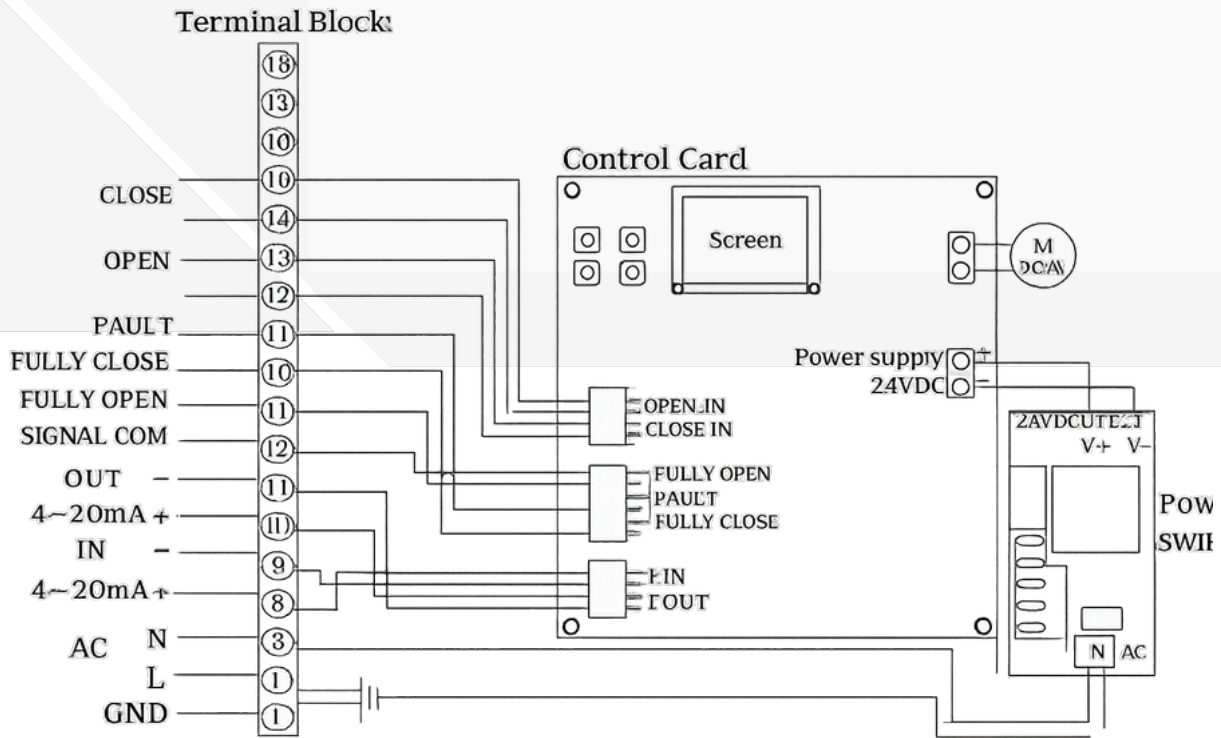
Port 8 & Port 10:

This port(8 and 10) will connect when the valve position reaches full Close.

Port 8 & Port 11:

This port(8 and 11) will connect when the product fails to work.

Wiring Diagram (110VAC~240VAC)



Power Supply

Port 2 & Port 3:

Port 2 connect with AC power L, port 3 connect with AC power N to power supply;

Modulating Control(4-20mA)

(Need to switch control mode in setting menu first)

Port 4 & Port 5:

This port(4 and 5)is used to input 4-20mA analog quantity control signal;

Port 6 & Port 7:

This port(6 and 7)is used to output 4-20mA analog control signal;

ON/OFF Control

(Need to switch control mode in setting menu first)

Port 12 & Port 13:

Connect this port(12 and 13)to open the valve;

Port 14 & Port 15:

Connect this port(14 and 15)to close the valve;

AUX.Contact

Port 8 & Port 9:

This port(8 and 9)will connect when the valve position reaches full Open.

Port 8 & Port 10:

This port(8 and 10)will connect when the valve position reaches full Close.

Port 8 & Port 11:

This port(8 and 11)will connect when the product fails to work.

Installation Suggestions

Installation Site:	Precautions for indoor installation: If installed in a flood environment or outdoors, please explain in advance. Please reserve space for wiring, manual operation, and maintenance during installation.
Precautions For Outdoor Installation:	In order to avoid rain, direct sunlight and other problems, it is necessary to install a protective cover, or choose a configuration with a protection grade of IP67 or above. Please reserve space for wiring, manual operation and other maintenance.
Ambient Temperature:	The acceptable working temperature is within the range of -20°C~+60°C. When the ambient temperature is below 0°C, install dehumidification heater in the machine.
Fluid Temperature Conditions:	When used in conjunction with valves, the heat of fluid will be transferred to the body, causing the body temperature to rise. When the fluid is in a high temperature condition, special treatment is required for the supports connected to the valves. 1: Standard supports: suitable for fluids below +65 °C or without optional. 2: Medium temperature support: suitable for fluid temperature +above 100 °C, +below 180 °C. 3: High-temperature support: suitable for fluid temperature +over 180 °C. Note: Users can design and manufacture brackets separately according to the functional requirements of drive bushing. The brackets can be designed as circular shaft, square shaft or other forms of shaped shaft output. (Processing must ensure that holes are concentric with the outer circle)

Selection Criteria And Configuration Reference

Control Method(K)	Power Supply (V)
MO: Modulating control V1.5	D: 220VAC-240VAC(50/60hz) E: 110VAC-120VAC(50/60hz) F: 24VDC
Options (B)	
X: Heater(Recommended for high humidity and low temperature working environment) CW: When power lost, The spring reset function of the product will cause the product to completely close (clockwise rotation) CCW: When power lost, The spring reset function of the product will cause the product to completely open (counterclockwise rotation)	

Notice

Pressure class and other performance data published in this catalog have been developed from our design calculation, in-house testing and/or published official standards or specifications. They are to be used as a general guideline to users of UNOX products. For specific application information, contact factory for technical support. Failure to follow this request could result in property damage and/or personal injury for which we shall not be liable. While this catalog has been compiled with the utmost care, we assume no responsibility for errors. Any information provided in this catalog is subject to change without notice for error rectification, product discontinuation, design modification new product introduction or any other cause that UNOX considers necessary. This edition cancels all previous issues. By using this UNOX literature you agree that UNOX will have no liability for any damages arising out of your use or modification to the literature. You will defend and indemnify UNOX, its affiliates and subsidiaries from and against any liability cost or damages including attorneys' fees arising out of or resulting from any modification to the literature by you. The final interpretation right of this sample belongs to UNOX FLOW CONTROL.

