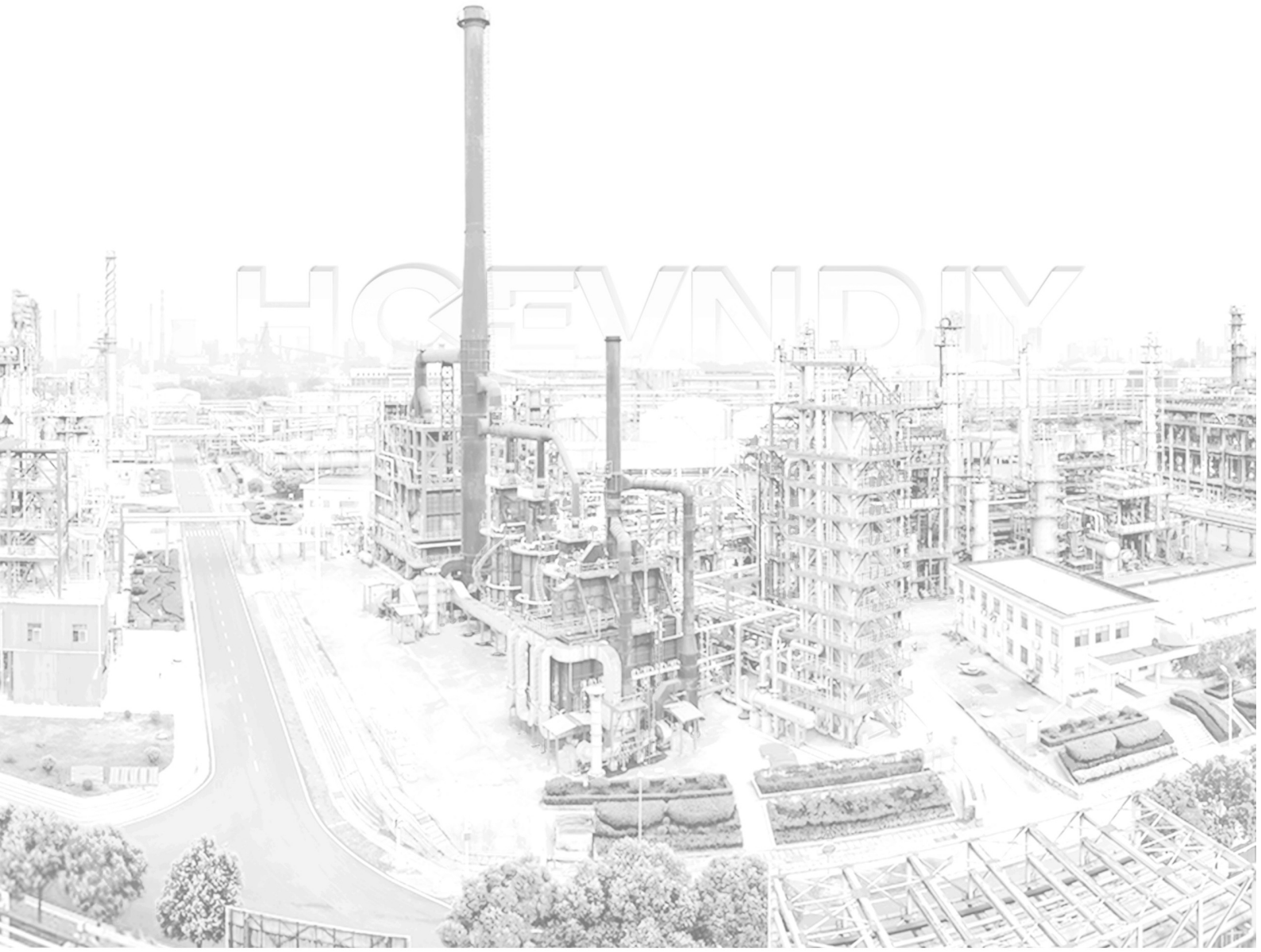
HCED



Electric Acruator

CANADA KINGSWAY FLOW CONTROL CO., LTD.



All valves produced by the company are ISO 9001 certified

Products are tested and inspected in accordance with specified test and inspection procedures

Provides the reliable guarantee for the high quality product



Company Profile

Canada Kingsway flow control Co., Ltd. is a company specialized in the design, development and sales of valves with all kinds of integrated control systems. It owns two series of brands "HOEVNDIY" and "HOED". Main products are high–performance electric butterfly valve, fluorine line butterfly valve, ball valve, regulating valve; All products are qualified by ISO and achieve ISO9001, ISO14001, SIL3, CE and other certificates. Our products widely used in environmental protection, HVAC, electricity, petroleum, chemical, metallurgy, electronics, medicine and other fields.

With many years of on–site application experience, our company have continuously developed and designed many new products with characteristics to meet the special requirements of current fluid treatment conditions. Our outstanding project management and technical expertise are reflected in providing perfect solutions for projects of different scale and different unites. We ensure that our analysize, selection, calculation and design which according to the initial working conditions and technical requirements can provide the best solution and timely delivery to meet your needs.

Our company currently have R&D, production and assembly center for control valve and subassembly system development in Vancouver, Canada. There are 3 after–sales office in Xiamen, Shanghai and Chengdu, meanwhile there is a subsidiary company in Beijing, China in charge of the Asia Pacific marketing and after–sales service. We are using advanced production equipment and technology, through 6 SIGMA excelsior management model and SAP management system to provide customer best production and service and offer our best solution.

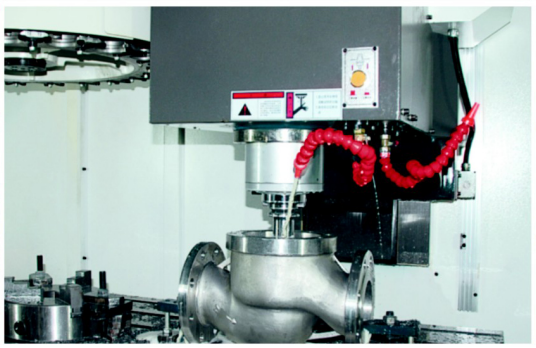
Mission To be a great company providing innovative technological products and services for healthy living.

Vision Using technology innovation technology to serve industrial development, create value for customers, create opportunities for ourselves.

Values Moral, people–oriented, collective struggle, win–win cooperation.

Building an industrial valve solution to create valuable ecology.

No matter any kind of conditions you are facing, we are committed to providing you the most completely valve applications and solutions!


Technology & Services

Factory Capabilities

Canada Kingsway is committed to provide high quality, high reliability and high safety valve products. The leading international product conceptual design is applied; the advanced numerical control design tools such as Mastercam, Solidworks are adopted to standardize the production with strict quality control system and advanced testing process. After continuous to improve the design, our products are ensured to adapt to the market better and quickly.

Factory quality management and testing capabilities

Canada Kingsway has its own unique product quality management system and corresponding product quality testing equipment, which provides a reliable guarantee for high–quality products. The main testing equipment includes triple coordinate measuring instruments, metallographic analyzers, spectrum analyzers, magnetic particle flaw detectors, X–ray detection equipment, impact testing machines, universal testing machines, etc., which not only ensure the quality of products from production, processing, testing and shipment but also improve the performance of the product, speed up the delivery schedule of the product, increase product R&D speed and reduce the cost of the product.

CRM customer service system construction

Pre–sales service: type selection guidance, technical confirmation, application condition analysis, maintenance consultation, etc.After–sales service: installation guidance, testing and commissioning, maintenance, spare parts sales, site training, etc. With the advanced CRM customer service system, we provide the total process of service from the beginning of design consulting to the aftersales of equipment commissioning and maintenance. This is also an important concept and principle we are committed to.

HCED

EMD Series

Multi-turn Electric Actuator

bsi. ISO 9001 Quality Management FM 522775

bsi. ISO 14001 Environmental Management EMS 595200

bsi. OHSAS 18001 Occupational Health and Safety Management OHS 595201

EMD Multi turn Introduction

- EMD series electric actuator is for multi turn or linear motion valve such as gate valve, globe valve and other similar control valve application. It can also apply with gear box to control quarter turn valve such as butterfly valve, ball valve and plug valve etc.

- EMD series output torque range from 100N·m-610N·m. The output speeds are 18rpm-144rpm selectable. With gear-box it can output higher torque to satisfy most the valve torque requirements.

- EMD series can provide three different types from the of basic to intelligence-types that can be configured and provide feedback signals in more complex engineering solutions.

Basic type

Integration type

Intelligence type

- Cast aluminium housing
- Speed：18~144 RPM
- High C/P ratio
- Integration：LCD display
  Non-intrusive setup
- Standard IP67

EMD Series Features

Operational Safety
F class insulation motor, with 2 built in temperature sensors to detect overheat and protect motor operation.(H class optional)

Anti-condensation Heater
Internal heater to eliminate the condensation or moisture.

Phase Sequence Correction
Phase sequence correction feature prevents the potential damage to the actuator from wrong wiring.

Voltage Protection
Protect actuator from power surge in over voltage and low voltage situation.

Over Torque Protection
In the case of valve jams, the actuator detects over torque and shut off to prevent further damage.

Operational Diagnosis
Intelligence type have multi built in sensors to feedback signal, for control, fault alarm, operational status and data. Effectively identify any faulty situation.

Password Protection
Intelligence type with operator password protection. To prevent mis operation by non authorized personal.

Safe Manual Override
The manual override clutch can safely break off power supply to motor, in the case of debugging or emergency situation.

Absolute Encoder
A 24bits optoelectronic absolute encoder for positon record. The resolution error is less than 0.1%. This design ensures accurate position even in power loss situation.

High Strength Worm Gear
High strength aluminium alloy worm gear set, pre-assembly examination to ensure maximum transmissioin efficiency.

EMD Series Torque Model Selection

AC380V , 3 Phase, On/off（Available for startup frequency ≤ 60 times/hour）

Speed RPM	50Hz rpm	18	24	36	48	72	96	144*
	60Hz rpm	21	29	43	57	86	115	173*
Model	Torque (N.m)							
EMD10	N.m	100		100	100	70	50	40
	lbf.ft	74		74	74	52	37	30
EMD15	N.m	150		150	150	100	75	60
	lbf.ft	110		110	110	74	55	45
EMD20	N.m	200		200	200	170	150	100
	lbf.ft	148		148	148	125	111	74
EMD30	N.m	300		300	300	200	170	120
	lbf.ft	221		221	221	148	125	88
EMD40	N.m	400		350	300	250	230	150
	lbf.ft	295		260	221	184	170	111
EMD50	N.m	500		500	500	400	300	200
	lbf.ft	370		370	370	295	220	148
EMD60	N.m	610		610	610	500	400	260
	lbf.ft	450		450	450	370	295	192

AC380V , 3 Phase, Modulating（Available for startup frequency ≤ 600 times/hour）

Speed RPM	50Hz rpm	18	24	36	48	72
	60Hz rpm	21	29	43	57	86
Model	Torque (N.m)					
EMD10	N.m	100		100	100	70
	lbf.ft	74		74	74	52
EMD15	N.m	150		150	150	100
	lbf.ft	110		110	110	74
EMD20	N.m	200		200	200	170
	lbf.ft	148		148	148	125
EMD30	N.m	300		300	300	200
	lbf.ft	221		221	221	148
EMD40	N.m	400		350	300	250
	lbf.ft	295		260	221	184
EMD50	N.m	500		500	500	400
	lbf.ft	370		370	370	295
EMD60	N.m	610		610	610	500
	lbf.ft	450		450	450	370

AC220V , 1 Phase, On/off（Available for startup frequency ≤ 60 times/hour）

Speed RPM	50Hz rpm	18	24	36	48	72
	60Hz rpm	21	29	43	57	86
Model	Torque (N.m)					
EMD10	N.m	60		50	50	35
	lbf.ft	44		37	37	26
EMD40	N.m	150		130	100	50
	lbf.ft	111		96	74	37
EMD60	N.m	250		200	170	130
	lbf.ft	184		147	125	370

Note: 1、The definition for IP68 is 7M depth and 72 hours none-leakage.

2、Above torque is the maximum torque. Motor working time is S2-15min,with 380V voltage. For modulating type it is S4-25%, higher rpm such as 96rpm and 144rpm and EMD90 model do not have modulating available.

3、Modulating type is not available for 220V.

4、RPM with * has higher force of inertia. Direct driving of gate valve or other similar applications is not recommended.

- Standard IP67
- Aluminium alloy
- Anti-corrosion epoxy powerder coating
- High strength alloy worm gear
- Independant wiring block

Basic Type（EMD-B）

EMD basic type adopts standard IP 67 protection grade to combat the harsh outdoor environment. IP68 standard is also optional（With 7m depth for 72 hours).

The product housing use high strength aluminium alloy that is very compact. This model provide basic limit switch,power and drive units.

Specification		
Protection		IP67 （IP68 optional)
Working	On/off	S2~15 min, no more than 60 times starts / hour
Motor		Standard F class, built in heat sensors（135℃)
Input Signal	On/off	Dry contacts，5A@250Vac available
Feedback Signal	On/off	• Open/Close position limit feedback • Open/Close over torque feedback • Position feedback potentiometer
Fault Signal	On/off	Motor over heat, over torque
Position Display		Mechanical pointer indicator
Manual Switch		Manual clutch
Operational protection		Over torque；motor over heat; anti condensation heater（optional）
Cable gland size		Standard 2-NPT3/4"(can upgrade to 2-NPT1") Optional3-NPT3/4"(can upgrade to 3-NPT1")

Torque(N.m)		100~610 N·m (Direct output)
Speed (RPM)	50Hz	18、24、36、48、72、96、144
	60Hz	21、29、43、57、86、115、173
Voltage		3 Phase: AC380V(±10%) 50/60Hz(±5%) 3 phase 3 wire 1 Phase 220V optional
Noise		Within 1m less than 70dB
Temperature		-30 ℃ … +70 ℃
Housing		Aluminium alloy
Coating		Epoxy powerder coating
Mounting		Standard JB2920, Optional ISO5210 (A type or B type)

Integration Type （EMD-Y)

EMD Integral type adopts standard IP 68 protection grade to combat the harsh outdoor environment. IP68 standard is also optional（With 7m depth for 72 hours).

Integration type and above is designed with hall switch local control unit, achieving non-intrusive and easy actuator setup.

The product housing use high strength aluminium alloy that is very compact. With multiple type of signal feedback it is appropriate for application in common control system.

- Standard IP68
- Hall switch local control
- Non-intrusive digital control
- Aluminium alloy
- Anti corrosion epoxy powerder coating
- High strength alloy worm gear
- Absolute encoder
- Remote control
- LCD display

Specification		
Protection		Standard IP68
Working	On/off	S2~15 min, no more than 60 times starts / hour
	Modul-ating	S4~25%, no more than 600 times trigger/ hour
Motor		Standard F class, built in heat sensors（135℃)
Input Signal	On/off	AC/DC 24 contro input or AC 110/220V or optoelectronic isolator
	Modul-ating	Input 4~20mA; 0~10V,2~10V input impedance 250 Ω (4~20mA)
Feedback Signal Output	On/off	▪ Overall fault contact ▪ Close valve contact ▪ Open valve contact （Contact rating: 5A @ 250Vac)
	Modul-ating	Output: 4 - 20 mA;0 - 10 V; 2 - 10 V Output impedance: ≤ 750 Ω (4 - 20 mA)
Fault Signal	On/off	Overall fault alarm: Power loss、motor over heat、lack of phase、over torque、signal loss、ESD protection, wiring terminal output
	Modul-ating	Supports signal reversal、dead zone ≤ 2%
Position Display		LCD display（percentage% display）
Local Control		Bottons(Open/Stop/Close/Local/Remote） / Infrared remote controller
Manual Switch		Manual clutch
Operational Protection		Over torque; motor over heat; anti condensation heater; auto sequence correction(only for 3 phase)
Cable gland size		Standard 2-NPT3/4"(can upgrade to 2-NPT1") Optional3-NPT3/4"(can upgrade to 3-NPT1")

Torque(N.m)		100~610Nm (Direct output)
Speed (RPM)	50Hz	18、24、36、48、72、96、144
	60Hz	21、29、43、57、86、115、173
Voltage		3 phase: AC380V(±10%) 50/60Hz(±5%) 3 phase 3 wire 1 Phase 220V optional
Noise		Within 1m less than 70dB
Temperature		-30 ℃ ... +70 ℃
Housing		Aluminium alloy
Coating		Epoxy powerder coating
Mounting		Standard JB2920, Optional ISO5210 (A type or B type)

Intelligence Type （EMD-I)

EMD Intelligence type adopts standard IP 68 protection grade to combat the harsh outdoor environment. IP68 standard is also optional（With 7m depth for 72 hours).

Intelligence type and above is designed with hall switch local control unit, achieving non-intrusive and easy actuator setup.

The product housing use high strength aluminium alloy that is very compact. With multiple type of signal feedback it is appropriate for application in common control system.

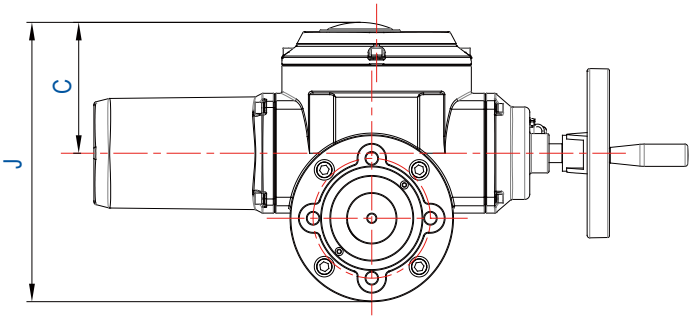
- Standard IP68
- Hall switch local control
- Non-intrusive digital control
- Aluminium alloy
- Anti corrosion epoxy powerder coating
- High strength alloy worm gear
- Absolute encoder
- Remote control
- LCD display
- Adjustable torque output

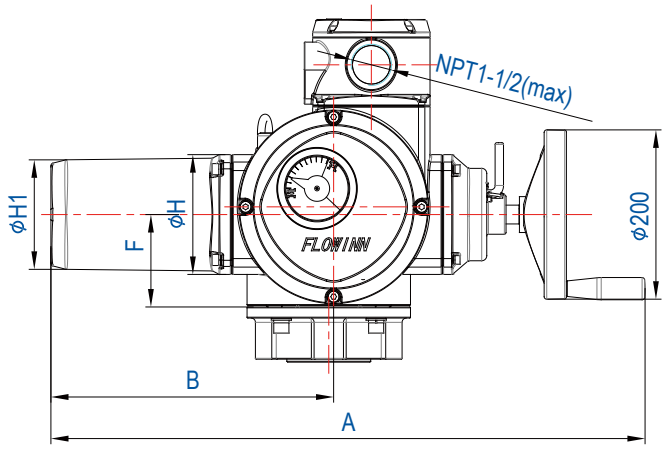
Specification		
Protection		Standard IP68
Working	On/off	S2~15 min, no more than 60 times starts / hour
	Modulating	S4~25%, no more than 600 times trigger/ hour
Motor		Standard F class, built in heat sensors（135℃)
Input Signal	On/off	AC/DC 24 contro input or AC 110/220V or optoelectronic isolator
	Modulating	Input 4~20mA; 0~10V,2~10V input impedance 250 Ω (4~20mA)
Feedback Signal Output	On/off	▪ Overall fault contact ▪ Close valve contact ▪ Open valve contact （Contact rating: 5A @ 250Vac）
	Modulating	Output： 4 - 20 mA;0 - 10 V; 2 - 10 V Output impedance： ≤ 750 Ω (4 - 20 mA)
Fault Signal	On/off	Overall fault alarm: Power loss、motor over heat、lack of phase、over torque、signal loss、ESD protection, wiring terminal output
	Modulating	Supports signal reversal、dead zone ≤ 2%
Position Display		LCD display（percentage% display）
Local Control		Bottons(Open/Stop/Close/Local/Remote） / Infrared remote controller
Manual Switch		Manual clutch
Operational Protection		Over torque； motor over heat; anti condensation heater; auto sequence correction(only for 3 phase）, alarm signal
Cable gland size		Standard 2-NPT3/4"(can upgrade to 2-NPT1") Optional3-NPT3/4"(can upgrade to 3-NPT1")

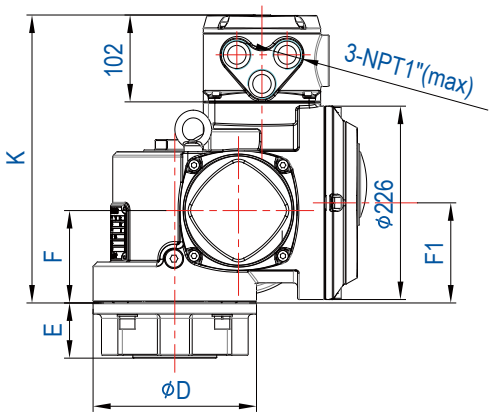
Torque(N.m)		100~610Nm (Direct output）
Speed (RPM)	50Hz	18、 24、 36、 48、 72、96、144
	60Hz	21、 29、 43、 57、 86、115、173
Voltage		3 phase： AC380V(±10%) 50/60Hz(±5%） 3 phase 3 wire 1 Phase 220V optional
Noise		Within 1m less than 70dB
Temperature		-30 ℃ ... +70 ℃
Housing		Aluminium alloy
Coating		Epoxy powerder coating
Mounting		Standard JB2920, Optional ISO5210 (A type or B type)

Basic Type

Unit: mm







Dimension

Unit: mm

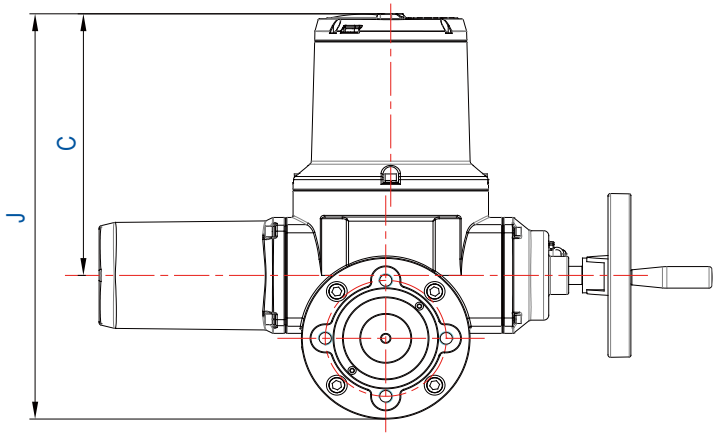
Model \ Size	A	B	C	ΦD	E			F	F1	ΦH	ΦH1	J	K	Weight (kg)
					JB	Type A	Type B							
EMD10/15	657	286	153	195	2	50	40	108	117	140	98	387	337	30
EMD20/30/40	710	338	153	195	2	65	42	114	117	140	128	490	337	36
EMD50/60	760	382	160	234	2	65	42	114	118	161	148	545	337	47

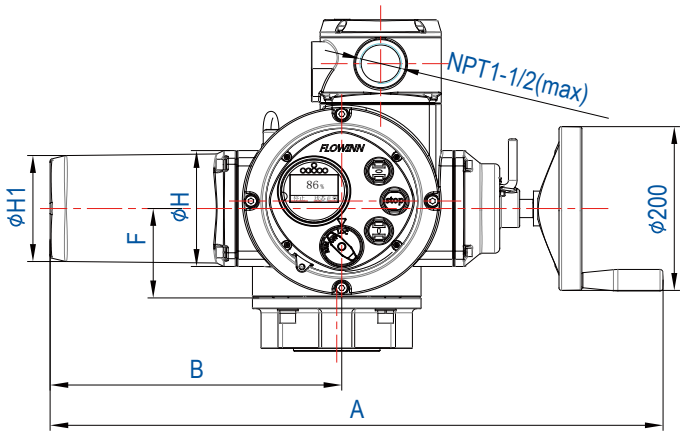
Note:

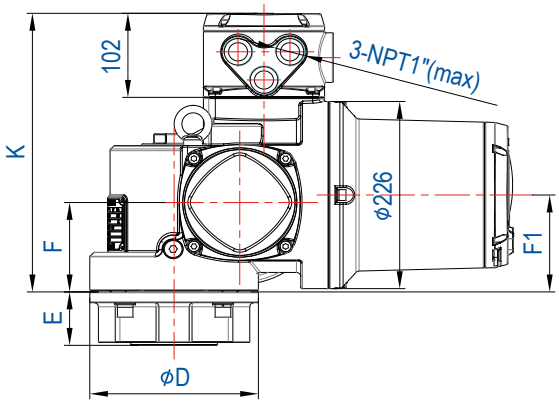
Connection size is in accordance to ISO5210. Special requirement can be customized.

Integration Type / Intelligence Type

Unit: mm







Dimension

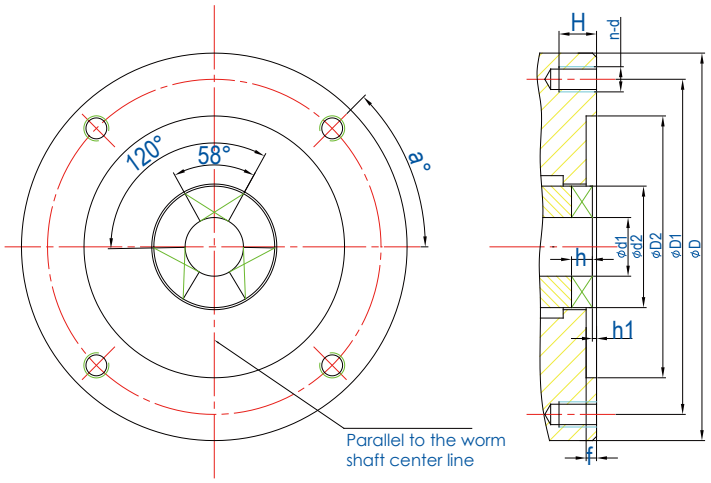
Unit: mm

Model \ Size	A	B	C	ΦD	E			F	F1	ΦH	ΦH1	J	K	Weight (kg)
					JB	Type A	Type B							
EMD10/15	657	286	337	195	2	50	40	108	117	140	98	387	337	30
EMD20/30/40	710	338	316	195	2	65	42	108	117	140	128	490	337	36
EMD50/60	760	382	332	234	2	65	42	114	118	161	148	545	337	47

Note:

1、Integral type and Intelligent type have the same dimension.

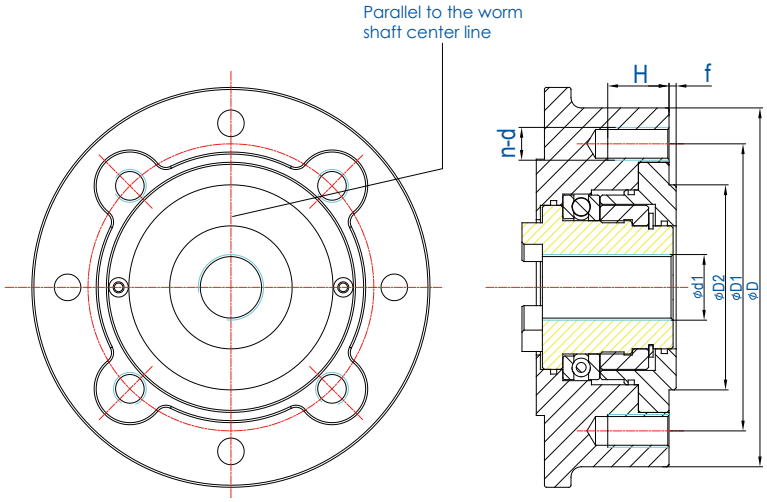
2、Connection size is in accordance to ISO5210. Special requirement can be customized.



JB type output （Three jaw coupling - rotary type）--JB2920 Standard

Mounting

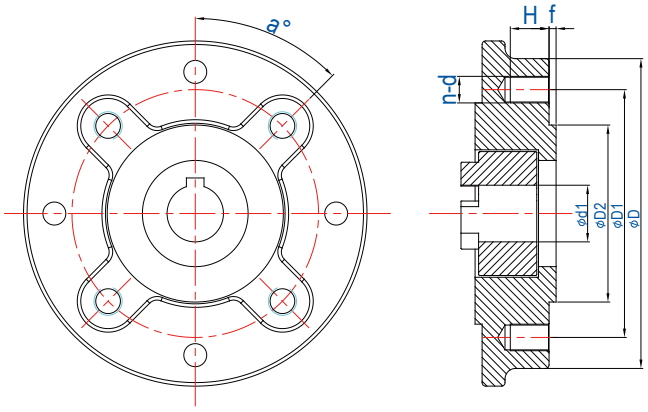
Model \ Size		ΦD	ΦD1	ΦD2	h1	f	h	d1	d2	n-d	a	H
EMD10/15	JB2	145	120	90	2	5	8	30	45	4-M10	45°	15
EMD20/30/40	JB3	185	160	125	2	5	10	42	58	4-M12	45°	15
EMD50/60	JB4	225	195	150	2	5	12	50	72	4-M16	45°	30



A type output（Thrust type）—ISO5210 Standard

Mounting

Model \ Type	Flange	ΦD	ΦD1	ΦD2	f	Φd1 Max.	Φd1 Standard	n-d	a	H
EMD10/15	F10	120	102	70	4	Tr32	≤Tr30	4-M10	45°	15
EMD20/30/40	F14	175	140	100	4	Tr48	≤Tr42	4-M16	45°	24
EMD50/60	F16	205	165	130	5	Tr62	≤Tr50	4-M20	45°	30



B type output（Rotary type）—ISO5210 Standard

Mounting

Model \ Size	Flange	ΦD	ΦD1	ΦD2	f	Φd1 Max.	Φd1 Standard	n-d	a	H
EMD10/15	F10	120	102	70	4	32	≤30	4-M10	45°	15
EMD20/30/40	F14	175	140	100	4	48	≤42	4-M16	45°	24
EMD50/60	F16	205	165	130	5	62	≤50	4-M20	45°	30

Our service

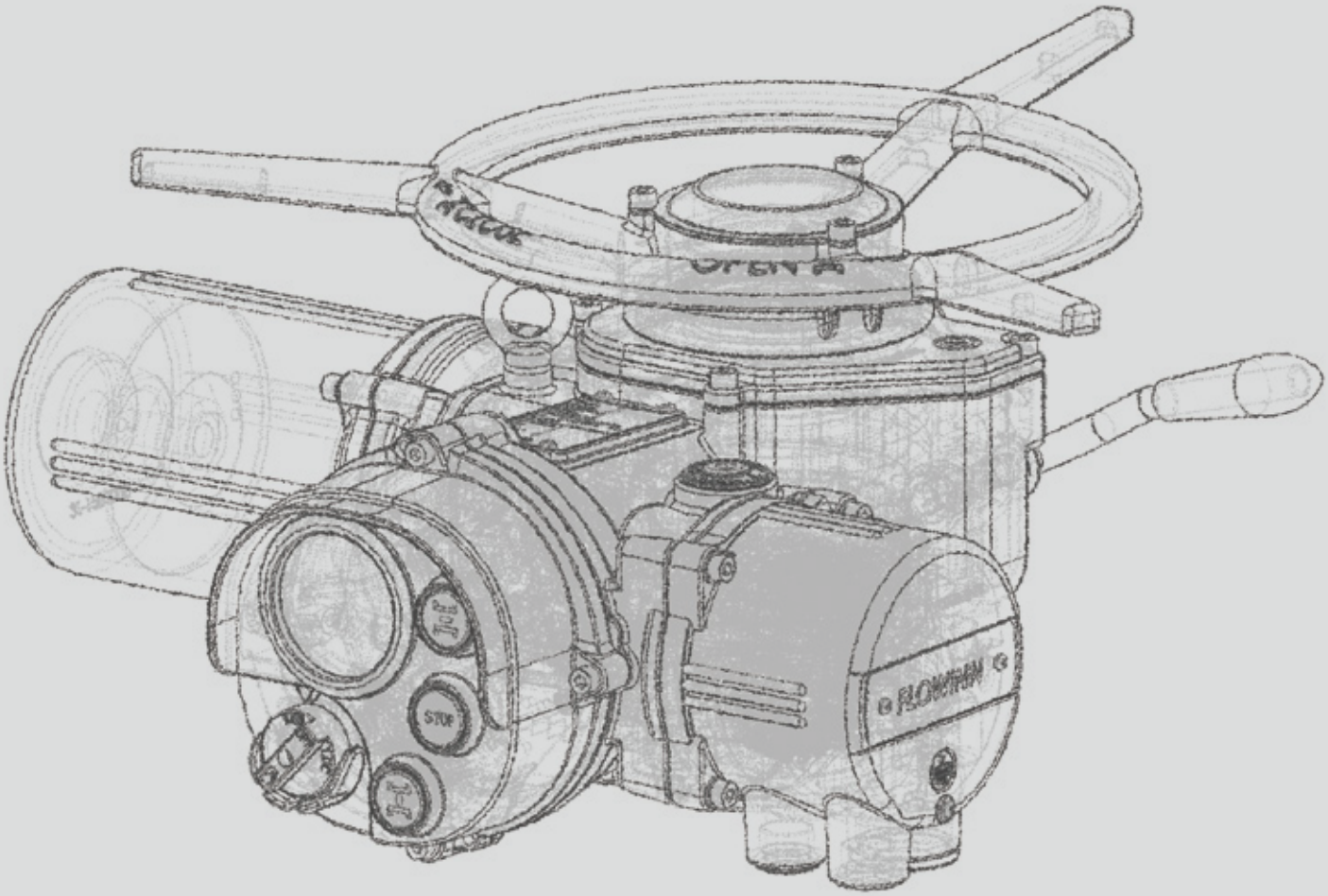
HOED'S professional service team is ready to provide our customers with comprehensive services and professional technical supports at all times:

- No matter it is by phone, mail or on the site, we are standing by for your inquiry.
- Stable dellivery time.
- On-site installation and debugging
- Regularly follow up our products status and maintenance.
- We provide training for structure knowledge, operation, debugging, maintenance and more.

CUSTOMIZED PRODUCTION

AS TO HOED, THERE IS NO SUCH THING CALLED IMPOSSIBLE FOR SPECIAL REQUIREMENTS, WE PROVIDE CUSTOMIZED SOLUTIONS.

HOED



MULTI-TURN
ELECTRIC ACTUATOR

FM 522775 EMS 595200 OHS 595201

CE RoHS REACH

CHARACTERISTICS & PERFORMANCE

MULTI TURN

24 BIT ABSOLUTE ENCODER

Unique absolute encoder has 24 bit resolution; supports 8000+ revolution in one time, the minimum resolution is less than 5 degree. Automatic self diagnostic function-makes it safe and reliable.

EXTERIOR STRUCTURE

Unique exterior structure design, improved the operation experience and it wins us a patent.

HIGH SPEED OUTPUT

192 rpm can be achieved by all models in this series. Especially for the controlling of high speed valves and so on.

MANUAL REDUCTION MECHANISM

This is an unique design from Flowinn. Driven by power screwdriver, it can quickly open or close the valve in any circumstance.

USER INTERFACE

Designed by the latest UI technology, this new user interface enables the remote control to duplicate operation, interrogates and configures the actuator to meet the special inquiry if needed. The multi-language display holds another great advantage.

ENERGY EFFICIENCY

Single phase and DC power supply is optional, ultra-low energy consumption, suitable for solar & wind powered applications.

WORKING ENVIRONMENT

ANTI-CORROSION PROTECTION:
Epoxy resin enclosure meets NEMA 4X, customer-special painting is available.

INGRESS PROTECTION:
IP67 is standard, IP68 is optional. The definition of IP68 is:
Depth of water: Maximum 15 m under water level.
Duration of continuous immersion in water: Max.(72 hours).

FIREPROOFING GRADE:
High temperature fireproof enclosure meets requirements in different situation.
It can be customized according to special needs.

EXPLOSION-PROOF RATING:
Ex d IIC T6 design and IECEx, ATEX certifications
which satisfy the reqirements in hazardous locations.

AMBIENT TEMPERATURE:
Temperature range is from -30 ˚C to 70 ˚C (-22 ˚F to +158 ˚F).

RELATIVE HUMIDITY:
≤ 95 % (at 25 ˚C /275 ˚F).

OPERATIONAL SAFETY
F grade insulation motor. The different positions of the motor windings are arranged with two thermal protectors to sense the temperature of motor. This marvelous design ensures the operational safety of the motor (H grade is optional).

ANTI-HUMIDITY RESISTANCE
Installed with heater inside the actuator used to remove the internal condensation which cause damages to electrical parts.

PHASE PROTECTION
Phase detection and correction functions avoid the actuator being damaged by connecting to the wrong phase.

VOLTAGE PROTECTION
Protection against high and low voltage situations.

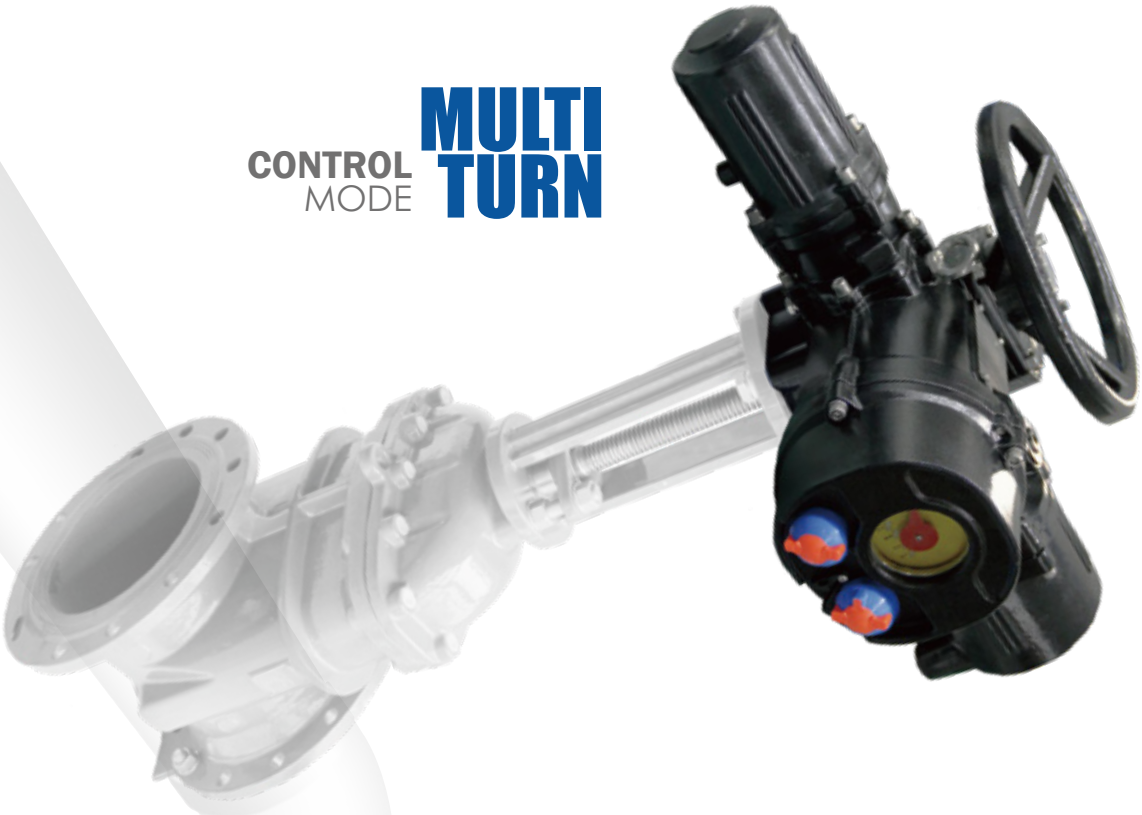
OVERLOAD PROTECTION
The power will automatically shut off when valve jam occurs. Thus preventing further damage to the valve and actuator.

OPERATIONAL DIAGNOSIS
Intelligent actuators are equipped with multiple sensing devices. With the functions of real-time reflections of the control signal received by the actuator, fault alarm, operating parameters, status indication and other status. Multi-diagnostic function can locate the fault, thus making it easy for the users.

PASSWORD PROTECTION
Intelligent actuators possess classifiable password protection, which can be authorized to different operators to avoid misuse which causing the actuator failure.

MULTI TURN SAFER MORE RELIABLE & STABLE

CONTROL MODE **MULTI TURN**



WORM GEAR SET

The adoption of high-strength alloy steel worm and high wear-resistant characteristics worm gear made of copper alloy. For its characteristics developed a worm gear & worm meshing device, for each pair of worm gear & worm are tested to ensure maximum transmission torque efficiency after the installation.

CLUTCH HANDLE

An ergonomically designed clutch handle is used to switch to the manual mode in the case of emergency or adjustment. Cooperating with the hand wheel, the clutch will disconnect from the motor drive to ensure personnel safety.

NON-INVASIVE CONTROL

Non-through-the-shaft magnetic switch design, it is controlled by the Hall device inside the actuator. Equipped with local/off/remote knob, and open/stop/close button (knob), accommodating with the indicator light and LCD screen to achieve non-invasive field control operations.

INFRARED REMOTE CONTROL

The intelligent type actuator is able to provide different remote control based on different application requirements. Such as portable infrared remote control in ordinary location and explosion-proof remote control for hazardous locations.

MULTI-TURN
TECHNICAL SPECIFICATION

EMT11-44 series
Basic (B)

General Parameters	Torque Range		▪ 35 – 3,000 Nm Direct Output
	Speed		▪ 18、24、36、48、72 (rpm) (please contact us for customization if in need of other voltages)
	Ambient Temperature		▪ -30℃~70℃(-22 ℉~158 ℉) Optional: -40℃~60℃(-40 ℉~140 ℉)
	Anti-vibration Level		▪ JB/T8219
	Noise Level		▪ Less than 75 dB within 1 m
	Electrical interface		▪ Two NPT 3/4, One NPT1 1/2 (please contact us for customization if in need of other interface)
	Ingress Protection		▪ IP67, Optional:IP68 The definition of IP68 is:Depth of water: Maximum 15 m under water level.Duration of continuous immersion in water: Max.(72 hours).
	Connection size		▪ ISO5210(Thrust type\ torque type)and JB2920(Three claw type)
Mechanical Parameters	Motor Specifications		▪ Class F, with thermal protector up to +135 ℃ (+275 ℉)
	Working System		▪ On-off Type: S2 ~ 15 min,
	Applicable Voltage		▪ 3 phase: AC 380 V (±10 %)/50/60 Hz (±5 %) 3 phase 4 wires ◯ Optional: 1 phase AC 220 V (1...3 series) (please contact us for customization if in need of other voltages)
	Bus		▪ N/A
	On/off Type Signal	Input	▪ Built-in contacts for 5 A at 250 V ac (depending on the control box)
		Signal Feedback	▪ Opening stroke limit, closing stroke limit ▪ Opening over torque, closing over torque ▪ Flash signal(contact capacity: 5 A at 250 V ac) ◯ Optional: Semi-modulating type-position feedback potentiometer ◯ Optional: 4 ~ 20 mA transmission
		Malfunction Feedback	▪ Integrated fault alarm: Motor overheating, over torque contacts ◯ Optional: Phase protection contact
	Modulating Type Signal	Input	▪ N/A
		Output	▪ N/A
		Signal Reverse	▪ N/A
		Loss Signal Mode Setting	▪ N/A
		Dead Zone	▪ N/A
		Time Lag	▪ N/A
Control mode	Indication		▪ Pointer type opening indicator plate
	Operation Settings		▪ N/A
	Local Control		▪ N/A
Others	Intelligently Analyze Data Records		▪ N/A
	Other Function		▪ Moisture-resistant heaters (anti-moisture device) ▪ Torque protection ▪ Motor overheat protection

※For explosion protection options, please refer to the P11 explosion-proof rating and parameter list.

MULTI-TURN
TECHNICAL SPECIFICATION

EMT11-44 series
Integral (M)

General Parameters	Torque Range		▪ 35 – 3,000 Nm Direct Output
	Speed		▪ 18、24、36、48、72、96、144、192 (rpm) (please contact us for customization if in need of other voltages)
	Ambient Temperature		▪ -30℃~70℃(-22 ℉~158 ℉) Optional: -40℃~60℃(-40 ℉~140 ℉)
	Anti-vibration Level		▪ JB/T8219
	Noise Level		▪ Less than 75 dB within 1 m
	Electrical interface		▪ Two NPT 3/4, One NPT1 1/2 (please contact us for customization if in need of other interface)
	Ingress Protection		▪ IP67, Optional:IP68 The definition of IP68 is:Depth of water: Maximum 15 m under water level.Duration of continuous immersion in water: Max.(72 hours).
	Connection size		▪ ISO5210(Thrust type\ torque type)and JB2920(Three claw type)
Mechanical Parameters	Motor Specifications		▪ Class F, with thermal protector up to +135 ℃ (+275 ℉)
	Working System		▪ On-off Type: S2 ~ 15 min, no more than 600 times per hour start ▪ ModulatingType: S4 ~ 50 %, up to 600 triggers per hour ◯ Optional: 1200 times per hour
	Applicable Voltage		▪ 3 phase: AC 380 V (±10 %)/50/60 Hz (±5 %) 3 phase 4 wires ◯ Optional: 1 phase AC 220 V (1...3 series) (please contact us for customization if in need of other voltages)
	Bus		▪ N/A
	On/off Type Signal	Input	▪ AC/DC 24 input ▪ AC 110/220 V input ▪ Optoelectronic isolation
		Signal Feedback	▪ Integrated fault contacts ▪ Close the valve contact ▪ Open the valve contact (contact capacity: 5 A at 250 V ac) ◯ Optional: Opening torque signal contact Closing torque signal contact
		Malfunction Feedback	▪ Integrated fault alarm: Power off, motor overheating, Losing phase, over torque, lose signal, ESD, terminal output
	Modulating Type Signal	Input	▪ Input signal: 4 ~ 20 mA; 0 ~ 10 V; 2 ~ 10 V ▪ Input impedance: 75 Ω (4 ~ 20 mA)
		Output	▪ Input signal: 4 ~ 20 mA;0~10 V; 2 ~ 10 V ▪ Output impedance: ≤750 Ω (4 ~ 20 mA) (repeatability and linearity within ±1 %of full valve stroke)
		Signal Reverse	▪ Support
		Loss Signal Mode Setting	▪ N/A
		Dead Zone	▪ ≤2%
		Time Lag	▪ N/A
Control mode	Indication		▪ Pointer type opening indicator plate
	Operation Settings		▪ N/A
	Local Control		▪ N/A
Others	Intelligently Analyze Data Records		▪ N/A
	Other Function		▪ Phase correction (3-phase power supply only) ▪ Torque protection ▪ Motor overheat protection ▪ Moisture-resistant heaters (anti-moisture device)

※For explosion protection options, please refer to the P11 explosion-proof rating and parameter list.

MULTI-TURN
TECHNICAL SPECIFICATION

EMT11-44 series
Integration (Y)

General Parameters	Torque Range	▪ 35 - 3,000 Nm Direct Output
	Speed	▪ 18、24、36、48、72、96、144、192(rpm) (please contact us for customization if in need of other voltages)
	Ambient Temperature	▪ -30℃~70℃(-22 ℉~158 ℉) Optional: -40℃~60℃(-40 ℉~140 ℉)
	Anti-vibration Level	▪ JB/T8219
	Noise Level	▪ Less than 75 dB within 1 m
	Electrical interface	▪ Two NPT 3/4, One NPT1 1/2 (please contact us for customization if in need of other interface)
	Ingress Protection	▪ IP67, Optional:IP68 The definition of IP68 is:Depth of water: Maximum 15 m under water level.Duration of continuous immersion in water: Max.(72 hours).
	Connection size	▪ ISO5210(Thrust type\ torque type)and JB2920(Three claw type)
Mechanical Parameters	Motor Specifications	▪ Class F, with thermal protector up to +135 ℃ (+275 ℉)
	Working System	▪ On-off Type: S2 ~ 15 min, no more than 600 times per hour start ▪ ModulatingType: S4 ~ 50 %, up to 600 triggers per hour ◯ Optional: 1200 times per hour
	Applicable Voltage	▪ 3 phase: AC 380 V (±10 %) /50/60 Hz (±5 %) 3 phase 3 wires ◯ Optional: 1 phase AC 220 V (1...3 series) (please contact us for customization if in need of other voltages)
	Bus	▪ N/A
	On/off Type Signal — Input	▪ AC/DC 24 input ▪ AC 110/220 V input ▪ Optoelectronic isolation
	On/off Type Signal — Signal Feedback	▪ On-site/remote contacts ▪ Integrated fault contact ▪ Close the valve contact ▪ Open the valve contact (contact capacity: 5 A at 250 V ac) ◯ Optional: Opening torque signal contact Closing torque signal contact
	On/off Type Signal — Malfunction Feedback	▪ Integrated fault alarm: Power off, motor overheating, Losing phase, over torque, lose signal, ESD, terminal output
	Modulating Type Signal — Input	▪ Input signal: 4 ~ 20 mA; 0 ~ 10 V; 2 ~ 10 V ▪ Input impedance: 75 Ω (4 ~ 20 mA)
	Modulating Type Signal — Output	▪ Input signal: 4 ~ 20 mA;0~10 V; 2 ~ 10 V ▪ Output impedance: ≤750 Ω (4 ~ 20 mA) (repeatability and linearity within ±1 %of full valve stroke)
	Modulating Type Signal — Signal Reverse	▪ Support
	Modulating Type Signal — Loss Signal Mode Setting	▪ N/A
	Modulating Type Signal — Dead Zone	▪ ≤2%
	Modulating Type Signal — Time Lag	▪ N/A
Control mode	Indication	▪ Pointer type opening indicator plate ▪ Fully open/Fully close/remote/fault indicat
	Operation Settings	▪ N/A
	Local Control	▪ Non-intrusive control knobs: Open/Stop/Close/Local/Remote
Others	Intelligently Analyze Data Records	▪ N/A
	Other Function	▪ Phase correction (3-phase power supply only) ▪ Torque protection ▪ Motor overheat protection ▪ Moisture-resistant heaters (anti-moisture device)

※For explosion protection options, please refer to the P11 explosion-proof rating and parameter list.

MULTI-TURN
TECHNICAL SPECIFICATION

EMT11-44 series
Intelligent (I)

General Parameters	Torque Range		▪ 35 - 3,000 Nm Direct Output
	Speed		▪ 18、24、36、48、72 、96、144、192(rpm) (please contact us for customization if in need of other voltages)
	Ambient Temperature		▪ -30℃~70℃(-22 ℉~158 ℉) Optional: -40℃~60℃(-40 ℉~140 ℉)
	Anti-vibration Level		▪ JB/T8219
	Noise Level		▪ Less than 75 dB within 1 m
	Electrical interface		▪ Two NPT 3/4, One NPT1 1/2 (please contact us for customization if in need of other interface)
	Ingress Protection		▪ IP67, Optional:IP68 The definition of IP68 is:Depth of water: Maximum 15 m under water level.Duration of continuous immersion in water: Max.(72 hours).
	Connection size		▪ ISO5210(Thrust type\ torque type)and JB2920(Three claw type)
Mechanical Parameters	Motor Specifications		▪ Class F, with thermal protector up to +135 ℃ (+275 ℉)
	Working System		▪ On-off Type: S2 ~ 15 min, no more than 600 times per hour start ▪ ModulatingType: S4 ~ 50 %, up to 600 triggers per hour ◯ Optional: 1200 times per hour
	Applicable Voltage		▪ 3 phase: AC 380 V (±10 %) /50/60 Hz (±5 %) 3 phase 3 wires ◯ Optional: 1 phase AC 220 V (1...3 series) (please contact us for customization if in need of other voltages)
	Bus		▪ N/A
	On/off Type Signal	Input	▪ AC/DC 24 input ▪ AC 110/220 V input ▪ Optoelectronic isolation
		Signal Feedback	▪ Local/remote contacts ▪ Integrated fault contact ▪ Close the valve contact ▪ Open the valve contact (contact capacity: 5 A at 250 V ac) ◯ Optional: Opening torque signal contact Closing torque signal contact
		Malfunction Feedback	▪ Integrated fault alarm: Power off, motor overheating, losing phase, over torque, lose signal, ESD, terminal output
	Modulating Type Signal	Input	▪ Input signal: 4 ~ 20 mA; 0 ~ 10 V; 2 ~ 10 V ▪ Input impedance: 75 Ω (4 ~ 20 mA)
		Output	▪ Input signal: 4 ~ 20 mA;0~10 V; 2 ~ 10 V ▪ Output impedance: ≤750 Ω (4 ~ 20 mA) (repeatability and linearity within ±1 %of full valve stroke)
		Signal Reverse	▪ Support
		Loss Signal Mode Setting	▪ Support
		Dead Zone	▪ ≤2%
		Time Lag	▪ 0.5s ~ 10s(adjustable)
Control mode	Indication		▪ LCD screen disply ▪ Fully open/Fully close/remote/ fault indicator(digital display of the opening percentage)
	Operation Settings		▪ Settings done without opening cover (menu settings by the remote control) ▪ Supporting stroke, maximum opening setting
	Local Control		▪ Non-intrusive on site control knobs: Open/Close,Local/Remote/Off
Others	Intelligently Analyze Data Records		▪ N/A
	Other Function		▪ Phase correction(3 phase power supply only) ▪ Alarm signal(local and remote included) ▪ Torque protection ▪ Motor overheat protection ▪ Moisture-resistant heater(anti-moisture device) ▪ Infrared remote control ◯ Optional:Intrinsically safe remote control

※For explosion protection options, please refer to the P11 explosion-proof rating and parameter list.

MULTI-TURN
TECHNICAL SPECIFICATION

EMT11-44 series
Super
Intelligent (S)

General Parameters	Torque Range		▪ 35 – 3,000 Nm Direct Output
	Speed		▪ 50Hz: 18-192 (rpm) ▪ 60Hz: 21-230 (rpm)
	Ambient Temperature		▪ -30℃~70℃(-22 ℉~158 ℉) Optional: -40℃~60℃(-40 ℉~140 ℉)
	Anti-vibration Level		▪ JB/T8219
	Noise Level		▪ Less than 75 dB within 1 m
	Electrical interface		▪ Two NPT 3/4, One NPT1 1/2 (please contact us for customization if in need of other interface)
	Ingress Protection		▪ IP67, Optional:IP68(The definition of IP68 is:Depth of water: Maximum 15 m under water level.Duration of continuous immersion in water: Max.(72 hours).
	Connection size		▪ ISO5210(Thrust type\ torque type)and JB2920(Three claw type)
Mechanical Parameters	Motor Specifications		▪ Class F, with thermal protector up to +135 ℃ (+275 ℉)
	Working System		▪ On-off Type: S2 ~ 15 min, no more than 600 times per hour start ▪ Modulating Type: S4 ~ 50 %, up to 600 triggers per hour ◯ Optional: 1200 and 1800 times per hour
	Applicable Voltage		▪ 3 phase: Voltage (±10%) ; Hz (±5%) 3 phase 3 wires 50Hz (220, 240, 380, 400, 460, 500, 和 550 Volts.) 60Hz (208, 220, 230, 240, 380, 440,460, 480, 575 和 600 Volts) ◯ Optional: 1 phase AC 220 V (1...3 series)
	Bus		▪ Modbus
	On/off Type Signal	Input	▪ 20-60V AC/DC or 60-120V AC ▪ Optoelectronic isolation
		Signal Feedback	▪ Relay X 5 (4 can be set to "natural open" or "natural closed" contacts. 1 integrated fault contact) A. Single or multi-phase power down B. Control circuit power failure C. Selection switch is in place or the stop position D. Motor temperature protector jumps off
		Malfunction Feedback	▪ Phase correction ▪ Torque switch ▪ Thermal protection ▪ Jammed valve protection ▪ Lose signal protection ▪ Instantaneous reverse protection▪ Other alarms
	Modulating Type Signal	Input	▪ Input signal: 4 ~ 20 mA;0 ~ 10 V; 2 ~ 10 V (the input signal can be arbitrarily corresponding to the valve position) ▪ Accuracy: (1 %) ▪ Dead zone: 0 ~ 25.5 % adjustable rate in full stroke ▪ Input impedance: 75 Ω (4~20 mA)
		Output	▪ Input signal: 4 ~ 20 mA;0 ~ 10 V; 2 ~ 10 V ▪ Output impedance: ≤750 Ω (4 ~ 20 mA) (repeatability and linearity within ±1 % of full valve stroke)
		Signal Reverse	▪ Support
		Loss Signal Mode Setting	▪ Support
		Dead Zone	▪ 0 ~ 25.5 % adjustable rate within full stroke
		Time Lag	▪ 0 ~ 25.5 s (adjustable)
Control mode	Indication		▪ 4-level grayscale LCD screen opening indicator ▪ Fully open/Fully close/remote/fault indicator (digital display of the opening percentage and torque percentage)
	Operation Settings		▪ Settings done without opening cover (menu settings by the remote control) ▪ Configuration settings(such as valve position, the maximum opening, the maximum torque, etc.)
	Local Control		▪ Non-intrusive on site control knobs: Open/Close, Local/Remote/Off
Others	Intelligently Analyze Data Records		▪ Use infrared remote control to conduct fault diagnosis analysis on the display ▪ Use two-way remote control to achieve fast and safe non-intrusive communication and data exchange. Able to analyze the actuator data and given recommendations
	Other Function		▪ Phase correction(3 phase power supply only) ▪ Alarm signal (local and remote controls) ▪ Torque bypass ▪ Torque setting and protection▪ Motor overheating protection ▪ Moisture-resistant heaters(anti-moisture device) ▪ ESD can be set to fully opened, fully closed, and remain still ▪ Valve torque curve ▪ Operation start up recording ▪ Event log ▪ Operation time ▪ Average torque ◯ Optional: Two-way remote control ▪ Operational trend records ◯ Optional: Intrinsically safe remote control

※For explosion protection options, please refer to the P11 explosion-proof rating and parameter list.

MULTI-TURN EXPLOSION-PROOF SPECIFICATION

Basic (B) Integral (M) Integration (Y) Intelligent (I)Super Intelligent (S)

CNEX Authentication	Ex d IIB T4 Gb/Ex Td A21 IP67 T130°C temperature: -20～+70°C Optional: -40～+70°C Ex d IIC T4 Gb/Ex Td A21 IP67 T130°C temperature: -20～+70°C Optional: -40～+70°C Ex d IIB T6 Gb/Ex Td A21 IP67 T80°C temperature: -20～+55°C Optional: -40～+55°C Ex d IIC T6 Gb/Ex Td A21 IP67 T80°C temperature: -20～+55°C Optional: -40～+55°C CNEX: GB3836.1, GB3836.2, GB12476.1 Optional:IP68 (GB12476.1)

※Please refer to P6-P10 for the technical parameters of the above models.

MULTI-TURN GENERAL SPECIFICATION

AC 220V/AC 380V/AC 440V/AC 480V 3 phase on-off type series

Speed	50Hz rpm	18	24	36	48	72	96	144*	192*
	60Hz rpm	21	29	43	57	86	115	173*	230*
Model	Output Torque								
EMT11	N.m	35	35	35	35	35	35	30	25
	lbf.ft	26	26	26	26	26	26	22	18
EMT12	N.m	80	80	80	70	50	40	35	30
	lbf.ft	59	59	59	52	37	29	26	22
EMT13	N.m	105	105	100	90	60	50	40	35
	lbf.ft	77	77	74	66	44	37	29	26
EMT21	N.m	200	200	200	200	170	150	100	60
	lbf.ft	147	147	147	147	125	111	74	44
EMT22	N.m	300	300	250	220	200	170	120	80
	lbf.ft	221	221	184	162	147	125	88	59
EMT23	N.m	400	400	300	250	250	230	150	90
	lbf.ft	295	295	221	184	184	170	111	66
EMT31	N.m	620	620	550	480	480	370	250	200
	lbf.ft	457	457	406	354	354	273	184	147
EMT41	N.m	1050	1050	850	700	700	550	420	250
	lbf.ft	774	774	627	516	516	406	310	184
EMT42	N.m	1500	1500	1300	1050	1050	750	650	550
	lbf.ft	1106	1106	959	774	774	553	479	406
EMT43	N.m	2050	2050	1750	1400	1400	1050	880	750
	lbf.ft	1512	1512	1291	1032	1032	774	649	553
EMT44	N.m	3000	3000	2050	1750	1750	1450	1360	1360
	lbf.ft	2212	2212	1512	1291	1291	1069	1003	1003

Note: 1. Above torque is the maximum torque. Please contact us if in need of special torque or speed.

2. Designed according to EN 15714-2009, Class A & B. The working time is S2 ~ 15 min.

3. Products with a* means the speed inertia is larger. Therefore, directly driving the gate valves and other similar applications is not recommended. For multi-turn actuators with A-type lift nut connection mechanism, the maximum permissible shaft speed (output speed) must follow:

A. The maximum for gate valve is 500 mm/min.

B. For the cut-off valve is up to 250 mm/min (maximum 45 rpm).

4. Modulating duty is available for option; the intermittent duty is S4 ~ 25 % and up to 600 starts per hour.

AC 220V/AC 230V Single phase series

Speed	50Hz rpm	18	24	36	48	72	96
	60Hz rpm	21	29	43	57	86	115
Model	Max. Output Torque						
EMT11	N. m	60	60	50	50	35	35
	lbf. ft	44	44	37	37	26	26
EMT21	N. m	150	150	130	100	50	50
	lbf. ft	111	111	96	74	37	37
EMT31	N. m	250	250	200	170	130	100
	lbf. ft	184	184	147	125	96	74

Note: 1. Above torque is the maximum torque. Please contact us if in need of special torque or speed.
2. Designed according to EN 15714-2009, Class A & B. The working time is S2 ~ 15 min.

AC 220V/AC 380V/AC 440V/AC 480V 3 phase on-off type series (unit: KW)

Speed	18	24	36	48	72	96	144*	192*
EMT11	0. 2	0. 2	0. 2	0. 2	0. 35	0. 35	0. 5	0. 5
EMT12	0. 35	0. 35	0. 35	0. 35	0. 35	0. 35	0. 6	0. 6
EMT13	0. 45	0. 45	0. 45	0. 45	0. 45	0. 45	0. 7	0. 7
EMT21	1. 1	1. 1	1. 1	1. 1	1. 1	1. 1	1. 5	1. 5
EMT22	1. 1	1. 1	1. 1	1. 1	1. 1	1. 1	1. 8	1. 8
EMT23	1. 25	1. 25	1. 25	1. 25	2	2	2. 3	2. 3
EMT31	2. 4	2. 4	2. 4	2. 4	3	3	4	4
EMT41	3. 5	3. 5	3. 5	3. 5	3. 5	3. 5	6. 5	6. 5
EMT42	5. 3	5. 3	5. 3	5. 3	5. 3	5. 3	11	11
EMT43	7. 5	7. 5	7. 5	7. 5	7. 5	7. 5	15	15
EMT44	7. 5	7. 5	9	9	9	9	20	20

AC 220V/AC 230V Single phase series (unit: KW)

Speed	18	24	36	48	72	96
EMT11	0. 3	0. 3	0. 4	0. 4	0. 4	0. 4
EMT12	—	0. 75	—	0. 75	1	1
EMT21	0. 75	0. 75	1	1	1	1
EMT22	—	1. 25	—	1. 25	1. 5	1. 5
EMT31	1. 25	1. 25	1. 5	1. 5	1. 5	1. 5

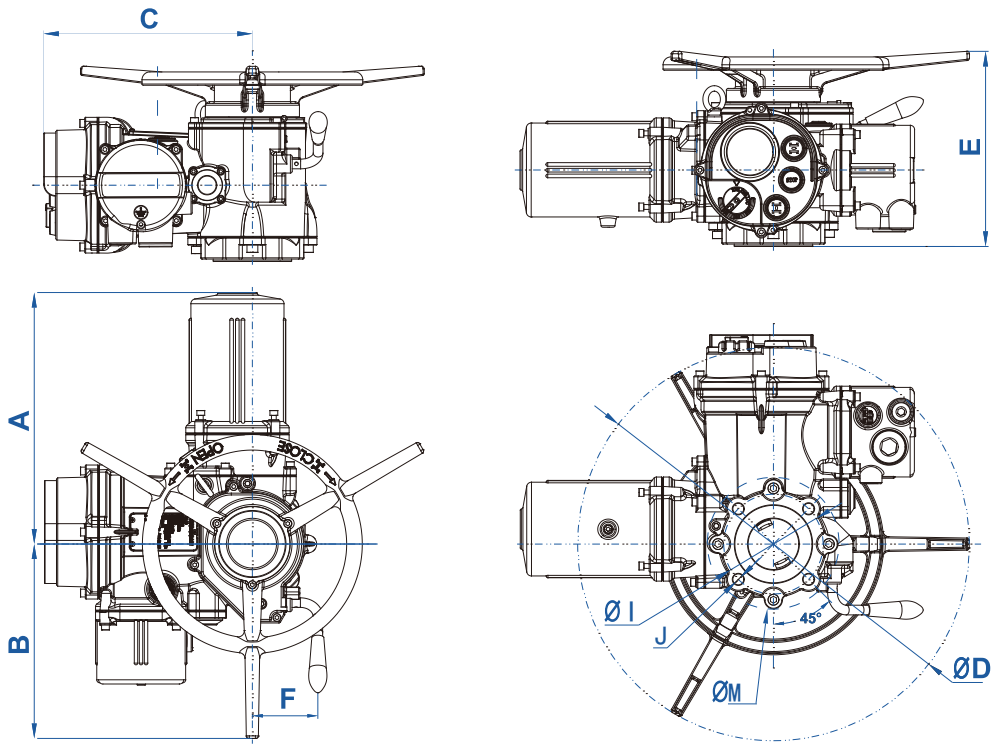
AC 220V/AC 380V/AC 440V/AC 480V 3 phase modulating type series

Speed	50Hz rpm	18		24		36		48		72	
	60Hz rpm	21		29		43		57		86	
Model	Output Torque	N. m	lbf. ft	N. m	lbf. ft	N. m	lbf. ft	N. m	lbf. ft	N. m	lbf. ft
EMT11	Modulating Torque	18	13	18	13	16	12	14	11	12	10
	Max Torque	35	26	35	26	31	23	28	21	25	19
EMT12	Modulating Torque	30	23	30	23	26	19	23	16	18	13
	Max Torque	60	45	60	45	50	37	45	33	35	26
EMT13	Modulating Torque	40	29	40	29	36	26	33	24	25	18
	Max Torque	80	59	80	59	72	53	65	48	50	37
EMT21	Modulating Torque	78	60	78	60	70	52	55	40	45	33
	Max Torque	160	118	160	118	140	104	110	81	90	67
EMT22	Modulating Torque	120	88	120	88	100	75	85	63	75	55
	Max Torque	240	177	240	177	200	148	170	126	150	111
EMT23	Modulating Torque	150	111	150	111	130	96	105	78	95	70
	Max Torque	300	221	300	221	260	192	210	155	190	140
EMT31	Modulating Torque	275	203	275	203	255	188	205	151	190	139
	Max Torque	550	406	550	406	510	376	410	302	380	278

Note: 1. Designed according to EN 15714-2009, Class C & D. With the standard startup frequency of 50 %, not exceeding 1200 starts per hour. Please contact us for special inquiry.
2. Above modulating torque is 1/2 of the max torque.

MULTI-TURN

DIMENSION



Unit: mm

Dimension / Model	A	B	C	ΦD	E		F	ΦI	ΦM	J	Weight (kg)
					Type A	Type B					
EMT11/12/13	330	254	310	300	310	282	90	102	120	4-M10	25
EMT21/22/23	384	283	331	509	335	303	111	140	175	4-M16	42
EMT31	420	325	346	650	355	323	111	165	205	4-M20	60
EMT41/42/43/44	580	465	510	930	568	520	140	298	335	8-M20	175

Note: Flange interface is in accordance with ISO 5210 standard. We can provide different connections according to customers' demands.

Dimensions of Output Drive Couplings

Unit: mm

Specifications Model	Stem Diameter			
	A型		B型	
	Max	Standard	Max	Standard
EMT11/12/13	Φ32	≤Φ22	Φ22	Φ20
EMT21/22/23	Φ51	≤Φ32	Φ32	Φ30
EMT31	Φ67	≤Φ45	Φ45	Φ40
EMT41/42/43/44	Φ83	≤Φ70	Φ60	Φ50

Note: Type A is for the application of rising valve stem. Type B is for the application of rotating valve stem.

Order code

EMT 11-18-O-eB-E00-S-K2-F07A-*

- Others
- Flange Interface (F07A, F07B...)
- Feedback Signal (K2: On/Off with fully Open/Close feedback; T3: 4 ~ 20 mA...)
- Control Units (S: Super Intelligence; I: Intelligence Type; Y: Integration; M: Integral Type; B: Basic Type)
- Explosion-proof Standards (E00: None; E01: Ex d IIB T4; E02: Ex d IIC T4...)
- Voltage + Color (e: AC 380 V / 3 ph, d: AC 220 V / 3 ph ... +B: black, Y: yellow...)
- Control Mode (O: On-off; I: Modulating)
- Output Speed (18, 24, 36, 48, 72, 96, 144, 192)
- Series Code (11, 12, 13, 21, 22, 23, 31, 41, 42, 43, 44)

QUALITY & SERVICE **MULTI-TURN**

STANDARD

•EN15714	•JB/T8219	•EN60730	•ISO5210	•JB2920
•GB3836	•GB12476	•EN60079	•CSA60079	•UL60079

Complying with ISO 9001, 6 Sigma and virtual board management system, Flowinn inspect all actuators in each step of the production process. Collecting all of the production data for further analysis and tracing.

PERFECTION HAS ALWAYS BEEN OUR ULTIMATE GOAL

TWO YEARS WARRANTY IS OUR COMMITMENT

bsi. ISO 9001 Quality Management FM 522775 | bsi. ISO 14001 Environmental Management EMS 595200 | bsi. OHSAS 18001 Occupational Health and Safety Management OHS 595201

CE RoHS REACH

- Please visit our website at **WWW.HOEDVALVE.COM** for all certifications.

SERVICES

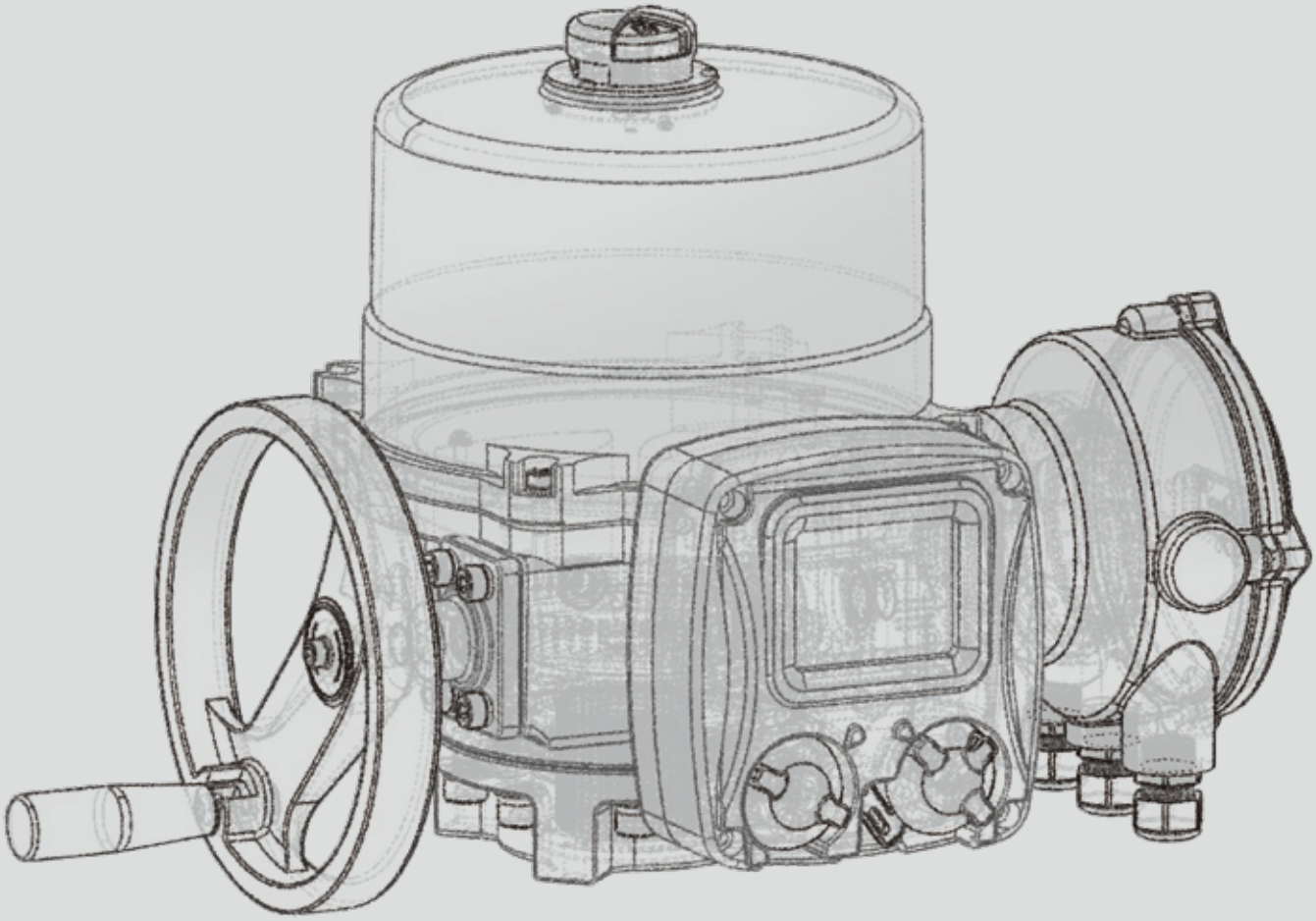
HOED's professional service team is ready to provide users with comprehensive services and professional technical supports at all time:

- No matter is it by phone, mail or on the site, we are standing by for your inquiry.
- Stable delivery time.
- On-site installation and debugging.
- Regularly follow up our products status and maintenance.
- We provide training for structure knowledge, operation, debugging, maintenance and more.

CUSTOMIZED PRODUCTION

As to HOED, there is no such thing called **IMPOSSIBLE**. For special requirements, we provide customized solutions.

HOED



QUARTER-TURN ELECTRIC ACTUATOR

bsi. ISO 9001 Quality Management FM 522775

bsi. ISO 14001 Environmental Management EMS 595200

bsi. OHSAS 18001 Occupational Health and Safety Management OHS 595201

CE RoHS REACH

QUARTER TURN CHARACTERISTICS

PATENT MECHANIC DESIGN

-----PAVING THE WAY FOR FUTURE TREND

EOM series of electric actuators are equipped with manual / electric automatic switching function. No clutch design thus enables the hand wheel to be rotated while the machine is running; this is to ensure the safety of the operator. Such design will be the mainstream trend in the future.

PROFESSIONAL GEAR DESIGN

The adoption of the planetary gear design achieved a combination of manual and electric control without the need of the clutch which ensures the operator’ s safety. Above all, the unique solar planetary gear design has gotten the national patent.

USER INTERACTION INTERFACE

Intelligent type is equipped with brand new UI control interface, with the specialized remote control, achieves a variety of functions of the actuator configuration operation. Supports multi-language, satisfies all kinds of demands from the customer. It can also be customized based on special requirements.

INTERCHANGEABLE SPLINE SLEEVE

Depending on the spindle of the valve, the output sleeve of the actuator is designed in spline form. The inner holes can be replaced into square holes and keyways and other different sizes. Fast debugging and replacing makes the operation more flexible.

ENERGY EFFICIENCY

Single-phase and DC power supply is optional, ultra-low energy consumption, suitable for solar and wind powered applications.

INTERCHANGEABLE CONNECTING FLANGE

The base connecting holes are in accordance with ISO 5211 standard, also with various connecting flange sizes. It can be replaced and rotated for the same type of actuators in order to achieve with different hole positions and angles of the valve flange connection purposes.

360 ° POSITION INDICATOR

Adopts high strength, anti-sunlight and RoHS-compliant plastic 3D window indicator. Users are able to observe the stroke position of the actuator within the 360° visual angle as there’ s no dead angles.

QUARTER TURN CONTROLMODE

NON-INVASIVE CONTROL

Non-through-the-shaft magnetic switch design, it is controlled by the Hall switch inside the actuator. Equipped with local control / remote control / disable knob, and on / off / stop button (knob), accommodating with the indicator light and LCD screen to achieve non-invasive field control operations.

INFRARED REMOTE CONTROL

The intelligent type actuator is able to provide different remote control sets based on different application requirements. Such as portable infrared remote control in general places, and explosion-proof remote control for hazardous locations.

PLANETARY GEARS

Using high strength alloy steel for the planetary gear set, more compact and efficient, achieving greater output for the same volume. At the same time, having differential input for motor drive and hand wheel operation, we are therefore able to operate electrically and manually at the same time.

SPROCKET OPERATION

Based on the features of operating manually and electrically without clutch mechanism, sprocket operation is more convenient to operate the valve at higher positions.

QUARTER TURN

SAFER MORE RELIABLE & STABLE

OVERLOAD PROTECTION

The power will automatically shut off when the valve jam occurs. Thus preventing further damage to the valve and actuator.

OPERATIONAL DIAGNOSIS

Intelligent actuators are equipped with multiple sensing devices. With the functions of real-time reflections of the control signal received by the actuator, fault alarm, operating parameters, status indication and other status. Multi-diagnostic function can locate the fault, thus making it easy for the users.

PASSWORD PROTECTION

Intelligent actuators possess classifiable password protection, which can be authorized to different operators to avoid misuse which causing the actuator failure.

OPERATIONAL SAFETY

F grade insulation motor. The motor winding has a temperature control switch to sense the temperature of the motor to protect the overheating issues, thus ensures the operational safety of the motor. (H grade optional).

MOISTURE RESISTANCE

Installed with heater inside the actuator used to remove the internal condensation which cause damages to electrical parts.

PHASE SEQUENCE CONTROL

Phase detection and correction functions avoid the actuator being damaged by connecting to the wrong power supply.

VOLTAGE PROTECTION

Protection against the high and low voltage situations.

WORKING ENVIRONMENT

ANTI-CORROSION PROTECTION: ····· Epoxy resin enclosure meets NEMA 4X, customer-special painting is available.

INGRESS PROTECTION: ····· IP67 is standard, IP68 is optional.

The definition of IP68 is:
Depth of water: Maximum 15 m under water level.
Duration of continuous immersion in water: Max.(72 hours).

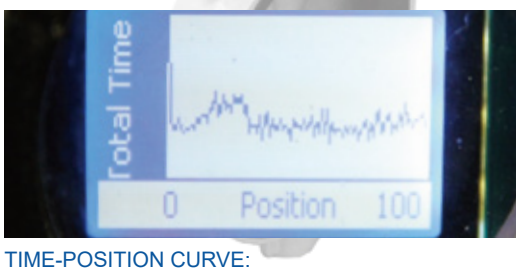
FIREPROOFING GRADE: ····· High temperature fireproof enclosure meets requirements in different situation.
It can be customized according to special needs.

EXPLOSION-PROOF RATING: ····· Ex d IIC T6 design and IECEx, ATEX certifications which satisfy the reqirements in hazardous locations.

AMBIENT TEMPERATURE: ····· Temperature range is from -30 ˚C to 70 ˚C (-22 ˚F to +158 ˚F).

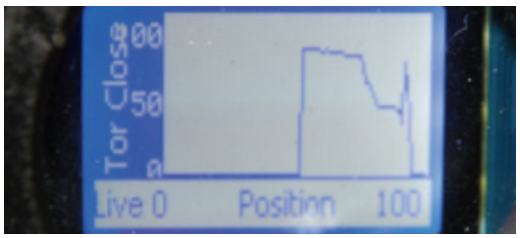
RELATIVE HUMIDITY: ····· ≤ 95 % (at 25 ˚C /275˚F).

QUARTER TURN
DATA MONITORING VS MANAGEMENT

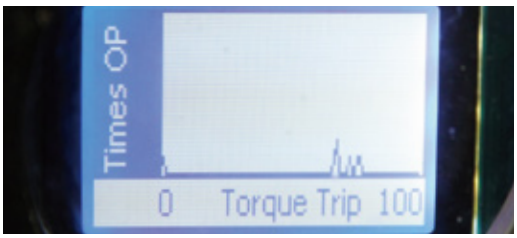


TIME-POSITION CURVE:
The curve shows the running trend of the actuator, and the number of times the actuator has been passed at the corresponding positions.

Super intelligent type actuators adopting high-performance microprocessors, real-time collection of valve position, torque and other operational information. Logical calculation truly reflects the operating status. Real-time monitoring & managing data provides references for the actuator maintenance.



AVERAGE TORQUE CURVE:
It records the average output torques in the corresponding positions of both OPEN and CLOSE directions. The operating load of the actuator can be detected via the curve.



OPERATION TREND CURVE:
The curve shows the cumulative number of positions corresponding to the control signal received by the actuator so far. It enables the clients to understand the overall controlling trend of the actuator.

QUARTER TURN INSTALLATION & MAINTENANCE

EOM 10 and above models are equipped with lifting ring for easy handling and on-site installation construction.

The mounting flange is in accordance with ISO 5211 international standard, and the replaceable spline sleeve makes the installation more flexible.

The wiring cavity with double sealing structure can be selected, while the actuator is well sealed and protected when installed and debugged on site.

α shrapnel terminal block, doesn't need to install a special wiring copper ring and can be directly connected. On-site installation is more convenient.

Seal off lubrication design, without regular grease supplement, life-long maintenance-free.

QUARTER TURN TECHNICAL SPECIFICATION

Basic (B)

EFM1/A series

EFM1/A/B-H series

EOM2-9 series

EOM10-12 series

EOM13-15 series

General Parameters	Torque Range		▪ 35 - 20000 N.m
	Switch Time		▪ 11 - 155 s
	Ambient Temperature		▪ -25 ℃ ··· 70 ℃ ○ Optional: -40 ℃ ··· 60 ℃
	Anti-vibration Level		▪ JB/T8219
	Noise Level		▪ Less than 75 dB within 1 m
	Electrical interface		▪ TwoPG13.5 (≤100N.m)TwoPG16 (≥100N.m) (customized)
	Ingress Protection		▪ IP67, Optional:IP68 The definition of IP68 is:Depth of water: Maximum 15 m under water level.Duration of continuous immersion in water: Max.(72 hours).
	Connection size		▪ ISO5211
Mechanical Parameters	Motor Specifications		▪ Class F, with thermal protector up to +135 ℃ (+275 ℉) ○ Optional: Class H
	Working System		▪ On-off Type: S2 ~ 15 min, no more than 600 times per hour start
	Applicable Voltage		▪ 3 phase: AC (±10 %); Hz (±5 %) 50 Hz (220, 240, 380, 400, 460, 500, 525 和 550 Volts) 60 Hz (208, 220, 230, 240, 380, 440, 460, 480, Volts) ▪ DC: 24 V (±10 %) ※ EFM series is for 1 phase only (For special inquire, please contact Flowinn)
	Bus		▪ N/A
	On/off Type Signal	Input	▪ Built-in contacts for 5A @ 250Vac (depending on the control box)
		Signal Feedback	▪ Opening stroke limit, closing stroke limit ▪ Opening over torque, closing over torque ○ Optional: Semi-modulating type - position feedback potentiometer ○ Optional: 4 ~ 20 mA to send
		Malfunction Feedback	▪ Integrated fault alarm: Motor overheating, over torque and such contacts ○ Optional: Undercurrent protection contact
	Modulating Type Signal	Input	▪ N/A
		Output	▪ N/A
		Signal Reverse	▪ N/A
		Loss Signal Mode Setting	▪ N/A
		Dead Zone	▪ N/A
		Time Lag	▪ N/A
Control mode	Indication		▪ 3D opening indicator
	Operation Settings		▪ N/A
	Local Control		▪ N/A
Others	Intelligently Analyze Data Records		▪ N/A
	Other Function		▪ Moisture-resistant heaters (anti-moisture device) ▪ Torque protection ▪ Motor overheat protection

※For explosion protection options, please refer to the P10 explosion-proof rating and parameter list.

QUARTER TURN
TECHNICAL SPECIFICATION

Integral (M)

EFMB-1/2/3 series

EFM1/A series

EFM1/A/B-H series

EOM2-9 series

EOM10-12 series

EOM13-15 series

General Parameters	Torque Range		▪ 10 - 20000 N.m
	Switch Time		▪ 11 - 155 s
	Ambient Temperature		▪ -25 ℃ ··· +70 ℃
	Anti-vibration Level		▪ JB/T8219
	Noise Level		▪ Less than 75 dB within 1 m
	Electrical interface		▪ Two PG13.5(＜100N.m) Two PG16(≥100N.m) (customized)
	Ingress Protection		▪ IP67, Optional:IP68 The definition of IP68 is:Depth of water: Maximum 15 m under water level.Duration of continuous immersion in water: Max.(72 hours).
	Connection size		▪ ISO5211
Mechanical Parameters	Motor Specifications		▪ Class F, with thermal protector up to +135 ℃ (+275 ℉) Optional: Class H
	Working System		▪ On/off type: S2 ~ 15 min no more than 600 times per hour start ▪ Modulating type: S4~50% up to 600 triggers per hour Optional: 1200 times per hour
	Applicable Voltage		▪ 1 phase: Voltage (±10 %); Hz (±5 %) 50 Hz (24, 220, 230, 240 Volts) 60 Hz (24, 110, 120, 220, 230, 240 Volts) ▪ 3 phase: Voltage (±10 %); Hz (±5 %) 50 Hz (220, 240, 380, 400, 460, 500, 525 和 550 Volts) 60 Hz (208, 220, 230, 240, 380, 440, 460, 480, Volts) ▪ DC: 24 V (±10 %) ※ EFM series is for 1 phase only (For special inquire, please contact Flowinn)
	Bus		▪ N/A
	On/off Type Signal	Input	▪ AC/DC 24 input control or AC 110/220 V input control
		Signal Feedback	▪ Close the valve contact ▪ Open the valve contact (contact capacity: 5 A @ 250 Vac) Optional: Opening torque signal contact Closing torque signal contact Local/remote contacts Integrated fault contact 4 ~ 20 mA to send ※ EFM series has no torque options
		Malfunction Feedback	▪ Integrated fault alarm: Power off, motor over heat-ing, lack of phase, over torque, signal off ※ EFM series has no torque options
	Modulating Type Signal	Input	▪ Input signal: 4 - 20 mA; 0 - 10 V; 2 - 10 V ▪ Input impedance: 250 Ω (4 - 20 mA)
		Output	▪ Output signal: 4 - 20 mA;0 - 10 V; 2 - 10 V ▪ Output impedance: ≤ 750 Ω (4 - 20 mA) (Repeatability and linearity within ± 1 % of full valve stroke)
		Signal Reverse	▪ Support
		Loss Signal Mode Setting	▪ Support
		Dead Zone	▪ ≤ 2.5 %
		Time Lag	▪ N/A
Control mode	Indication		▪ 3D opening indicator
	Operation Settings		▪ N/A
	Local Control		▪ N/A
Others	Intelligently Analyze Data Records		▪ N/A
	Other Function		▪ Phase correction(3-phase power supply only) ▪ Torque protection ▪ Motor overheat protection ▪ Moisture-resistant heaters (anti-moisture device)

※For explosion protection options, please refer to the P10 explosion-proof rating and parameter list.

QUARTER TURN TECHNICAL SPECIFICATION

Integration (Y)

EFM1/A/B-H series

EOM2-9 series

General Parameters	Torque Range		▪ 35 – 20000 N.m
	Switch Time		▪ 11 – 155 s
	Ambient Temperature		▪ -25 ℃ ··· +70 ℃
	Anti-vibration Level		▪ JB/T8219
	Noise Level		▪ Less than 75 dB within 1 m
	Electrical interface		▪ Two PG13.5 (≤100N.m)Two PG16 (≥100N.m) (customized)
	Ingress Protection		▪ IP65
	Connection size		▪ ISO5211
Mechanical Parameters	Motor Specifications		▪ Class F, with thermal protector up to +135 ℃ (+275 ℉) Optional: Class H
	Working System		▪ On/off type: S2 ~ 15 min no more than 600 times per hour start ▪ Modulating type: S4~50% up to 600 triggers per hour Optional: 1200 times per hour
	Applicable Voltage		▪ 1 phase: Voltage (±10 %); Hz (±5 %) 50 Hz (24, 220, 230, 240 Volts) 60 Hz (24, 110, 120, 220, 230, 240 Volts) ▪ 3 phase: Voltage (±10 %); Hz (±5 %) 50 Hz (220, 240, 380, 400, 460, 500, 525 和 550 Volts) 60 Hz (208, 220, 230, 240, 380, 440, 460, 480, Volts) ▪ DC: 24 V (±10 %) ※ EFM series is for 1 phase only (For special inquire, please contact Flowinn)
	Bus		▪ N/A
	On/off Type Signal	Input	▪ AC/DC 24 input control or AC 110/220 V input control
		Signal Feedback	▪ Close the valve contact ▪ Open the valve contact (contact capacity: 5 A @ 250 Vac) Optional: Opening torque signal contact Closing torque signal contact Local/remote contacts Integrated fault contact 4 ~ 20 mA to send ※ EFM series has no torque options
		Malfunction Feedback	▪ Integrated fault alarm: Power off, motor overheating, lack of phase, over torque, signal off ※ EFM series has no torque options
	Modulating Type Signal	Input	▪ Input signal:: 4 – 20 mA; 0 – 10 V; 2 – 10 V ▪ Input impedance: 250 Ω (4 – 20 mA)
		Output	▪ Output signal: 4 – 20 mA;0 – 10 V; 2 – 10 V ▪ Output impedance: ≤ 750 Ω (4 – 20 mA) (Repeatability and linearity within ± 1 % of full valve stroke)
		Signal Reverse	▪ Support
		Loss Signal Mode Setting	▪ Support
		Dead Zone	▪ ≤ 2.5 %
		Time Lag	▪ N/A
Control mode	Indication		▪ 3D opening indicator ▪ On/off/remote control/fault indicator (Button type) ▪ Open/close/power indicator (Knob)
	Operation Settings		▪ N/A
	Local Control		▪ Non-intrusive local control knob: Open/close/stop ▪ Non-intrusive local control knob: Local/remote/prohibit
Others	Intelligently Analyze Data Records		▪ N/A
	Other Function		▪ Phase correction(4-phase power supply only) ▪ Torque protection ▪ Motor overheat protection ▪ Moisture-resistant heaters (anti-moisture device)

QUARTER TURN
TECHNICAL SPECIFICATION

Intelligent (I)

EOM2-9 series

General Parameters	Torque Range		▪ 100 – 20000 N.m
	Switch Time		▪ 19 – 155 s
	Ambient Temperature		▪ -25 ℃ ··· +70 ℃
	Anti-vibration Level		▪ JB/T8219
	Noise Level		▪ Less than 75 dB within 1 m
	Electrical interface		▪ Two PG16。(customized)
	Ingress Protection		▪ IP67, Optional:IP68 The definition of IP68 is:Depth of water: Maximum 15 m under water level.Duration of continuous immersion in water: Max.(72 hours).
	Connection size		▪ ISO5211
Mechanical Parameters	Motor Specifications		▪ Class F, with thermal protector up to +135 ℃ (+275 ℉) Optional: Class H
	Working System		▪ On/off type: S2 ~ 15 min no more than 600 times per hour start ▪ Modulating type: S4~50% up to 600triggers per hour Optional: 1200 times per hour
	Applicable Voltage		▪ 1 phase: Voltage (±10%); Hz (±5%) 50 Hz (24, 220, 230, 240 Volts) 60 Hz (24, 110, 120, 220, 230, 240 Volts) ▪ 3 phase: Voltage (±10 %); Hz (±5 %) 50 Hz (220, 240, 380, 400, 460, 500, 525 和 550 Volts) 60 Hz (208, 220, 230, 240, 380, 440, 460, 480, Volts) ▪ DC: 24 V (±10 %) (For special inquire, please contact Flowinn)
	Bus		▪ N/A
	On/off Type Signal	Input	▪ AC 24 auxiliary power input control ▪ Optoelectronic isolation
		Signal Feedback	▪ Close the valve contact ▪ Open the valve contact (contact capacity: 5 A @ 250 Vac) Optional: Opening torque signal contact Closing torque signal contact Local/remote contacts Integrated fault contact 4 ~ 20 mA to send
		Malfunction Feedback	▪ Integrated fault alarm:Power off, motor overheating, lack of phase, over torque, signal off, ESD beyond protection, terminal output ※ EFM series has no torque options
	Modulating Type Signal	Input	▪ Input signal: 4 – 20 mA; 0 – 10 V; 2 – 10 V ▪ Input impedance: 250 Ω (4 – 20 mA)
		Output	▪ Output signal: 4 – 20 mA;0 – 10 V; 2 – 10 V ▪ Output impedance: ⩽ 750 Ω (4 – 20 mA) (Repeatability and linearity within ± 1 % of full valve stroke)
		Signal Reverse	▪ Support
		Loss Signal	▪ Support
		Mode Setting Dead Zone	▪ 0.5 ~ 9.9 % adjustable rate within full stroke
		Time Lag	▪ N/A
Control mode	Indication		▪ LCD screen opening indicator ▪ On/off/remote control/fault indicator (Digital display of the opening percentage)
	Operation Settings		▪ Settings done opening the cover
	Local Control		▪ Non-intrusive local control knob: Open/close/stop ▪ Non-intrusive local control knob: Local/remote/prohibit
Others	Intelligently Analyze Data Records		▪ N/A
	Other Function		▪ Phase correction (3-phase power supply only) ▪ Alarm signal (local and remote included) ▪ Torque protection ▪ Motor overheat protection ▪ Moisture-resistant heaters(anti-moisture device) ▪ Infrared remote control Optional: Explosion-proof infrared remote control

※For explosion protection options, please refer to the P10 explosion-proof rating and parameter list.

QUARTER TURN TECHNICAL SPECIFICATION

Super Intelligent (S)

EOM2-9 series

General Parameters	Torque Range		▪ 100 – 20000 N.m
	Switch Time		▪ 19 – 155 s
	Ambient Temperature		▪ -25 ℃ ··· +70 ℃
	Anti-vibration Level		▪ JB/T8219
	Noise Level		▪ Less than 75 dB within 1 m
	Electrical interface		▪ Two NPT 3/4, Two NPT1 1/2 (customized)
	Ingress Protection		▪ IP67 Optional: IP68 The definition of IP68 is:Depth of water: Maximum 15 m under water level.Duration of continuous immersion in water: Max.(72 hours).
	Connection size		▪ ISO5211
Mechanical Parameters	Motor Specifications		▪ Class F, with thermal protector up to +135 ℃ (+275 ℉) Optional: Class H
	Working System		▪ On/off type: S2 ~ 15 min no more than 600 times per hour start ▪ Modulating type: S4~50% up to 600 triggers per hour Optional: 1200 and 1800 times per hour
	Applicable Voltage		▪ 1 phase: Voltage (±10 %); Hz (±5 %) 50 Hz (24, 220, 230, 240 Volts) 60 Hz (24, 110, 120, 220, 230, 240 Volts) ▪ 3 phase: Voltage (±10 %); Hz (±5 %) 50 Hz (220, 240, 380, 400, 460, Volts) 60 Hz (208, 220, 230, 240, 380, 440, 460, 480, 575 和 600 Volts) ▪ DC: 24 V (±10 %) (For special inquire, please contact Flowinn)
	Bus		▪ Modbus
	On/off Type Signal	Input	▪ 20 ~ 60 V AC/DC or 60 – 120 V AC ▪ Optoelectronic isolation
		Signal Feedback	▪ Relay X 5 (4 can be set to "constant open" or "constant closed" contacts. 1 integrated fault contact) a. On/off in place b. On/off over torque c. Local/remote d. Center position e. Multiple malfuntions to choose Optional: 4 ~ 20 mA to send
		Malfunction Feedback	▪ Phase correction ▪ Torque switch ▪ Heat protection ▪ Jammed valve protection ▪ Broken signal protection ▪ Instantaneous ▪ Other alarms reverse protection
	Modulating Type Signal	Input	▪ Input signal: 4 ~ 20 mA; 0 ~ 10 V; 2 ~ 10 V (the input signal can be arbitrarily correspond-ing to the valve position) ▪ Accuracy: (1 %) ▪ Input impedance: 75 Ω (4 ~ 20 mA)
		Output	▪ Output signal:: 4 – 20 mA;0 – 10 V; 2 – 10 V ▪ Output impedance: ≤ 750 Ω (4 – 20 mA) (Repeatability and linearity within ± 1 % of full valve stroke)
		Signal Reverse	▪ Support
		Loss SignalSetting	▪ Support
		Dead Zone	▪ 0 – 25.5 % adjustable rate within full stroke
		Time Lag	▪ 0 – 25.5 s (Adjustable)
Control mode	Indication		▪ LCD screen opening indicator ▪ On/off/remote control/fault indicator (Digital display of the opening percentage and torque percentage)
	Operation Settings		▪ Settings done without opening cover(menu settings by the remote control) ▪ Configuration settings(such as valve position, the maximum opening, the maximum torque, etc.)
	Local Control		▪ Non-intrusive local control knob:Open/close/stop ▪ Non-intrusive local control knob: Local/remote/prohibit
Others	Intelligently Analyze Data Records		▪ Use infrared remote control to conduct fault diagnosis analysis on the display ▪ Use two-way remote control to achieve fast and safe nonintrusive communication and data exchange. Able to analyze the actuator data and given recommendations
	Other Function		▪ Phase correction(3-phase power supply only) ▪ Alarm signal (local and Telecontrol) ▪ Torque setting and protection ▪ Motor overheat protection ▪ Moisture-resistant heaters (anti-moisture device) ▪ Operation start up recording ▪ Operational trend records ▪ ESD can be set to fully opened, fully closed, and remain still ▪ Torque bypass ▪ Event log ▪ Operation time ▪ Average torque ▪ Valve torque curve Optional: Two-way remote control Optional: Explosion-proof infrared remote control

※For explosion protection options, please refer to the P10 explosion-proof rating and parameter list.

EXPLOSION-PROOF SPECIFICATION QUARTER TURN

Explosion-proof series

EXC(G)1/A/B series

EXB(C)2-9 series

EXCJ2-9 series

	Basic (B)Integral (M)	Intelligent (I)Super Intelligent (S)
NEPSI certified	▪ NEPSI : GB 3836.1, GB 3836.2, GB 12476.1 ▪ Ex d IIB/IIC T4 — T6 Gb DIP A21 TA, T4 (GB 3836.1, GB 3836.2) ▪ Ex tb IIIC T85 ℃ to T135 ℃ (GB 12476.1)	▪ NEPSI : GB 3836.1, GB 3836.2, GB 12476.1 ▪ Ex d IIB/IIC T4 — T6 Gb DIP A21 TA, T4 (GB 3836.1, GB 3836.2) ▪ Ex tb IIIC T85 ℃ to T135 ℃ (GB 12476.1)
ATEX certified	▪ ATEX (94/9/EC) II 2 GD c. EN 60079-0, EN 60079-1, EN 60079-31 ▪ Ex d IIB T4 — T6 Gb T4 ▪ Ex tb IIIC T85 ℃/T100 ℃/T135 ℃ Db T4, IP66 ▪ Temperature range:-20 ℃to+65 ℃ ◯ Optional: -40 ℃ to +60 ℃ ◯ Optional: IP67/IP68 (EN 60529) ▪ Ex d IIC T4 — T6 Gb ▪ Ex tb IIIC T85 ℃/T100 ℃/T135 ℃ Db T4, IP66 ▪ Temperature range:-20 ℃to+65 ℃ ◯ Optional: -40 ℃ to +60 ℃ ◯ Optional: IP67/IP68 (EN 60529)	▪ ATEX (94/9/EC) II 2 GD c. EN 60079-0, EN 60079-1, EN 60079-31 ▪ Ex d IIC T4 — T6 Gb ▪ Ex tb IIIC T85 ℃/T100 ℃/T135 ℃ Db T4, IP66 ▪ Temperature range:-20 ℃to+65 ℃ ◯ Optional: -40 ℃ to +60 ℃ ◯ Optional: IP67/IP68 (EN 60529)
IECEx certified	▪ IECEx. IEC 60079-0 & IEC 600679-1 ▪ Ex d IIC T4 — T6 Gb ▪ Ex tb IIIC T85 ℃ — T135 ℃ Db IP66 ▪ Temperature range:-20 ℃to+65 ℃ ◯ Optional: -40 ℃ to +65 ℃ ◯ Optional: IP67/IP68 (IEC 60529)	▪ IECEx. IEC 60079-0 & IEC 600679-1 ▪ Ex d IIB T4 — T6 Gb ▪ Ex tb IIIC T85 ℃ — T135 ℃ Db IP66 ▪ Temperature range:-20 ℃to+65 ℃ ◯ Optional: -40 ℃ to +65 ℃ ◯ Optional: IP67/IP68 (IEC 60529) ▪ Ex d IIC T4 — T6 Gb ▪ Ex tb IIIC T85 ℃ — T135 ℃ Db IP66 ▪ Temperature range:-20 ℃to+65 ℃ ◯ Optional: -40 ℃ to +65 ℃ ◯ Optional: IP67/IP68 (IEC 60529)
CSA certified	▪ CSA Explosionproof to CSA 60079-0-11, CSA 600679-1-11 , CSA 60079-31-12, UL 60079-0-11, UL 600679-1-11 , IAS 60079-31-13 ▪ Ex d IIB T4 — T6 Gb ▪ Ex tb IIIC T4 — T6 Db IP66 ▪ Temperature range:-25 ℃to+65 ℃ ◯ Optional: IP67/IP68 (EN 60529) ▪ Ex d IIC T4 — T6 Gb ▪ Ex tb IIIC T4 — T6 Db IP66 ▪ Temperature range:-25 ℃ to +65 ℃ ◯ Optional: IP67/IP68 (EN60529)	▪ CSA Explosionproof to CSA 60079-0-11, CSA 600679-1-11 , CSA 60079-31-12, UL 60079-0-11, UL 600679-1-11 , IAS 60079-31-13 ▪ Ex d IIC T4 — T6 Gb ▪ Ex tb IIIC T4 — T6 Db IP66 ▪ Temperature range:-25 ℃to+65 ℃ ◯ Optional: IP67/IP68 (EN 60529)

※Please refer to P5-P9 for the technical parameters of the above models.

QUARTER TURN REGULAR SERIES, EXPLOSION PROOF

ON-OFF TYPE VS MODULATING TYPE

REGULAR SERIES	ON/OFF TYPE	MODULATING TYPE
Basic (B)	√	—
Integral (M)	√	√
Integration (Y)	√	√
Intelligent (I)	√	√
Super Intelligent (S)	√	√

Explosion-proof Series	ON/OFF TYPE	MODULATING TYPE
Basic (B)	√	—
Integral (M)	√	√
Intelligent (I)	√	√
Super Intelligent (S)	√	√

QUARTER TURN GENERAL SPECIFICATION

— TECHNICAL PARAMETER CHART

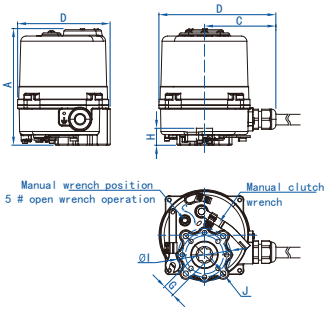
Model	Power (W)	Max Output Torque(N.m)		Max Output Torque(lbf.in)		Running time (Sec)				ISO 5211	Remarks
		AC 110 V AC 220 V AC/DC 24 V	AC 220 V AC 380 V 3 phase	AC 110 V AC 220 V AC/DC 24 V	AC 220 V AC 380 V 3 phase	50 Hz AC 110 V AC 220 V	50 Hz AC 380 V 3 phase	AC/DC 24 V	Fail-safe		
EFMB-1	5	10	–	89	–	13	–	13	–	F03/F04/F05	Manual wrench
EFMB-2	8	20	–	177	–	12	–	12	–		
EFMB-3	10	30	–	266	–	11	–	11	–		
EFM1-(H)	10	35	–	310	–	11	–	8		F03/F05/F07	Manual wrench options: Handwheel
EFMA-(H)		50	–	443	–	15	–	10			
EFMB-H		80	–	708	–	22	–	15			Handwheel
EOM 2	40	100		885		19		14		F05/F07/F10/F12	Handwheel operation, planetary gear mechanism
EOM 3		200		1770		39		28			
EOM 3A		300		2655		39		28			
EOM 4	90	400		3540		29		21		F10/F12/F14	
EOM 5		600		5310		39		28			
EOM 6		800		7080		47		34			
EOM 7	120	1000		8850		47		34			
EOM 7A		1300		11505		47		34			
EOM 8		1700		15045		34		25		F12/F14/F16	
EOM 8A		2000		17700		34		25	–		
EOM 9	200	2300		20355		47		34	–		
EOM 10		3500		30975		76		55	–	F14/F16	
EOM 11		5000		44250		105		76	–		
EOM 12		8000		70800		143		103	–	F25	
EOM 13	400	–	13000	–	115050	–	109	–		F25/F30	
EOM 14		–	16000	–	141600	–	129	–			
EOM 15		–	20000	–	177000	–	155	–			

Note: Standard configuration.

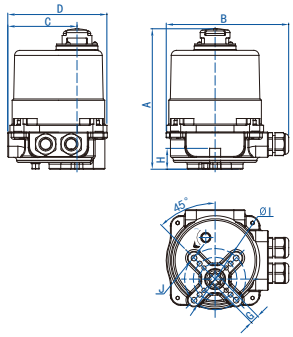
1. Rated torque is 75 % of the max torque.
2. Motor insulation is class F. class H is optional.
3. The running time of 60 Hz is 5/6 of that of 50 Hz. The max output torque is the same as above.
4. Above mentioned 3 phase output power doesn't apply to EFM1-(H),EFMA-(H).

DIMENSION QUARTER TURN

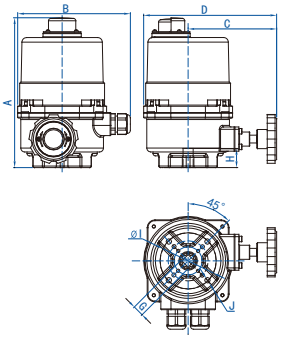
—— BASIC TYPE & INTEGRAL TYPE



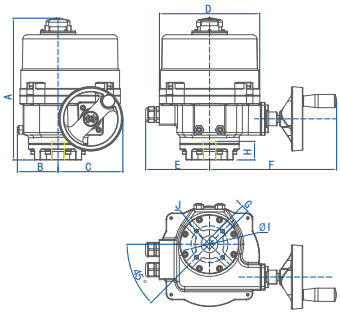
EFMB 1/2/3



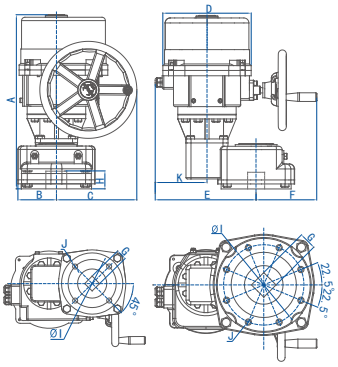
EFM 1/A/B



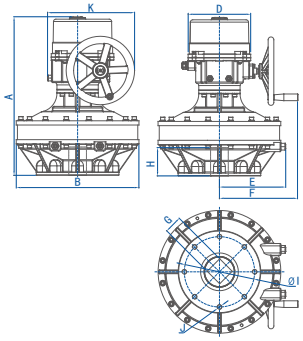
EFM 1/A/B-H



EOM 2~9



EOM 10~12



EOM 13~15

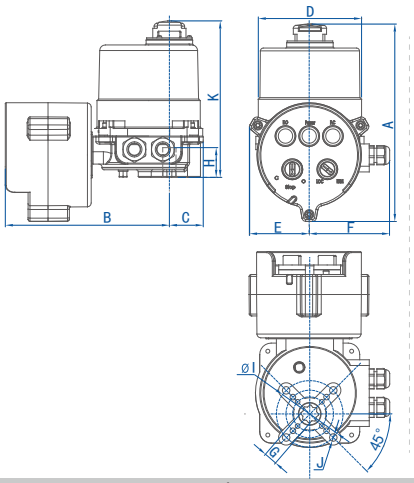
Model		A	B	C	D	E	F	G	H	Φ I	J	Weight (kg)
EFMB-1 EFMB-2 EFMB-3		110	111	71	87	–	–	11x11	16	36 42 50	4-M5 4-M5 4-M6	1
EFM1 EFMA	On/off	165	150	82	118	–	–	11x11	20	36	4-M5	3
	Modulating	185						14x14				3. 2
EFM1-H	On/off	192		135	170	–	–	11x11		50	4-M6	3. 6
EFMA-H EFMB-H	Modulating	212		135	170	–	–	14x14 17x17		70	4-M8	3. 8
EOM2		268	77	123	216	121	240	14x14	35	70	4-M8	11
EOM3								17x17				
EOM4		327	103	187	266	150	297	22x22	55	102	4-M10	22
EOM5								22x22 27x27		102 125	4-M10 4-M12	
EOM6								27x27		125	4-M12	
EOM7												
EOM8		380	127	242	293	161	333	27x27	65	125	4-M12	36
EOM9								36x36		140	4-M16	
EOM10		532	118	242		308	186	40x40	85	140 165	4-M16 4-M20	76
EOM11								46x46		165	4-M20	
EOM12		545	160	242		343	160	55x55	130	254	8-M16	107
EOM13		672	520	–		281	331	55x55 75x75	120	254	8-M16	218
EOM14										298	8-M20	
EOM15												

Note: 1. Dimension unit is mm.
2. Above “G” dimension is what we recommended. However, it can be customized according to customers’ requirements.
3. Above “ΦI”and“J”dimensions are in accordance with ISO 5211 flange specifications. Which means that there’s only one specification can be chosen, please specify when ordering.

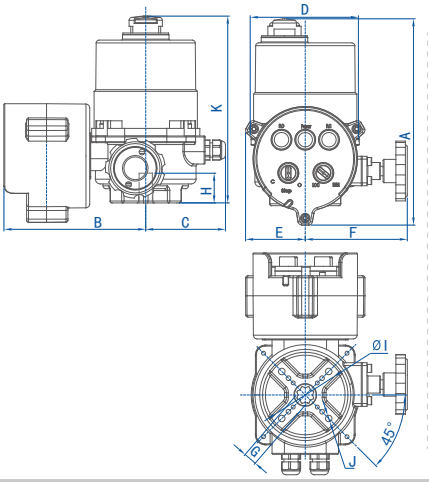
BASIC TYPE	
More functions as options:	○ Quick open ○ Slow open (The running time can be customized. Quick and slow open functions are added.)
More accessories as options:	○ Flange ○ Spline sleeve ○ Independent wiring box ○ Sprocket

INTEGRAL TYPE	
More functions as options:	○ Quick Open ○ Slow Open (The running time can be customized. Quick and slow open functions are added.) ○ Battery mackup ○ Capacitor return ○ Spring return (Fail-safe)
More accessories as options:	○ Flange ○ Spline sleeve ○ Independent wiring box ○ Sprocket

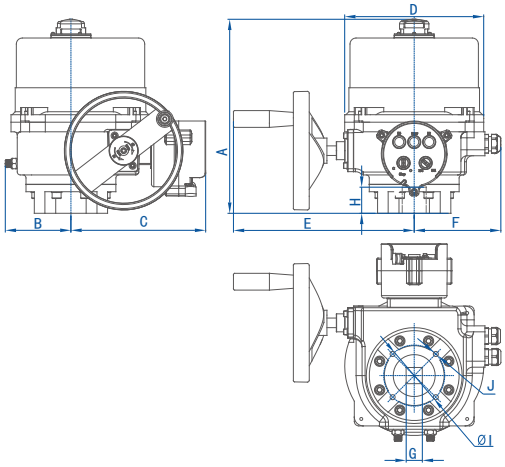
QUARTER TURN DIMENSION
—— INTEGRATION TYPE



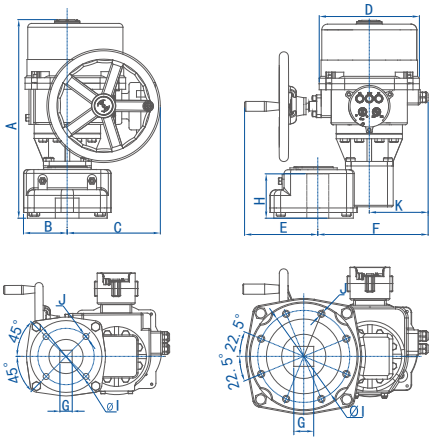
EFM 1/A



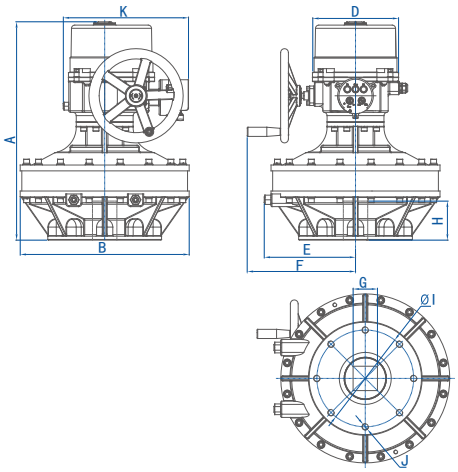
EFM 1/A/B-H



EOM 2~9



EOM 10~12



EOM 13~15

Model		A	B	C	D	E	F	G	H	ΦI	J	K	Weight (kg)
EFM1	On-off	207	173	36	114	63	85	11 X 11	20	36	4- M5	164	4.1
EFMA	Modulating	227						14 X 14		50	4- M6		4.3
										70	4- M8		
EFM1 -H	On-off	217	149	84	114	63	108	11 X 11	20	36	4- M5	197	4.7
EFMA -H	Modulating							14 X 14		50	4- M6		
EFMB -H		237						17 X 17		70	4- M8		4.9
EOM 2		268	77	208	190	240	121	14 X 14	35	70	4- M8	-	12.2
EOM 3								17 X 17					
EOM 4		327	110	225	266	301	145	22 X 22	55	102	4- M10	-	23.2
EOM 5								22 X 22		102	4- M10		
EOM 6								27 X 27		125	4- M12		
EOM 7								27 X 27		125	4- M12		
EOM 8		380	127	248	265	333	161	27 X 27	65	125	4- M12	-	37.2
EOM 9								36 X 36		140	4- M16		
EOM 10		532	118	242	265	194	292	40 X 40	85	140	4- M16	156	77.2
EOM 11								46 X 46		165	4- M20		
EOM 12		545	160	242	265	168	343	55 X 55	130	254	8- M16	156	108.2
EOM 13		672	520	-	265	281	331	55 X 55	120	254	8- M16	385	219.2
EOM 14								75 X 75		298	8- M20		
EOM 15													

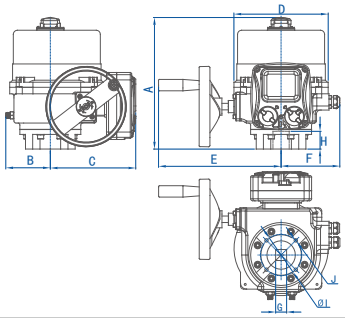
Note: 1. Dimension unit is mm.
2. Above “G” dimension is what we recommended. However, it can be customized according to customers’ requirements.
3. Above “ΦI”and“J”dimensions are in accordance with ISO 5211 flange specifications. Which means that there’s only one specification can be chosen, please specify when ordering.

INTEGRATION TYPE

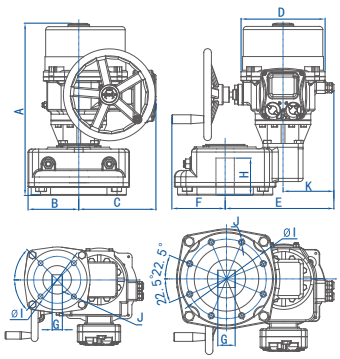
More functions as options:	○ Quick Open ○ Slow Open (The running time can be customized. Quick and slow open functions are added.)
More accessories as options:	○ Flange ○ Spline sleeve ○ Independent wiring box ○ Sprocket

DIMENSION QUARTER TURN

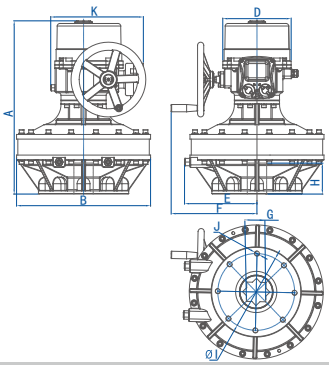
—— INTELLIGENT TYPE



EOM 2~9



EOM 10~12

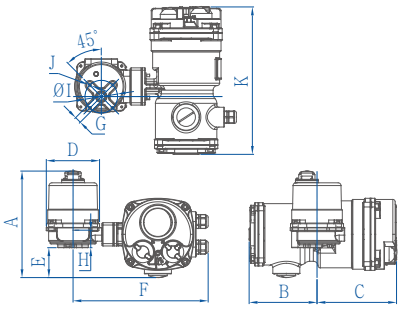


EOM 13~15

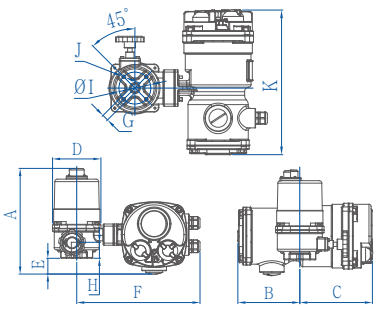
Model	A	B	C	D	E	F	G	H	ΦI	J	K	Weight (kg)
EOM 2	268	79	198	190	240	121	14 X 14	35	70	4- M8	-	13
EOM 3							17 X 17					
EOM 4	327	110	210	232	301	145	22 X 22	55	102	4- M10	-	24
EOM 5							22 X 22		102	4- M10		
EOM 6							27 X 27		125	4- M12		
EOM 7							27 X 27		125	4- M12		
EOM 8	380	127	234	265	333	161	27 X 27	65	125	4- M12	-	38
EOM 9							36 X 36		140	4- M16		
EOM 10	532	118	227	265	180	300	40 X 40	85	140	4- M16	156	78
EOM 11							46 X 46		165	4- M20		
EOM 12	545	160	244	265	168	343	55 X 55	130	254	8- M16	156	109
EOM 13	672	520	-	265	281	331	55 X 55	120	254	8- M16	385	220
EOM 14							75 X 75		298	8- M20		
EOM 15												

DIMENSION QUARTER TURN

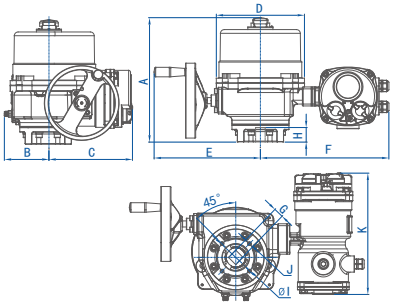
—— SUPER INTELLIGENT TYPE



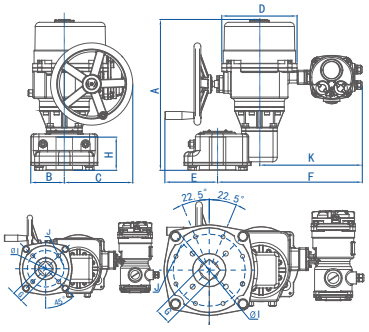
EFM1/A



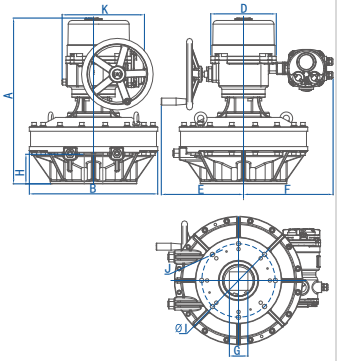
EFM1/A/B-H



EOM 2~9



EOM 10~12



EOM 13~15

Model	A	B	C	D	E	F	G	H	ΦI	J	K	Weight (kg)
EFM1/A	185	147	172	115	38	298	11 X 11	30	36	4-M5	319	8
EFM1/A/B-H	212				65		14 X 14		50	4-M6		
EOM 2	268	79	198	190	240	121	14 X 14	35	70	4-M8	319	13
EOM 3							17 X 17					
EOM 4	327	110	210	232	301	338	22 X 22	55	102	4-M10	319	24
EOM 5							22 X 22		102	4-M10		
EOM 6							27 X 27		125	4-M12		
EOM 7							27 X 27		125	4-M12		
EOM 8	380	127	234	265	333	361	27 X 27	65	125	4-M12	319	38
EOM 9							36 X 36		140	4-M16		
EOM 10	532	118	227	265	180	510	40 X 40	85	140	4-M16	361	78
EOM 11							46 X 46		165	4-M20		
EOM 12	545	160	244	265	168	545	55 X 55	130	254	8-M16	361	109
EOM 13	672	520	-	265	281	363	55 X 55	120	254	8-M16	333	220
EOM 14							75 X 75		298	8-M20		
EOM 15												

INTELLIGENT TYPE/ SUPER INTELLIGENT TYPE

More functions as options:	○ Quick Open ○ Slow Open (The running time can be customized. Quick and slow open functions are added.)
More accessories as options:	○ Flange ○ Spline sleeve ○ Independent wiring box ○ Sprocket ○ Remote control

Note: 1. Dimension unit is mm.
2. Above "G" dimension is what we recommended. However, it can be customized according to customers' requirements.
3. Above "ΦI"and"J"dimensions are in accordance with ISO 5211 flange specifications. Which means that there's only one specification can be chosen, please specify when ordering.

QUARTER TURN GENERAL SPECIFICATION

EXPLOSION-PROOF SERIES

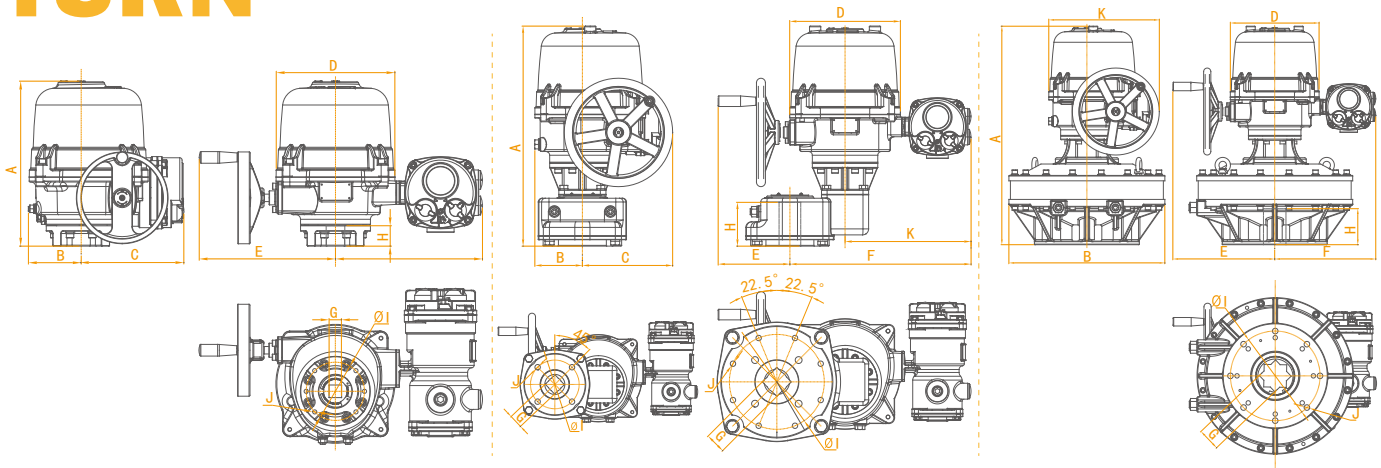
Model	Power (W)	Max Output Torque (N.m)		Max Output Torque (lbf.in)		Running time (Sec)				ISO 5211	Remarks
		AC 110 V AC 220 V AC/DC 24 V	AC 220 V AC 380 V 3 phase	AC 110 V AC 220 V AC/DC 24 V	AC 220 V AC 380 V 3 phase	50 Hz AC 110 V AC 220 V	50 Hz AC 380 V 3 phase	AC/DC 24 V	Fail-safe		
EXC (CG) 1	10	35	–	310	–	11	–	8		F03/F05/ F07	Manual wrench Options: Handwheel
EXC (CG) A		50	–	443	–	15	–	10			
EXC (CG) B		80	–	708	–	22	–	15			Handwheel
EXB (C) 2	40	100		885		19		14		F05/F07/ F10/F12	Handwheel operation, planetary gear mechanism
EXB (C) 3		200		1770		39		28			
EXB (C) 3A		300		2655		39		28			
EXB (C) 4	90	400		3540		29		21		F10/F12/ F14	
EXB (C) 5		600		5310		39		28			
EXB (C) 6		800		7080		47		34			
EXB (C) 7	120	1000		8850		47		34			
EXB (C) 7A		1300		11505		47		34			
EXB (C) 8	200	1700		15045		34		25		F12/F14/ F16	
EXB (C) 8A		2000		17700		34		25	–		
EXB (C) 9		2300		20355		47		34	–		
EXB (C) 10		3500		30975		76		55	–	F14/F16	
EXB (C) 11		5000		44250		105		76	–		
EXB (C) 12		8000		70800		143		103	–	F25	
EXB (C) 13	400	–	13000	–	115050	–	109	–		F25/F30	
EXB (C) 14		–	16000	–	141600	–	129	–			
EXB (C) 15		–	20000	–	177000	–	155	–			

Note: Standard configuration.

1. Rated torque is 75 % of the max torque.
2. Motor insulation is class F. class H is optional.
3. The running time of 60 Hz is 5/6 of that of 50 Hz. The max output torque is the same as above.
4. Above mentioned 3 phase output power doesn't apply to EXC(G)1, EXC(G)A, EXC(G)B.

QUARTER TURN DIMENSION

—— INTELLIGENT TYPE & SUPER INTELLIGENT TYPE



EXCJ 2~9 | EXCJ 10~12 | EXCJ 13~15

Model	A	B	C	D	E	F	G	H	ΦI	J	K	Weight (kg)
EXCJ 2	286	83	160	209	242	294	14 X 14	35	70	4– M8	319	13
EXCJ 3							17 X 17					
EXCJ 4	354	113	220	255	293	315	22 X 22	55	102	4– M10	319	24
EXCJ 5							22 X 22		102	4– M10		
							27 X 27		125	4– M12		
EXCJ 6							27 X 27		125	4– M12		
EXCJ 7												
EXCJ 8	415	127	242	296	340	337	27 X 27	65	125	4– M12	319	38
EXCJ 9							36 X 36		140	4– M16		
EXCJ 10	589	127	242	296	192	484	40 X 40	85	140	4– M16	337	78
									165	4– M20		
EXCJ 11							46 X 46		165	4– M20		
EXCJ 12	545	160	244	296	160	519	55 X 55	130	254	8– M16	337	109
EXCJ 13	729	520	–	296	340	337	55 X 55	120	254	8– M16	369	220
EXCJ 14							75 X 75		298	8– M20		
EXCJ 15												

Note: 1. Dimension unit is mm.

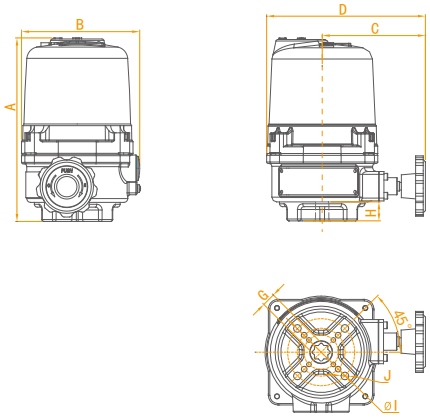
2. Above "G" dimension is what we recommended. However, it can be customized according to customers' requirements.
3. Above "ΦI"and"J"dimensions are in accordance with ISO 5211 flange specifications. Which means that there's only one specification can be chosen, please specify when ordering.
4. EXCJ13~15 series are not certified due to that the only difference with the EXCJ10~12 series is the replacement of the gearbox, thus there's no effect on the explosion-proof performance.

INTELLIGENT TYPE	
More functions as options:	○ Quick Open ○ Slow Open (The running time can be customized. Quick and slow open functions are added.) ○ Spring return (Fail-safe)
More accessories as options:	○ Flange ○ Spline sleeve ○ Sprocket ○ Explosion-proof remote control

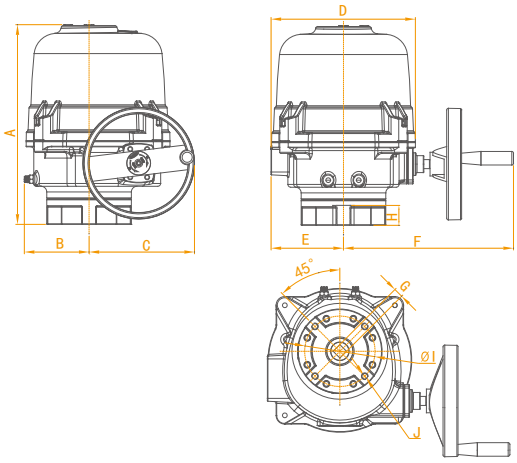
SUPER INTELLIGENT TYPE	
More functions as options:	○ Quick Open ○ Slow Open (The running time can be customized. Quick and slow open functions are added.) ○ Spring return (Fail-safe)
More accessories as options:	○ Flange ○ Spline sleeve ○ Sprocket ○ Explosion-proof remote control

DIMENSION QUARTER TURN

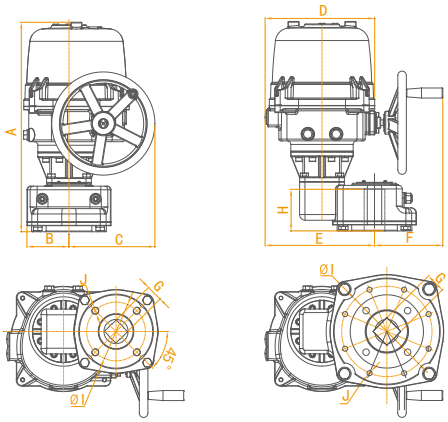
—— BASIC TYPE & INTEGRAL TYPE



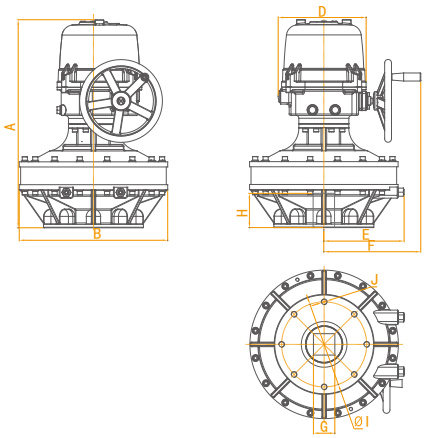
EXC(G) 1/A/B-H



EXB(C) 2~9



EXB(C)10~12



EXB(C)13~15

Model		A	B	C	D	E	F	G	H	ΦI	J	Weight (kg)
EXC1-H EXCA-H EXCB-H	On-off	192	121	108	167	–	–	11 X 11 14 X 14	20	36 50 70	4- M5 4- M6 4- M8	3. 2
EXCG1-H EXCGA-H EXCGB-H	Modulating	212										3. 6
EXB(C) 2 EXB(C) 3		286	83	126	209	108	242	14 X 14 17 X 17	35	70	4- M8	11
EXB(C) 4		354	115	187	256	129	302	22 X 22	55	102	4- M10	22
EXB(C) 5								22 X 22 27 X 27		102 125	4- M10 4- M12	
EXB(C) 6								27 X 27		125	4- M12	
EXB(C) 7												
EXB(C) 8		415	136	242	308	152	340	27 X 27	65	125	4- M12	36
EXB(C) 9								36 X 36		140	4- M16	
EXB(C) 10		589	118	242	308	308	192	40 X 40	85	140 165	4- M16 4- M20	76
EXB(C) 11								46 X 46		165	4- M20	
EXB(C) 12		602	160	242	308	343	160	55 X 55	130	254	8- M16	107
EXB(C) 13		729	520	–	308	281	340	55 X 55	120	254	8- M16	218
EXB(C) 14								75 X 75		298	8- M20	
EXB(C) 15												

Note: 1. Dimension unit is mm.
2. Above “G” dimension is what we recommended. However, it can be customized according to customers’ requirements.
3. Above “ΦI”and“J”dimensions are in accordance with ISO 5211 flange specifications. Which means that there’s only one specification can be chosen, please specify when ordering.
4. EXB(C)13 ~ 15series are not certified due to that the only difference with the EXB(C)10 ~ 12 series is the replacement of the gearbox, thus there’s no effect on the explosion-proof performance.

BASIC TYPE	
More functions as options:	○ Quick open ○ Slow open (The running time can be customized. Quick and slow open functions are added.)
More accessories as options:	○ Flange ○ Spline sleeve ○ Sprocket

INTEGRAL TYPE	
More functions as options:	○ Quick Open ○ Slow Open (The running time can be customized. Quick and slow open functions are added.) ○ Spring return (Fail-safe)
More accessories as options:	○ Flange ○ Spline sleeve ○ Sprocket

what FAIL-SAFE?

For the demand of the actuator to be returned to the default location when the power is off, we provide 3 solutions in battery return, capacitor return and spring return.

BATTERY BACKUP

With high-performance lithium battery as a backup power supply, when the system power is normal, the battery is charged and in standby mode. The battery is powered by the actuator and is executed to the preset position.

PERFORMANCE PARAMETERS

Voltage:
24 V AC / DC standard configuration
Other voltages must be matched with the power adapter.
(Transformer / switch power box).
EFM 1/A/B-(H) series 100 VA
EOM 2~3 series 250 VA
EOM 4~7 series 500 VA
Ambient temperature: -20 ℃ ~ +50 ℃
Relative humidity: ≤ 95 % (25 ℃)
Working environment:
Does not contain strong corrosive, flammable, explosive medium
Working time: S1 continuous working system
Control signal:
On/off type --- Switch contact signal
Modulating type --- 0 ~ 10 V / 2 ~ 10 V / 4 ~ 20 mA
Ingress protection class:
IP67 is the standard configuration, IP68 is optional
Battery parameters:
24 V DC, 1500 mAH, charging time is 5 hours
Power failure mode: Fully open, fully close, remain still
Loss of power operation: ≥ 5 times full stroke
Output torque: ≤ 1000 N.m

CAPACITOR RETURN

With super capacitor set as a backup power supply. When the system power is normal, the capacitor set is charged and in standby mode. When the system power is loss, the capacitor set supplies power to the actuator and performs to the preset position. Capacitors don' t require special maintenance, no memory effect, charging time is short and up to 500,000 times for charge and discharge with the lifespan up to ten years.

PERFORMANCE PARAMETERS

Voltage:
24 V AC / DC standard configuration
Other voltages must be matched with the power adapter.
Power 100 VA
(Transformer / switch power box).
Ambient temperature: -20 ℃ ~ +65 ℃
Relative humidity: ≤ 95 % (25 ℃)
Working environment:
Does not contain strong corrosive, flammable, explosive medium
Working time:
S1 continuous working system
Control signal:
On/off type --- Switch contact signal
Modulating type --- 0 ~ 10 V / 2 ~ 10 V / 4 ~ 20 mA
Ingress protection class:
IP67 is the standard configuration, IP68 is optional
Capacitor parameters:
24 V DC, 6F, charging time is 20 min
Power failure mode:
Fully open, fully close, remain still
Loss of power operation: ≥ 1 time full stroke
Output torque: ≤ 80 N.m

SPRING RETURN

The special scroll wrap spring set is used as the energy storage unit. The spring stores energy when the system power is normal. When the system loss the power supply, the spring drives the valve and other devices to fully closed or fully open position. Pure mechanical mechanism unit with strong environmental adaptability, safe and reliable.

PERFORMANCE PARAMETERS

Voltage:
24 V AC/DC, AC 110 V ~ 120 V
AC 220 V ~ 240 V, AC 380 V ~ AC 440 V(50Hz, 60Hz)
Ambient temperature: -25 ℃ ~ +70 ℃
Relative humidity:
≤ 95 % (25 ℃)
Working environment:
Does not contain strong corrosive, flammable, explosive medium
Working time:
S2-30 min
Control signal:
On/off type --- Switch contact signal
Modulating type --- 0 ~ 10 V / 2 ~ 10 V / 4 ~ 20 mA
Ingress protection class:
IP67 is the standard configuration, IP68 is optional
Power failure mode:
Fully open; fully close
(Standard configuration, please specify when ordering)
Loss of power operation:
1 time full stroke
Output torque:
50 N.m /150 N.m /300 N.m /600 N.m

what QUICK OPEN & SLOW OPEN?

There may be requirement to quick or slow open and close the valve based on actual situations. HOED can provide the corresponding solution according to the specific needs.

QUARTER TURN ORDER CODE

EOM2 - 0 - dB - K5 - M

- Product configuration (B: basic type; M: integral type; Y: integration type ...)
- Signal code (KS: A set of fully open and fully close dry contact feedback; T3-4~20 mA input and feedback …)
- Color code (B: black; Y: yellow; G: gray; A: blue ...)
- Voltage code（a: AC 24 V; I: AC 24 V/1 ph; O: 380 V3/ph … ）
- Control type (I: Modulating type; O: on/off; Mb-Modbus …)
- Torque code (Please refer to the actuator parameter chart ...)
- Product series (EFM: multi-stage gear structure small size actuator ...)
  (EOM: Planetary gear structure with large torque actuators. Manual without clutch ...)

EXB2 - 0 - dB - K5 - M

- Product configuration (B: basic type; M: integral type; Y: integration type ...)
- Signal code (KS: A set of fully open and fully close dry contact feedback; T3-4~20 mA input and feedback…)
- Color code (B: black; Y: yellow; G: gray; A: blue ...)
- Voltage code（a：AC 24 V；I：AC 24 V/1 ph；O：380 V 3/ph … ）
- Control type (I: Modulating type; O: on/off; Mb-Modbus …)
- Torque code (Please refer to the actuator parameter chart ...)
- Product series (EXB：Ex d IIB T4/T6 series explosion-proof electric actuators)
  EXC：Ex d IIB T4/T6 series explosion-proof electric actuators
  EXCG：Ex d IIB T4/T6 series explosion-proof electric actuators (Modulating types under 100 N.m)
  EXCJ：Ex d IIB T4/T6 series intelligent type, super intelligent type explosion-proof electric actuators)

QUALITY & SERVICE QUARTER TURN

STANDARD

- •EN15714
- •JB/T8219
- •EN60730
- •ISO5211
- •GB3836
- •GB12476
- •EN60079
- •CSA60079
- •UL60079

Complying with ISO 9001, 6 Sigma and virtual board management system, HOED inspect all actuators in each step of the production process. Collecting all of the production data for further analysis and tracing.

PERFECTION HAS ALWAYS BEEN OUR ULTIMATE GOAL

TWO YEARS WARRANTY IS OUR COMMITMENT

bsi. ISO 9001 Quality Management FM 522775

bsi. ISO 14001 Environmental Management EMS 595200

bsi. OHSAS 18001 Occupational Health and Safety Management OHS 595201

CE RoHS REACH

■ Please visit our website at **WWW.HOEDVALVE.COM** for all certifications.

SERVICES

HOED's professional service team is ready to provide users with comprehensive services and professional technical supports at all time:

- No matter is it by phone, mail or on the site, we are standing by for your inquiry.
- Stable delivery time.
- On-site installation and debugging.
- Regularly follow up our products status and maintenance.
- We provide training for structure knowledge, operation, debugging, maintenance and more.

CUSTOMIZED PRODUCTION

As to HOED, there is no such thing called **IMPOSSIBLE**. For special requirements, we provide customized solutions.

SIL3 CE

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