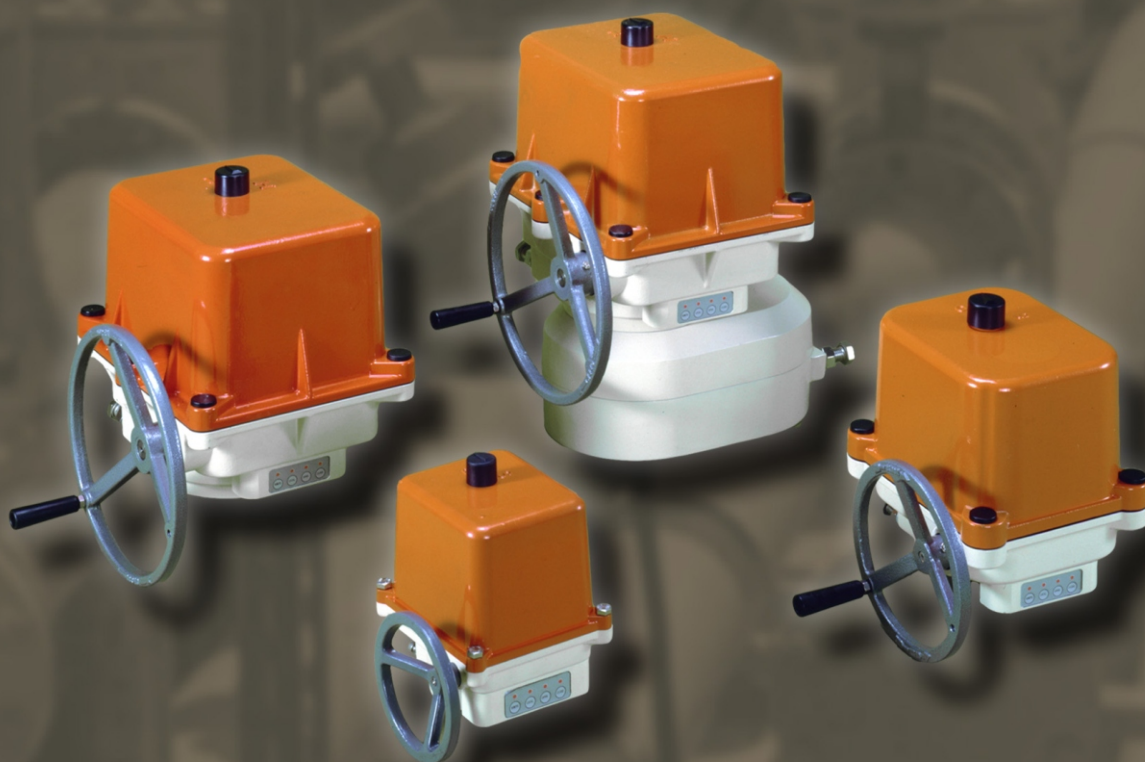


ELECTRIC ACTUATOR



SERIES

MK21 MK22 MK23 MK24

KUHNWAY



Water treatment



Chemistry pier, fire system

Applications

- | | |
|---|----------------------------|
| 1. Power plant | 5. Air transfer equipment |
| 2. Water treatment | 6. Food industry |
| 3. Damper control equipment | 7. Petro-chemical industry |
| 4. Refrigerating, air-conditioning system | 8. Others |



Damper control equipment

Standard

1. Watertight IP 65.
2. Torque switch can activate torque switches to provide overload protection.
3. Mechanical position indicator.
4. Heater.
5. Hand wheel.
6. Two travel limit switches. (can be adjustable in suitable rate).
7. Motor class F, with built-in Thermal protection.

Options

1. IP66, IP67, IP68.
2. Two auxiliary limit switches.
3. Potentiometer unit 1K Ohm.
4. Modulation control unit.
Input: 4~20mA, 1~5VDC
Output: 4~20mA DC
5. Local-remote control unit including pushbuttons for local, remote open, close switch, these switches all with LED indicator.
6. Auto correction phase controller.
7. Magnetic contactor.
8. Transformer.
9. Mounting bracket or sockets are made according to ISO5211 standard for mounting electric actuator with valve.
10. Digital opening percentage indicator.



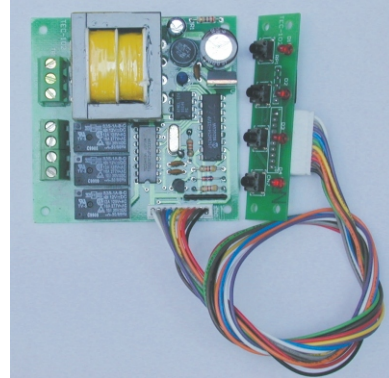
Power plant, fuel combustion system



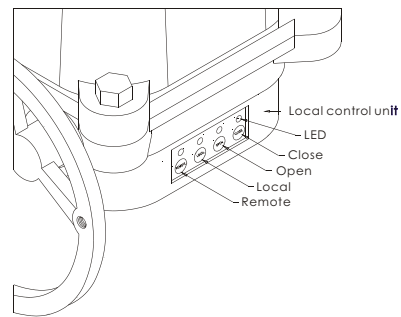
Oil-water separation treatment

Optional accessories

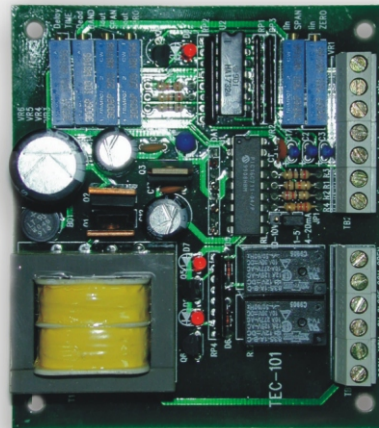
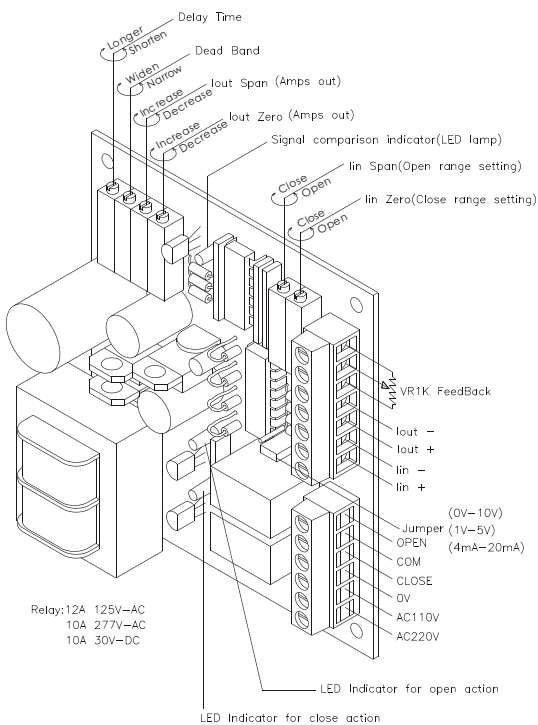
Local control unit



Local control unit is watertight including 4 push buttons with LED indicator. The local control unit can be operated separately when main control is switched by control panel (from control panel to local control unit ... Vice versa.)
The device of local control unit can avoid the happening of miss operation or accident.



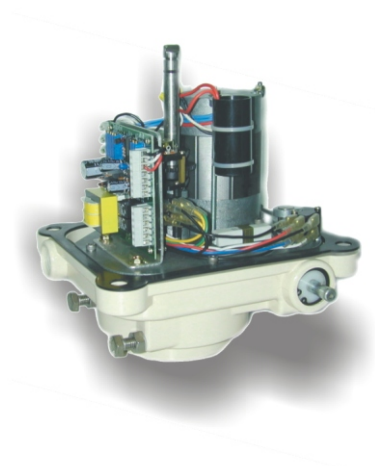
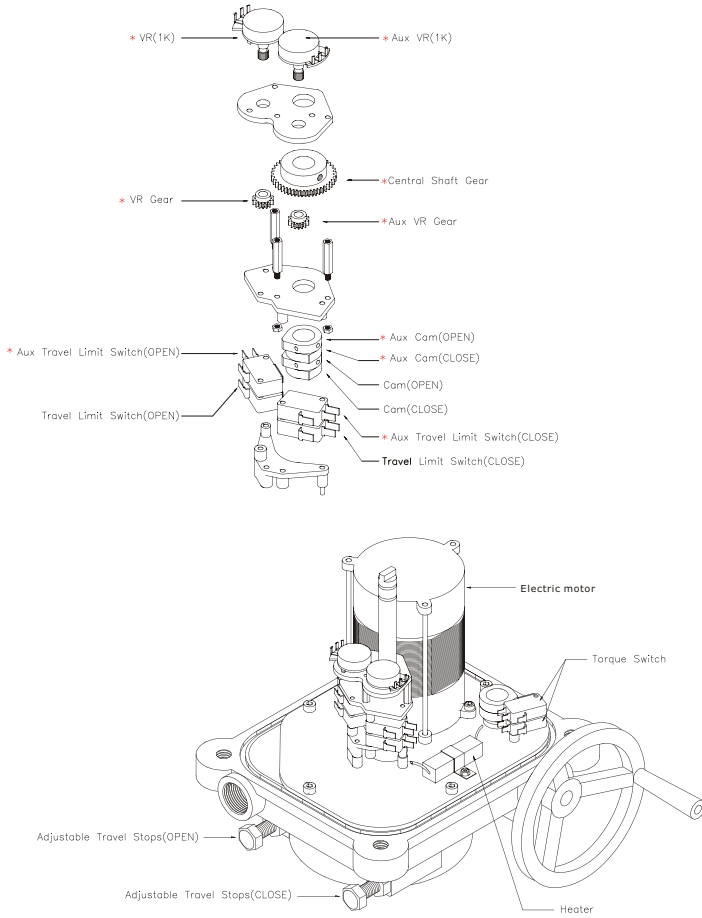
Modulation control unit



The modulation control unit with multifunction are suitable for different precision adjustment to keep all systems in good condition.

These functions of delay time, dead band, Amps output (Iout), Amps input (lin), signal input (lin span), ... are easy to adjust to meet with user's requirements.

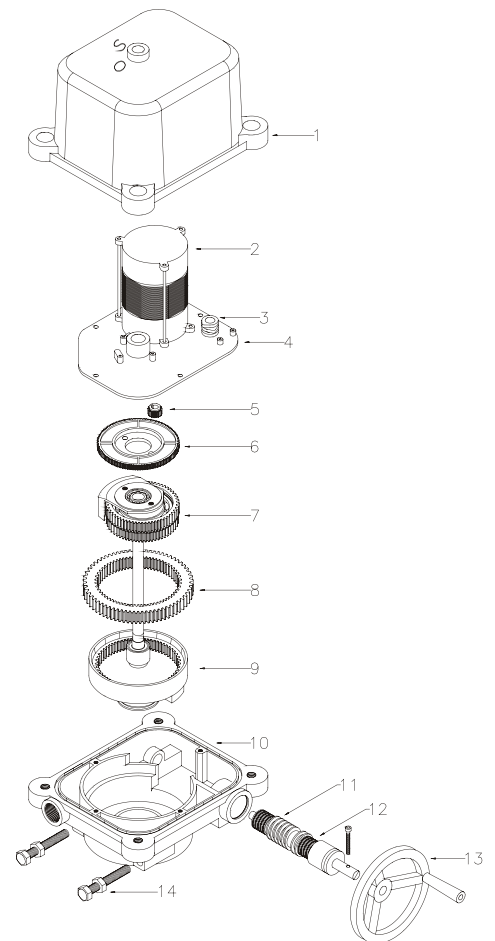
Component assembly drawing



Assembly drawing for electric actuator

(Add * symbol is optional component)

No	Part's name
1	Cover case
2	Motor
3	Torque switch cam
4	Cover for gear box
5	Motor's gear
6	Gear
7	Planetary gear set
8	Gear
9	Gear
10	Gear box
11	Worm gear
12	Conical spring
13	Handle wheel
14	Positional adjustable screw

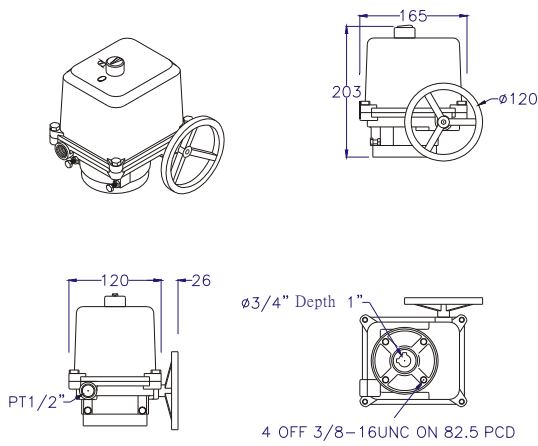


Specification and performance data

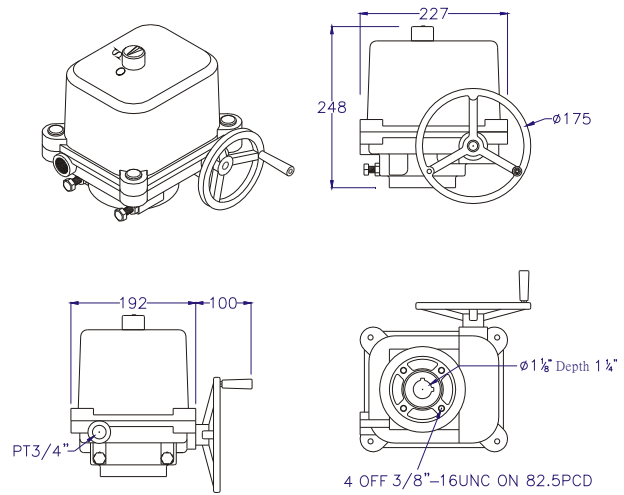
Model	Torques (Nm)		Electrical Gear Ratio		Manuel Gear Ratio	Motor Power (W)	Time for 90° (SECS)		Weight (Kg)
MK 21	68	34	2360	1080	68	80	22	10	7.5
MK 22	225	112	2360	1080	65	150	22	10	10
MK 23	770	385	2345	1115	72	350	22	10	25
MK 24	2200	1350	7035	3345	216	350	66	30	39

Dimensions for MK 21

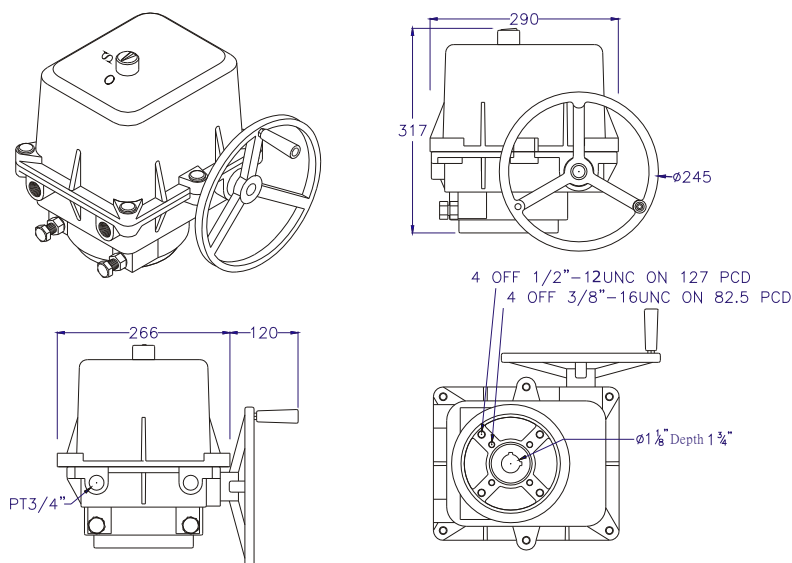
Unit:m/m



Dimensions for MK 22

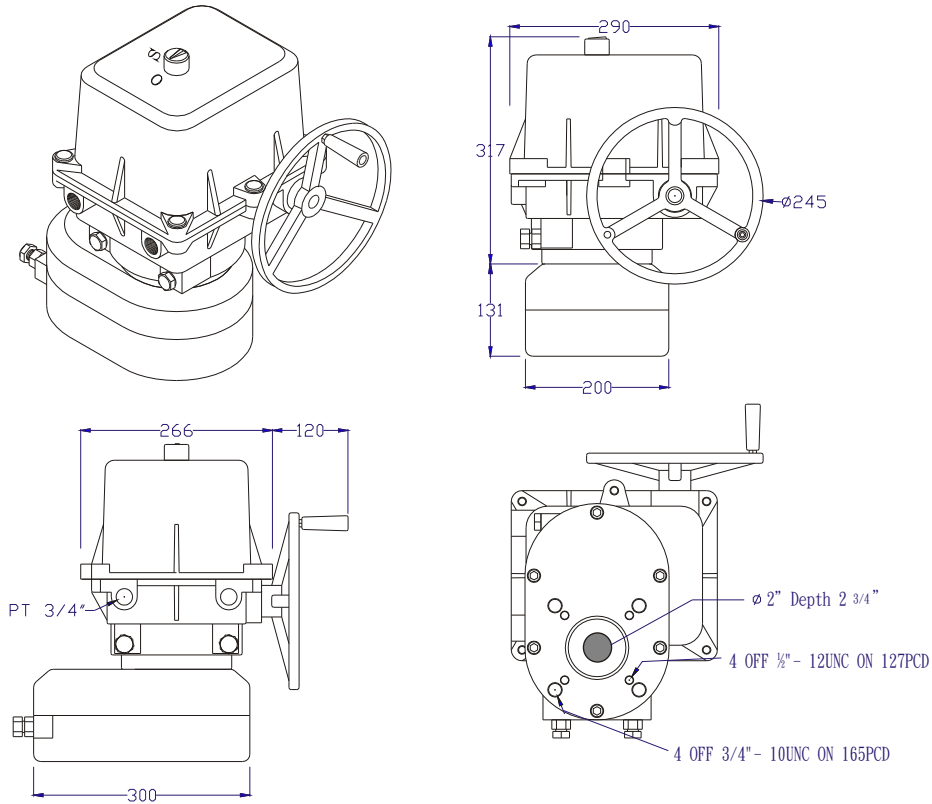


Dimensions for MK 23



Dimensions for MK 24

Unit: m/m



Electric actuators adapt butterfly valve's size

Model	Adapt butterfly valve size										
	2	2½	3	4	5	6	8	10	12	14	16
MK 21	○	○	○	⊙							
MK 22				○	○	○	⊙				
MK 23						○	○	○	⊙		
MK 24									○	○	⊙

Torque conversion table

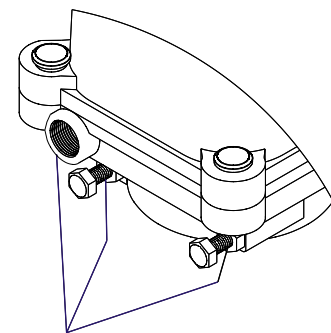
1 kgf / m = 86.79 lb / in = 7.233 lb / ft
 1 lb / ft = 1.357 N / m
 1 lb / in = 0.1131 N / m
 1 N / m = 8.8430 lb / in
 1 kgf / cm = 0.8679 lb / in

*lb = Pound

Remarks: Mark ○ Suitable for mounting butterfly valve's size.
 Mark ⊙ When using the butterfly valve's size, please consult with manufacturer or local distributors.

Special notes for installation of electric actuators

1. When mounting electric actuators with valves, it is necessary of valves's shaft and mounting brackets, socket, vertical and same center to match the actuator's vertical and same center.
2. After completing the final setting for adjusting travel stops, be sure to seal the two adjusting travel stops by water proof glue.
3. After completing wiring installation, be sure to seal the wiring connection hole by water proof glue after completing wiring installation.
4. Do not use electric actuators in the vacuum's chamber.

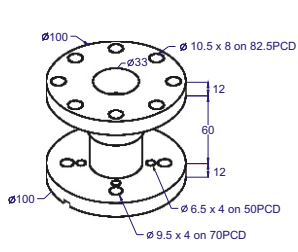


Seal water proof glue

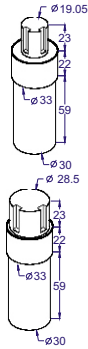
The following mounting brackets and sockets are suitable for ISO5211, F05,F07,F10,F12 different shaft's shapes and sizes.
Please choose the optimum type to match your butterfly valves, details as below:

Mounting bracket

Type:MB-01-F05/F07



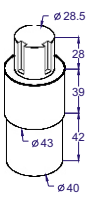
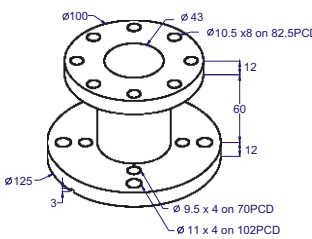
Socket



Socket's types and specification

Type	MS-01	MS-02	MS-03	MS-04	MS-05	MS-06	MS-07
Connect with actuator							
Connect with valve's shaft							
Keyway size	3/16" Wide X 1 1/8" Deep		1/8" Wide X 1 1/8" Deep	1/8" Deep		3/16" Wide X 1 1/8" Deep	1/8" Deep

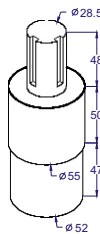
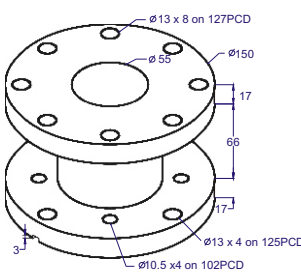
Type:MB-02-F07/F10



Socket's types and specification

Type	MS-08	MS-09	MS-10	MS-11
Connect with actuator				
Connect with valve's shaft				
Keyway size	1/4" Wide X 1 3/8" Deep	3/16" Wide X 1 3/8" Deep	1 3/8" Deep	

Type:MB-03-F10/F12



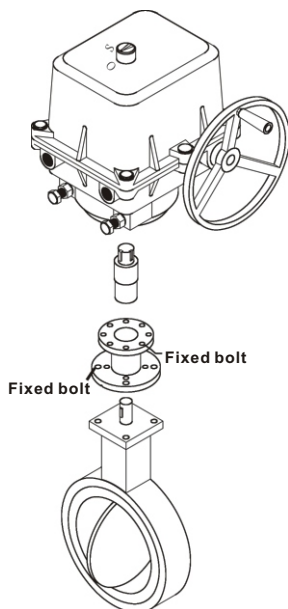
Socket's types and specification

Type	MS-12	MS-13	MS-14	MS-15	MS-16
Connect with actuator					
Connect with valve's shaft					
Keyway size	5/16" Wide X 1 1/2" Deep			1 1/2" Deep	

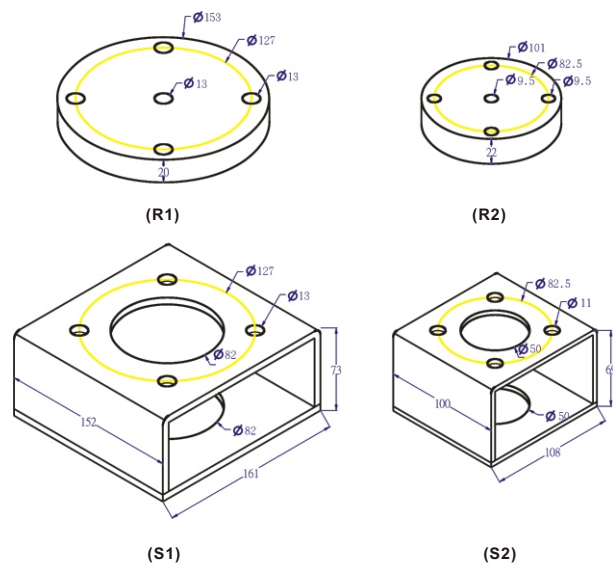
Socket's material : carbon steel

Bracket's material : aluminum alloy

Illustration



Semi-product, assembly accessories



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The certificate is awarded by
United URS

ISO 9001 Certificate number :
2551 Issue No. 3

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10/2005 E/A edition