Type EA Electric Actuators/Class 10K Stainless Steel Ball Valves

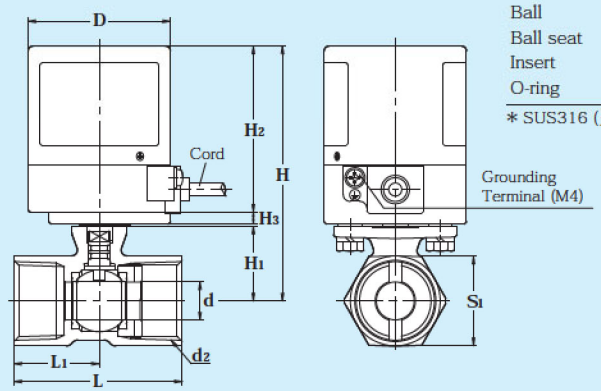
Fig. EA100/200-UTE

Actuator size: 1 and 1.5
Valve size: ¼" to 1" (Reduced bore)

Valve material

Parts	Materials
Body	SCS14A
Stem	SUS316+Cr plated
Ball	SUS316
Ball seat	PTFE
Insert	SCS14A*
O-ring	FKM

* SUS316 (¼" to ½")

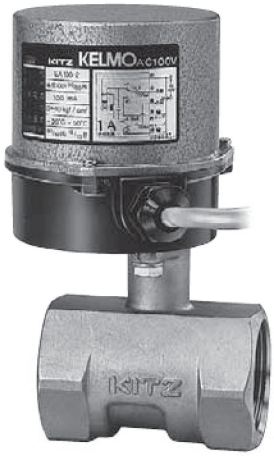


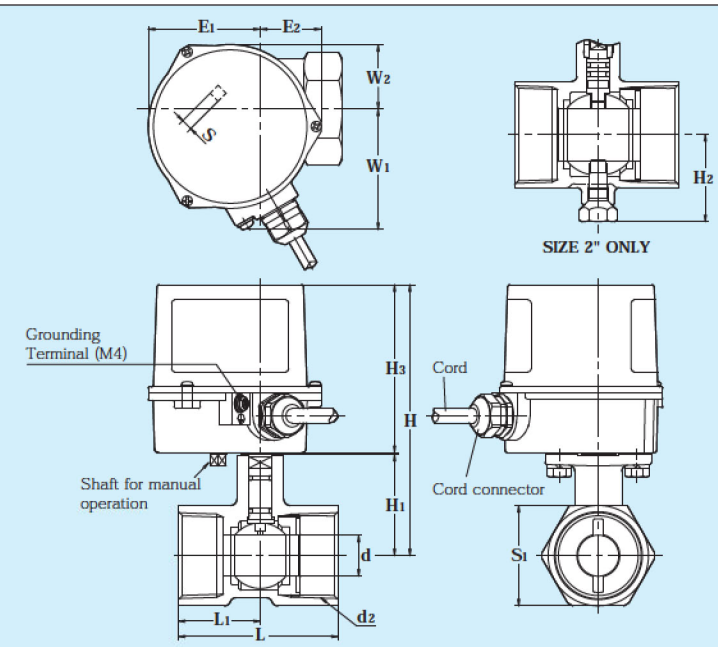
Dimensions (mm)

Valve Size (inch)	d	d1	H	H1	L	L1	S1	Actuator			
								H2	H3	D	Type
¼	5.3	Rc¼	102	26	44	21	21	70	5	60	EA100/200-1
⅜	7.7	Rc⅜	102	26	44	21	21				
½	9.2	Rc½	102	26	56.5	27.5	25				
¾	12.5	Rc¾	105	29	59	30	32				
1	16	Rc1	108	32	71	36	38				EA100/200-1.5

Fig. EA100/200-UTE

Actuator size: 2
Valve size: 1¼" to 2" (Reduced bore)





Dimensions (mm)

Valve Size (inch)	d	d1	H	H1	H2	L	L1	S1	Actuator						
									H3	E1	E2	W1	W2	S	Type
1¼	20	Rc1¼	132.5	49.5	—	78	40	49	82	54.5	30	59	31.5	5.5	EA100/200-2
1½	24.5	Rc1½	135.5	52.5	—	83	42.5	53							
2	32	Rc2	141.5	58.5	53.5	100	51	65							

KITZ 10K Compact Ball Valves

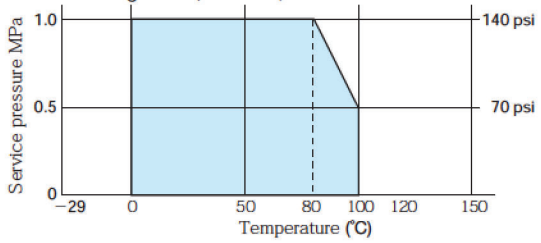
Valve flow coefficient (Cv for fully opened valves)

KITZ Fig. \ Size (inch)	¼	⅜	½	¾	1	1¼	1½	2
TE·TLE*	—	2.1	5.6	15	27	45	85	120
TNE	0.5	1	3	6	11	17	28	37
TUE	—	—	3	6.2	—	—	—	—
TKE·TKSE*	0.9	2.4	3.4	6.1	—	—	—	—
TNVE	—	—	3	7.3	13	17	—	—
TASE	—	—	5	8	15	—	—	—
UTE·UTGE*·UTASE*	1	2	5	8	15	20	37	60
TFE·UTFE	—	—	18	46	58	92	170	—
5/10UTWE	—	6.5	18	46	58	—	—	—
UTVE	0.5	1	2.2	3.9	7	—	—	—

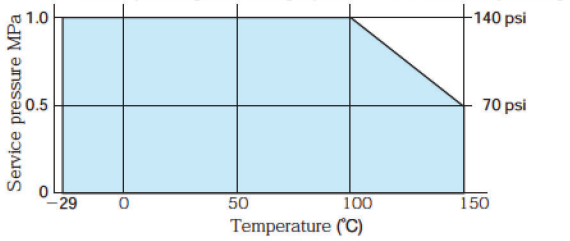
*½" and larger for TLE. ¾" and smaller for TKSE, 1" and smaller for UTGE, and ½" to 1" for UTASE.

PTFE seat pressure-temperature ratings

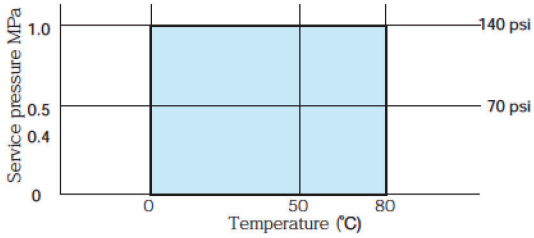
Valve: TE·TFE·TLE·TNE·TUE·UTE·UTFE·5/10UTWE
- Fluid: water, oil, gas (unfrozen)
- Ball seat: PTFE (Standard)
- O-ring: FKM (Standard)



Valve: UTGE
- Fluid: water, oil or gas (unfrozen)
- Ball seat: reinforced PTFE
- Gland packing: Flexible graphite+PTFE braided packing

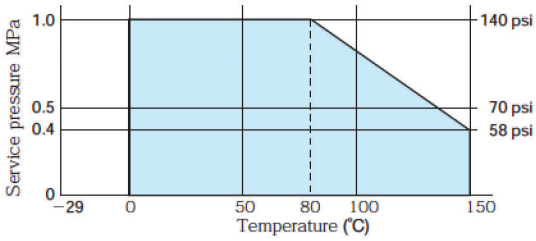


Valve: TASE·UTASE
- Fluid: water, oil, gas (unfrozen)
- Ball seat: PTFE (standard)
- O-ring: FKM (standard)

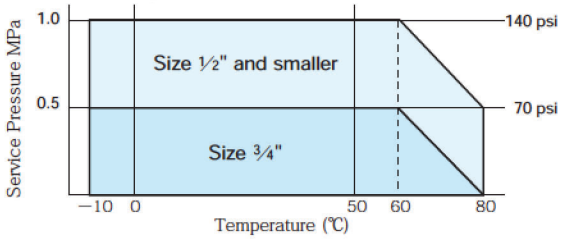


for saturated steam

Valve: TE·TFE·TLE·TNE·TUE·TLUE·UTE·UTFE·5/10UTWE
- Fluid: water, oil, gas (unfrozen) or saturated steam
- Ball seat: reinforced PTFE (Option*)
- O-ring: FKM (Option*)



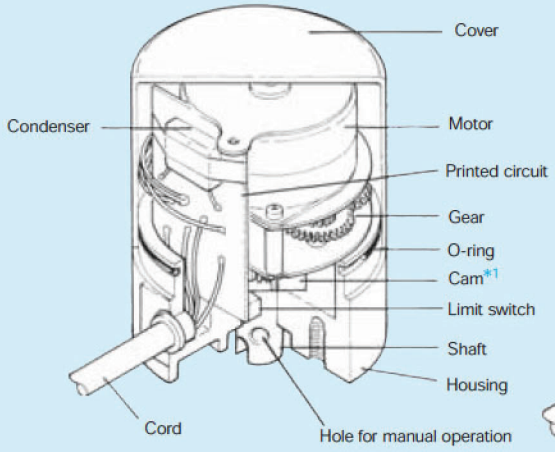
Valve: TKE·TKSE
- Fluid: water, oil or gas (unfrozen)
- Ball seat: PTFE
- O-ring: FKM



*Specify these materials in your order for the P-T ratings covered by the graph shown above, except for 1½" and 2". Standard materials are only available for these sizes.

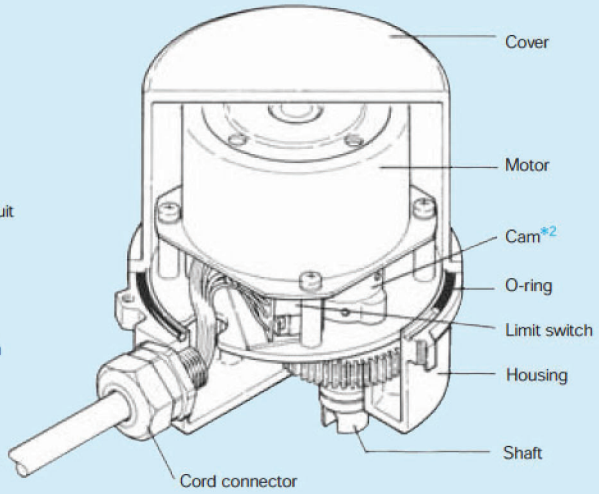
Note:
- Serviceable ambient temperature depends on the design of actuators. Refer to the information given for each of actuators introduced in this catalog.
- Do NOT install UTGE with gland packing into a position where maintenance is not possible.

KITZ KELMO® Electric Actuators



Type EA100/200 Size 1 & 1.5

*1 Different cam design for Type EAH100/200-1



Type EA100/200 Size 2

*2 Different cam design for Type EAH100/200-2

General design features

- Compact size and light weight with die-cast aluminum housing and powerful miniature motor for economy and handling ease.
- Simple mechanism with minimized number of component parts for high durability and trouble-free service.
- Free from concerns common with conventional solenoid valves such as water hammer, pressure loss, and restricted flow direction.
- All-weather-type design for outdoor service. (Avoid exposure to direct sunlight)
- Availability of manual operation in case of electric failure.
- Versatile applications by means of optional built-in relay circuit for parallel drive, terminal boxes and 180° rotary mechanism for 3-way flow direction.
- Safety provision to protect the motor from overheat damage caused by accidental overload.
- Factory-made actuator-to-valve assembly for off-the-shelf supply.

Compact KELMO® actuators: power sources and functional features

Type of actuator		* Power source	Functional features
EA Series	EA100/EA200	100/200V AC (50/60Hz)	90°bidirectional rotation
	EAB100/EAB200		90°bidirectional rotation/Terminal box
	EAL100/EAL200		90°bidirectional rotation/Built-in relay
	EALB100/EALB200		90°bidirectional rotation/Built-in relay/Terminal box
	EAH100/EAH200		180°bidirectional rotation
	EAHB100/EAHB200		180°bidirectional rotation/Terminal box
EC Series	EC100/EC200	100/200V AC (50/60Hz)	90°Unidirectional rotation
EAE Series	EAE100/EAE200	100/200V AC (50/60Hz)	90°bidirectional rotation/Spring-return
ED Series	ED12/ED24	12/24V DC	90°bidirectional rotation/Parallel drive
ES Series	ESA100/ESA200	100/200V AC (50/60Hz)	90°bidirectional rotation

* Optional Specification (EA Series)

AC110V (50/60Hz)
AC115V* (50/60Hz)
AC120V (50/60Hz)
AC230V* (50/60Hz)
AC240V (50/60Hz)

*EA100/200-1 only

Type EA and EAB Electric Actuators/Class 10K Bronze or Stainless Steel Ball Valves

100/200V AC 50/60Hz

■ ***90˚bidirectional rotation***

■ ***Factory assembled terminal box for easier installation of actuators (EAB)***

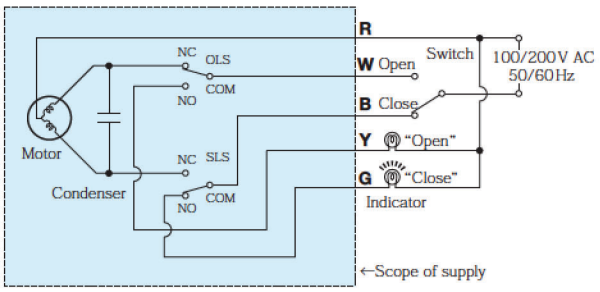
Type EA and EAB actuator design specifications

Specification \ Type		EA100-1 EAB100-1	EA200-1 EAB200-1	EA100-1.5 EAB100-1.5	EA200-1.5 EAB200-1.5	EA100-2 EAB100-2	EA200-2 EAB200-2
Power source 50/60Hz		100V AC±10%	200V AC±10%	100V AC±10%	200V AC±10%	100V AC±10%	200V AC±10%
Rated current		90mA	50mA	90mA	50mA	100mA	50mA
Max. power consumption		9W	10W	9W	10W	10W	
Valve closing time 90˚	50Hz	Approx.6 s		Approx.12 s		Approx.15 s	
	60Hz	Approx.5 s		Approx.10 s		Approx.13 s	
Max. output torque		1.9N•m		3.9N•m		9.8N•m	
Rated time		Continuous					
Insulation class		JIS Class E					
Sensitive switch contact capacity		125V AC 2A (Resistance load) 250V AC 0.6A (Resistance load)				125V AC 2A (Resistance load) 250V AC 2A (Resistance load)	
Position limit switch		One unit each for opening/closing (using the same power source as that of the actuator)					
Insulation strength		1500V AC (1 min. interval)					
Insulation resistance		Minimum 10MΩ (500V DC)					
Standard protection		All weather type (for outdoor use, avoid exposure to direct sunlight) IP56 (IEC60529)					
Ambient temperature		−20℃ to +50℃					
Mounting position		Vertical to horizontal					
Wiring		Vinyl cabtyre cord with five cores, 700mm in length					
		0.3mm^2				0.5mm^2	
Lubrication		Grease					
Overload protection		Impedance protection					
Coating color		Housing: black Cover: light blue					

Note: Contact KITZ for technical advice when the service conditions differ from the above.

Type EA actuator circuit diagrams (with the valve fully closed)

EA100/200 Size 1 to 2



- Wire color: **R** red **W** white **B** black **Y** yellow **G** green
- Actuator rotates:
  R-W: counter-clockwise to fully open the valve
  R-B: clockwise to fully close the valve
- Limit switches activate:
  OLS: on fully opening the valve (R-W: off W-Y: on)
  SLS: on fully closing the valve (R-B: off B-G: on)

Note: For all sizes of Type EAB100/200, the terminals are numbered 1, 2, 3, 4 and 5 in place of R, W, B, Y and G, respectively.

Note:
- When two or more actuators are operated by a single switch, ensure to prevent unintended current flow by using relay contacts.
- Auxiliary devices, such as lamps or relays, where minute current is used, may cause failure in the contacts of limit switches. Consult KITZ for such applications.