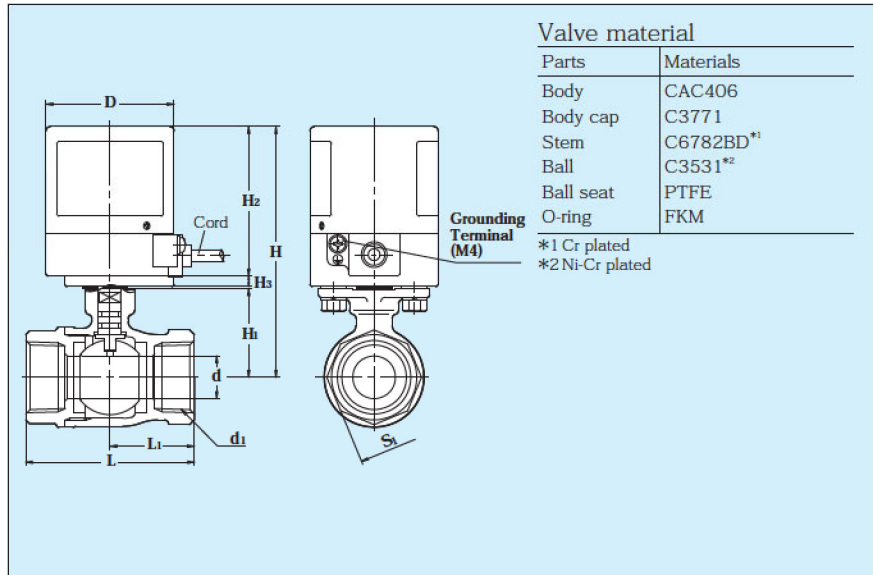


Type EA Electric Actuators/Class 10K Bronze Ball Valves

Fig. **EA100/200-TE**

Actuator size: 1 and 1.5
 Valve size: 3/8" to 1" (Standard bore)



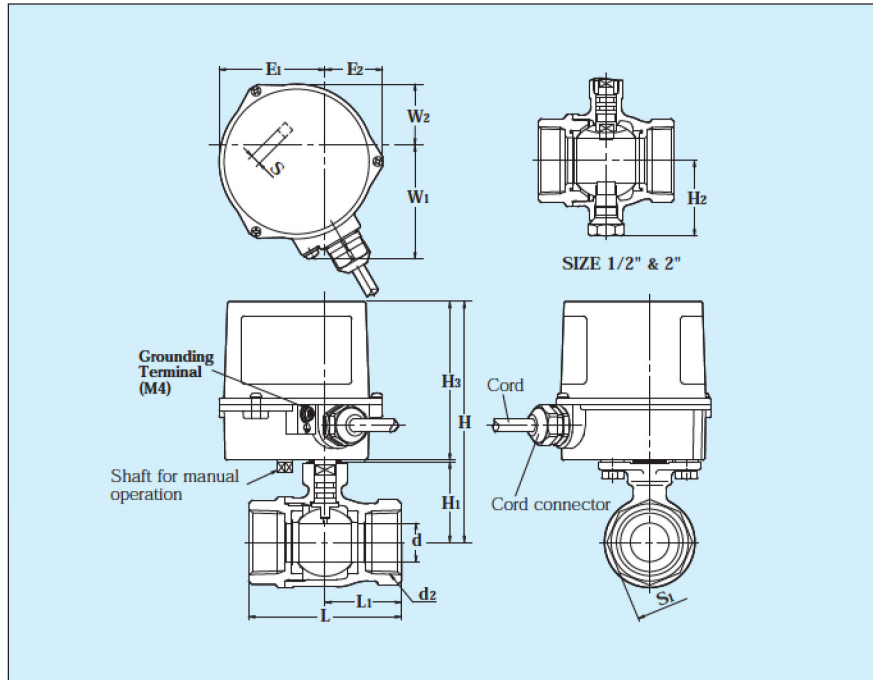
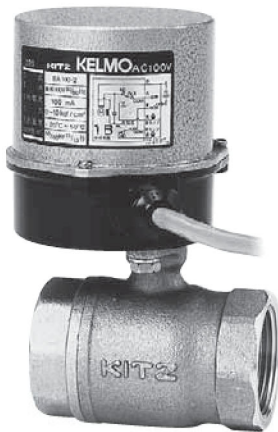
Dimensions

(mm)

| Valve Size (inch) | d | d ₁ | H | H ₁ | L | L ₁ | S ₁ | Actuator | | | Type |
|-------------------|-----|----------------|-------|----------------|----|----------------|----------------|----------------|----------------|----|---------------|
| | | | | | | | | H ₂ | H ₃ | D | |
| 3/8 | 7.5 | Rc3/8 | 104 | 28 | 46 | 22 | 22 | 70 | 5 | 60 | EA100/200-1 |
| 1/2 | 10 | Rc1/2 | 109.5 | 33.5 | 65 | 32.5 | 28 | | | | EA100/200-1.5 |
| 3/4 | 15 | Rc3/4 | 113.5 | 37.5 | 68 | 34 | 34 | | | | |
| 1 | 20 | Rc1 | 117.5 | 41.5 | 79 | 39.5 | 41 | | | | |

Fig. **EA100/200-TE**

Actuator size: 2
 Valve size: 1/4" to 2" (Standard bore)



Dimensions

(mm)

| Valve Size (inch) | d | d ₁ | H | H ₁ | H ₂ | L | L ₁ | S ₁ | Actuator | | | | | | Type |
|-------------------|----|----------------|-------|----------------|----------------|-----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----|-------------|
| | | | | | | | | | H ₃ | E ₁ | E ₂ | W ₁ | W ₂ | S | |
| 1 1/4 | 25 | Rc1 1/4 | 128.5 | 45.5 | — | 86 | 43 | 50 | 82 | 54.5 | 30 | 59 | 31.5 | 5.5 | EA100/200-2 |
| 1 1/2 | 32 | Rc1 1/2 | 142.5 | 59.5 | 53.5 | 96 | 48 | 56 | | | | | | | |
| 2 | 40 | Rc2 | 148.5 | 65.5 | 60 | 109 | 54.5 | 68 | | | | | | | |

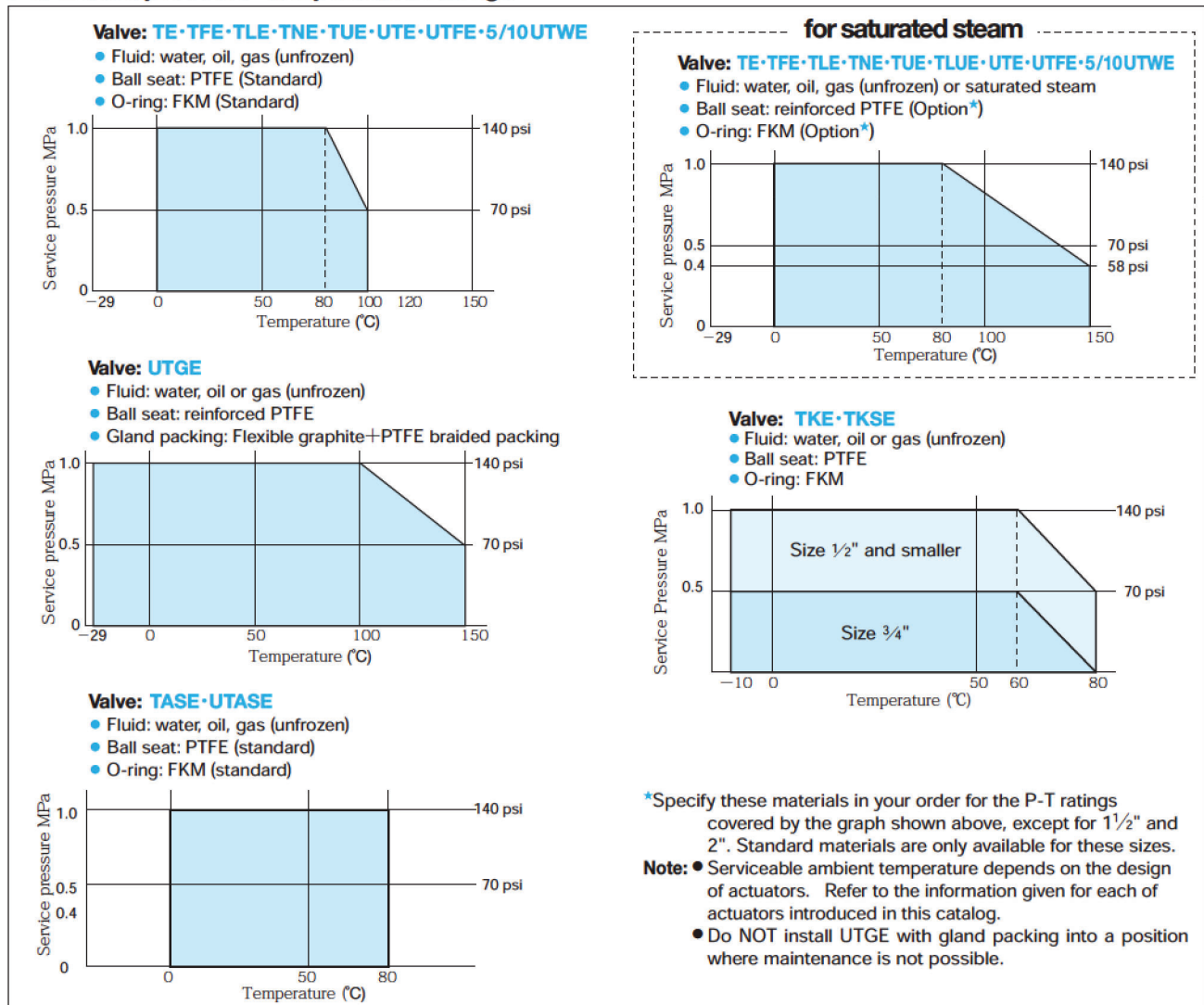
KITZ 10K Compact Ball Valves

Valve flow coefficient (Cv for fully opened valves)

| KITZ Fig. \ Size (inch) | 1/4 | 3/8 | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 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 | — | — | — |

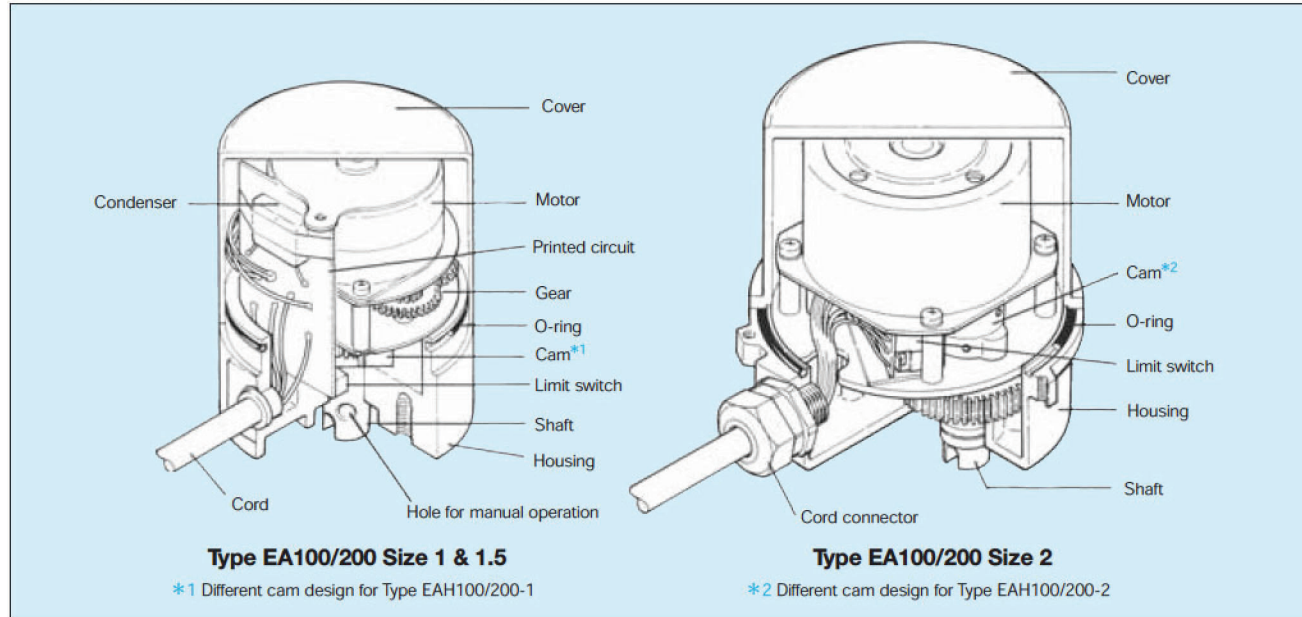
*1/2" and larger for TLE. 3/4" and smaller for TKSE, 1" and smaller for UTGE, and 1/2" to 1" for UTASE.

PTFE seat pressure-temperature ratings



Types EA · EAB
Types EAL · EALB
Types EAH · EAHB
Types EC · ECS
Type EAE
Type ED
Type ES
Types C-CS/FBS

KITZ KELMO® Electric Actuators



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 | 100/200 V 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 | 100/200 V AC (50/60Hz) | 90°bidirectional rotation/Spring-return |
| ED Series | ED12/ED24 | 12/24V DC | 90°bidirectional rotation/Parallel drive |
| ES Series | ESA100/ESA200 | 100/200 V AC (50/60Hz) | 90°bidirectional rotation |

* Optional Specification (EA Series)

AC110V (50/60Hz)

AC230V* (50/60Hz)

AC115V* (50/60Hz)

AC240V (50/60Hz)

*EA100/200-1 only

AC120V (50/60Hz)

Types EA · EAB
 Types EAL · EALB
 Types EAH · EAHB
 Types EC · ECS
 Type EAE
 Type ED
 Type ES
 Types C-CS/FBS

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)**

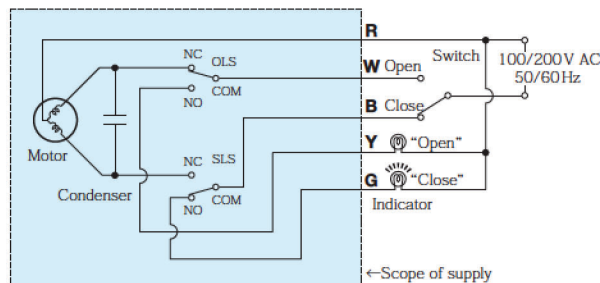
Type EA and EAB actuator design specifications

| 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) | | | | 125V AC 2A (Resistance load) | |
| | 250V AC 0.6A (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°C to +50°C | | | | | |
| 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



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.

- 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: 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.