ESBE ARA 600 Motor Actuator



Applications:



The ARA 600 series of motor actuators replaces the Series 60 of 24V motor actuators mounted to ESBE 3 way and 4 way rotary valves. Incorporated into the redesign of the ARA motor actuators are improvements in the mounting and operation of the motor actuator resulting in a simpler and quicker installation. These redesigned direct mounted motor actuators are capable of mounting to the new VRG styles of 3 & 4-way rotary valves. In addition, the ARA 600 series are also backward compatible to the older MG and G series of valves.

The ARA 600 series is available in floating 3-point withor without an auxiliary switch and proportional, which cross over to the Series 60 actuators. However there are additional varieties of actuators to select from a 2-point actuator to different run time options. These variety of selections provide flexibility in application selecting.

Features:

- Fewer parts and tools required for installation
- Increased stabilization between actuator and valve
- Backward compatible with MG and G series of 3 & 4-way rotary valves
- Reduced profile and size of motor actuator
- Easier mounting procedure

| 3-Point | Floating | Signal. | 24VAC |
|-----------|----------|---------|---------|
| 5 1 01110 | riouting | Jignui, | 2-10/10 |

| Code No. | | | Run Time | Replaces | | |
|----------|---------------|--|--------------|----------|--------|--|
| | Series Signal | | (90° @ 60Hz) | Code No. | Series | |
| 193B1600 | ARA663 | Floating 3-point | 96 | 082F8972 | 62E | |
| 193B1601 | ARA644 | | 24 | - | - | |
| 193B1602 | ARA654 | Floating 3-point, w/ Aux. switch | 48 | - | - | |
| 193B1603 | ARA664 | | 96 | 082F8974 | 62EM | |

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Ordering Information (Cont.):

2-Point Signal, 24VAC

| Code No. | Series | Signal | Run Time | Replaces | | |
|----------|--------|--------------------------|--------------|----------|--------|--|
| | | | (90° @ 60Hz) | Code No. | Series | |
| 193B1604 | ARA638 | On/Off w/ Aux. switch | 12 | - | - | |
| 193B1605 | ARA648 | | 24 | - | - | |

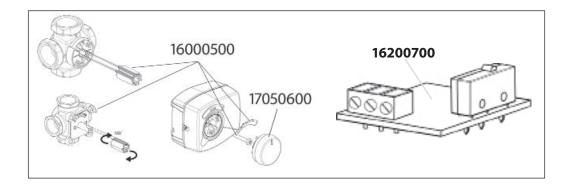
Propotional Signal, 24V AC/DC

| Code No. | Series | Signal | Run Time | Replaces | | |
|----------|---------|---|--------------|----------|--------|--|
| | | | (90° @ 60Hz) | Code No. | Series | |
| 193B1606 | ARA639* | 0-10VDC, 2-10VDC, 0-20mA, 4-20mA with feedback ability | 15/30/60/120 | - | - | |
| 193B1607 | ARA659 | 0-10VDC, 2-10VDC, 0-20mA, 4-20mA | 45/120 | 082F8973 | 62P | |

*Wire lead not connected

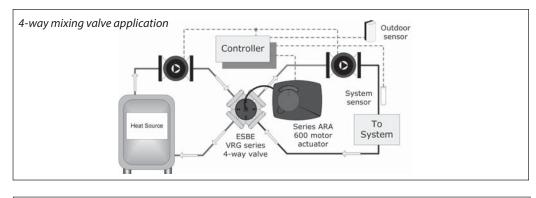
Accessories & Replacement Parts

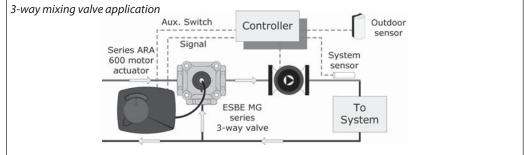
| Code No. | Description | | |
|----------|---|--|--|
| 16000500 | Assembly kit: drive sleeve, mounting stud scale and mounting screw | | |
| 17050600 | ARA motor actuator knob | | |
| 16200700 | Auxiliary end switch kit, includes end switch, cable and wiring plate cover | | |

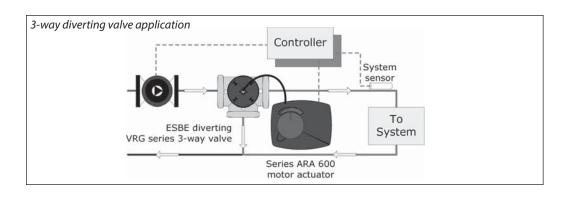


Applications:









3 & 4 Way VRG Valves:

| 3-Way Valve, Series 131 | | | | |
|-------------------------------------|--|--|--|--|
| Code No. Connection Cv ¹ | | | | |
| 1⁄2″ NPT | 2.9 | | | |
| 3⁄4″ NPT | 4.7 | | | |
| 3⁄4″ NPT | 7.3 | | | |
| 1″ NPT | 7.3 | | | |
| 1″ NPT | 11.7 | | | |
| 1-¼″ NPT | 18.7 | | | |
| 1-1⁄2" NPT | 29.3 | | | |
| 2″ NPT | 46.8 | | | |
| | Connection ½" NPT ¾" NPT ¾" NPT 1" NPT 1" NPT 1-¼" NPT 1-¼" NPT 1-½" NPT | | | |

| 4-Way Valve, Series 141 | | | | | |
|-------------------------|-------------|-----------------|--|--|--|
| Code No. | Connection | Cv ¹ | | | |
| 193B1531 | ³⁄4″ NPT | 4.7 | | | |
| 193B1532 | ³⁄4″ NPT | 7.3 | | | |
| 193B1533 | 1″ NPT | 11.7 | | | |
| 193B1534 | 1-¼″ NPT | 18.7 | | | |
| 193B1535 | 1-1⁄2″ NPT | 29.3 | | | |
| 193B1536 | 2″ NPT | 46.8 | | | |
| 193B1537 | ¾" Solder | 2.9 | | | |
| 193B1538 | 1″ Solder | 7.3 | | | |
| 193B1539 | 1-¼″ Solder | 13.9 | | | |

¹Cv value based on flow per a 1 psi pressure drop through the valve

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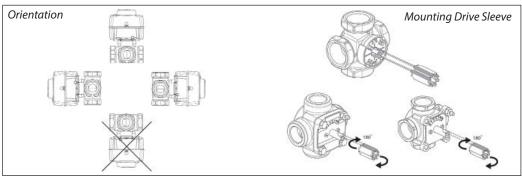


Technical Specifications:

| | 3- P | oint | 2-1 | Point | Proportional | | nal |
|-------------------------|---|-------------|------------|---|--------------------|---------|---------|
| ARA Series | 663 / 644 | / 654 / 664 | 638 | / 648 | 639 / 659 | |) |
| Supply Voltage | 24VAC +/- 10%, 50/60Hz 24VAC +/- 10%, 24VAC/DC +/- 10% 50/60Hz 50/60Hz | | | | | | |
| Devee | | | | | | 639 | 659 |
| Power Consumption | | 2VA | | | AC | 11VA | 8VA |
| | | | | | DC | 6VA | 4VA |
| Rotation | | | 9 | 90° | | | |
| Towners | 53.1 lbf.in (6Nm) | | 638 | 26.6 lbf.in (3Nm) | 53.1 lbf.in (6 Nm) | | Nues) |
| Torque | | | 648 | 53.1 lbf.in (6Nm) | | | INITI) |
| Mountable Valve Size | 1/2" to 2" ESBE rotary mixing valves, Series MG, G and VRG (for 638 mountable on sizes 1/2" to 1-1/4") | | | | | | |
| Enclosure | NEMA 1, IP 41 | | | | | | |
| Ambient Temp. Range | 23 to 131°F (-5 to 55°C) | | | | | | |
| Weight | 1 lb (0.4 kg) | | | | | | |
| | 663 | 96 sec | (20) | 12 | | @ 60 Hz | |
| Run Time (sec) | 644 | 24 sec | 638 | 12 sec | 639 | 15/30 | /60/120 |
| Kull Hille (sec) | 654 | 48 sec | 648 | 648 24 sec | 659 | 45/120 | |
| | 664 | 96 sec | 040 24 Sec | | 039 | 45/120 | |
| Control Signal | - | | | 0-10V, 2-10V, 0-20mA, 4-20mA/ 60, 60 or 120 sec. | | | |
| Output signal | - | | | Proportional analogue signal (only for ARA369) | | | |
| Auxiliary Switch | Max 2A, adjustable cam position (663 actuator does not have Aux. switch) | | | Optional | | | |

Mounting & Installation:

The actuator should be mounted with the ESBE rotary valve stem in either a horizontal position or pointing upwards. The actuator should not be installed in a downward orientation to reduce the possible contact of water with the actuator. Included with the actuator is the mounting hardware necessary to mount the electric motor actuator to an ESBE rotary mixing valves; MG, G, and VRG series.



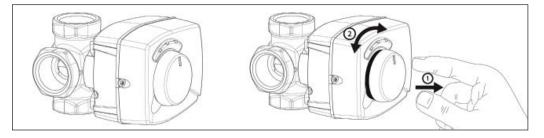
With the white drive sleeve the ARA actuator can be installed on older MG and G series of valves and also current VRG valves. The orientation of the drive sleeve determines the style of valve the actuator will mount to.

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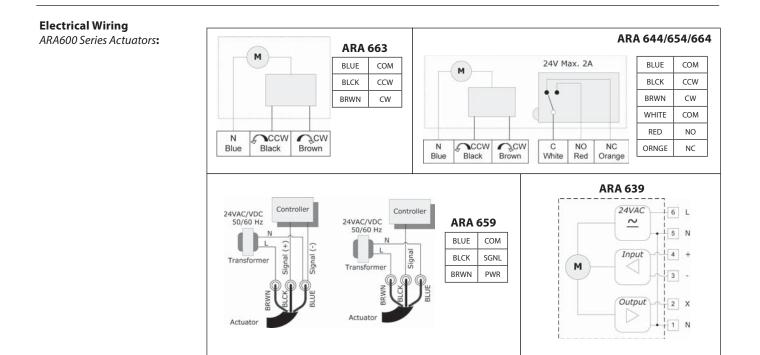


Manual Operation:

When placing the actuator in manual operation power should be turned off to the actuator. In the event the actuator is powered and is left in a manual position, the result could lead to the internal damage of the actuator.

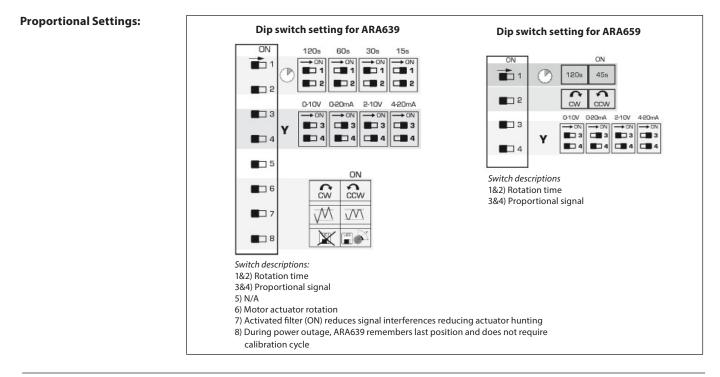


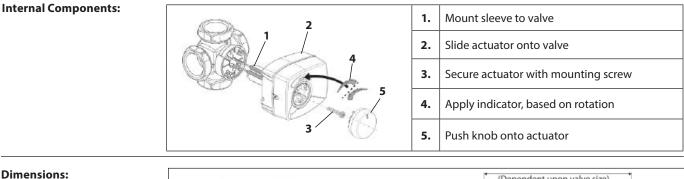
To manually operate the ARA Series actuator, slightly pull out on the large indicator knob. With it pulled out, rotate the knob to the left or right to manually operate the valve. To return the actuator to automatic operation, rotate the knob to the position prior to manual operation and push the knob into the actuator.



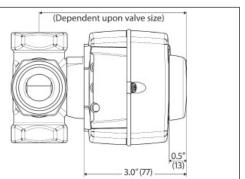
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$\begin{array}{c} 1.7''\\ (43)\\ 1.7''\\ (43)\\ 1.7''\\ (43)\\ -1.5''\\ .5''$.5'''



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