



**Type: EA-2303E**

AVS Smart actuator shown direct mounted to stainless 3 way ball valve



Very compact design

**AVA Compact Basic On-Off electric actuator features:**

- Compact size.
- Fully weatherproof basic industrial actuator.
- All external electrical connections, no need to remove cover .
- Individual voltage motors.
- Position setting using cams and micro-switches.
- Manual override facility.
- Electronic torque limiter.
- Thermostatic anti-condensation heater.
- End of travel switches for remote open/ closed indication.
- CE Marked.
- ABS housing (aluminium option).

**AVA Compact Smart On-Off electric actuator features:**

- Compact size.
- Fully weatherproof basic industrial actuator.
- All external electrical connections, no need to remove cover .
- Multi-voltage power supply.
- Position control uses digital magnetic electronics, no cams.
- Manual override facility.
- Electronic torque limiter.
- Thermostatic anti-condensation heater.
- End of travel relays for remote open/ closed indication.
- CE Marked.
- ABS housing (aluminium option).

**Ball valve information:**

3 Way stainless steel ball valve changes the direction of flow in pipes. Designed for automation with integrally cast ISO5211 actuator mounting platform. Stainless steel body, ball and stem, PTFE seats. Anti-static device fitted. End connections are threaded BSP female.

L Port version diverts the flow, typically with intel via the centre port and out via either the left, or right port.  
T Port versions can either mix with all 3 ports connected, or divert with one position offering straight through flow.

**Applications:**

Potable water, oil, air and most non-corrosive media, subject to compatibility with wetted parts in contact with media. This assembly is NOT recommended for use on steam.

Valve actuators sized on a maximum differential pressure of 10 bar wet service, operated at least once per day. If the intended duty differs from these parameters, or is dry (air or gas), please call to check the actuator sizing as a larger output electric actuator may be required.

Maximum working temperature of a direct mounted assembly is +60C. For higher working temperatures , consider models that have a mounting kit between the valve and the AVA electric actuator which uses air cooling to dissipate the rising heat from the valve away from the actuator. Should the AVA electric actuator see more than +60C it will malfunction.

**Typical Kv Values**

| Size | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2"  |
|------|------|------|----|--------|--------|-----|
| Kv   | 13   | 15   | 31 | 39     | 62     | 103 |

Kv = m<sup>3</sup> per hour with a 1 bar pressure drop across the valve  
CV = US gallons per hour with a 1psi pressure drop across the valve  
Cv = Kv / 0.86

AVA Electric Actuator Function: **POWER OPEN - POWER CLOSE , STAYS PUT ON POWER FAILURE**

### Specifications:

|                       | AVA BASIC ACTUATOR                       | AVA SMART ACTUATOR                          |
|-----------------------|--|---|
| Actuator housing      | ABS                                      | ABS   |
| Supply voltage range  | 24VDC, 24VAC, 100VAC, 240VAC             | 12-24V AC/DC 85-265V AC/DC                  |
| Motor Control         | Cam and mechanical micro-switches        | Magnetic digital position sensing & control |
| Position Confirmation | Cam and mechanical micro-switches        | Electronic relays                           |
| IP Rating             | IP67                                     | IP67  |
| Actuator temp limits  | -20 to +60°C                             | -20 to +60°C                                |
| Assembly temp limits  | EA-2303-B +60°C Actuator Direct mounted  | EA-2303-S +60°C Actuator Direct mounted     |
|                       | EA-2313-B +95°C Actuator mounted via kit | EA-2313-S +120°C Actuator mounted via kit   |
| Valve body            | CF8M Stainless Steel                     | CF8M Stainless Steel                        |
| Valve ball            | Stainless Steel                          | Stainless Steel                             |
| Valve seats           | RPTFE                                    | RPTFE                                       |
| Valve seals           | PTFE & Viton                             | PTFE & Viton                                |
| Ends                  | Screwed BSP ISO 7-1                      | Screwed BSP ISO 7-1                         |
| Valve Pressure rating | UTI 2" 63 bar at ambient temp            | UTI 2" 63 bar at ambient temp               |
| Valve temp limits     | -20 to +180°C                            | -20 to +180°C                               |
| Valve Size range      | 1/2" to 2"                               | 1/2" to 2"                                  |

### Wiring Diagrams:

Note: AVS Model 20 actuator supplied with approx 0.75m flying lead (9 colour coded cores as per wiring diagram below).

UK Stock wiring: 3 Wire with switching live between open and closed (SPDT)

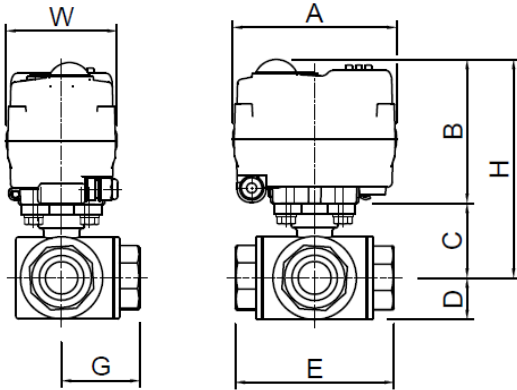
|                                  |            |  |       |  |
|----------------------------------|------------|--|-------|--|
| Neutral                          | Blue wire  |  | N / - | MOTOR CONTROL<br>for open & closed positions         |
| Live Close Motor Stop            | Red wire   |  | L / + |  |
| Live Open Motor Stop             | Black wire |  | L / + |  |
| Common for Position Confirmation | White wire |  | N / - | POSITION CONFIRMATION<br>for open & closed positions |
| Open Position Confirmation       | Grey wire  |  | L / + |  |
| Closed Position Confirmation     | Brown wire |  | L / + |  |
| Earth                            | Green wire |  | E     | EARTH  |

Factory option wiring: 2 Wire with permanent live on closed and switch for open (SPST). Shown in closed position

|                                  |            |  |       |  |
|----------------------------------|------------|--|-------|--|
| Neutral                          | Blue wire  |  | N / - | MOTOR CONTROL<br>for open & closed positions         |
| Live Close Motor Stop            | Red wire   |  | L / + |  |
| Live Open Motor Stop             | Black wire |  | L / + |  |
| Common for Position Confirmation | White wire |  | N / - | POSITION CONFIRMATION<br>for open & closed positions |
| Open Position Confirmation       | Grey wire  |  | L / + |  |
| Closed Position Confirmation     | Brown wire |  | L / + |  |
| Earth                            | Green wire |  | E     | EARTH  |

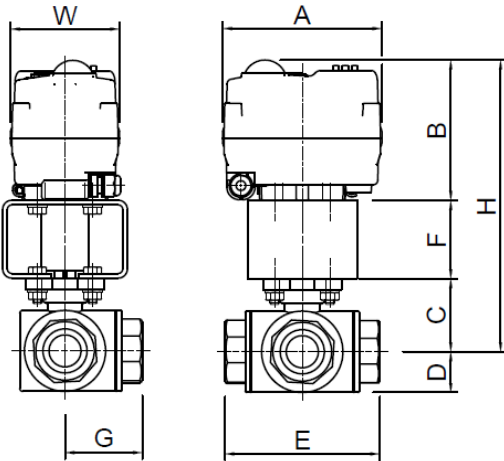
**Typical Dimensions:** Note: Overall dimensions are the same for basic and smart AVS actuators

**Type: EA-2303E AVA** Actuator direct mounted to valve, maximum working temperature +60C



|        | Model | A   | B   | C  | E   | H   | W   | Kilos |
|--------|-------|-----|-----|----|-----|-----|-----|-------|
| 1/2"   | 20    | 102 | 90  | 37 | 75  | 127 | 70  | 1.53  |
| 3/4"   | 20    | 102 | 90  | 41 | 85  | 131 | 70  | 1.85  |
| 1"     | 20    | 102 | 90  | 47 | 100 | 137 | 70  | 2.30  |
| 1 1/4" | 20    | 102 | 90  | 56 | 122 | 146 | 70  | 3.81  |
| 1 1/2" | 60    | 165 | 122 | 60 | 131 | 182 | 115 | 5.80  |
| 2"     | 60    | 165 | 122 | 71 | 158 | 193 | 115 | 8.50  |



**Type: EA-2313E AVA** Actuator fitted to valve via a bracket and drive adapter, maximum working temperature +120C



|        | Model | A   | B   | C  | E   | F  | H   | W   | Kg  |
|--------|-------|-----|-----|----|-----|----|-----|-----|-----|
| 1/2"   | 20    | 102 | 90  | 37 | 75  | 50 | 177 | 70  | 2.1 |
| 3/4"   | 20    | 102 | 90  | 41 | 85  | 50 | 181 | 70  | 2.4 |
| 1"     | 20    | 102 | 90  | 47 | 100 | 50 | 187 | 70  | 2.9 |
| 1 1/4" | 20    | 102 | 90  | 56 | 122 | 50 | 196 | 70  | 4.5 |
| 1 1/2" | 60    | 165 | 122 | 60 | 131 | 50 | 232 | 115 | 6.4 |
| 2"     | 60    | 165 | 122 | 71 | 158 | 70 | 263 | 115 | 9.5 |

AVA Electric Actuator Function: POWER OPEN - POWER CLOSE , STAYS PUT ON POWER FAILURE

### Brief Comparison Between AVS Compact Actuator Models:

| AVA BASIC ACTUATOR  | FEATURE   | AVSA SMART ACTUATOR   |
|---|---|---|
|  |  |  |
| ABS plastic (aluminium base)  | Housing   | ABS plastic (aluminium base)  |
| Internal cams and micro-switches  | Motor Control   | Digital magnetic position sensing   |
| Internal cams and micro-switches  | Position Confirmation Signal  | Electronic relays   |
| Dome mechanical indicator   | Position Confirmation Visual  | Dome mechanical indicator + OLED screen   |
| IP67  | Weatherproof  | IP67  |
| Yes, pre-wired  | Anti-condensation Heater  | Yes, pre-wired  |
| -20°C to +60°C  | Ambient Temperature   | -20°C to +60°C  |
| 24VDC, 24VAC, 110VAC, 240VAC  | Voltages/ Range   | 24V AC/DC or 95-265V AC/DC  |
| Yes, with supplied hexagon tool   | Manual Override   | Yes, with supplied hexagon tool   |
| Pre-wired with multi-colour 0.8m cable  | Electrical Connection   | Pre-wired with multi-colour 0.8m cable  |
| F03, F04 (at 45°), F05 x 14mm octagon   | Valve Mounting  | F03, F04 (at 45°), F05 x 14mm octagon   |
| Not available   | Local Control   | Yes with OLED screen and 3 push buttons   |
| Remove cover and adjust cams  | Working Angle Control   | Yes with OLED screen and 3 push buttons   |
| Not available   | Speed Control   | Yes with OLED screen and 3 push buttons   |
| Not available   | 3 Position Control  | Yes with OLED screen and 3 push buttons   |
| <b>OPTIONS</b>  |   |   |
| Yes   | Aluminium Cover   | Yes   |
| Yes, by capacitor   | Failsafe  | Yes, by capacitor   |
| Not available   | Fast Acting   | Yes, 1 second working time (90°)  |
| Not available   | Modulating  | Yes, 0-10V, 2-10V, 4-20mA, 0-20mA   |
| Not available   | Bus Communications  | Yes, Modbus, Profibus, Canbus   |
| Not available   | Wireless  | Yes, RF Ocean, RF-Lora  |
| Not available   | Timer   | Yes   |
| Not available   | Alarm Function  | Yes   |