



Type: EA-2104E

AVS Smart actuator shown direct mounted to 2" stainless ball valve



Very compact design

AVA Basic Failsafe 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).
- Internal capacitor failsafe system

Ball valve information:

Full bore 3 piece construction offers in-line maintenance and provides full unrestricted flow and a very low pressure drop across the ball valve. Designed for automation with integrally cast ISO5211 actuator mounting platform. Anti-static device fitted. Turning the ball through 90° fully opens the valve, turning back through 90° fully closes the valve and isolates the flow. End connections are threaded BSP female. NPT, butt weld and socket weld ends are available as an option.

Typical KV Values

| Size | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" |
|------|--------|------|--------|------|------|--------|
| KV | 6 | 10 | 24 | 43 | 83 | 130 |
| Size | 1 1/2" | 2" | 2 1/2" | 3" | 4" | - |
| KV | 205 | 340 | 520 | 1100 | 1820 | - |

Kv = m³ 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 Smart Failsafe electric actuator features:

- Compact size.
- Multi-function OLED Screen
- External push buttons for local parameter setting & local control
- Fully weatherproof smart 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).
- Internal capacitor failsafe system

Applications:

Potable water (ball valve is not WRAS approved), oil, air and many corrosive media, subject to compatibility with wetted parts in contact with media.

AVA Electric 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) call to check AVA actuator sizing as a larger output AVA valve actuator may be required.

Maximum working temperature of a direct mounted assembly is +70C. For higher working temperatures , consider models that have a mounting kit or TSM stem extension between the valve and actuator which uses air cooling to dissipate the rising heat from the valve away from the actuator. Should the AVA smart actuator see more than +70C it will malfunction.

AVA Electric Actuator Function: POWER OPEN - POWER CLOSE , FAILS SAFE 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 | EAB-2104E +60°C AVA Direct mounted | EAS-2104E +60°C AVA Direct mounted |
| | EAB-2114E +95°C AVA mounted via kit | EAS-2114E +95°C AVA mounted via kit |
| Valve body | Nickel plated brass | Nickel plated brass |
| Valve ball | Chrome plated brass | Chrome plated brass |
| Valve seats | PTFE | PTFE |
| Valve seals | NBR | NBR |
| Ends | Screwed BSPP | Screwed BSPP |
| Valve Pressure rating | UTI 1" 40 bar at ambient temp | UTI 1" 40 bar at ambient temp |
| Valve temp limits | -20 to +120°C | -20 to +120°C |
| Valve Size range | 1/4" to 3" | 1/4" to 3" |

Wiring Diagrams:

Note: AVA 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)

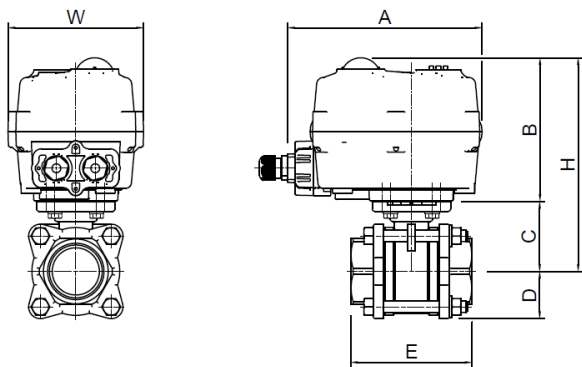
| | | | | |
|----------------------------------|------------|--|-------|--|
| Neutral | Blue wire | | N / - | MOTOR CONTROL for open & closed positions |
| Live Close Motor Stop | Red wire | | L / + | |
| Live Open Motor Stop | Black wire | | L / + | |
| Common for Position Confirmation | White wire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

Factory option wiring: 3 Wire with permanent live on closed and switch for open (SPST). Shown in closed position

| | | | | |
|----------------------------------|------------|--|-------|--|
| Neutral | Blue wire | | N / - | MOTOR CONTROL 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 for open & closed positions |
| Open Position Confirmation | Grey wire | | L / + | |
| Closed Position Confirmation | Brown wire | | L / + | |
| Earth | Green wire | | E | EARTH |

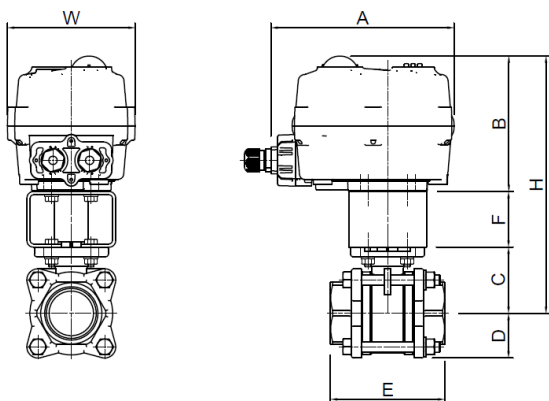
Typical Dimensions: Note: Overall dimensions are the same for basic and smart AVA actuators

Type: EA-2104E AVA Actuator (60Nm) direct mounted to valve






| | Model | A | B | C | E | H | W | Kilos |
|--------|-------|-----|-----|---|-----|---|-----|-------|
| 1/4" | 20 | 102 | 88 | | 48 | | 70 | 1.0 |
| 3/8" | 20 | 102 | 88 | | 48 | | 70 | 1.0 |
| 1/2" | 20 | 102 | 88 | | 56 | | 70 | 1.1 |
| 3/4" | 20 | 102 | 88 | | 73 | | 70 | 1.5 |
| 1" | 20 | 102 | 88 | | 82 | | 70 | 1.7 |
| 1 1/4" | 20 | 102 | 88 | | 91 | | 70 | 2.5 |
| 1 1/2" | 60 | 165 | 122 | | 104 | | 115 | 4.7 |
| 2" | 60 | 165 | 122 | | 120 | | 115 | 5.8 |
| 2 1/2" | 60 | 165 | 122 | | 155 | | 115 | 11.0 |
| 3" | 110 | 165 | 122 | | 182 | | 115 | 15.0 |
| 4" | 110 | 165 | 122 | | 220 | | 115 | 22.0 |

Type: EA-2114E AVA Actuator (60Nm) fitted to valve via a bracket and drive adapter



| | Model | A | B | C | E | F | H | W | Kilos |
|--------|-------|-----|-----|---|-----|----|---|-----|-------|
| 1/4" | 20 | 102 | 88 | | 48 | 50 | | 70 | 1.3 |
| 3/8" | 20 | 102 | 88 | | 48 | 50 | | 70 | 1.3 |
| 1/2" | 20 | 102 | 88 | | 56 | 50 | | 70 | 1.4 |
| 3/4" | 20 | 102 | 88 | | 73 | 50 | | 70 | 1.8 |
| 1" | 20 | 102 | 88 | | 82 | 50 | | 70 | 2.0 |
| 1 1/4" | 20 | 102 | 88 | | 91 | 50 | | 70 | 2.8 |
| 1 1/2" | 60 | 165 | 122 | | 104 | 50 | | 115 | 5.0 |
| 2" | 60 | 165 | 122 | | 120 | 50 | | 115 | 6.1 |
| 2 1/2" | 60 | 165 | 122 | | 155 | 70 | | 115 | 11.5 |
| 3" | 110 | 165 | 122 | | 182 | 70 | | 115 | 15.5 |
| 4" | 110 | 165 | 122 | | 220 | 70 | | 115 | 22.5 |

Brief Comparison Between AVA Models:

| AVA BASIC ACTUATOR | FEATURE | AVA 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 |
| | OPTIONS | |
| Yes | Aluminium Cover | Yes |
| Yes, by capacitor | Failsafe | Yes, by capacitor |
| Not available | Fast Acting | Yes, 1 second working time (90°) 24VDC only |
| 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 |