

AVA Electric Actuator Function: POWER OPEN - POWER CLOSE , FAILS SAFE ON POWER FAILURE



### Type: EA-1304

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

### 3 Way Ball Valve - Flow paths

L Port: Divert duty only

T Port: Divert or Mixing duties



Very compact design

### AVS Compact Smart 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).

### 3 Way ball valve information:

Full bore 3 way ball valve providing full flow and a relatively low pressure drop across the valve. Designed for automation with integrally cast ISO5211 actuator mounting platform. End connections are threaded BSP female.

3 Way brass ball valves are used to change the direction of flow as opposed to 2 way ball valves that simply isolate the flow, and are available as either a L-port or T-port design. L-port diverter valves typically divert flow from the centre port to either output port. T-port valves are used for either mixing or diverting type flow functions. As a diverting valve the T port valve provides straight through flow in one position.



L Port :  
Diverting



T Port :  
Mixing



T Port :  
Diverting

### AVS Compact Smart Failsafe electric actuator features:

- Compact size.
- Internal capacitor failsafe system
- 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).

### Failsafe function:

When external power is applied, and internal capacitor charges and stores energy. Should external power be lost, the capacitor discharges and drives the motor to the pre-set failsafe position.

### 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.

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### Specifications:

	BASIC	SMART
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-1103 +60°C Actuator Direct mounted	EAS-1103 +60°C Actuator Direct mounted
	EAB-1113 +95°C Actuator mounted via kit	EAS-1113 +95°C Actuator 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 3/4" 30bar, to 11/4" 20bar, rest 16 bar	UTI 3/4" 30bar, to 11/4" 20bar, rest 16 bar
Valve temp limits	-20 to +90°C	-20 to +90°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)

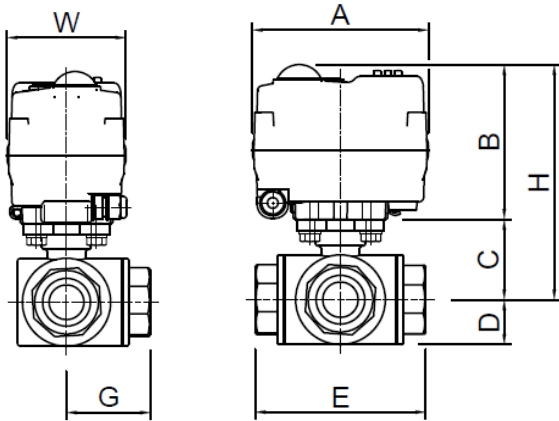
Neutral	Blue wire		N / -	MOTOR CONTROL for open & closed positions
Live Close Motor Stop	Red wire		L / +	
Live Open Motor Stop	Black wire		L / +	
Common for Position Confirmation	White wire		N / -	POSITION CONFIRMATION for open & closed positions
Open Position Confirmation	Grey wire		L / +	
Closed Position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

Factory option wiring: 2 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

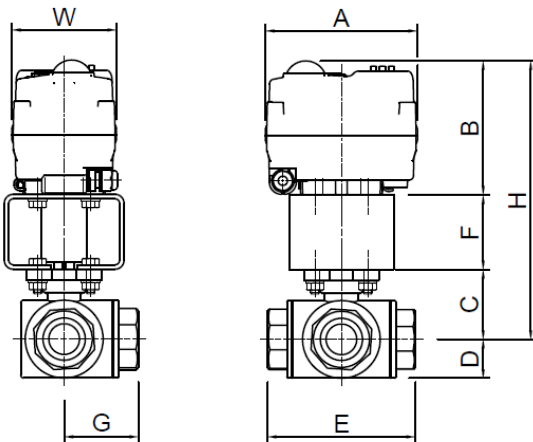
**Typical Dimensions:** Note: Overall dimensions are the same for basic and smart AVS actuators

**Type: EA-1304** Actuator direct mounted to valve, maximum working temperature +60C



	Model	A	B	C	E	H	W	Kilos
1/2"	20	102	83	33	78	116	70	1.1
3/4"	20	102	83	42	87	125	70	1.2
1"	20	102	83	47	105	130	70	1.5
1 1/4"	20	102	83	52	118	135	70	1.9
1 1/2"	20	102	83	70	134	153	70	2.2
2"	20	102	83	80	161	163	70	3.0

**Type: EA-1314** Actuator fitted to valve via a bracket and drive adapter, maximum working temperature +95C



	Model	A	E	F	H	W	Kilos
1/2"	20	102	78	50	166	70	1.4
3/4"	20	102	87	50	175	70	1.5
1"	20	102	105	50	180	70	1.8
1 1/4"	20	102	118	50	185	70	2.2
1 1/2"	20	102	134	50	203	70	2.5
2"	20	102	161	50	213	70	3.3

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**Brief Comparison Between AVS Compact Actuator Models:**

AVS BASIC ACTUATOR	FEATURE	AVS 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