




## QUARTER TURN ELECTRIC ACTUATOR

# AVA-S20.25 SMART MODULATING 20Nm



Model	AVA-S20.25 20Nm MULTI-VOLTAGE SMART MODULATING ACTUATOR		
	High voltage	Low voltage	
Rated Voltage	230V AC/DC	24V AC/DC	
Voltage Range	AC 95-265V 50/60Hz, DC 100-300V	AC 18-26V 50/60Hz, DC22-32V	
Consumption	9.6W run, 0.12W hold	9.6W run, 0.85W hold	
Peak current	35mA (AC230V), 75mA (DC110V) for 5ms	350mA (DC 24V) for 5ms	
Fuse	1A	2A	
Maximum Break Torque Nm	20	20	
Run & Reseat Torque Nm	15	15	
Manual operation	Yes, by hexagonal wrench (supplied in clip) when no power is being applied		
Control Signal input/ output	0-20mA, 4-20mA, 0-5V, 1-5V, 0-10V, 2-10V		
Run time	≈ 10 sec	≈ 10 secs	
STANDARD FEATURES:			
Operating frequency	100% Duty cycle, suitable for continuous running		
Position sensing	Magnetic with digital sensing. No mechanical cams fitted.		
Maximum angle of rotation	330° ±5°		
Position indication (visual)	2 colour (red/ yellow) dome for local visual confirmation		
End Position indication	2 x Electronic relay		
Mounting restriction	None, can be mounted at any angle. Leave room for space to operate manually, and for electrical connection		
ISO:5211	F03 & F05 (+ F04 which mounts at 45 degrees)		
Female drive	14mm double square (star) x 17mm deep [11mm octagon x 17mm deep option]		
Ingress protection	IP67, recommend cover provided if exposed to direct rain or sun		
Max media temp	≤ 80C		
Ambient temp	-20 to +60C (ABS) -20 to +80C (Aluminium)		
Non-operating temp	≤ -40C to ≥80C		
Ambient humidity	5-95% RH non-condensing		
Explosion proof	No, absolutely prohibited. Do not use in hazardous areas		
Shock Resistance	≥300m/S2		
Vibration	10 to 55Hz, 1.5mm double amplitude (product damage most likely if exceeded)		
VNoise level	Around 50dB		
Flame Retardant Level	V0 using the UL94 Test method		
Certification	CE		
Maintenance	Maintenance free		
Cable Entry	Cable gland provides, actuator pre-wired with approx. 0.5m flying lead		
Housing	Plastic (ABS)		
Weight	With standard ABS housing 0.62kg (With optional aluminium housing 0.82kg)		

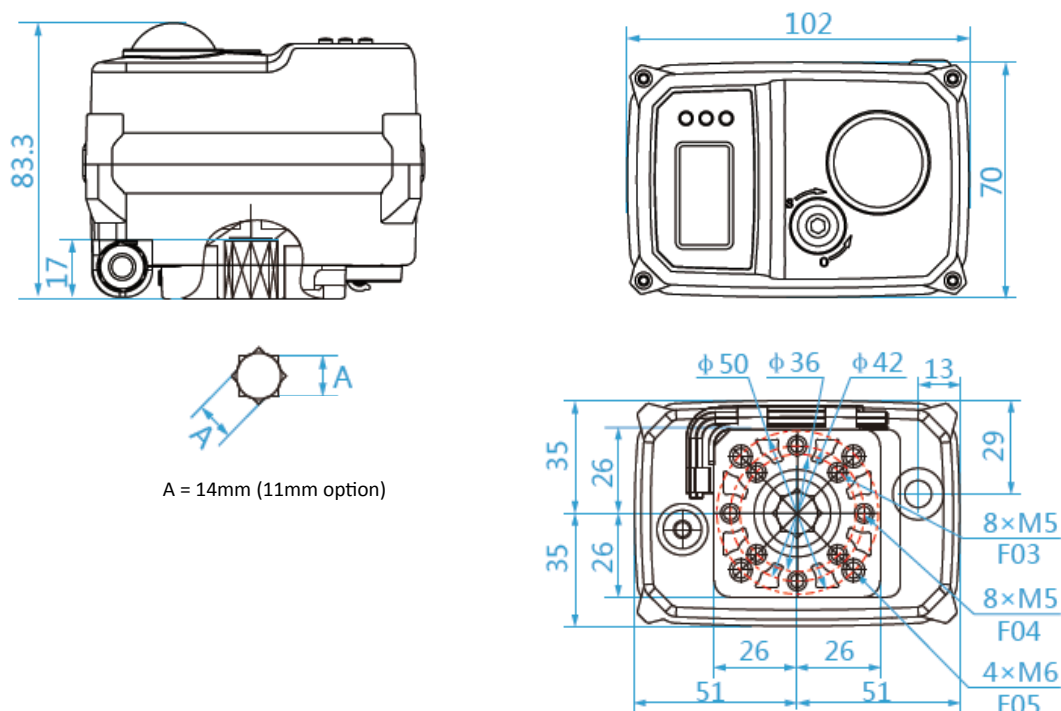


Success results from our continual pursuit of perfection, details therefore subject to change without notice in the interests of product development and improvement.

[www.avactuators.co.uk](http://www.avactuators.co.uk)

# DIMENSIONS

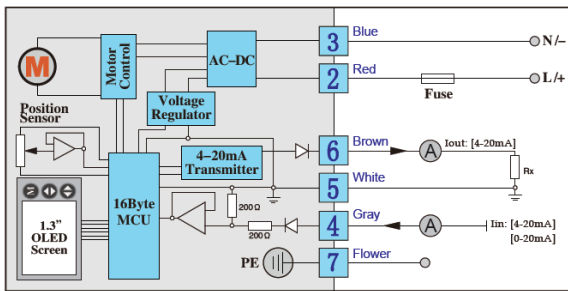
# AVA-S20.25 20Nm SMART MODULATING ELECTRIC ACTUATOR



## PART NUMBERING

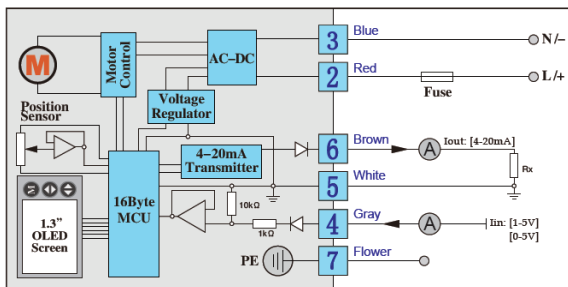
Model	Voltage	Housing	Heater	Control of on-off function
AVA-S20.25-	5 AC 230V or	P Plastic (ABS)	O None	O 0-20mA Input & output
	5 AC 110V	A Aluminium	H 2W/24kΩ	P 4-20mA Input & output
	6 AC 24V or			R 0-5V Input & output
	6 DC 24V			T 1-5V Input & output
	Multi-voltage:			U 0-10V Input & output
	95-265V AC/DC			V 2-10V Input & output
	24V AC/DC			1 0-20mA Input & output with alarm
				2 4-20mA Input & output with alarm
				3 0-5V Input & output with alarm
				4 1-5V Input & output with alarm
				5 0-10V Input & output with alarm
				6 2-10V Input & output with alarm

## AVA-S20.25 MODULATING WIRING 'O' &amp; 'P'

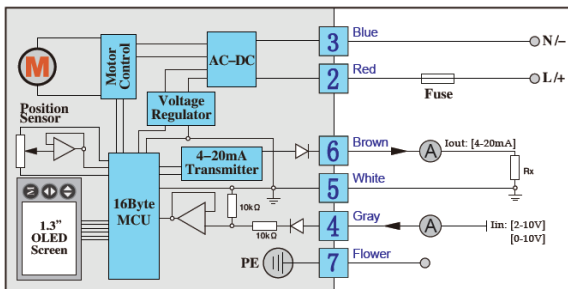
NOTES (actuators *without* alarm function)

- 1 Terminals 2 & 3 are the power supply, ensure correct polarity when connecting, and that the voltage to be applied is within the range of the actuator that it is being applied to. Supply Live / +ve on 2, Neutral/ -ve on 3)
- 2 Terminals 4, 5 & 6 are the control signal input & output, ensure correct polarity when connecting (+ve on 4 & 6, -ve on 5)
- 3 Terminal 4 is the control signal input, input impedance is shown on each relevant diagram
- 4 Terminal 6 is the output feedback, and is in the same form as the input signal.
- 5 For Rx, ensure that a resistor with a low TCR (Temperature Coefficient of Resistance) is selected.  $V_{out} = I_{out} \times R_x$  Where  $V_{out} \leq 8V$ ,  $R_x \leq 400\Omega$   
Actuator manufacturer recommends  $V_{out} \leq 5V$ ,  $R_x = 250\Omega$  (0.25W)
- 6 Local push button controls can be used to set the action on loss of control signal [move to open, move to closed or stay put/ freeze] for 1-5V, 2-10V and 4-10mA control signals only.
- 7 Do not supply power supply voltage to the control module connections as it will
- 8 Contactor loading capacity 0.1A for 24VDC, 50mA for 230VAC.

## AVA-S20.25 MODULATING WIRING 'R' &amp; 'T'

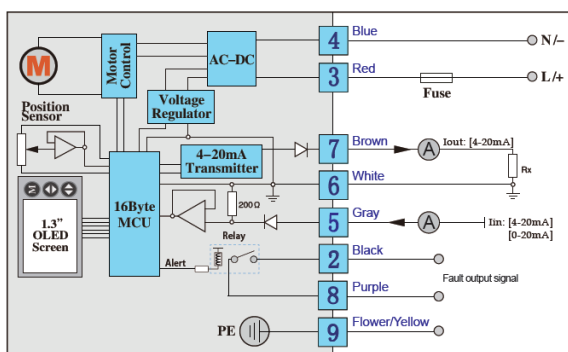


## AVA-S20.25 MODULATING WIRING 'U' &amp; 'V'

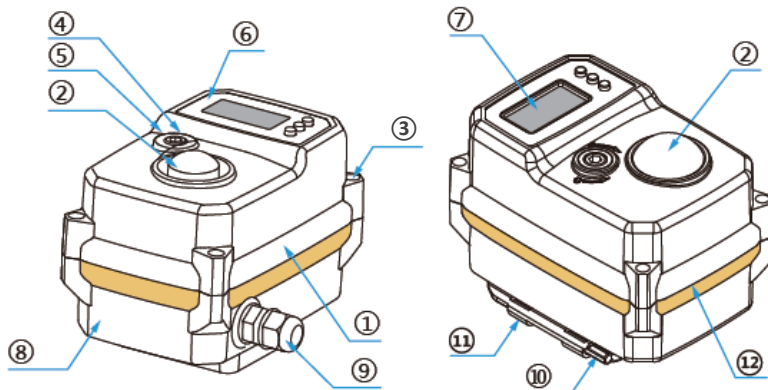
NOTES (actuators *with* alarm function)

- 1 Terminals 3 & 4 are the power supply, ensure correct polarity when connecting, and that the voltage to be applied is within the range of the actuator that it is being applied to. (Live or +ve on 2, Neutral or -ve on 3)
- 2 Terminals 5, 6 & 7 are the control signal input & output, ensure correct polarity when connecting (+ve on 5 & 7, -ve on 6)
- 3 Terminal 5 is the control signal input, input impedance is shown on each relevant diagram
- 4 Terminal 7 is the output feedback, and is in the same form as the input signal.
- 5 For Rx, ensure that a resistor with a low TCR (Temperature Coefficient of Resistance) is selected.  $V_{out} = I_{out} \times R_x$  Where  $V_{out} \leq 8V$ ,  $R_x \leq 400\Omega$   
Actuator manufacturer recommends  $V_{out} \leq 5V$ ,  $R_x = 250\Omega$  (0.25W)
- 6 Local push button controls can be used to set the action on loss of control signal [move to open, move to closed or stay put/ freeze] for 1-5V, 2-10V and 4-10mA control signals only.
- 7 Do not supply power supply voltage to the control module connections as it will irreparably damage the actuator, and is not covered under the warranty.
- 8 Contactor loading capacity 0.1A for 24VDC, 50mA for 230VAC.

## AVA-S20.25 MODULATING WIRING '1' &amp; '2'



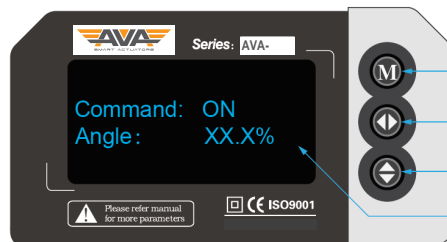
Note: All control options available with alarm output.  
Wiring diagrams available on request.



No	PART	MATERIAL
1	Housing	Aluminium base, ABS cover
2	Indicator	Clear plastic
3	Cover screws	304SS
4	Override drive	304SS
5	Seal	NBR
6	Screen cover	Rubber
7	Screen	OLED
8	ID Label	PVC
9	Connector	Plastic
10	Allen key	Tool steel
11	Allen key clip	ABS
12	Cover seal	NBR

**Overview:** All AVA smart electric actuators have local controls as standard which combine an OLED screen and 3 positive feel push buttons to create local control and a variety of user friendly adjustments. The bright screen with blue letters on a black background are easy to read, and the use of the push buttons to adjust settings is intuitive. The local controls require power to be applied to the actuator to operate.

#### Local controls:



M button	M button is used to enter and switch menus.
K2 button	K2 is used in conjunction with K3 for adjusting values.
K3 button	K3 is used for changing settings, navigating menus, exiting and saving.
OLED Screen	OLED Screen with clear blue letters against a black background

#### Standard local control function options:

<b>MANUAL CONTROL</b>	The AVA smart actuator can be opened and closed using the K2 and K3 buttons
<b>DEAD BAND</b>	Adjusts the accuracy and sensitivity
<b>SPEED CONTROL</b>	The working time can be increased either by setting a step timer (run/stop/run/stop), or continuous running adjusting the PWM
<b>CLOSED POSITION</b>	Small adjustments can easily and quickly be made to the final close position angle (zero adjustment).
<b>REVERSE ACTING</b>	Receiving an open command signal sends the AVA smart actuator to the closed position and vice versa
<b>EXTEND ANGLE</b>	Adjust the open position by adjusting the span. Typically used to set 0-180 degree operation