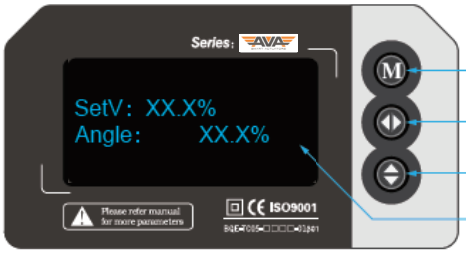
SCREEN BY SCREEN USER GUIDE AND INSTRUCTION MANUAL FOR S2025 MODULATING SERIES

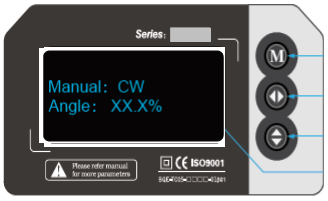
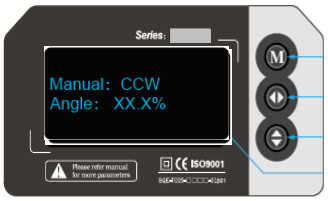
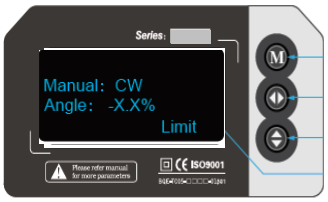
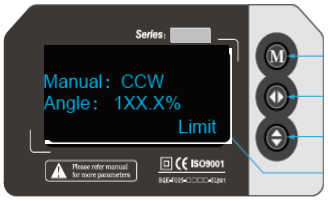


M Key: to switch menus

K2 Key: to switch Flash Item or adjust values

K3 Key: to modulate numerical value

Screen 1.3"OLED,Blue word against black background， 128X64

Step	Menu Operation:- Manual Mode	
1	Press and hold the K3 button, as shown above, for around 3 seconds. You will see K3 flashing in the top right hand corner. The actuator is now in Manual mode. The actuator will now not respond to control signals from the PLC until taken out of Manual Mode. The actuator can be opened and closed as follows: Press K3 and the actuator will rotate in the anti clockwise direction and the screen will show the current angle. The actuator will stop as soon as the button is released. If the angle is more than 90 degrees, the bottom screen will show 'Limit' and the actuator will now pass that point. Press K2 and the actuator will rotate in the anti clockwise direction and the screen will show the current angle. The actuator will stop as soon as the button is released. If the angle is more than 90 degrees, the bottom screen will show 'Limit' and the actuator will now pass that point. Modulating local control differs to ON OFF and other models. Modulating is allowing you to JOG the actuator by small movements whereas an ON OFF actuator for example would just drive the actuator fully OPEN or FULLY close. The modulating version gives you 'fine' control.	   

Prepared by	Adam Chapman
Date Prepared	July 2017
Revision Number	001
Factory Revision Number	Ver:20161015

AVA comments:

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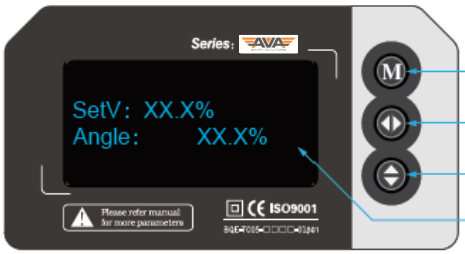
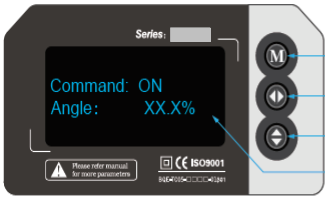


Step	Menu Operation:- USER Setting Mode	
2	Long Press the M button, until you can see 'M' flashing in top right hand corner. After around 3 seconds, enter user setting mode. The first screen you will see is dead zone setting. Dead zone setting main task is adjust the accuracy and sensitivity of the actuator. The adjustments are in degrees. The bigger the dead zone, the less accurate and sensitive the actuator is. The smaller the dead zone is the more accurate and sensitive the actuator is. The range is 0.3° to 3.9°, the system default is 1.0° .	

Step	Menu Operation:- Control Direction Setting	
2	To select direct acting or reverse acting. Direct acting means 4mA is closed and 20mA is open Reverse acting means 4mA is open and 20mA is closed. Press K3 button to switch positive acting and negative acting Press M to enter next setting	 

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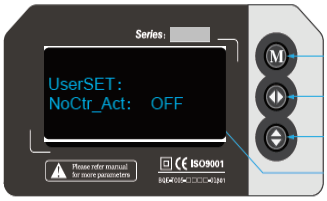
Step	Menu Operation:- No Control Command	
3	This is setting is to determine what the actuator should do on loss of control command. If no modulating signal is received the actuator can move the OPEN position, CLOSED position or KEEP its current position. Press K3 button to switch bettwen 3 choices and shown on left. Once you have selected the position you want, press M to move to next screen.	  

Step	Menu Operation:- Dead Zone Setting	
4	Dead Zone setting main task is to adjust the accuracy and the sensitivity, the unit of measurement is degrees. The bigger the dead zone is the less accurate the actuator is and the lower the dead zone is the more the accurate the actuator is. If too sensitive sometimes the actuator can have 'hunting issue' if input PLC is not as sensitive. Press K3 to increase 0.1 Press K2 to decrease 0.1 Press M to enter next setting.	  

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Step	Menu Operation:- Slight adjustment to valve-off positon	
5	Slight adjustment to valve-off position is to adjust the CLOSED position of the actuator. This is primarily used for where you want to allow for an inaccuracy between the valve stem and the actuator output drive. If the tolerance is not right, the actuator output drive can move a few degrees before it connects to the valve stem. This can mean that the actuator stop moving before the valve is in the fully closed position. This feature enables you to allow for this and effectively let the actuator over travel. • Press K3 button to decrease 0.1° and the menu will show “Offset-Open” which indicates valve-off (CLOSE) position is moving towards the valve-on position (OPEN). If the menu shows “This is maximum”, which means the set value is out of range of valve-off limits. • Press K2 button to increase 0.1° and the menu will show “Offset-Close” which indicates the actuator is moving towards valve-off position. If the menu shows “This is minimum” it means the set value is out of range of valve-off limits. • Press M button to enter next setting.	

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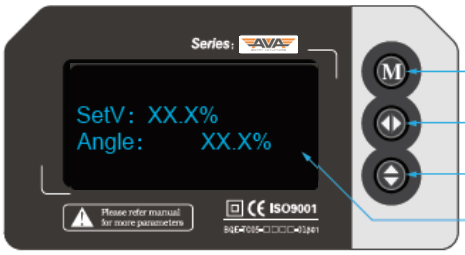

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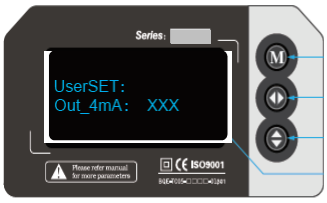
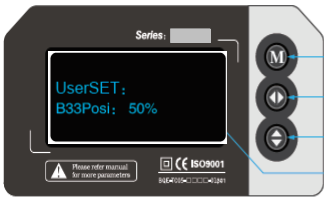
Screen 1.3"OLED,Blue word against black background， 128X64

Step	Menu Operation:- Out 4ma Modifying	
6	If 4mA deviation value of output current is big, user can adjust it by this screen. If the number increases, output current will be greater. If the number decreases then the output will be smaller. Press K3 to increase the figure one by one Press K2 to decrease the figure one by one Press M to access next screen.	

Step	Menu Operation:- Out ma Modifying	
7	If 20mA deviation value of output current is big, user can adjust it by this screen. If the number increases, output current will be greater. If the number decreases then the output will be smaller. Press K3 to increase the figure one by one Press K2 to decrease the figure one by one Press M to access next screen.	

Step	Exit Setup	
8	This screen is the final screen you will see before returning to AUTO mode by saving changes and exiting or returning to screen 1. To save Press K3 and you will see the screen change to show software version, number of cycles and errors (note you wont see number of cycles on modulating actuators) and you will then be returned to the AUTO mode.	

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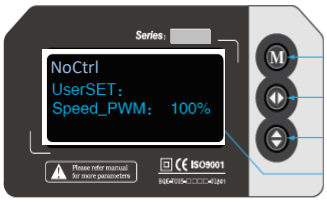
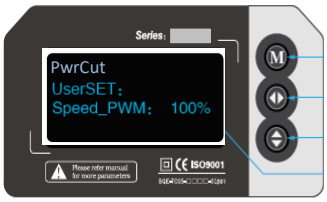
Step	FAULT / ALERT Conditions
9	The Smart series of AVA electric actuators have a number of displays that will occur under certain conditions. The actuators can detect certain errors or alarm conditions and display them on screen. The following Terminology is used to display the following faulty/conditions;

- **NOCTRL** - This is referring to Modulating actuators and is advising the user that the actuator cannot see its digital input command. If using 4-20ma or 0—10V for example, check your supply and connection on the wiring of the actuator. Once the actuator can see the Control input signal again it will work as it should normally.

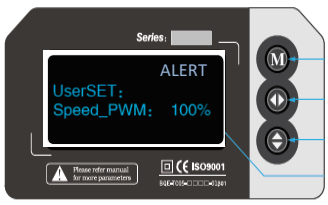


- **PWRCUT** - For Failsafe actuators, the actuator can detect when the power is removed. The actuator will use its alternative power source (capacitor on 20 series or battery for 60/110 series) to open or close the actuator or stay put. Once power is restored the error message will disappear and the actuator will work as it should normally.



- **ALERT -** There are 3 common conditions under which an ALERT will display. They are as follows;

ALERT - Torque Limiter, this will occur when the actuator experiences an over torque condition due to excessive torque in the valve. The actuator has a set maximum torque limiter and monitors an increase in current draw as an indicator or of an over torque situation. The other cause of the torque limiter to operate would be a valve jam. The actuator will stop to protect the gear-box, you can reverse the signal to see if this clears any valve jam. Reverse the signal once more to see the actuator stops in the same place it did previously. Once the jam is cleared of the valve torque issue is resolved, the actuator will work again and the ALERT screen will disappear.



ALERT - Torque Limiter sensor failure - note that there is a sensor monitoring current draw, if this hardware fails then it would replicate the same condition as a torque limiter issue without there being a torque issue. This is non re-pairable by the user and should be returned to the actuator. To check this remove actuator from valve and test free of the valve. If ALERT displays re-turn to supplier.

ALERT– Motor Failure, this will occur if the motor within the actuator devel-ops a fault. This is not repairable by the user. It is identified by applying a con-trol signal to the actuator, if the actuator does not move but you can hear the motor attempting to turn followed by an ALERT and the actuator is not fitted to a valve, this is a sign that the motor could have failed. Return to supplier.

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Step	Common Failure and Processing Method	
10	**Fault**	**Possible Solutions**
	Actuator Not Responding	
1	Power not connected	Connect power
2	Voltage below lever or incorrect	Check if voltage supplied is correct
3	Torque limiter after 3 seconds	Free valve of jam/blockage, check torque in valve
4	Terminal loose or poor contact	Check and correctly terminate
5	Starting capacitance poor run	Contact manufacturer for repair
	No Feedback Signal	
1	Line barrier of user acquisition signal	Connect user acquisition signal
2	Actuator has now power	Connect power and signal will work as normal
	Actuator Not Fully Closed	
1	Using feedback to stop actuator	Do not use limit switches to control open /close actuator. Use motor stops.
2	Actuator moves before valve does	Check tolerance of valve stem vs actuator output drive
	Actuator has water ingress	
1	Actuator has condensation build up	Customer not using internal heater
2	Actuator has water ingress	Cover has been removed and not re sealed correctly
3	Actuator has water ingress	Actuator seals have failed, return to factory
4	Actuator has water ingress	Actuator has been used outside of IP67 rating. Return to factory