



## USER GUIDE VERSION 12.6

- Screen by screen user guide
- Covers Smart Series On Off, On Off f/w Failsafe and On Off Hi Speed
- For Modulating, Modbus, Multi Turn or Timer, see specific guides.
- Firmware guides are updated on a continuous basis for on going development and improvement of our actuators.
- We will release an update to show changes between software as and when we release new firmware versions.
- Check our Product Library online at [www.avactuators.co.uk/support](http://www.avactuators.co.uk/support)

Version 001:13/10/22 subject to change without notice

### SMART ACTUATORS WITH OLED SCREEN, TOUCH BUTTONS AND SMARTMENU™

All of our Smart actuators have a colour OLED screen and 3 x touch buttons. The screen will typically tell you all you need to know about your actuator, from the input command to the actual position, any problems with the actuator such as loss of power (if failsafe) or flash ALERT if the actuator as an alarm condition such as an over torque situation or valve jam. As standard, all of our actuators have Local Control as explained below. The touch buttons are used to navigate our onboard firmware to adapt and change the actuator settings to enable you, the user to customise our Smart actuators to your application and own specific requirements.

#### How to access the main customer accessible menus:

Main Menu:	Hold M for 3 seconds and enter the password 333 to access main user Main Menu.
Local Control:	Hold K3 (bottom button) for 3 seconds and enter the password 111 to access Local Control / manual override
Reset:	Need to go back to factory reset/default settings? Hold all 3 buttons for 3 seconds and enter 6666.
Note:	If the actuators is left in a menu screen without a change in 120 seconds, the actuator will exit the menu.



#### Understanding the default screen: this is the screen you will see when not in a menu but the actuator is powered

1. Input Command: ON = Open OFF = Closed	5. K2 = Button used in SmartMenu	9. On power up shows the total number of errors. You can also view this screen whenever exiting a menu. *Note that this information turns off quickly.
2. Angle: Shown as %. 0% is Closed 100% Open	6. K3 = Button used SmartMenu/Local Control	
3. IDLE: Actuator is waiting next command	7. On power up, shows Firmware Version Number	
4. M = Button to enter / use in SmartMenu	8. On power up, shows total number of cycles	



SCAN ME

New feature, we are adding a QR label to all of our products that will enable users of our product to have quicker and more direct access to support documents via our new purpose built QR website. Simply scan the QR code using your Smart phone camera and you will be taken directly to the specific actuator you have on site and will have access to Technical Datasheets, Firmware guides and product support videos.





English version. Available in Spanish



## USER GUIDE VERSION 12.6

Version 001: 3/10/22 subject to change without notice

Screen by Screen Firmware guide for Smart Actuators Series 10, 20, 50, 80 and 110.

<p><b>UserSET</b> <b>PassWord: XXX</b></p>	<p>User settings are accessed by holding down the 'M' button for ~3 seconds, after this time the screen will request a password. The User Settings password is simply: 333 Use 'K2' to select the column and 'K3' to change the number.</p>
<p><b>UserSET</b> <b>DisMod: English</b></p>	<p>Display Mode allows the user to choose English or Chinese. If you hard reset the actuator using 6666 password, this will default the actuator to Chinese. To change back to English, simply hold M, enter 333, press M to go to the first screen and press K2 to select English.</p>
<p><b>UserSET</b> <b>DeadZone: X. X%</b></p>	<p>DeadZone is a sensitivity feature which allows for much more accurate positioning. The AVA default setting stops the actuator from hunting on a signal.</p>
<p><b>UserSET</b> <b>Hysteres: X. X%</b></p>	<p>This option would be used if the output drive does not engage with the valve stem immediately. The actuator will move to the set % before it starts its 90° turn.</p>
<p><b>UserSET</b> <b>CIPosAdj: XX%</b></p>	<p>This setting allows you to make a small adjust to angle of the closed position.</p>
<p><b>UserSET</b> <b>OpPosAdj: XX%</b></p>	<p>This setting allows you to make a small adjust to angle of the open position.</p>
<p><b>UserSET</b> <b>Speed_PUL: XXX%</b></p>	<p>PULSE mode (PUL): the bigger the setting is the slower the working time is, the smaller the setting is the faster the working time is. Note that this cannot increase the standard set working time, it can only slow it down.</p> <p style="text-align: right;"><i>Note speed control can reduce torque output</i> </p>
<p><b>UserSET</b> <b>Speed_PWM: XXX%</b></p>	<p>The method of speed control. The bigger the value the faster the actuator will operate, the lower the value the slower the actuator will work.</p> <p style="text-align: right;"><i>Note speed control can reduce torque output</i> </p>
<p><b>UserSET</b> <b>StallTime: 1X</b></p>	<p>Stall Time represents the delay between the actuator detecting an error and the actuator triggering the alert signal (LED will light <b>BLUE</b>).</p>



## USER GUIDE VERSION 12.6

Version 001: 3/10/22 subject to change without notice

Screen by Screen Firmware guide for Smart Actuators Series 10, 20, 50, 80 and 110.




<p><b>UserSET</b> <b>B33D_RefCLP: CCW</b></p>	<p>This parameter means the third position is achieved according to rotation in the direction of CCW or CW . CCW:counterclockwise ; CW:clockwise.</p>
<p><b>UserSET</b> <b>B33Posi: XX%</b></p>	<p>B33 is the AVA version of a 3rd position. This setting allows the user to adjust the angle of that 3rd position. For example you can set 0-90-180 or 0-45-90 degree operation.</p>
<p><b>UserSET</b> <b>FK_Refer: ANGLE</b></p>	<p>FK_Refer :By2CMD:Feedback is execute according to the feedback mode CM_POS: Feedback is according to the angle corresponding with the command. At this mode, the above "feedback mode" is invalid and the feedback is only execute according to the angle.</p>
<p><b>UserSET</b> <b>FK_Mode: FK_ERR</b></p>	<p>This setting sets the feedback mode. FK_ERR means the feedback is for the alarm and the LED will light blue . If user choose the B33 , the led will change to Blue when the actuator is in the 3rd position. Blue LED will also show when actuator is in ALERT condition.</p>
<p><b>UserSET</b> <b>RB1Mode: REMOTE</b></p>	<p>Refers to the feedback mode, the option as following: REMOTE: Remote function. The LED will show blue and alarm signal will be remoting signal when someone press the key. Out_4mA:4-20mA feedback.</p>
<p><b>UserSET</b> <b>Out_4mA: X. X%</b></p>	<p>If the deviation value of the output current of 4mA is large, it can be adjusted by modifying this value</p>
<p><b>UserSET</b> <b>Out_20mA: XX%</b></p>	<p>If the deviation value of the output current of 20mA is large, it can be adjusted by modifying this value</p>
<p><b>UserSET</b> <b>CMD_Swap: Yes</b></p>	<p>Command swap is to reverse the input command from the standard. You can reverse the signal so that the standard ON command would be OFF and OFF would be ON.</p>
<p><b>UserSET</b> <b>BothIN_ON: KEEP</b></p>	<p>This setting allows you to set how you want the actuator to respond on receiving input voltage to both the ON and OFF command. Usually you will operate the actuator by either powering ON (open) or powering OFF (closed) but if you apply power to both ON and OFF at the same time, we can set the actuator to keep current position, Open/ Close or go to a 3rd (B33) position.</p>



## USER GUIDE VERSION 12.6

Version 001: 3/10/22 subject to change without notice

Screen by Screen Firmware guide for Smart Actuators Series 10, 20, 50, 80 and 110.

<p><b>UserSET</b> MVF_FiltCoe: 15</p>	<p>The actuator will digitally filter the input signal. The bigger value, the better filter effect, but the responding time of the actuator to the signal will be longer. So, this value should not be too high. <i>Not recommended to change default setting.</i></p>
<p><b>UserSET</b> LPF_FiltCoe: 15</p>	<p>LPF_FiltCoe: Low-Pass-Filter. The smaller coefficient, the more stable filtering effect, the lower sensitivity; The bigger coefficient, the higher sensitivity, the more unstable filtering effect; <i>Not recommended to change default setting.</i></p>
<p><b>UserSET</b> PDChk_Time: 20x</p>	<p>Power Down Check Time dictates the delay on the actuator using the capacitors to close on loss of power. E.g. if loss of power lasts 2 seconds the actuator would not immediately begin to close. <i>Not recommended to change default setting.</i></p> <p style="text-align: right;"><i>*Only applicable if actuator is Failsafe type</i> </p>
<p><b>UserSET</b> PDAction: 20x</p>	<p>Power Down Action allows the user to dictate the failsafe position. Whether that be Open, Close, complete the last signal given or Keep in position.</p> <p style="text-align: right;"><i>*Only applicable if actuator is Failsafe type</i> </p>
<p><b>UserSET</b> CapCharge: XXX%</p>	<p>Failsafe actuator capacitors should be fully charged before the actuator is operable and therefore the default setting reflects this. But with this setting you can change the actuator to power on at an earlier %.</p> <p style="text-align: right;"><i>*Only applicable if actuator is Failsafe type</i> </p>
<p><b>UserSET</b> MotLock: LOCK</p>	<p>This parameter is majorly used for the Failsafe series. The capacitor inside the actuator will supply energy for motor, so this parameter would lock the outside manual control.</p>
<p><b>UserSET</b> TestAlarm: ON</p>	<p>To replicate an 'Alert' situation we can set the 'Test Alarm' to 'ON'. This will turn the LED <b>Blue</b>, if you purchased your actuator with an alarm relay, this will also generate a signal.</p>
<p><b>UserSET</b> BrkDelay: XXms</p>	<p>Break Delay allows the actuator to delay its movement from one position to another.</p>
<p><b>UserSET</b> ExitSET: Push K3</p>	<p>Once you have made any of the necessary changes, please press K3 to save and exit. You will see the message 'SaveOK' appear and the actuator will display a 'Thank you for your use' message and default back to the default screen that displays actuator input and actual position.</p>



## USER GUIDE VERSION 12.6

Version 001: 3/10/22 subject to change without notice

Screen by Screen Firmware guide for Smart Actuators Series 10, 20, 50, 80 and 110.

UserSET

PassWord: 168

UserSET

SavCCWopen: XXXX

UserSET

SavCWCclose: XXXX

Setting new working angle, for example 0-180 degree operation:

Hold M and K3, screen will show MK3. Hold for 3 seconds. Enter password 168.

1. First screen is to adjust current position. Press M to second screen. T
  2. Second screen is used to set the Open position. Move actuator to desired open position. Position is shown as 4 digit number. Number generated via digital encoder.
  3. Third screen is used to set the Closed position. Move the actuator to the desired position. Please note that on saving and exiting this screen via the final screen, you will not only set the open / close position but also the end of travel limit switches. Number is generated by digital encoder. The close position number must be less than the open.
- Final screen: press K3 (bottom button to exit)

*For setting 0-180, follow this simple step. Set the open position to show Yellow/Yellow and for closed position, rotate 180 degrees to show Yellow/Yellow. Example below to show our meaning.*



Open 100% 90°=  
Yellow/Yellow  
Green LED



Closed 0% 0°=  
Red / Red  
Red LED

Standard 0-90 will show this configuration.



Open 100% 180°=  
Yellow/Yellow  
Green LED



Closed 0% 0°=  
Red / Red  
Red LED

When actuator is changed to 0-180, the indicator/LED will show as shown. A visually simple way to set 0-180.



Manual : OFF  
Angle : XX.XX%  
K2 OFF

Local Control / Manual Control under power:

This mode is to control the actuator locally when power is applied to the actuator. Simply hold the bottom button (K3) for 3-4 seconds and enter the password 111 and press M.

Once in the menu you will see Manual displayed on screen, the actuator can now be controlled by pressing K2 (middle button) and K3. This will open/close the actuator. To exit the screen simply press M and you will return to the powered mode and the actuator will return to the signal currently being applied. If the actuator is left in Local Control, after approx. 45 seconds the actuator will return to the powered mode.

Remember to not use the Manual Override via Allen key when power is applied. Refer to the Installation, Operation and Maintenance guide.



For more support documents, video and general product information visit [www.avactuators.co.uk](http://www.avactuators.co.uk).

To view other Firmware guides for Modulating actuators and Series 200-400, click on the image of the actuator. As we update our Firmware guides, we will make superseded versions available for download on our website.

English version. Available in Spanish

