



# USER GUIDE VERSION 13.1

## RELEASE NOTES

The following changes have been made to our actuators onboard firmware:

- Parameter name changes -Out\_4mA/Out\_20mA to OutmA\_0/OutmA-100
- New Parameters—RevDis, DisPosi, AFKMod (see details below)
- Removed Parameters— FK\_Ref, FK\_Mode.

For additional support documents and superseded firmware guides, visit the help centre on our website, click here: [Help Centre \(avactuators.co.uk\)](http://Help Centre (avactuators.co.uk))

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



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

1	<p><b>UserSET</b></p> <p>DisMod: English</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>
2	<p><b>UserSET</b></p> <p>Hysteres: X.X%</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>Available Range: 0.0% - 9.0%</p>
3	<p><b>UserSET</b></p> <p>DeadZone: X.X%</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>Available Range: 0.3% - 9.9%</p>
4	<p><b>UserSET</b></p> <p>Speed_PUL: XXX%</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>Available Range: 5%-100%</p> <p><i>Note speed control can reduce torque output</i></p> 
5	<p><b>UserSET</b></p> <p>Speed_PWM: XXX%</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>Available Range: 20% - 100%</p> <p><i>Note speed control can reduce torque output</i></p> 
6	<p><b>UserSET</b></p> <p>StallTime: 1X</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> <p>Available Range: 5x - 90x</p>
7	<p><b>UserSET</b></p> <p>BrkDelay: XXms</p>	<p>Break Delay allows the actuator to delay its movement from one position to another.</p> <p>Available Range: 0-990ms</p>
8	<p><b>UserSET</b></p> <p>SWDIRDly: XXXms</p>	<p>SWDIR_Dly is system default parameter. User is not necessary to set its value during normal usage. This parameter is used to enhance the stability of motor during working.</p> <p>Available Range: 20ms - 2000ms</p>
9	<p><b>UserSET</b></p> <p>CIPosAdj: XX%</p>	<p>This setting allows you to make a small adjust to angle of the closed position.</p> <p>Available Range: -25% - 25%</p>



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<p>10</p> <p><b>UserSET</b></p> <p><b>OpPosAdj: XX%</b></p>	<p>This setting allows you to make a small adjust to angle of the open position.</p> <p>Available Range: 30% - 220%</p>
<p>11</p> <p><b>UserSET</b></p> <p><b>RevDis: True</b></p>	<p>4-20mA: Control direction: Direct acting (Dir), Reverse acting (Rev). Direct acting: 4mA means valve is totally off, 20mA means valve is totally on. Reverse acting: 4mA means valve is totally on, 20mA means valve is totally off</p> <p>Available Range: Normal/DisRev</p>
<p>12</p> <p><b>UserSET</b></p> <p><b>DisPosi: OffSet</b></p>	<p>DisPosi is the setting to displaying mode. This parameter is setting to the display value of Posi 4mA and Posi 20mA. 0-100%:is logic displaying value;Pos420 is practical position value.</p> <p>Available Range: 0-100%/Pos420</p>
<p>13</p> <p><b>UserSET</b></p> <p><b>RB1_Mode: 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>Available Range: REMOTE/Out420</p>
<p>14</p> <p><b>UserSET</b></p> <p><b>mAFKMod: OffSet</b></p>	<p>FKChk Mod is used to set the feedback mode</p> <p>Available Range: OffSet/NoOFST</p>
<p>15</p> <p><b>UserSET</b></p> <p><b>OutmA_0: 200A</b></p>	<p>OutmA_0 is the feedback benchmark for the position of close valve 4mA. If 4mA deviation value of output current is too big, user can adjust it by this item. If the number increases, output current will be bigger .If the number decreases, the output current will be smaller.</p>
<p>16</p> <p><b>UserSET</b></p> <p><b>OutmA_100: 500</b></p>	<p>OutmA_100 is the feedback benchmark for the position of close valve 20mA.If 20mA deviation value of output current is too big, user can adjust it by this item. If the number increases, output current will be bigger, If the number decreases, the output current will be smaller.</p>
<p>17</p> <p><b>UserSET</b></p> <p><b>MVF_FiltCoe: 15</b></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. Not recommended to change default setting.</p> <p>Available Range: 5 - 16</p>
<p><b>UserSET</b></p> <p><b>LPF_FiltCoe: 15</b></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; Not recommended to change default setting.</p> <p>Available Range: 0.0-1.0</p>



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19	<p><b>UserSET</b> PDChk_Time: XX%</p> <p>PDChk_Time means detecting time of power off exactly. The actuator will test the supply power signal again after basic time. Adjusting this value will change the interval time .It is not necessary to adjust this value during normal use. The default is 50%.</p>
20	<p><b>UserSET</b> PDAction: 20x</p> <p>Power down command: It means the command executed by actuator when actuator loss of power supply, choice is :ON/OFF/KEEP.</p> <p style="text-align: right;"><i>*Only applicable if actuator is Failsafe type</i> </p>
21	<p><b>UserSET</b> CapCharge: XXX%</p> <p>Only useful for KT series, and could shows energy percent when it could enter automatic mode after power-on ,which in order to ensure the actuator has enough energy to act " 13 command". The default of the actuator with KT is 95%.The default of the actuator without KT is 0%</p> <p style="text-align: right;"><i>*Only applicable if actuator is Failsafe type</i> </p>
22	<p><b>UserSET</b> B33Posi: XX%</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>Available Range: 1% - 99%</p> <p style="text-align: right;"><i>*Only applicable if actuator is Failsafe type</i> </p>
23	<p><b>UserSET</b> B44Posi: XX%</p> <p>B44 position: only available in B44 control model Mid1position is the first position of the B44 control. The default is 33%.</p>
24	<p><b>UserSET</b> TestAlarm: ON</p> <p>Test Alarm means the function of testing to Alarm outout signal is ON or OFF.</p>
25	<p><b>UserSET</b> StartUpDly: X.Xs</p> <p>StartUpDly is the displaying time of the start-up interface.</p>
26	<p><b>UserSET</b> Cycles: XXXXXXXXX</p> <p>Cycles is parameter which displays the running numbers of times of the actuator.</p>
27	<p><b>UserSET</b> ErrStall: XXXXXXXXX</p> <p>ErrStall is the number of times the actuator has gone into alarm .</p>



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<p><b>UserSET</b></p> <p><b>PassWord: 168</b></p>	<p>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.          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)</p> <p><i>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.</i></p>			
<p><b>UserSET</b></p> <p><b>SavCCWopen: XXXX</b></p>				
<p><b>UserSET</b></p> <p><b>SavCWCclose: XXXX</b></p>				
	<p>Open 100% 90°=          Yellow/Yellow          Green LED</p>		<p>Closed 0% 0°=          Red / Red          Red LED</p>	<p>Standard 0-90 will show this configuration.</p>
	<p>Open 100% 180°=          Yellow/Yellow          Green LED</p>		<p>Closed 0% 0°=          Red / Red          Red LED</p>	<p>When actuator is changed to 0-180, the indicator/LED will show as shown. A visually simple way to set 0-180.</p>
	<p>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.</p>			
<p><b>Manual: OFF</b></p> <p><b>Angle: XX.XX%</b></p> <p><b>K2 OFF</b></p>	<p>Remember to not use the Manual Override via Allen key when power is applied. Refer to the Installation, Operation and Maintenance guide.</p>			



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.

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