REact30DC PoP
Initial Startup and Calibration

Mounting React30DC-Pop to Valve Body

- **Tools Required**
  - 24MM Wrench
  - 19MM Wrench
  - 8MM Wrench

Mounting React30DC-Pop to Valve Body

1) Actuator stem/ valve stem interference may prevent actuator from mounting to valve body

2) If so, pull down on manual override knob and rotate handwheel counterclockwise to raise actuator stem out of way

Mounting React30DC-Pop to Valve Body

3) Attach actuator spindles to valve body using lock washer and nut (24MM Wrench)

Mounting React30DC-Pop to Valve Body

4) Screw on nut and lock washer onto valve stem

5) Detach the steel travel indicator and valve stem coupler from actuator coupler using 10mm wrench. Slide steel travel indicator over valve stem coupler and screw onto valve stem

6) Lower actuator using handwheel until the two coupling pieces are just apart from each other

7) Attach coupling pieces together using 10MM bolts

8) Lower actuator so pieces are joined together (be careful not to overturn handwheel), tighten 10MM bolts

Mounting React30DC-Pop to Valve Body

9) Tighten valve stem nut.

Setup of React30DC-Pop

- **Tools Required**
  - 4MM Allen Wrench
  - T10 Screwdriver
  - Multimeter (optional)

Setup of React30DC-Pop

10) Remove actuator cover using 4MM Allen Wrench

**Be sure to fully back out screw before removing cover as rod that this threads into can be damaged if cover is removed prior to unthreading fully

Setup of React30DC-Pop

This valve has two torque switches. When the valve is an intermediate position the torque lever will remain horizontal.

Setup of React30DC-Pop

11) Using handwheel, carefully raise the plug into valve seat until the torque lever engages the lower torque switch, the valve is now fully shut.

Setup of React30DC-Pop- Electrical

12) Connect 120 VAC Power Supply to Power Converter.

Setup of React30DC-Pop- Electrical

13) The supercapacitor power supply terminal block is shipped disconnected. Connect as shown in attached picture

Setup of React30DC-Pop- Electrical

14) Locate the Repos Positioner and put the actuator into manual mode by pressing the A/M Key once. MAN will be displayed in the lower left hand corner of the screen.

15) Press the down arrow until the valve is closed.

Setup of React30DC-Pop- Electrical

16) Using a multimeter, set to DC mode measure the voltage across DZ to ground **while pressing the down arrow**. If you don't get 24VDC measuring DZ, then check WZ using the same method.

24VDC on DZ means the torque switch is engaging

24VDC on WZ means the lower limit switch is engaging

Setup of React30DC-Pop- Electrical

17) Disconnect the supercapacitor power supply terminal block.

Setup of React30DC-Pop

18) When the valve is in the fully closed position (torque switch engaged) , the scribe line on the potentiometer should be in line with the triangle. If not, gently pull back on the metal spring and rotate until it is.

** If multimeter available, the measured resistance between grey and red wire should be 100 Ohm +/- 20 Ohm

Setup of React30DC-Pop

There are different potentiometer gears based upon the valve stroke, this should be set up from factory or assembler.

Up to 50mm real valve stroke...

- **Nr.1** stroke 0-24mm (dk 10.5mm)
- **Nr.2** stroke 25-29mm (dk 12.6mm)
- **Nr.3** stroke 30-36mm (dk 16.1mm)
- **Nr.4** stroke 37-54mm (dk 23.1mm)

From > 50mm real valve stroke
(Actuator with adaption spindle)

- **Nr.4** stroke 37-54mm (dk 23.1mm)

Setup of React30DC-Pop

This valve has four limit switches

E1: Upper Limit

E2: Lower Limit

E3&E4: Between Limits

Setup of React30DC-Pop

When the valve is in the fully closed position (torque switch engaged) the upper limit switch should be set

19) Using the T10 screwdriver, turn the adjustment screw E1 until the yellow piece engages the limit switch

**You should hear an audible “click” and also see the switch engaged

20) Back off on the adjustment screw until there is another click and the switch is no longer engaged

**This ensures the torque switch engages prior to the upper limit and the valve will be fully shut

Setup of React30DC-Pop

21) Identify the stroke of the valve

22) Make a mark or use provided position sticker to mark the closed position

23) Make a mark at the upper position using the stroke identified in step 15

24) Use the manual handwheel, drive the valve open to the lower limit. Using the T10 screwdriver, turn the adjustment screw E2 until the yellow piece engages the limit switch. The lower limit is now set

Setup of React30DC-Pop- Electrical

- **Tools Required**
  - Flat-head Instrumentation Screwdriver

Setup of React30DC-Pop- Electrical

25) Connect the supercapacitor power supply terminal block.

Setup of React30DC-Pop- Electrical

DIP1 = **off** → Spindle extended
DIP1 = **on** → Spindle retracted

26) Set the failure position on loss of power (DIP1), On for fail closed

27) Set the actuator speed using DIP2 (01 preferred: 1-Off, 2-On)

Actuator Speed

REact30DC PoP	***low***	***high***
DIP2= **00**→	0,20mm/sec	0,60mm/sec
01→	0,28mm/sec	0,74mm/sec
10→	0,42mm/sec	1,12mm/sec
11→	0,84mm/sec	2,24mm/sec

00	DIP1
01	DIP1
10	DIP1
11	DIP1

DIP 2: 1-OFF 2-ON

DIP 1: ON

Setup of React30DC-Pop- Electrical

28) Connect signal input to 68 & 69 on the RePos Positioner

Setup of React30DC-Pop- Electrical

29) To preform initial setup, press and hold the A/M button for approximately 4 seconds until you enter the main menu

30) Use the Up/Down arrows until you get to the Conf option, press the A/M button to confirm

31) You may be prompted for a password, press the A/M button and then use the Up/Down arrow until you get to 20, press the A/M button to confirm

Setup of React30DC-Pop- Electrical

32) Use the Up/Down arrows until Ainp is displayed, press the A/M key. Use the Up/Down arrows until the correct input signal is displayed, press the A/M button to confirm

33) Use the Up/Down arrows until SpRv is displayed, press the A/M key. Use the Up/Down arrows until Rev is displayed, press the A/M button to confirm.

			Configuration param
#	Display	Description	Parameter Value
1	**Ainp**	Analog Input	0-20mA / 4-20mA 0-10V / 2-10V
2	**SpRv**	Setpoint Inversion	Dir (Direct) Rev (Reverse)
3	**Aout**	Analog Output Type	0-20mA / 4-20mA 0-10V / 2-10V
4	**Rinv**	Feedback signal Inversion	Dir (Direct) Rev (Reverse)
5	**SplM**	Split range mode	None, High, Low
6	**SplT**	Split range Threshold	20…80%
7	**Safe**	Safety Position	Off Open Close
8	**DBnd**	Dead band	0.5…5.0%
9	**MnTT**	Minimum Travel Timeout	0……1000s
10	**CITe**	Close Tight Enable	En (Enabled) Dis (Disabled)
11	**CITB**	Close Tight Band	0.5….5.0%

Setup of React30DC-Pop- Electrical

34) Use the Up/Down arrows until Safe is displayed, press the A/M button. Use the Up/Down arrows until Open is displayed on the screen

35) Press and hold the A/M button for approximately 4 seconds until you get back to the main valve display screen

			Configuration param
#	Display	Description	Parameter Value
1	**Ainp**	Analog Input	0-20mA / 4-20mA 0-10V / 2-10V
2	**SpRv**	Setpoint Inversion	Dir (Direct) Rev (Reverse)
3	**Aout**	Analog Output Type	0-20mA / 4-20mA 0-10V / 2-10V
4	**Rinv**	Feedback signal Inversion	Dir (Direct) Rev (Reverse)
5	**SplM**	Split range mode	None, High, Low
6	**SplT**	Split range Threshold	20…80%
7	**Safe**	Safety Position	Off Open Close
8	**DBnd**	Dead band	0.5…5.0%
9	**MnTT**	Minimum Travel Timeout	0……1000s
10	**CITe**	Close Tight Enable	En (Enabled) Dis (Disabled)
11	**CITB**	Close Tight Band	0.5….5.0%

Setup of React30DC-Pop- Auto Calibration

36) To preform autocalibration, press and hold the A/M button for approximately 4 seconds until you enter the main menu

37) Use the Up/Down arrows until you get to the Cmds option, press the A/M button to confirm

38) You may be prompted for a password, use the Up/Down arrow until you get to 20, press the A/M button to confirm

Setup of React30DC-Pop- Auto Calibration

39) Select Auto using the Up/Down arrows, press A/M to confirm

40) Press A/M button when prompted for GoAuto

41) It will then ask for you to move motor to middle position, use the Up/Down arrows to move the valve to the middle position of its stroke

42) Press the A/M button to begin auto calibration (should take around 5 minutes)

43) When successful, press the A/M button to get back to the Main Menu, hold the A/M button to get to main valve screen

Setup of React30DC-Pop- Deadband

44) To adjust deadband, press and hold the A/M button for approximately 4 seconds until you enter the main menu

45) Use the Up/Down arrows until you get to the Conf option, press the A/M button to confirm

46) You may be promoted for a password, use the Up/Down arrow until you get to 20, press the A/M button to confirm

Setup of React30DC-Pop- Deadband

47) Use the Up/Down arrows until DBnd is displayed, press the A/M key. Use the Up/Down arrows until the desired deadband is displayed, press the A/M button to confirm

48) Press and hold A/M button for 4 seconds until the main valve screen is displayed

49) The valve is now fully setup for operation, the cover can be put back on using the 4MM Allen Wrench

			Configuration param
#	Display	Description	Parameter Value
1	**Ainp**	Analog Input	0-20mA / 4-20mA 0-10V / 2-10V
2	**SpRv**	Setpoint Inversion	Dir (Direct) Rev (Reverse)
3	**Aout**	Analog Output Type	0-20mA / 4-20mA 0-10V / 2-10V
4	**Rinv**	Feedback signal Inversion	Dir (Direct) Rev (Reverse)
5	**SplM**	Split range mode	None, High, Low
6	**SplT**	Split range Threshold	20…80%
7	**Safe**	Safety Position	Off Open Close
8	**DBnd**	Dead band	0.5…5.0%
9	**MnTT**	Minimum Travel Timeout	0……1000s
10	**CITe**	Close Tight Enable	En (Enabled) Dis (Disabled)
11	**CITB**	Close Tight Band	0.5….5.0%