

Ref: FAQ0084

Made By: AB 28/01/15

Version: 1.0

Title – ControlMate Calibration

(Issue 1)

**FM Pressure Controller - Pressure transducer calibration and test** 

Note- the word 'Stable' in the following test procedure means that the ADC value settles after a short time and does not fluctuate more than +/- 2 ADC values.

1. Connect a Druck pressure calibrator to the 'PRV INLET PRESSURE' and 'PRV OUTLET PRESSURE' transducers.

Open the valve on the Druck so that both pressure transducers see atmospheric pressure.

2. Select the 'Calibrate Logger' option from the 'ReaderMate 301' main dialogue by pressing F5. The 'Logger calibrator' dialogue should appear similar to figure 3.1.

Logger Calibrator		
Location: Res	ID: NW0001 - 1	
Calibration BAD = 10000 BAD Volts = $-0.18$ V		
F1 Zero F2 Hi Pt F3 Value		

Figure 3.1: The 'Logger Calibrator' dialogue.

3. Using the Page Up key change the logger channel ID to 'NW0002-2' as illustrated in figure 3.2.

E Logger Calibrator
Location: Res ID: NW0002 - 2 Transducer: 1590.290 mV @ 12937 mBar Calibration BAD = 10000 BAD Bad Calibration Values
<u>F1</u> -Zero <u>F2</u> -Hi Pt <u>F3</u> -Transducer <u>F4</u> -Value

Figure 3.2: The 'Logger Calibrator' dialogue appearance showing ID: NW0002-2.

4. Type 'XXXBAR' and the 'Logger Calibrator' dialogue should display the current pressure value in Bar (calculated from the ADC value) and '12 Bit ADC' value as illustrated in figure 3.3.

🗾 Logger Calibrator	
Location: Res	ID: NW0002 - 2
Calibration Pressure = 10000 Pressure = 51.49 Bar 12 Bit ADC = 183 F1-Zero F2-Hi Pt F3-Mid Pt	mBar <u>F4</u> -Value





5. Ensure that the 'Calibration Pressure' value is 10000 mBar. If it is not select the 'Value' option by pressing F4 and enter 10000 mBar as illustrated in figure 3.4.

Enter Calibration Pressure (mBar)		
10000		
OK CANCEL		

Figure 3.4: The 'Enter Calibration Pressure (mBar)' dialogue.

6. Ensure that the 12 Bit ADC reading is in the range 113 to 570 and is stable and then select the 'Zero' option by pressing F1. Record the 12 Bit ADC reading.

7. Using the Page Down key change the logger channel ID to 'NW0001-1' as illustrated in figure 3.5.

🗾 Logger Calibrator	
Location: Res	ID: NW0001 - 1
Calibration Pressure = 10000 Pressure = 0.00 Bar 12 Bit ADC = 337 F1-Zero F2-Hi Pt F3-Mid Pt	mBar F4Value

Figure 3.5: The 'Logger Calibrator' dialogue appearance showing ID: NW0001-1.

8. If necessary type 'XXXBAR' and the 'Logger Calibrator' dialogue should display the current pressure value in Bar (calculated from the ADC value) and 12 Bit ADC vlaue.

9. Ensure that the 'Calibration Pressure' value is 10000 mBar. If it is not select the Value option by pressing F4 and enter 10000 mBar as illustrated in figure 3.4.

10. Ensure that the 12 Bit ADC reading is in the range 113 to 570 and is stable and then select the 'Zero' option by pressing F2. Record the 12 Bit ADC reading

11. Close the valve on the Druck and pressurise the inlet and outlet pressure transducers to 10.00 Bar.

12. Ensure that the 12 Bit ADC reading is in the range 1515 to 2199 and is stable and then select the 'Hi Pt' option by pressing F1. Record the 12 Bit ADC reading



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13. Using the Page Up key change the logger channel ID to 'NW0002-2'

14. Ensure that the 12 Bit ADC reading is in the range 1515 to 2199 and is stable and then select the 'Hi Pt' option by pressing F1. Record the 12 Bit ADC reading

15. Exit the 'Logger Calibrator' by pressing the Esc key.

16. Select the 'Setup Logger' option from the 'ReaderMate 301' main dialogue by pressing F1. The 'Logger Setup (Online)' dialogue should appear similar to figure 3.6.

17. Record the pressure range for Logger ID NW0001-1, which should be between 220m and 290m.

18. Using Page Up move to Logger ID NW0002-2 and record the pressure range, which should be between 220m and 290m.

F Logger Setup (Online)	X
Logging Start (GMT) = 07:41 16/08/10 (Barrel) F1 - Read Logger Setup (Page Up/Down) F2 - Logger ID = NW0001 - 1 F3 - Logger (GMT) = 11:51:30 17/08/10 F4 - Logging Rate = 15 Min F5 - Pulse Input = Flow @ 10.000 1/Pulse F6 - ADC Input = Pressure @ 0-185.6 m F7 - Register = <b>5.00000</b> F8 - Location = Res F9 - Dial Back = No Inputs F10 - Setup Logger	

Figure 3.6: The 'Logger Setup (Online)' dialogue appearance after pressure transducer calibration.

## **Document History:**

Edition	Date of Issue	Modification	Notes
1st	28/01/15	Release	