

Troubleshooting Guide: ILM-4 **FOOD**



Please note: This troubleshooting guide is for ILM-4 and ILM-4R models produced after April 2018

ILM-4 Full Range Calibration Procedure

Calibrating using a full range

1. Make sure you know the milli siemens range required for your system / process
2. Obtain good known conductivity reference solutions to complete the calibration. Typically, distilled water would be used as the low point, and you would select two reference solutions that would represent a mid-point and a high-point (at least 80% of full range) across your required range
3. Test the unit in each reference solution without making any adjustments and record all values
4. If the readings differ by the same amount in each solution, complete an Offset adjustment (**See Procedure A**) by using either the push buttons on the display or the MPI-200 Software/Cable
 - An offset adjustment is an addition or subtraction to the value to obtain a linear reading. For example, if the difference is +1 mS/cm, the offset would be a -1 mS/cm

Reference Solution	Sensor Reading	Difference	Offset
0 mS/cm (distilled water)	1 mS/cm	+1 mS/cm	-1 mS/cm
20 mS/cm	21 mS/cm	+1 mS/cm	-1 mS/cm
100 mS/cm	101 mS/cm	+1 mS/cm	-1 mS/cm

5. If the readings vary by a different amount in each solution, complete a Slope Adjustment (**See Procedure B**) by using either the push buttons on the display or the MPI-200 Software/Cable
 - The correction here will represent a % error. The default value should be 100% but can be adjusted down to a minimum of 75% or up to a maximum of 125% to yield the acceptable % error (standard deviation) needed for a linear reading for your process parameters. The slope adjustment may need to be completed multiple times to reach a linear reading.

Reference Solution	Sensor Reading	Difference	% Error	Slope
0 mS/cm (distilled water)	1 mS/cm	+1 mS/cm	1%	99%
20 mS/cm	23 mS/cm	+3 mS/cm	3%	97%
100 mS/cm	105 mS/cm	+5 mS/cm	5%	95%

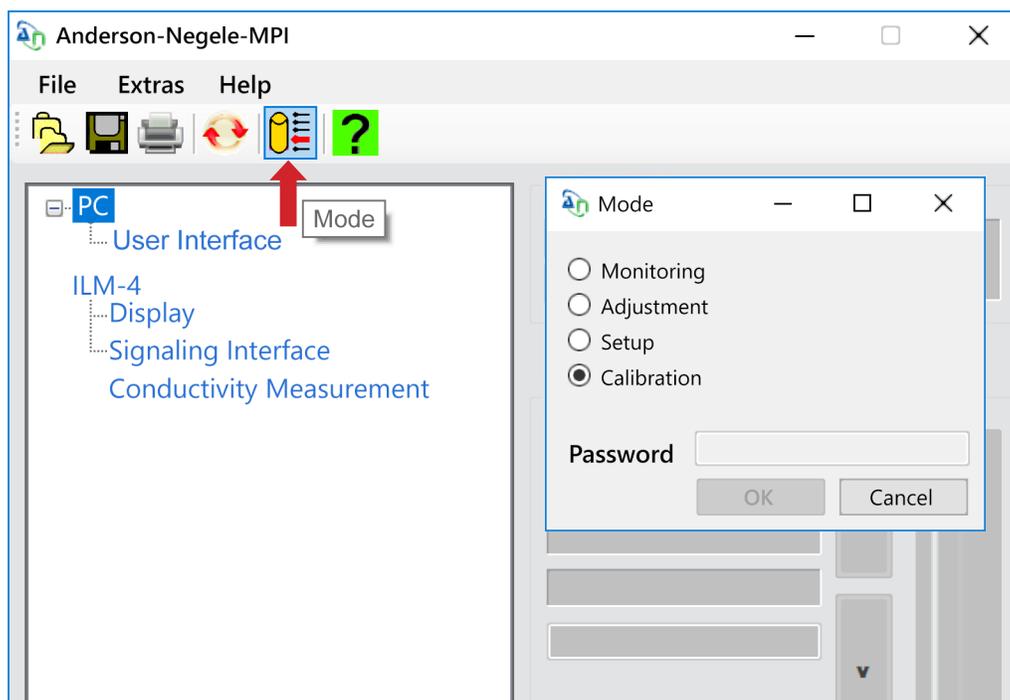
Changing Offset using push buttons

1. Long right press to Menu
2. Short right press down to Calibr.
3. Long right press to Calibration menu
4. Long right press to Conductivity 1
5. Long right press to highlight
6. Short right press to underscore leftmost digit
7. Long right press to highlight digit
8. Use left and right buttons to change as needed
9. Long right press to unhighlight
10. Short right press to underscore second digit
11. Long right press to highlight digit
12. Use left and right buttons to change as needed
13. Long right press to unhighlight
14. Short right press to highlight all
15. Long right press to Save Data?
16. Short right press for yes
17. Repeat as needed for Cond and Conductivity 2



Changing Offset using MPI-200 Software

1. Make sure unit is powered with 24V DC
2. Make sure green board on the adapter is facing towards the connectors on ILM
3. Open Software
4. Click on ILM-4
5. Click on Extras tab on top of screen
6. Select Calibration
7. Enter password (5315)
8. Click OK



Changing Offset using MPI-200 Software (cont'd)

9. Click on Conductivity Measurement
10. Click on Conductivity 1
11. Click on Offset Conductivity 1
12. Select red screwdriver to enable editing (1)
13. Use up and down arrows to adjust range (2)
14. Click on green check mark to save (3)

The screenshot displays the Anderson-Negele-MPI software interface. On the left, a tree view shows the navigation path: PC > ILM-4 > Conductivity Measurement > Conductivity 1 > Offset Conductivity 1. The main panel is divided into three sections: Process Value, Parameter, and Source Value. The Process Value section shows 'Conductivity 1' with a value of '0 mS/cm' and a green 'ok' button. The Parameter section shows 'Offset Conductivity 1' with a value of '0 mS/cm', a range of '250 mS/cm' to '-250 mS/cm', and a red '2' next to the range adjustment arrows. The Source Value section shows 'Temperature' with a value of '73.6 °F' and a green 'ok' button. At the bottom, a status bar shows '00:05:03 | Power: PC | Mode: Calibration | Uart0-ANEG: COM4 | Status'. A red '3' is placed over a green checkmark icon, and a red '1' is placed over a red screwdriver icon in the bottom right area of the main panel.

Changing Slope Adjustment using push buttons

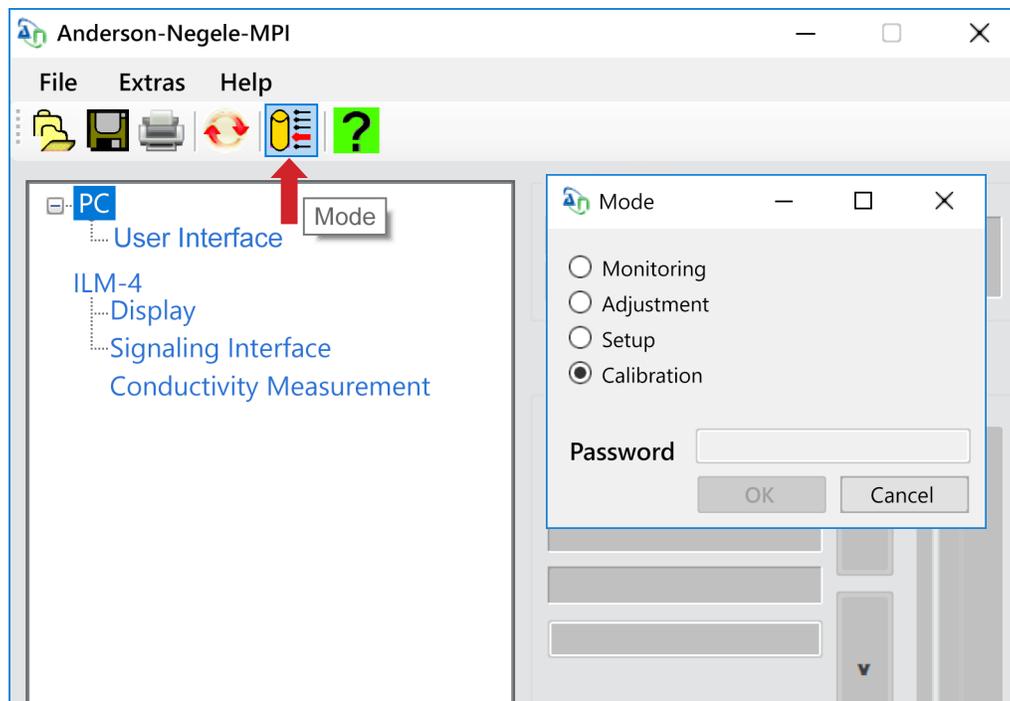
1. Long right press to Menu
2. Short right press down to Calibr.
3. Long right press to Calibration menu
4. Short right presses down to Slope CD 1
5. Long right press to highlight
6. Short right press to underscore leftmost digit
7. Long right press to highlight digit
8. Use left and right buttons to change as needed
9. Long right press to unhighlight
10. Short right press to underscore second digit
11. Long right press to highlight digit
12. Use left and right buttons to change as needed
13. Long right press to unhighlight
14. Short right press to underscore third digit
15. Long right press to highlight digit
16. Use left and right buttons to change as needed
17. Long right press to unhighlight
18. Short right press to underscore fourth digit
19. Long right press to highlight digit
20. Use left and right buttons to change as needed
21. Long right press to unhighlight
22. Short right press to highlight all
23. Long right press to Save Data?
24. Short right press for yes
25. Repeat as needed for Cond and Conductivity 2



Changing Slope Adjustment using MPI-200 Software

1. Make sure unit is powered with 24V DC
2. Make sure green board on the adapter is facing towards the connectors on ILM
3. Open Software
4. Click on ILM-4
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6. Select Calibration
7. Enter password (5315)
8. Click OK

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Changing Slope Adjustment using MPI-200 Software (cont'd)

1. Click on Conductivity Measurement
2. Click on Conductivity 1
3. Click on Slope Conductivity 1
4. Select red screwdriver to enable editing (1)
5. Use up and down arrows to adjust range (2)
6. Click on green check mark to save (3)

