

Model 48i CO Analyzer Initial S/R Setting

The purpose of this procedure is to set the initial zero in a Model 48i CO Analyzer after replacing the correlation filter wheel, p/n 7358, or when receiving the background above limit notification when calibrating the zero background on the unit.

1. Flow Zero gas. Let instrument stabilize.
2. Press the menu/return key to display the Main Menu. It is the key that looks like a double page on the middle left of the key pad.
3. The Main Menu will appear. The CO concentration display will move to the top of the display screen.
4. In the Main Menu > use the down arrow key and tab down to the Calibration Factors Menu > Press the enter key and go to BKG. Press the enter key and enter the BKG. Manually set the background (Set BKG To:) to 0.000 by using the up/down arrow keys. Press the enter key to save the value.
5. Press the menu/return key and return to the Calibration Factors menu > place the cursor on the COEF function and enter the coefficient (COEF) function. Manually set the CO coefficient to 1.000 also by using the up/down arrow keys. Press the enter key to save the value. If the unit is in dual range set the Low CO coefficient to 1.000 and also the Hi CO coefficient to 1.000. Press enter to save values.
6. Put the instrument in the Service mode. Go to the Main Menu > tab to Instrument Controls > use the down arrow button and tab to Service. Enter Service and turn service mode on by pressing the enter key. It will read: Currently On.
7. This opens up the Service Menu. Press the return/menu key and return to the Main Menu. Using the down arrow key tab down to where it now does say Service.
8. Enter the Service Menu.
9. In the Service Menu tab down to Preamp Board Cal. Enter Preamp Board Cal.
10. By now when flowing zero gas the unit should be completely stabilized.
11. In the Preamp Board Cal screen there are 2 values displayed – sample intensity and reference intensity. Using the up/down arrow keys, adjust the intensity so that the average value between the 2 values is about 150,000 Hz. (Add the 2 numbers together and divide by 2 to get the average value. Typical readings would be approximately 160,000 Hz sample intensity and 140,000 reference intensity.) When the average value is about 150,000 Hz press enter to save the value.
12. Press the return/menu button and return to the Service Menu.
13. In the Service Menu tab to Initial S/R Ratio. Enter this function.
14. There are 3 lines displayed – currently / measured / set to.
15. While still flowing zero gas, monitor the measured value. It should be between 1.13 and 1.18. If higher or lower than these values the correlation filter wheel must be replaced (p/n 7358).

16. If the measured value is between 1.13 and 1.18, manually enter the measured value in the set to line (the 3rd line) and then press enter. This resets the current value to match the measured value and effectively resets the initial zero for the unit. The CO reading at the top of the display screen will be zero or very close to it.
17. While still flowing zero gas, return to the Main Menu and tab to the Calibration Menu.
18. From here you will perform a standard calibration.
19. In the Calibration Menu tab to Cal Background. Enter this and press the enter key to Set To Zero.
20. Press the Menu/Return key to the Calibration Menu and tab to Cal Coefficient. Turn off the zero gas and introduce the high span gas. After the unit stabilizes, manually enter the span gas concentration and press enter to save the value. If the unit is in the dual range mode, calibrate the high range concentration first and then calibrate the low range concentration second with the low range calibration gas.
21. Take the unit out of the service mode.
22. From the Main Menu tab to Instrument Controls > Enter Instrument Controls and tab to Service > Enter Service and turn of the service mode. The unit will read: Currently Off.
23. Press the Run Key and return to main concentration display.
24. This completes the calibration of the unit and you should be able to return to the sampling mode. Should any problems be encountered in performing this procedure, please contact the Thermo Factory Technical Support Group at T: 508-520-0430 X- 6637 where a technical support engineer can provide further support.
25. If the unit will not calibrate the span or is not linear, a multipoint calibration procedure may need to be performed. Please see the instruction manual provided with the instrument, Chapter 4, for the multipoint calibration procedure.

USA

27 Forge Parkway
Franklin, MA 02038
Ph: (508) 520-0430
Toll Free: (866) 282-0430
orders.aqi@thermofisher.com

Find out more at **thermofisher.com**

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