



How to zero calibrate your CO2 sensor – with a GSS evaluation kit

We recommend that you zero calibrate your CO2 sensor before using it.

For most applications we recommend using autocalibration. This is the best option if you're measuring CO2 in ambient air, such as in residential or commercial settings. The built in autocalibration feature on our CozIR[®]-A and CozIR[®]-LP sensors makes this process very easy, and this is documented in our Automatic Calibration Application Note.

The exception to using autocalibration in ambient applications is when people are present 24/7 – such as in hospitals and police stations – which makes this method unsuitable.

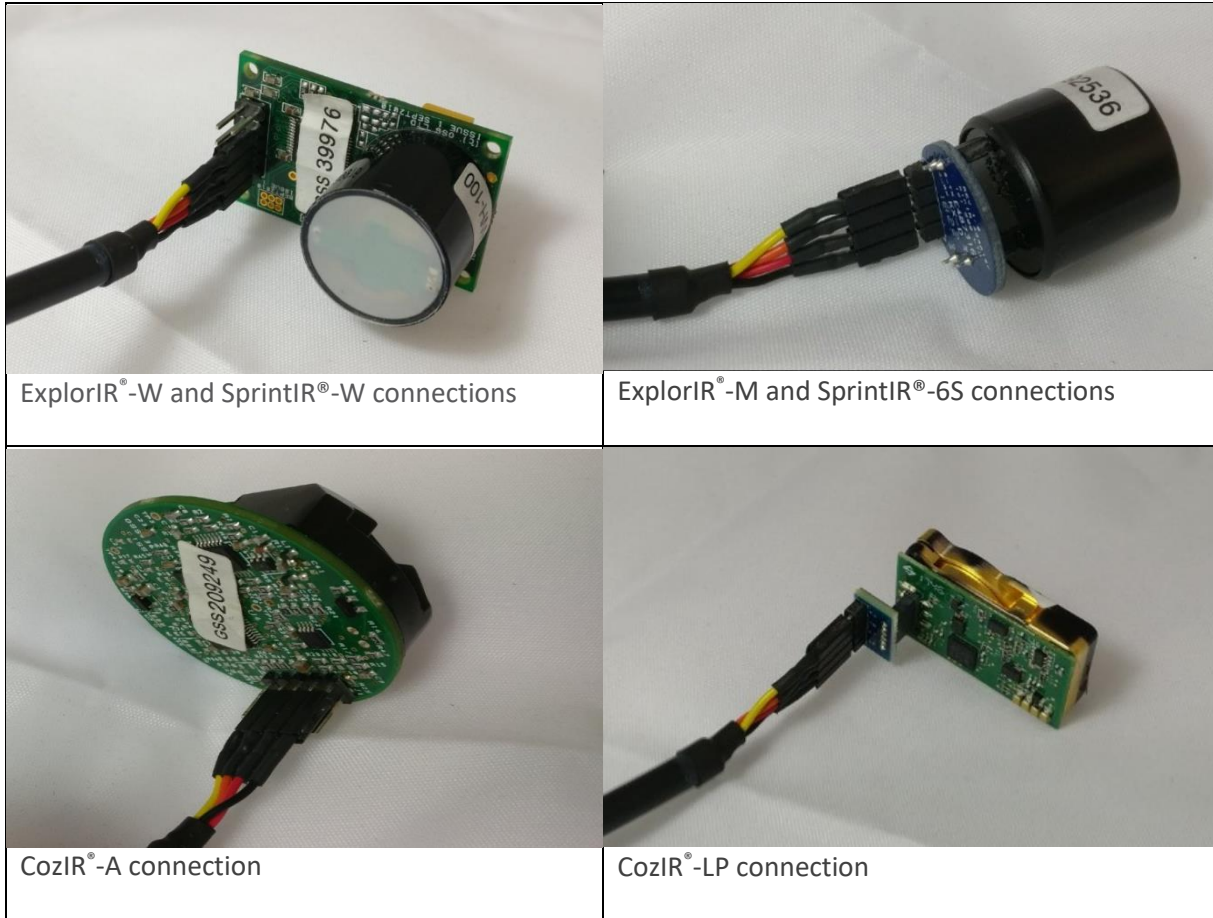
If you're not using autocalibration, the methods below describe how to zero calibrate for 3 typical environments. You should select one calibration method from the list below, based on which environment is most suitable for your application:

- Calibration in ambient air – G command
- Calibration in Nitrogen gas – U command
- Calibration using a known gas – X command

G command calibration

G command allows you to calibrate in normal background (or ambient) CO2 levels, at around 400ppm. First, you need your GSS Evaluation Software programme running on screen. This is the software provided on the USB stick in your evaluation kit. If you need a hand getting started with this you can watch our video which shows you how to get up and running with our eval kit in under 2 minutes: <https://www.gassensing.co.uk/videos/>

Next, plug the USB cable into your laptop or PC, and connect the other end to your sensor. The connections vary for different sensor types - see examples of the various electrical connections overleaf. For any further queries, please refer to the relevant product datasheet for details.

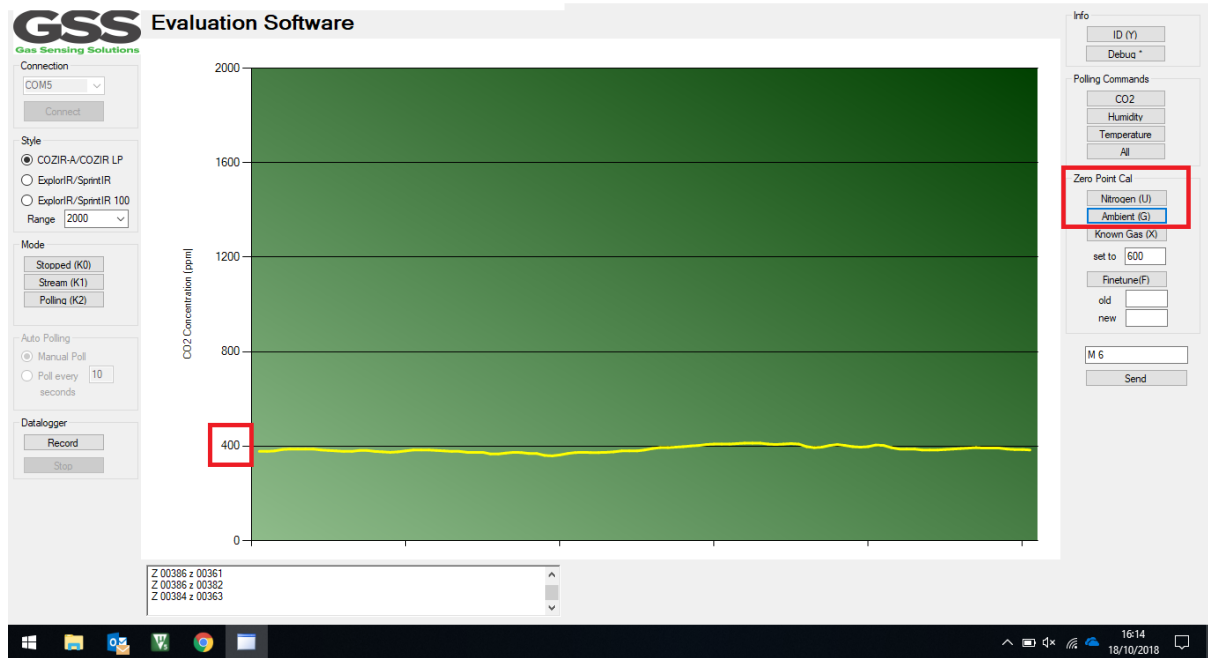


Now you'll see the evaluation software giving live CO2 readings on screen.

To send G command, click on the Ambient (G) button at the right-hand side of your screen. A warning message will appear advising that you're about to change the zero calibration. Just press the OK button and almost instantly you'll see the CO2 reading on screen showing around 400ppm.

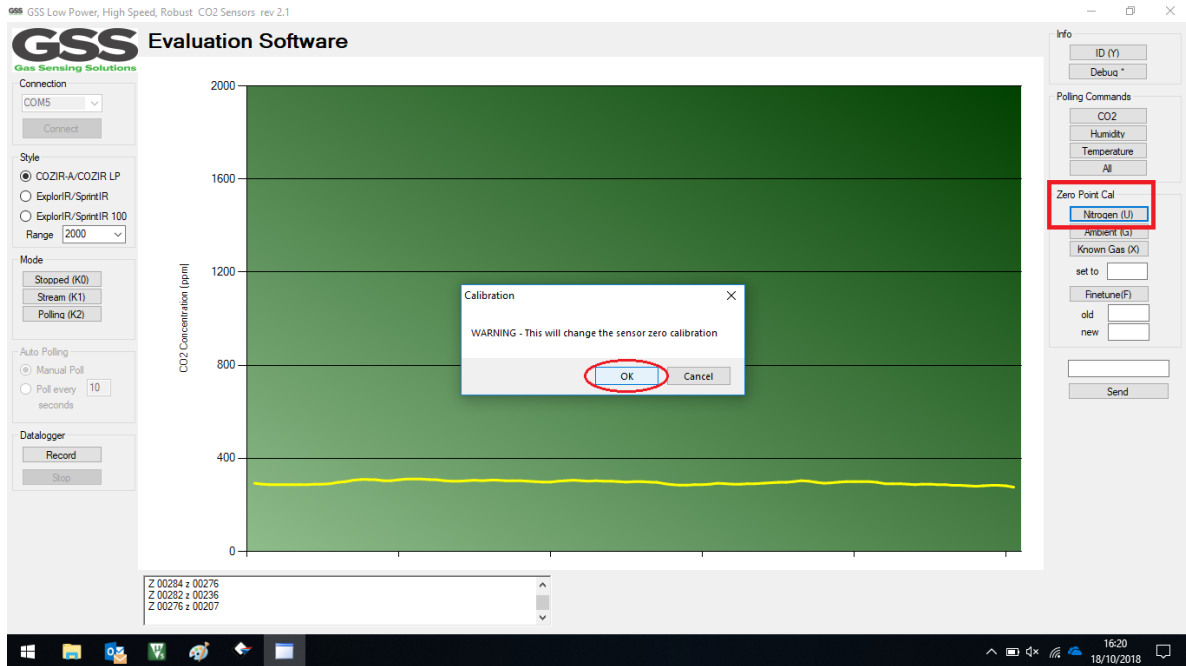
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U command calibration

If you want to calibrate in an environment where there's no CO2 present, you'll need to use the U command. Simply follow the same steps as above, but this time click on the Nitrogen (U) button at the right-hand side of your screen.

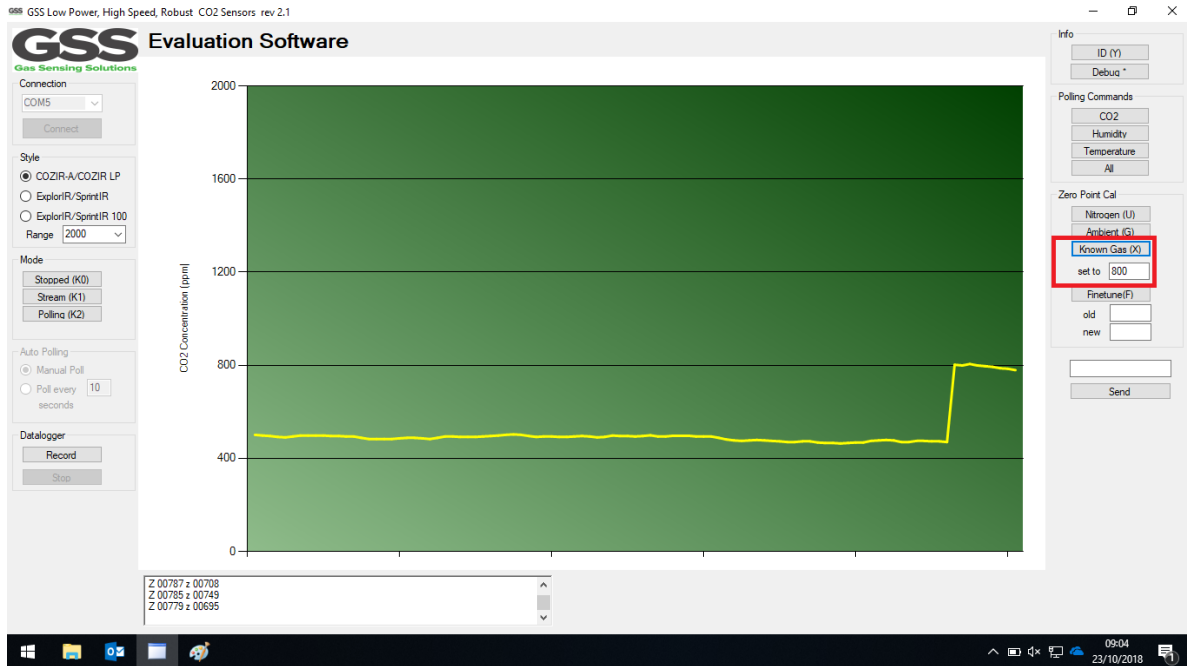


The same warning message will appear on screen, and again just OK that. Instantly the sensor will show a zero reading as there's no CO2 present. And you're now ready to use the sensor.

X command calibration

Lastly, if you know what the concentration level of CO2 will be at the point of calibration, and you have a calibration gas available, you can calibrate using the X command. For example, you might know that the environment where you're going to calibrate the sensor has a CO2 level of 800ppm. To calibrate the sensor at this level, click the Known Gas (X) button at the right-hand side of your screen, and in the 'set to' box just type in the known value of 800. No units of measure are needed, just type in the number.

Again, the same warning message will appear so just OK that. Then you'll see the sensor reading 800ppm CO2 concentrations on screen. That's it, you're ready to test the sensor in your application.



Please note, if you're using our ExplorIR® sensors you need to multiply the reading given to get the actual result. If you have a 100% concentration ExplorIR® sensor, multiply the reading by 100. For all other ExplorIR® sensors, multiply the reading by 10.

So now you've seen the quickest ways to zero calibrate your sensor. Our Zero Calibration Application Note provides further detailed information if required, so please don't hesitate to contact us.