GASSYS2-EA/EB O_2 & CO_2 GAS ANALYSIS SYSTEM

See the **AFT series** of accessories for airflow and gas analysis.

Modular assembly makes complete cleaning easy!

GASSYS2 modules measure expired O_2 and CO_2 concentrations. When the subject inspires, air is drawn into the GASSYS2 through an airflow transducer. The SS11 (GASSYS2 EA/EB) airflow transducer is placed on the inspiration side to eliminate any effects associated with expired air humidity. When the subject expires, air is directed to the GASSYS2 module. The GASSYS2 is designed to work with saturated expired air.

Obtain real-time Oxygen Consumption (VO_2) and Respiratory Exchange Ratio (RER) measurements using the MP36 System with a GASSYS2 module and some airflow accessories. The GASSYS2 connects directly to the MP36 System (GASSYS EA/EB) and requires two channels.

The non-rebreathing T-valve directs only expired air to the GASSYS2. Because only expired air is directed to the module, the system acts to average respiratory outflows. This averaging effect causes the CO_2 and O_2 concentrations to vary in accordance to the mean values resident in a few expired breaths.

Two chamber sizes are available for the GASSYS2. Each chamber assembly includes the chamber casing and rod. The chambers work exactly the same way and are interchangeable on the module base. Use the smaller chamber size for small children/medium sized animals.

5-liter chamber ð included in the **GASSYS2-EA**; order chamber only as **RX-GASA**

1.7-liter chamber ð included in the **GASSYS2-EB**; order chamber only as **RX-GASB**

The GASSYS2 also includes **AFT7** tubing, **AFT11E** Coupler, **AFT22** Non-rebreathing T-Valve, and a power supply.

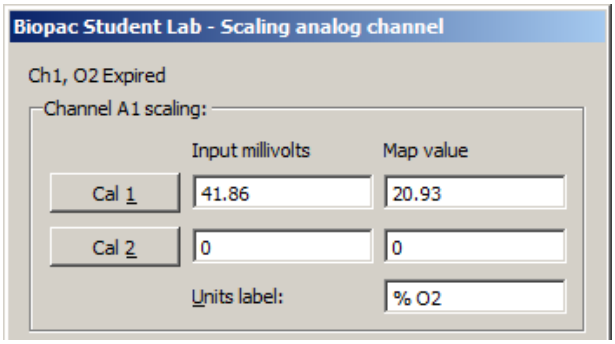
GASSYS2 Specs

O_2 sensor:	Warm-up: 10 minutes. Response time 10-90%: 30 sec. Accuracy: ±1% FSR*. Zirconia solid electrolyte with a 0.1-25% sensing range. It runs hot, which helps burn off humidity. *FSR = Full Scale Reading
Expected O_2 sensor lifespan (in years):	[5,256/(number of hours used per year)]*5 • If used for 10 hours per week or 520 total hours in a year, O_2 sensor lifespan would be [5,256/520]* 5 = 50.5 years
CO_2 sensor:	Warm-up: 2 minutes. Response time: < 120 seconds for a 90% step change. Uses a humidity-repellant (hydrophobic) membrane and has a sensing range of 0-5%. It uses non-dispersive infrared diffusion with single-beam IR and a self-calibrating algorithm. It also runs hot, which burns off humidity.
Calibration:	GASSYS2 sensors are factory calibrated prior to shipping.
Power Supply:	12 V DC @ 4.17 amp (AC150A) wall adapter

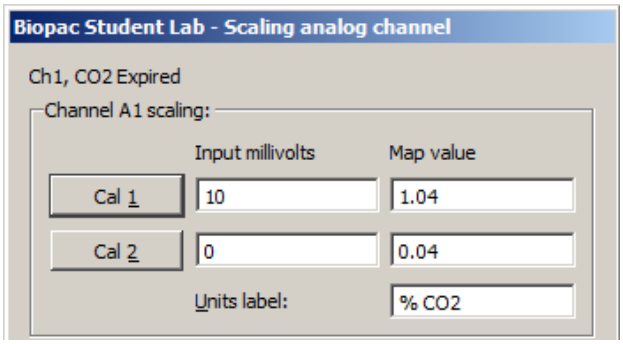
Dimensions/Weight	1.7-liter chamber	5-liter chamber
Length:	22 cm	55 cm
Height:	18 cm	18 cm
Width:	14 cm	14 cm
Weight:	1.38 kg	1.96 kg

GASSYS2 Software Scaling Defaults

BSL *PRO* Software



Default $\%O_2$ Scaling



Default $\%CO_2$ Scaling

Calibration Procedure

The GASSYS2 scaling parameters are factory-set to a ñballparkò default, but in order to achieve accurate measurements, these values must be re-calibrated in the BSL *PRO* software using the following steps.

1. Flood the mixing chamber with fresh (ambient) air. (20.93% O_2, 0.04% CO_2) This can be accomplished by attaching the calibration syringe to the mouthpiece and cycling fresh air into the mixing chamber.
2. Monitor the gas concentration levels using BSL *PRO* software. When the levels appear stabilized at ambient, obtain the first calibration point. (CAL 1)
3. Flood the chamber with the gas mixture using BIOPACôs GASCAL and GASREG. The recommended concentration is 16% O_2, 4% CO_2 and 80% nitrogen (N_2).
4. When the levels appear stabilized, obtain the second calibration point. (CAL 2)

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Cleaning the BIOPAC GASSYS2

Note: Never clean the sensor base of the device. The two sensors, a screen and a copper-colored gas detector, are highly sensitive.

1) Unscrew the top knob attachment.

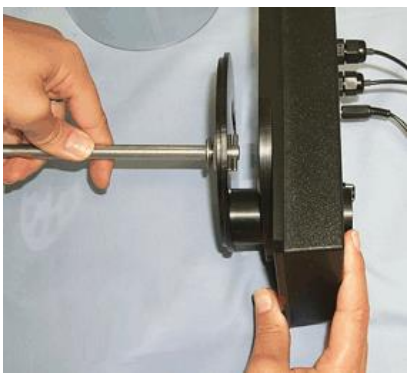
2) Remove the plastic lid from the flow chamber.

3) Gently pull the clear cylinder off the sensor base.

4) Detach the metal standing rod and its lower base attachment by holding the third of the standing rod nearest the base of the module and unscrewing the rod in a counter-clockwise motion.

   a. Depress the rod by applying pressure at the base ï this unlocks the rodôs position and allows movement.

   b. Unscrew the rod in a counter-clockwise motion.



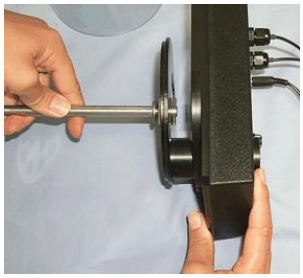
5) Remove the chamber stand (gently pull back the chamber stand from the electronics base).

6) Clean the flow chamber using the following method:

   a. Use a soft cloth and Cidex® OPA Disinfecting Solution cleanser. It is important never to get Cidex near the sensors of the device.

      - Other cleansers should not be substituted for Cidex OPA ï non-Cidex cleansers might damage or abrade the flow chamber pieces.

7) After all parts have dried completely, reattach the platformed-standing rod to the electronics base.



   a. Align the exhaust tube at the bottom of the rod stand with the exhaust port on the electronics base and insert securely.

   b. Gently ease the rod stand back into its appropriate position on the electronics base. The sensors are very delicateð slowly lower the plastic base of the standing rod to the electronics base to make sure that the openings in the standing rod base correspond with the appropriate sensors.

8) Locate the latch opening for the security screw and align it with the screw, and then press the base of the standing rod to the sensor base.

   a. Revolve the rod until the lower screw drops into its opening. When the screw meets its opening, it should drop into the hole.

   b. Depress the rod by applying pressure on the lower third of the piece and rotate it in a clockwise motion until it locks into position.

9) Ease the clear cylinder back onto the device and lay its lower edge in the track on the electronics base.

10) Re-attach the plastic top to the clear cylinder.

11) Lock the plastic top into place by screwing in the security knob.