



## **HGSUv2-CO** **2-10v CO SENSOR**

REPLACES PREVIOUS  
MODELS HGSU-CO  
& HGS-CO

### **CARBON MONOXIDE (CO) 3 WIRE 2-10vDC O/P SENSOR** **SELECTABLE RANGE : 0 - 100, 150, 200 & 300 ppm**

#### **Features**

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- Australian Manufactured & Designed.
  - CO cell replaceable.
  - L.E.D Indication of output and fault status.
  - Easy Site Calibration with ZERO and GAIN potentiometers.
  - Test plug for forced 100 % and Fault mode Output tests.
  - Selectable O/P range to suit other brand controllers as universal replacement
  - Choice of cable entry : Top, Bottom or Rear.
  - Ideal Universal 2-10v O/P type CO replacement sensor
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#### **Use**

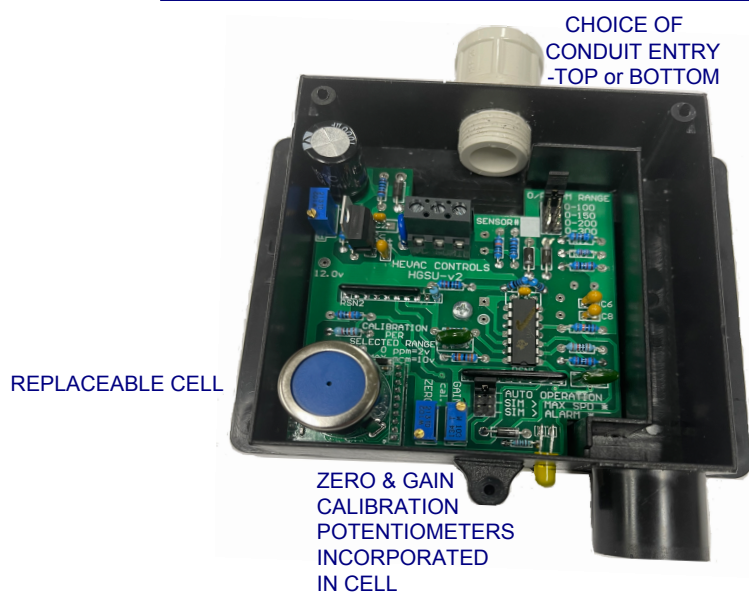
The HGSUv2-CO is primarily designed as a Carpark Carbon Monoxide monitoring sensor for connection to most brands of CO Controllers accepting 2-10vdc input signals. Hevac also manufacture a CO/NO2 controller model HCP7 which accepts upto 7 of the HGS series sensor's, and using EXP7 expansion modules, up to a total of 42 sensors. The sensor is a 3 wire connection powered by 24V AC or DC voltage and produces a 2 to 10 volt DC output signal over the selectable output range of upto 0 to 300 ppm CO. The sensor is marked with a signed calibration date sticker & certificate of compliance. Hevac recommend a 12 month recalibration period. This sensor is an idea service fan stock universal replacement CO sensor to replace other brand failed 3 wire 2-10vdc sensors (*but care must be taken that sensors are not subject to extreme heat or moisture whilst in storage*).



**Made in Australia**  
**100% Australian Owned Company**

## Technical Data

General Specifications	Operating Voltage			24 Volts AC or DC	
	Power Consumption			30 mA	
	24 DC Volts			0.5 Va	
	24 AC Volts				
Output values over selectable range (maximum cell measurement is 150ppm so maximumum output is proportional to selected range).	Re Calibration Period			12 months	
	0-100ppm	0.080v	per 1ppm	2 - 10vdc	(Max. O/P@ <b>100ppm</b> )
	0-150ppm	0.0533v	per 1ppm	2 - 10vdc	(Max. O/P@ 150ppm)
	0-200ppm	0.040v	per 1ppm	2 - 8.0vdc	(Max. O/P@ 150ppm)
	0-300ppm	0.0266v	per 1ppm	2- 6.0vdc	(Max. O/P@ 150ppm)
Environmental Conditions	Operation				
	Ambient Temperature			0...40oC	
	Humidity			< 90 % RH (Non Condensing)	
	Storage and Transport				
	Ambient Temperature			<i>recommended</i> 10...30oC	
	Humidity			<i>recommended</i> < 75 % RH	
Product Standards	As per Australian standards.				
Weight	Including Packaging			150 grams	
Housing	Colour			BLACK	
	Material			ABS POLYCARBONATE	
	UV Stabilised			YES	
	Fire Retardant			YES	
	Size			H122mm x W98mm x D35mm	
	Mounting Method			Wall mount 4 screw locations	



### Terminal Designations

- G 24 Volt Supply Active AC or DC
- G0 24 Volt Neutral (ground)
- Y 2-10VDC Signal Out

**SELECTABLE OUTPUT RANGE** 100,150,200 or 300 ppm  
Factory default=100ppm to suit Hevac HCP7F)

**TEST PLUG.** Use to short pins for simulated CO levels to cause either 100% fan speed output or over scale sensor fault output that triggers fault mode causing 100% O/P & full alarm outputs.

**FLASHING YELLOW LED INDICATES CO LEVELS ABOVE 15ppm or SENSOR FAULT MODE.**



## **INSTALLATION**

The standards call for the maximum distance between sensor locations to not exceed 25 meters with sensors mounted between 750mm & 1800mm above floor level. Wiring can be connected either by a top or bottom conduit entry (plug supplied for non used entry).

## **MAINTAINANCE**

*HEVAC RECOMMEND OUR CO SENSORS BE CALIBRATED EVERY 12 MONTHS FROM THE LAST CALIBRATION DATE BY QUALIFIED PERSONAL USING APPROPRIATE CALIBRATED TEST GAS & APPARATUS.*

## **REQUIRED EQUIPMENT**

- 1 X CARBON MONOXIDE GAS BOTTLE CALIBRATED TO 0 ppm (STILL WITHIN USED BY DATE)
- 1 X CARBON MONOXIDE GAS BOTTLE CALIBRATED TO 100 ppm (STILL WITHIN USED BY DATE)
- 1 X GAS BOTTLE REGULATOR C/W TUBING & FLOW HEAD TO FIT SENSOR HEAD
- 1 X ELECTRONIC VOLT METER SET TO 20vDC SCALE

## **CALIBRATION STEPS : (WITH OUTPUT RANGE SET TO "0-100 ppm")**

TO CALIBRATE HEVAC HGSU-CO SENSORS PLEASE FOLLOW THE FOLLOWING PROCEDURE.

**NOTE : SENSOR SHOULD BE POWERED FOR 15 MINUTES PRIOR TO CALIBRATION TO ALLOW CELL WARMUP. AFTER TEST GAS HAS BEEN APPLIED ALLOW 5 MINUTES TO RESTABISE AT ZERO PPM.**

- 1.) REMOVE SENSOR COVER AND LOCATE "ZERO" & "GAIN" POTENTIOMETERS ON THE CELL.
- 2.) CONNECT OR HOLD VOLT METER PROBES TO MEASURE THE SENSOR OUTPUT.  
CONNECT THE METER'S BLACK LEAD TO TERMINAL "GO" AND THE RED LEAD TO "Y"
- 3.) USING THE "0ppm" GAS BOTTLE & REGULATOR ATTACH FLOW HEAD SNUGGLY OVER CO SENSOR HEAD, LOCATED PROTRUDING BOTTOM RIGHT OUT OF THE HGS HOUSING.
- 4.) OPEN THE REGULATOR ON THE "0ppm" GAS BOTTLE AND LEAVE TO SETTLE MEASUREMENT FOR 15 SECONDS, NOTE VOLTAGE OUTPUT.
- 5.) AJUST THE "ZERO" POTENTIOMETER WITH A SMALL PHILIPS HEAD SCREW DRIVER UNTILL THE VOLTAGE O/P READS 2.00 +/- 0.02 Volts. ( 2-10vDC O/P =0 to100 ppm with 0.08 volts per 1ppm)
- 6.) CLOSE THE REGULATOR ON THE "0ppm" BOTTLE AND CONNECT THE "100ppm" GAS BOTTLE AND REGULATOR.
- 7.) OPEN THE REGULATOR ON THE "100ppm" GAS BOTTLE AND LEAVE FOR **3 minutes** or UNTIL MEASUREMENT SETTLES. **note cell response 95% in 1min, 100% by 3mins.**
- 8.) ADJUST "GAIN" POTENTIOMETER SUCH THAT THE O/P VOLTAGE READS 10.00 +/- 0.02 Volts IF SENSOR RANGE SET TO THE FACTORY DEFAULT RANGE OF 0-100ppm **or** to 7.33v for 0-150ppm, 6.0v for 0-200ppm or 4.0v if 0-300ppm RANGE SELECTED.
- 9.)TURN OFF REGULATOR AND REPLACE SENSOR HOUSING LID.
- 10.) ATTACH A NEW CALIBRATION STICKER TO HOUSING SHOWING NEXT DUE CALIBRATION DATE AND IDENTIFICATION OF THE SERVICE TECHNICIAN & COMPANY.



## **EX FACTORY CALIBRATION CERTIFICATE**

(WITH SENSOR SET TO FACTORY DEFAULT O/P OF 0-100ppm)

**SENSOR MODEL NUMBER : HGSU-CO**

**SENSOR SERIAL NUMBER : \_\_\_\_\_**

**0ppm CALIBRATION "AIR" BOTTLE WITHIN USE BY DATE \_\_\_\_\_**

**100ppm CALIBRATION "CO" BOTTLE WITHIN USE BY DATE \_\_\_\_\_**

**FACTORY CALIBRATION DATE : \_\_\_\_\_**

**CALIBRATION TECHNICIAN : \_\_\_\_\_**

**THIS IS TO CERTIFY THAT THIS SENSOR HAS BEEN CALIBRATED IN ACCORDANCE WITH AUSTRALIAN STANDARDS AS1668.2 , AND IS REQUIRED TO BE SITE CALIBRATED IN 12 MONTHS FROM THE ABOVE DATE BY QUALIFIED PERSONAL.**

**NOTE : CALIBRATION TOLERANCE ex HEVAC IS WITHIN 2% OF SELECTED RANGE**

**0-100ppm = 2ppm --- FACTORY CALIBRATED SETTING**

**0-150ppm = 3ppm**

**0-200ppm = 4ppm**

**0-300ppm = 6ppm**

**FOR HIGHER ACCURACY HEVAC RECOMMEND SITE CALIBRATION IF SET TO O/P RANGE OTHER THAN 0-100ppm**