

***Critical Environment Technologies
Canada Inc.***

www.critical-environment.com

**Installation Manual for
*AST-IS3***

**Infrared CO2 sensor - transmitter with
Industrial enclosure (duct mount)**



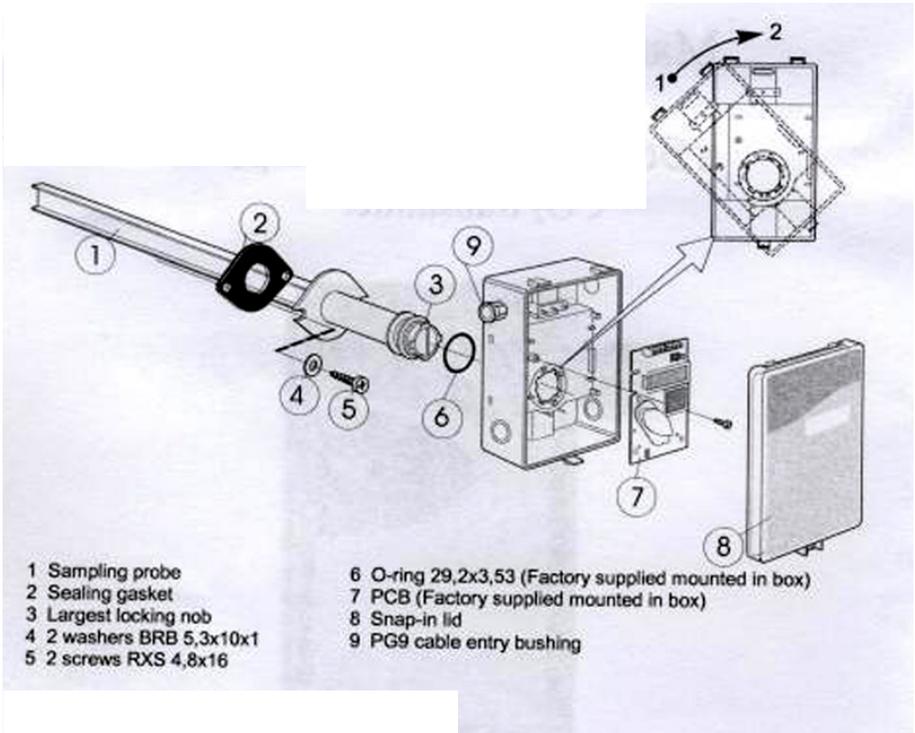
MANUAL REVISION-A, SEPTEMBER 9, 2010

**#145, 7391 VANTAGE WAY
DELTA, BC CANADA V4G 1M3
PH: 604-940-8741 TOLL FREE: 877-940-8741
www.critical-environment.com/blog**

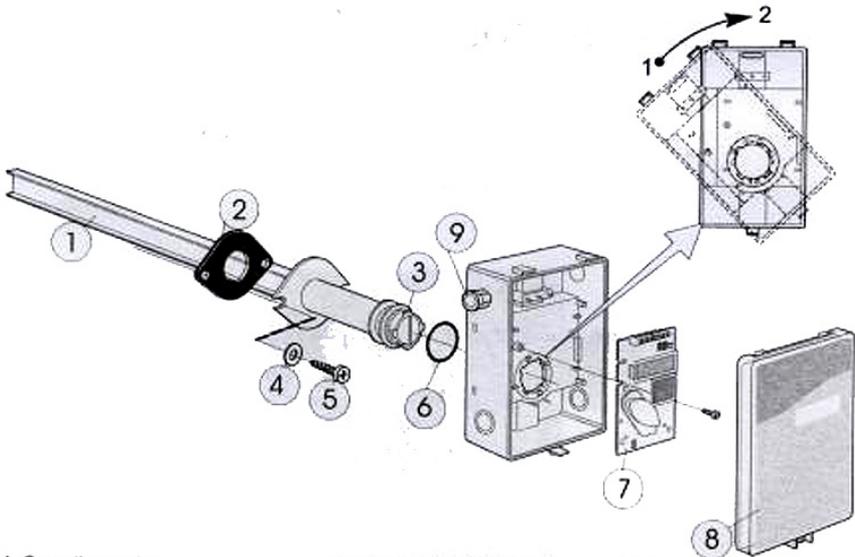
AST-IS3 (no display)

are infrared Carbon Dioxide (CO₂) sensor/transmitters mounted in an industrial duct style, water tight enclosure. The enclosure cover has a built-in rubber gasket and all other connections must be tight and sealed to prevent water intrusion. Improper installation resulting in damage is not covered under warranty.

ITEM LOCATORS



INSTALLING AST-IS3 INTO A DUCT



- | | |
|--------------------------|--|
| 1 Sampling probe | 6 O-ring 29,2x3,53 (Factory supplied mounted in box) |
| 2 Sealing gasket | 7 PCB (Factory supplied mounted in box) |
| 3 Largest locking nob | 8 Snap-in lid |
| 4 2 washers BRB 5,3x10x1 | 9 PG9 cable entry bushing |
| 5 2 screws RXS 4,8x16 | |

Since there may be substantial pressure differences in duct mounting applications, it is essential to avoid ambient air from suction into the duct mounting box. For correct function it is indispensable that the sealing of the box cover, cable entry bushings, cable feed through and the duct entrance are absolutely air tight. The duct entrance may need extra sealing paste in order to prevent leakage. The PCB must be handled carefully (by the edges) and protected from electrostatic discharge.

1) Electrical cable entry: The box has a factory mounted cable entry bushing in dimension PG9. Never feed more than one cable through each cable entry bushing or else gas might leak through.

2) Mounting the probe: Drill a hole (10) with 25mm (1") diameter for the sampling probe and two holes with 4mm diameter for the screws (5) into the air duct and mount the probe (1) with the gasket (2). The sampling probe should be mounted with the largest locking knob on top. The unit can be mounted with the air coming from the left or right.

3) Attaching the sensor box: The sensor enclosure is attached to the probe by a snap-in bayonet fitting. Orient the enclosure onto the sampling probe so that the box is on the same side as the largest locking knob (3). When the probe is fitted into the notches of the box, then turn the enclosure clockwise until stop (see Figure-1). Position 1 indicates open where the box can be removed from the sampling probe. In position 2 the box is locked to the probe.

ELECTRICAL CONNECTIONS

The power supply has to be connected to and . Is considered as system ground. The same ground reference has to be used for the AST-IS3 unit and for the DDC/signal receiver.



NOTE: The same ground reference has to be used for the AST-IS3 and for the control system.

TERMINAL	FUNCTION	ELECTRICAL DATA	REMARKS - STANDARD SETTINGS	REMARKS - SETTINGS OF THIS SENSOR
 + 	Power (+) Power ground (-)	24VAC/DC+ (+20%), 2W 24VAC/DC-	System voltage reference	
Out (1)	Analog output - 1 (+)	0-10 VDC	0-2000 ppm CO2	
Out (2)	Analog output - 2	2.0 - 10.0 VDC 4.0 - 20.0 mA 0.9 - 1.6 VDC or 1.5 - 2.5 mA 0 VDC or 0 mA	0-2000 ppm CO2 Status = Error Status = NOT READY	

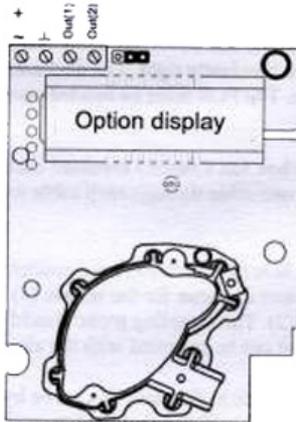


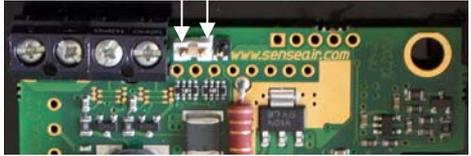
Figure 2 PCB with jumper to configure OUT2 for current output 4-20mA or voltage output 2-10VDC

WIRING TERMINALS & SIGNAL OUTPUT JUMPER SETTINGS

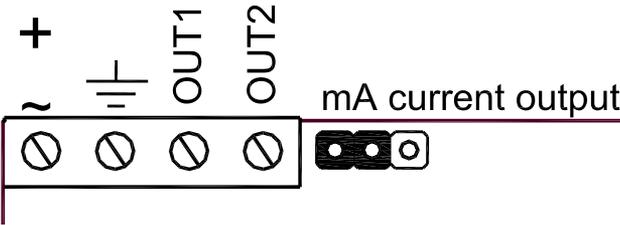


- + L POWER 24VAC / DC+
- ⊥ POWER GROUND (-)
- OUT-1 ANALOG OUT 0-10VDC(+)
- OUT-2 ANALOG OUT 4-20 mA(+)
- CURRENT OUTPUT JUMPER SET
- VOLTAGE OUTPUT JUMPER SET

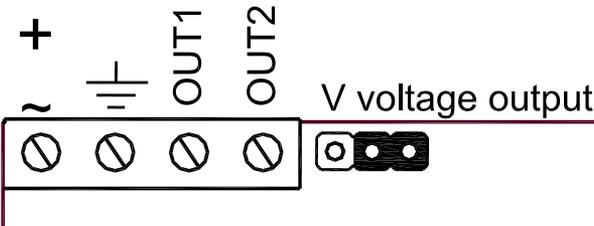
NOTE: JUMPER IN THIS PHOTO IS SET FOR VOLTAGE OUTPUT. FOR CURRENT OUTPUT, COVER THE TWO PINS CLOSEST TO THE TERMINAL STRIP. <<<<<<



The drawings below indicate the jumper locations and positions for attaining current or voltage output



Drawing of PCB jumper area with the jumper set to current output (left position)



Drawing of PCB jumper area with the jumper set to voltage output (right position)

DIMENSIONS

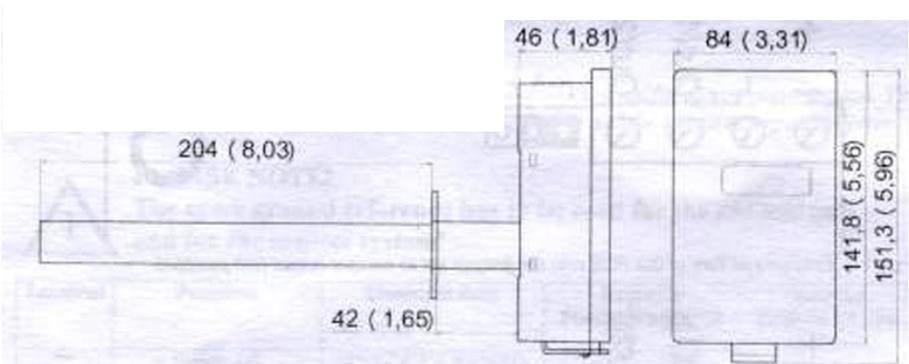


Figure 5. The dimensions of the sensor in mm and (inches)

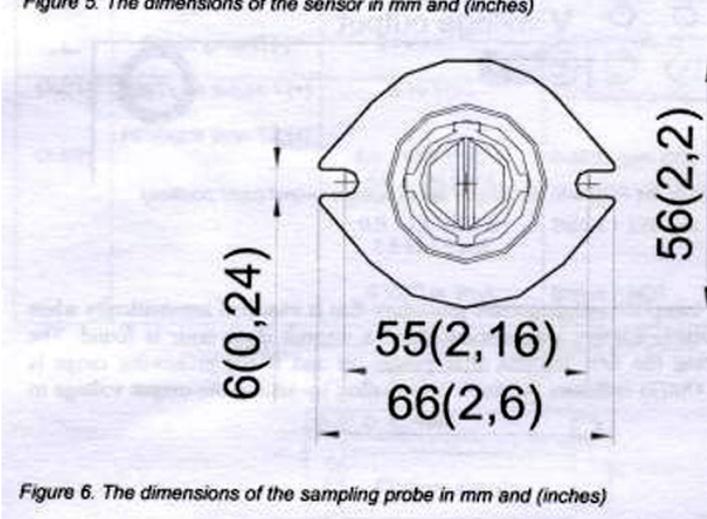


Figure 6. The dimensions of the sampling probe in mm and (inches)

Warranty

Critical Environment Technologies Canada Inc. (CETCI) warrants that for a period of twenty-four (24) months following receipt by purchaser the product supplied by CETCI will be, under normal use and care, free from defects in workmanship or material and to be in material conformity with the published specifications. Units returned to CETCI for warranty repairs shall be shipped to CETCI at buyer's expense, according to CETCI instruction. CETCI reserves the right to repair or replace the unit(s) at our discretion.

This warranty does not extend to any unit that has been subject to misuse, neglect or accident; that has been damaged by causes external to the unit; that has been used in violation of CETCI's instructions; that has been affixed to any non-standard accessory attachment; or that has been modified, disassembled, or reassembled by anyone other than CETCI.

The manufacturer and reseller are not responsible for any consequential loss or damages which may occur by reason of purchase and use of this product. This warranty is, in any event, strictly limited to replacement or repair of the product.