

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

www.critical-environment.com

**Installation Manual for
*AST-IS6, AST-IS7***

**Infrared CO₂ / Temperature sensor / transmitter with
Industrial enclosures (wall or duct)**



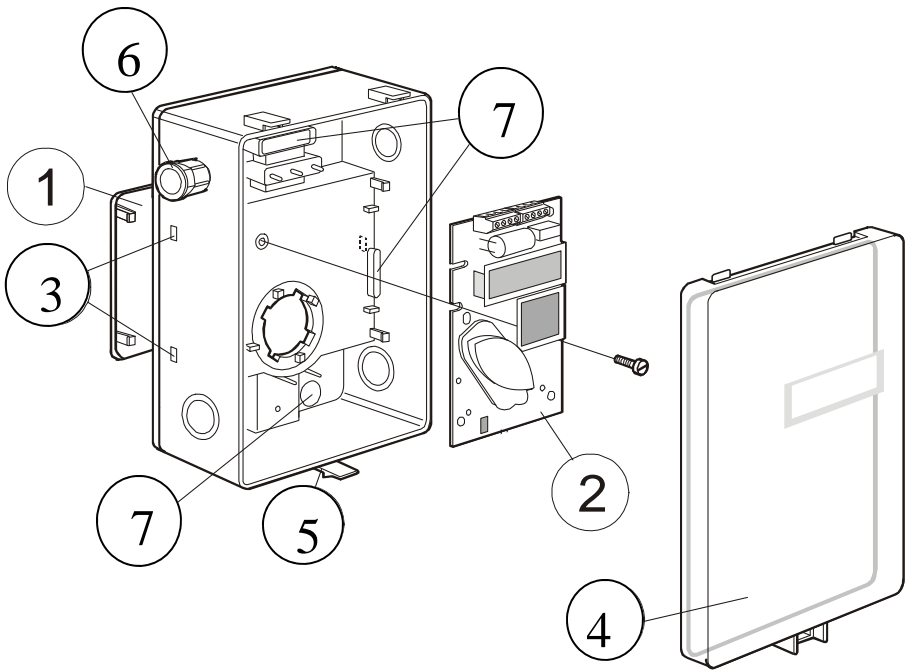
MANUAL REVISION-D, AUGUST 31, 2010

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AST-IS6 (no display)

AST-IS7 (c/w LCD display)

are infrared Carbon Dioxide (CO₂) sensor/transmitters with LCD digital display (model AST-IS7) and without digital display (model AST-IS6), all mounted in an industrial wall mount or 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.

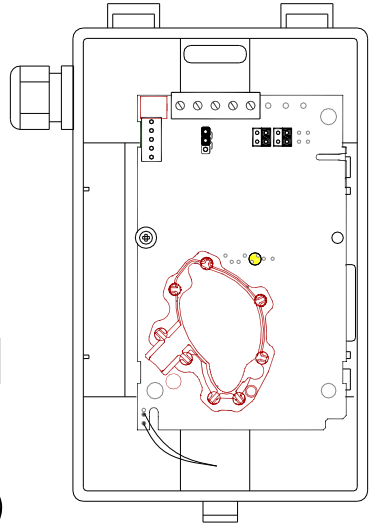
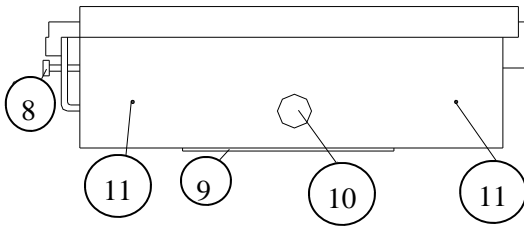


ITEM LOCATORS

- 1 Wall plate
- 2 PCB (Factory supplied mounted in box)
- 3 Holes for wall plate hooks
- 4 Snap-in lid
- 5 Locking screw of the lid (not shown)
- 6 PG9 cable entry bushing
- 7 Air holes

ITEM LOCATORS, CONT'D.....

- 8 Lid locking screw
- 9 Wall plate
- 10 Screw to hold the wall plate
- 11 Drill marks for cable entry bushings



Dismounting the wall plate

The sensor is delivered with the wall plate mounted. The wall plate has to be removed before the sensor is mounted onto the wall. Unthread the screw on the side of the box. See item "10" in drawing above.

Wall Mounting Instruction

Normally the PCB should not be removed from the housing. If for some reason the PCB must be removed it must be handled carefully and protected from electrostatic discharge.

1) Electrical cable entry: The box has a factory mounted cable entry bushing in dimension PG9, item-6 in drawing on previous page. Never feed more than one cable through each cable entry bushing, or else gas might leak through!

2) Screw the wall plate onto the wall: The wall plate has holes for three screws. Drill holes for 3,5mm screws and put dowel into them. Dowels and screws 3,5 x 25mm are included in a plastic bag

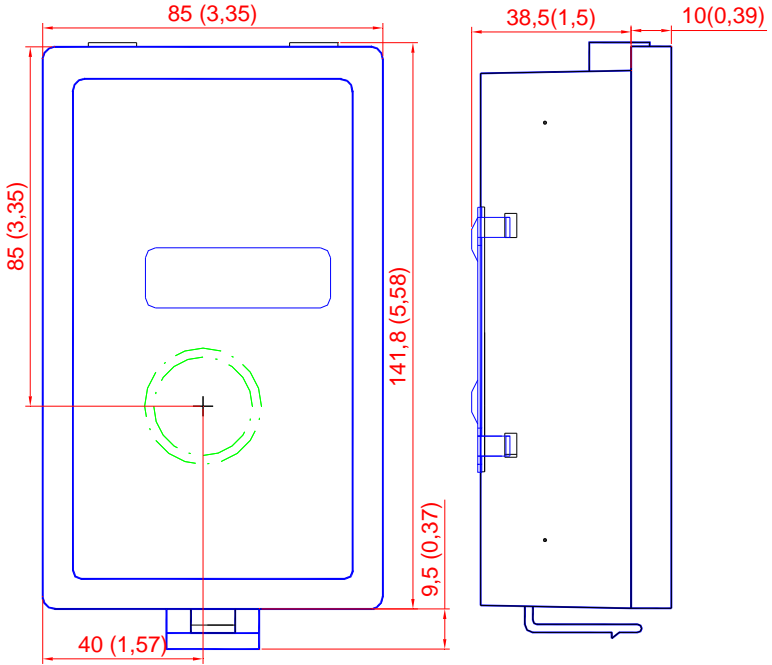
3) Attaching the sensor box to the wall plate is done by a snap-in fitting. The wall plate has three hooks that fit in holes in the sensor box. Fasten the screw on the side of the box, item-10 in drawing above and on previous page.

4) The lid can be locked with the screw at the bottom of the sensor box, item-5 on drawing on previous page.

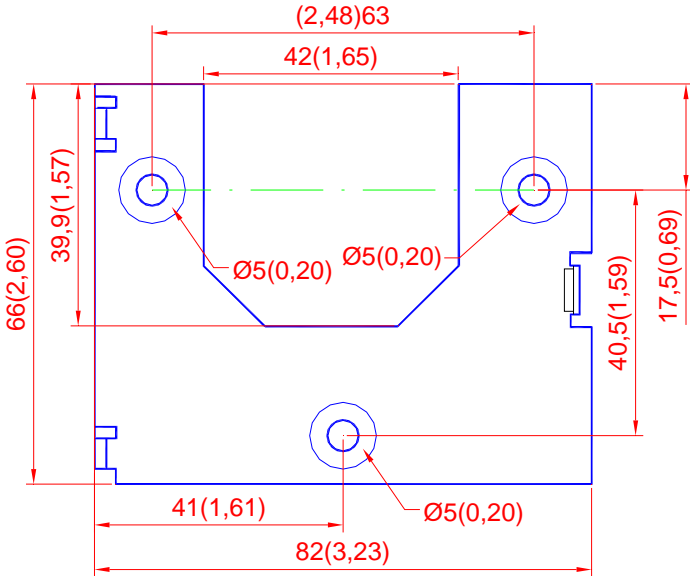
If for some reason the PCB must be removed it must be handled carefully and protected from electrostatic discharge! Normally, removing the PCB is not required.



DIMENSIONS

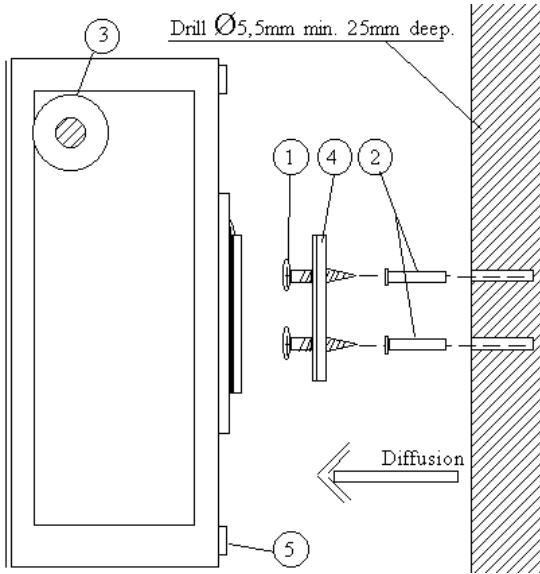


DIMENSIONS OF TRANSMITTER IN mm AND INCHES



DIMENSIONS OF WALL PLATE IN mm AND INCHES

CO2 TRANSMITTER WITH INDUSTRIAL ENCLOSURE



Mounting Transmitter to a wall

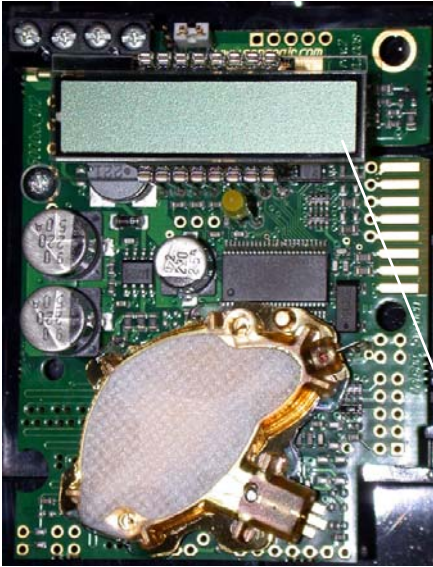
- 1 Screw 5x25
- 2 Dowel
- 3 Cable entry bushing PG9
- 4 DIN rail
- 5 Draining holes

The DIN rail places the sensor 7 mm from the wall. This distance is very important for the response time because the air inlets are situated at the back of the housing facing the wall. The sensor should be mounted with the cable entry bushing upwards and the draining holes downwards.

If for some reason the PCB must be removed it must be handled carefully and protected from electrostatic discharge! Normally, removing the PCB is not required.

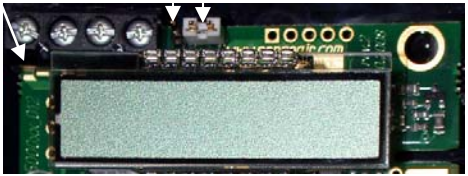


WIRING TERMINALS & SIGNAL OUTPUT JUMPER SETTINGS

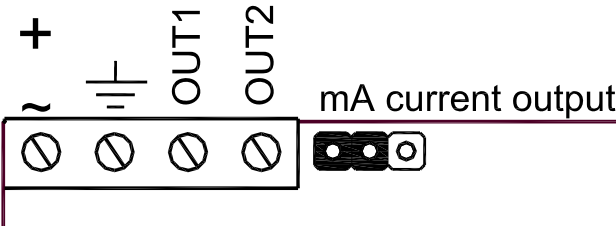


- + POWER 24VAC / DC+
- POWER GROUND (-)
- OUT-1 ANALOG OUT 0-10VDC(+)
- OUT-2 ANALOG OUT 4-20 mA(+)
- CURRENT OUTPUT JUMPER SET
- VOLTAGE OUTPUT JUMPER SET

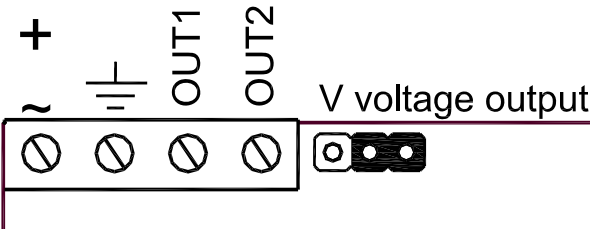
NOTE: JUMPER IN THIS PHOTO IS SET FOR VOLTAGE OUTPUT. FOR CURRENT OUTPUT, COVER THE TWO PINS CLOSEST TO THE TERMINAL STRIP.
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The drawings below indicate the jumper locations and positions for attaining current or voltage output



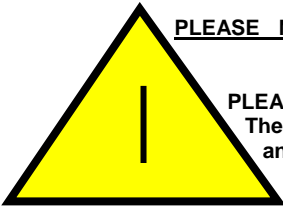
Drawing of PCB jumper area with the jumper set to current output (left position)



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

Electrical connections

The **power supply** has to be connected to G+ and G0. G0 is considered as system ground. If the analogue output is connected to a controller *the same ground reference has to be used for the AST-IS6 unit and for the control system!* Unless different transformers are used, special precautions need to be taken.



PLEASE NOTE! The **AST-IS6** signal ground **is not** galvanically separated from the **AST-IS6** power supply!

PLEASE NOTE!
The same ground reference has to be used for the **AST-IS6** unit and for the control system!

If possible keep the sensor powered up after mounting. Connect the analogue output before measuring.

Note 1: *The ground terminal is used as negative power supply DC input or AC phase ground G0 (half wave rectifier). The signal ground M, protected by a PTC resistor, is the same as power ground G0 (permitting a "3-wire" configuration). A single transformer may be used for the entire system.*

Note 2: *AST-IS6 can deliver a voltage or a current loop for OUT1/OUT2. To change between voltage and current output mode the hardware jumpers are used. There is one jumper for OUT1 and one for OUT2, so that one output can be a voltage output and the other a current output. Both, voltage output and current output, can have start points 0 % (0-10 VDC or 0-20mA) or 20% (2-10 VDC or 4-20mA). The same start point is used for both outputs. See the function manual.*

Electrical connections, Cont'd.....

| Connection Terminal | Function | Electrical Data | Remarks |
|---------------------|---------------------|--|---|
| G+ | Power (+) | 24VDC/DC+ (+20%), 3W | 2W without output load |
| G0 | Power ground (-) | 24VAC/DC- | See note 1! |
| Out-1 | Analog Output-1 (+) | 0-10 VDC or 0-20 mA 2-10 VDC or 4-20 mA | According to positions of Out-1 & start point jumpers See note-2 |
| Out-2 | Analog output-2 (+) | Same as Out-1 | According to positions of Out-2 & start point jumpers See note-2 |
| M | Signal ground (-) | Connected to G0 via PTC fuse | See note-1 |

Table-1. Terminal connections for AST-IS6 & AST-IS7