

Installation, Operation & Maintenance Manual

GPS-iDETECT-P



Thank you for purchasing a GPS-iDETECT-P™ from GPS Air. The GPS-iDETECT-P is a revolutionary product in the air purification industry. The GPS-iDETECT-P is a plenum mounted ionization detector that confirms the output from the GPS-iMOD® System.

Specifications

- Voltage Input: 18-260VAC Universal Range
- Power Required: 5VA Detecting, 2VA Standby (non-detecting)
- Alarm Contact: 24-220VAC, 0.5A relay with NO, NC and C terminals
- Dimensions: 1" diameter and 10" long
- Wiring Required: 300V, 18/4, plenum rated, SHIELDED, solid strand – provided and installed by others
- LED Status: Power On – Green LED, Detecting – Blue LED, both are seen from end opposite power entry

Mechanical Installation

Mount the GPS-iDETECT-P to the GPS-iMOD bar using the included 1" coated pipe clamp and secure it to a GPS-iMOD section using a nut and bolt as shown in FIGURE 1. The sensor should be as close as possible to the ionization source.

Power On - Green LED
Ion Sensing - Blue LED



Figure 1

Wiring Diagram

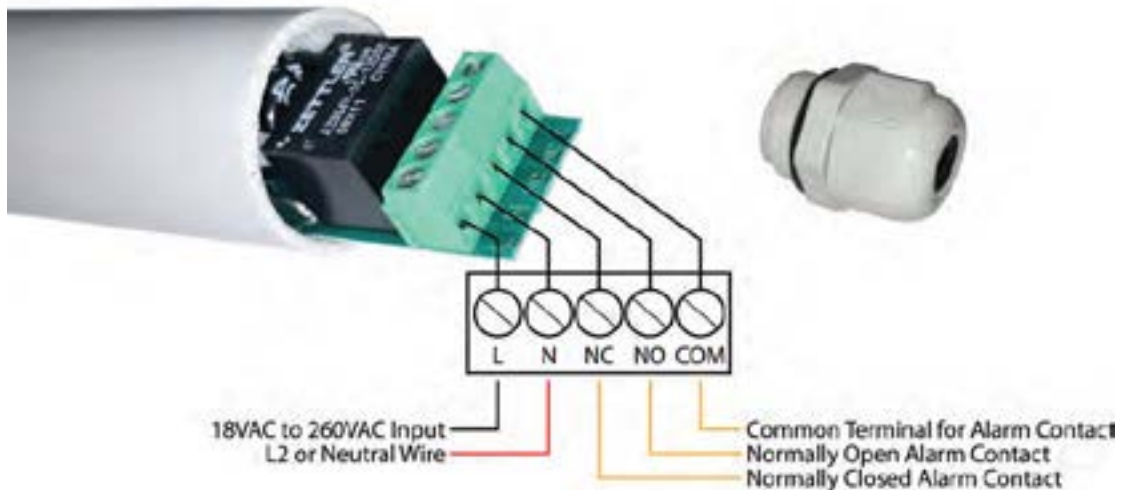


Figure 2



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Power Source

The GPS-iDETECT-P can be connected to either (I) house power source, or (II) GPS-iMOD power supply. Please reference below the instructions for connecting to the target power source.

I. Wiring direct to house power source



1. Remove cable gland. Remove foam filler, but don't discard. See FIGURE 2.
2. Use 300V 18/4 plenum-rated, SHIELDED cable rated for the voltage applied. Follow all local and national electric codes. Solid copper wiring is preferred.
3. The shield on the 18/4 cable should be grounded on one end, opposite the sensor. The shield on the 18/4 cable inside the sensor should not be connected to anything, including ground!
4. Connect power to the appropriate power input pins of the terminal block. See FIGURE 2. The neutral must be landed on the N terminal. If 240V, L2 is connected to N terminal.
5. Pull the cable through the gland. Place foam filler over the cable and then terminate to the circuit board. Push the board and foam spacer into the tube. Tighten the cable gland.

Connection to BMS/BAS

The detector is supplied with an alarm relay that can be wired into the building management system. The internal relay has been provided with both normally open (NO) and normally closed (NC) connections along with the common (COM) terminal. See FIGURE 2 for connection details.

The relay will energize once the ion detection threshold has been exceeded proving ion output is present. The relay will change state once the unit is detecting. There is a 12 second delay after ion detection has ceased to prevent cycling.

I. Wiring direct to GPS-iMOD power supply

1. Remove cable gland. Remove foam filler, but don't discard. See FIGURE 2.
2. See FIGURE 2 for connections to GPS-iDETECT-P.
3. Remove the red jumper wire between C and NO on the "GPS-iDetect-P" terminal block inside the GPS-iMOD power supply (see FIGURE 3 for jumper wire).
4. Use 300V, 18/4, plenum rated, SHIELDED cable wire between the GPS-iDETECT-P terminal block and the GPS-iMOD power supply "GPS-iDetect-P" terminal block.
5. Connect the line (L), neutral (N), and common wires (COM or C). See FIGURE 4.
6. Connect the normal open (NO) contact on the GPS-iDETECT-P to the "ON" contact on the GPS-iMOD power supply terminal block (see FIGURE 4).
7. Ground 18/4 SHIELD to the ground contact (G) on the "GPS-iDetect-P" terminal (ref. FIGURE 4).



- Only ground ONE end of the shielded cable.
 - Do not ground the end connected to the GPS-iDETECT-P sensor.
 - DO NOT RUN CONTROL WIRING WITH HV CABLES!
8. Pull the cable through the gland. Place foam filler over the cable and then terminate to the circuit board. Push the board and foam spacer into the tube. Tighten the cable gland.
 9. When the GPS-iDETECT-P senses output, the "Plasma On" light will illuminate on the front panel of the power supply and the BAS/BMS Alarm Contacts will close. When using the GPS-iDETECT-P in conjunction with the GPS-iMOD power supply, always connect to the BMS/BAS using the "BAS Alarm Contacts" on the GPS-iMOD power supply, and not directly to the contacts on the GPS-iDETECT-P.

Jumper Wire



Figure 3



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Connection to BMS/BAS thru GPS-iMOD Power Supply

Refer to FIGURE 5.

Integral alarm “dry” contacts will close when the system is on and operating properly. To tie into the BMS/BAS for remote monitoring, use 18/2 twisted pair, SHIELDED, plenum rated cable and connect to the “BAS Alarm” contact terminals inside the GPS-iMOD power supply. Connect the cable shield to the “BAS Alarm” ground contact (G) shown in FIGURE 5. The terminal block may be removed for ease of wiring.



Keep the control wiring as far from the HV wiring as possible.

DO NOT RUN BOTH CABLES TOGETHER AND DO NOT ZIP TIE CONTROL WIRING TO FLEXIBLE HV CABLES!

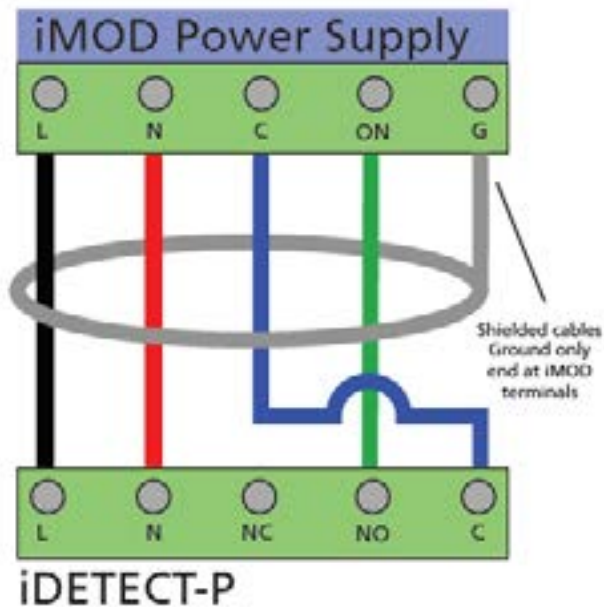


Figure 4

BAS Alarm Contacts

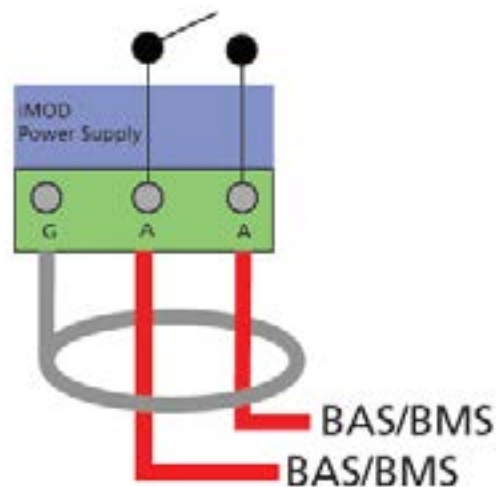


Figure 5



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