Technical Service Bulletin 120224
I/O Module (IOM) Grounding Procedure

Service Bulletin 120224 applies to all Comark Paragon and Arqiva transmitters built prior to 2012 and is designed to ensure a reliable ground reference to the IOM.

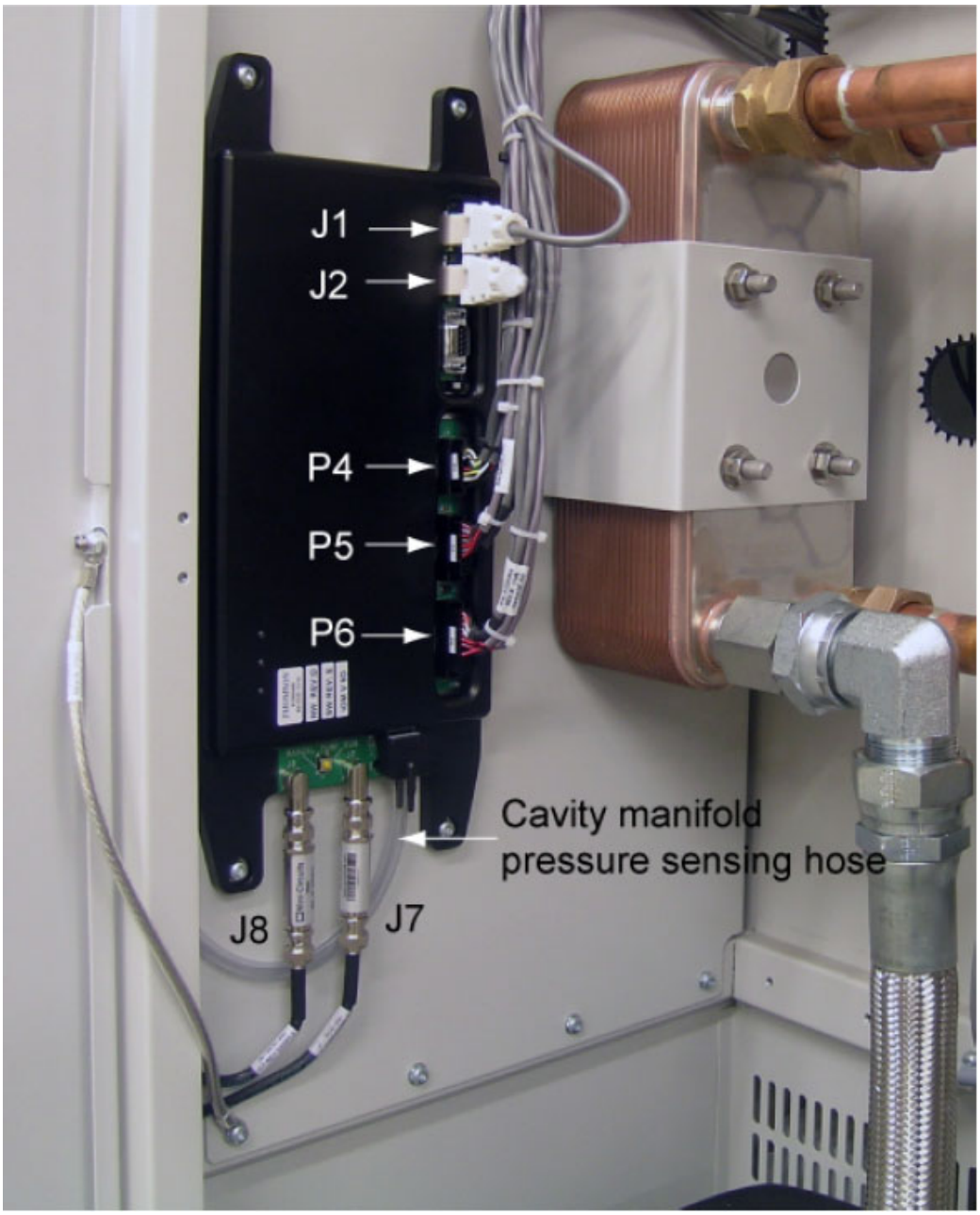
SB120224 I/O Module (IOM) Grounding Procedure	
Applicability	All Comark Paragon and Arqiva transmitters.
Prerequisites	Fully read and understand bulletin before attempting procedure.
Equipment Required	453517-0X - Paragon IOM Grounding Kit (order applicable version below) 01- 1 HPAs 02- 2 HPAs 03- 3 HPAs T-25 Torx® Driver, 15/32” Counterbore with 3/16 pilot, suitable drill, 5/16” open end wrench, 3/8” nut driver
Comments	Clean any and all metal and paint shavings as required

1. Place HPA in stop mode and in an offline configuration. Once the cool down cycle is complete, turn off HPA power and turn off the UPS.

NOTE: Save the PARCON logs before powering down HPA, otherwise they will be lost when the Brain Board (CPU) is powered down.

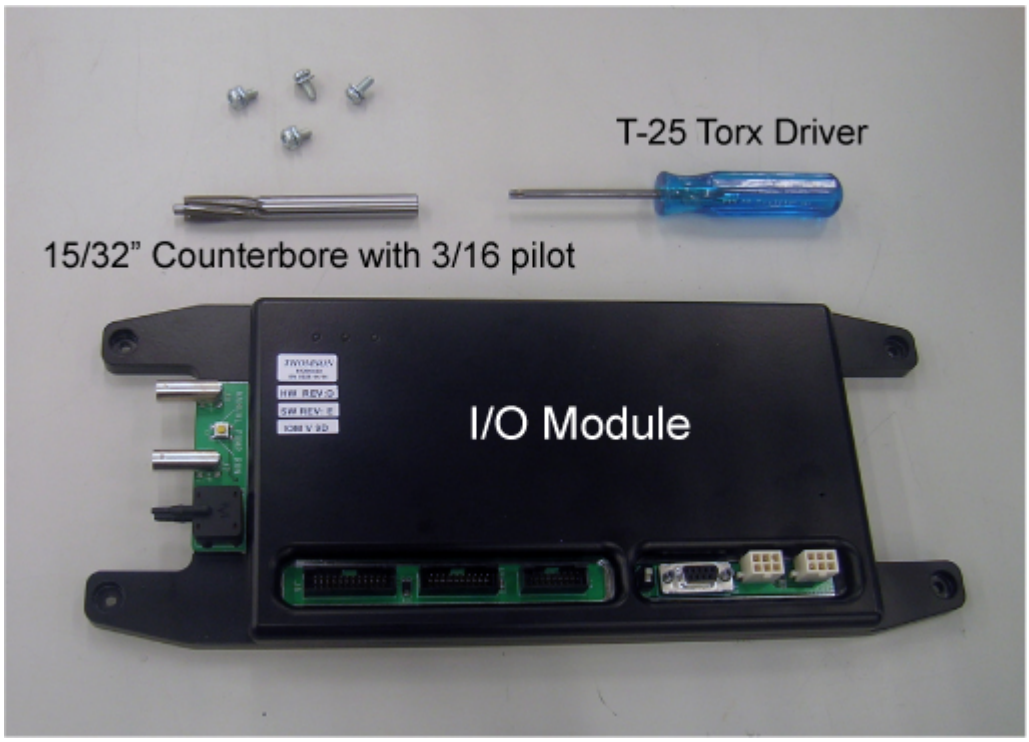
IOT/C-I/O Module

2. Unplug CAN bus cable J1 and Termination Plug J2 from top of the IOT/C-I/O module.
3. Unplug P4, P5, and P6 from the right side of the I/O.
4. Disconnect the cavity manifold pressure sensing hose from the pressure sensor.
5. Disconnect J7 (IOT FWR Sample) and J8 (IOT REV Sample).



6. Use the T-25 Torx ® driver to remove the four screws from the I/O Module.

I/O Module Removed



7. Insert the counterbore bit into the drill and hold the I/O module on a secure surface and slowly but carefully drill out the top left and bottom right mounting holes -- just enough to remove the paint. Avoid removing excessive amounts of metal during this process. Also keep any metal shavings generated during this process from getting into the module.

Paint removed from mounting hole

NOTE: It is best to do this as far from the cabinet as possible to ensure metal shavings or paint do not contaminate the transmitter system or get drawn into the filters.

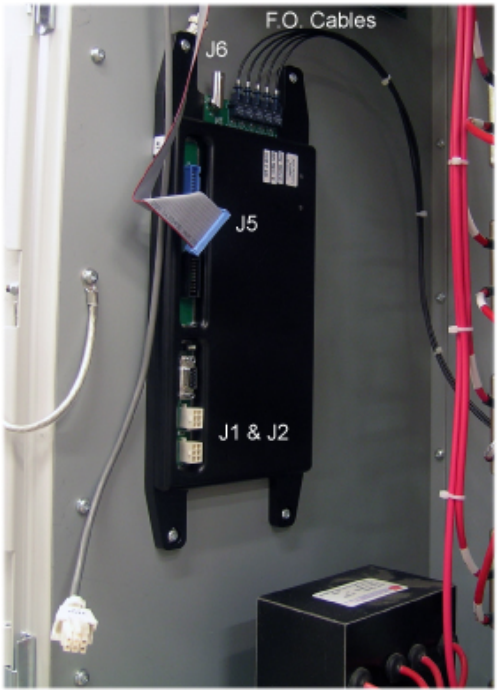
8. Drape the hose and the sample cables over the plumbing to keep them clear of the bottom panel. Remove the four (4) T-25 Torx ® screws from the bottom of the IOM Panel. Pry panel away from HPA frame (approx. ¼" is sufficient) and use a piece of cardboard to allow some space between the panel and the frame.

9. Drill the first two (2) holes using the counterbore bit, as illustrated above, removing paint from the panel. Carefully vacuum any and all metal shavings that were generated.
10. Remove cardboard and secure the panel using the four (4) screws that were removed in step 8. Ensure that the door ground strap is secured to the panel using the first screw.
11. Install the I/O module and secure it using the four (4) Torx ® screws removed in step 6.
12. Connect the cavity manifold pressure sensing hose to the bottom hose barb of the sensor on the IOM. The hose goes on the barb closest to the circuit board, or the closest to the HPA panel.

13. Connect J7 and J8 and P4, P5, and P6 to the IOM.
14. Connect CAN bus cable J1 and Termination Plug J2.

Modified IOT/C-I/O Module installed

High Voltage IOM 61200551



HV IOM Unplugged

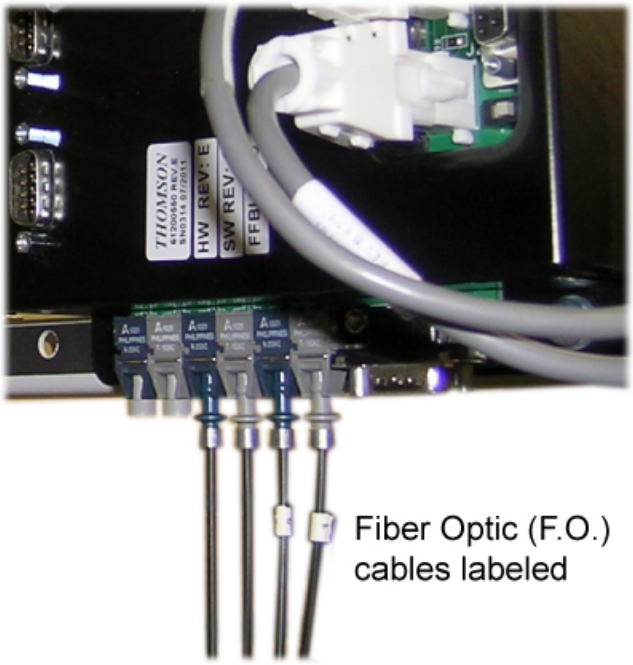
15. Unplug CAN bus cable J2 and Termination Plug J1 from bottom left of the HV-I/O module.
16. Unplug J5 (blue connector) and J6 (BNC) from the upper left of the I/O.
17. Use the T-25 Torx ® driver to remove the four screws from the I/O Module.
18. Leave the fiber optic (F.O.) cables on and carefully move the I/O enough to get it on a stable surface in order to use the counterbore in the next step.
19. Using the counterbore bit in the drill, hold the I/O module on a secure surface and slowly but carefully drill out the top left and bottom right mounting holes -- just enough to remove the paint. Avoid removing excessive amounts of metal during this process. Also keep any metal shavings generated during this process from getting into the module.

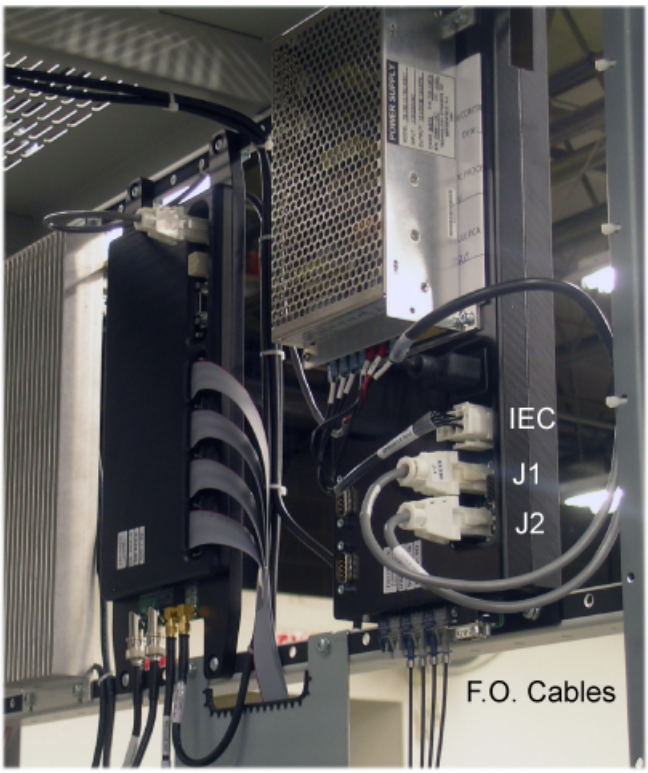
NOTE: It is best to do this as far from the cabinet as possible to ensure metal shavings or paint do not contaminate the transmitter system or get drawn into the filters.

20. Install the I/O module and secure it using the four (4) Torx ® screws removed in step 17.
21. Connect CAN bus cable J2 and Termination Plug J1.
22. Connect J5 and J6 the IOM.

FFBI (Brain Board) IOM 61200550

23. Use wire marker tape to label the first and second F.O. cables to ensure they get put back in the correct order.





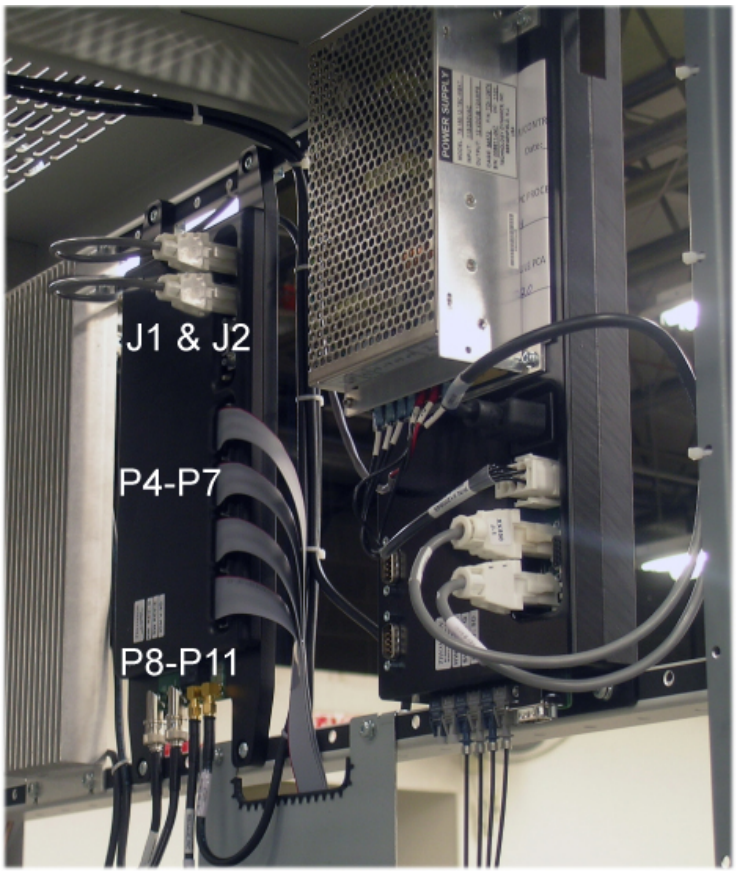
FFBI module

24. Unplug both CAN bus cables (J1 and J2) from the FFBI (Brain)-I/O module.
25. Unplug the IEC power connector just above J1 and J2.
26. Use the T-25 Torx ® driver to remove the four screws from the I/O Module.
27. Using the counterbore bit in the drill, hold the I/O module on a secure surface and slowly but carefully drill out the **TOP RIGHT** and **BOTTOM LEFT** mounting holes -- just enough to remove the paint. Avoid removing excessive amounts of metal during this process. Also keep any metal shavings generated during this process from getting into the module.

> **NOTE:** The FFBI I/O Module is the *only* module with top right and bottom left drilling. All other modules are drilled top left and bottom right.

28. Install the I/O module and secure it using the four (4) Torx ® screws removed in step 26.
29. Connect the CAN bus cables to J1 and J2.
30. Connect the IEC power connector just above J1 and J2.

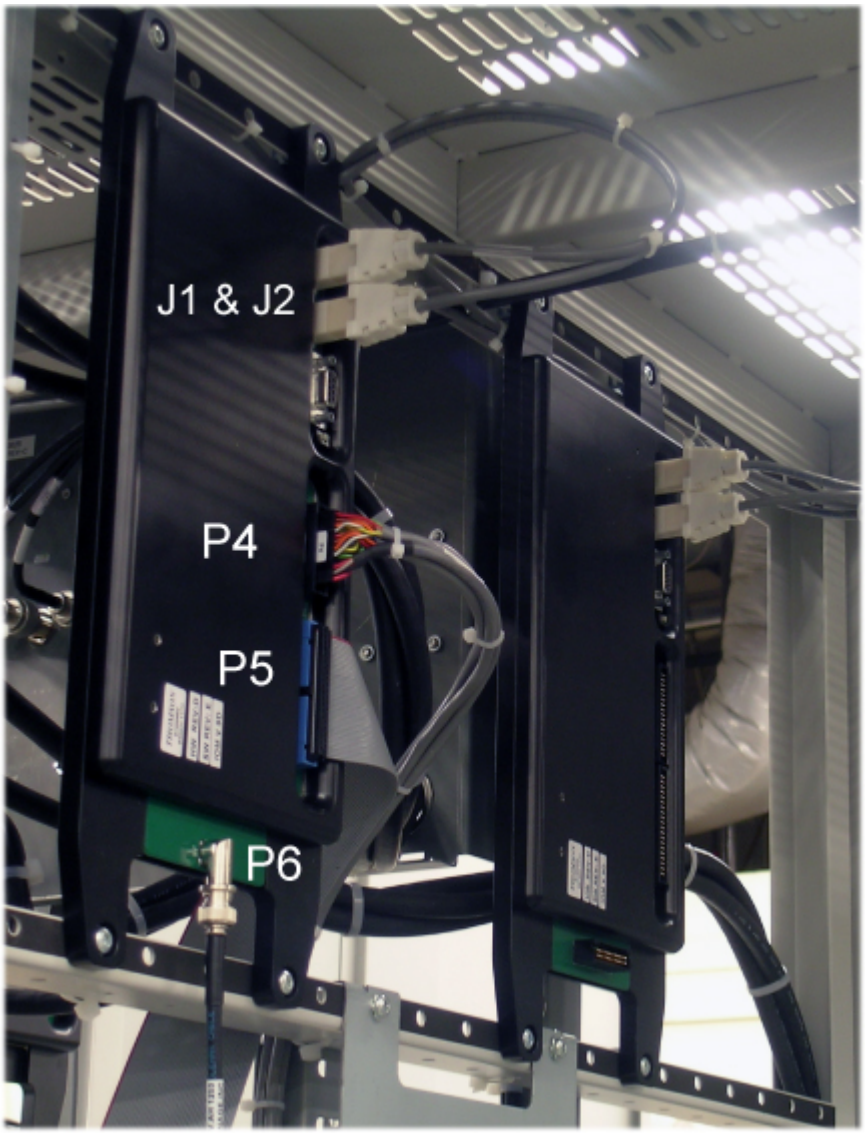
Driver IOM 61200553



Driver I/O Module FFBI (Brain) I/O Module

31. Unplug CAN bus cables (J1 & J2) from top of the Driver-I/O module.
32. Unplug P4, P5, P6, and P7 from the right side of the I/O.
33. Unplug SMA connectors P8 and P9 (5/16” wrench) and BNC connectors P10 and P11 from the bottom of the I/O.
34. Use the T-25 Torx ® driver to remove the four screws from the I/O Module.
35. Using the counterbore bit in the drill, hold the I/O module on a secure surface and slowly but carefully drill out the top left and bottom right mounting holes -- just enough to remove the paint. Avoid removing excessive amounts of metal during this process. Also keep any metal shavings generated during this process from getting into the module.
36. Connect CAN bus cables (J1 & J2) from top of the I/O module.
37. Connect P4, P5, P6, and P7 from the right side of the I/O.
38. Connect SMA connectors P8 and P9 and BNC connectors P10 and P11 to the I/O module.

A/C Distribution IOM 61200552

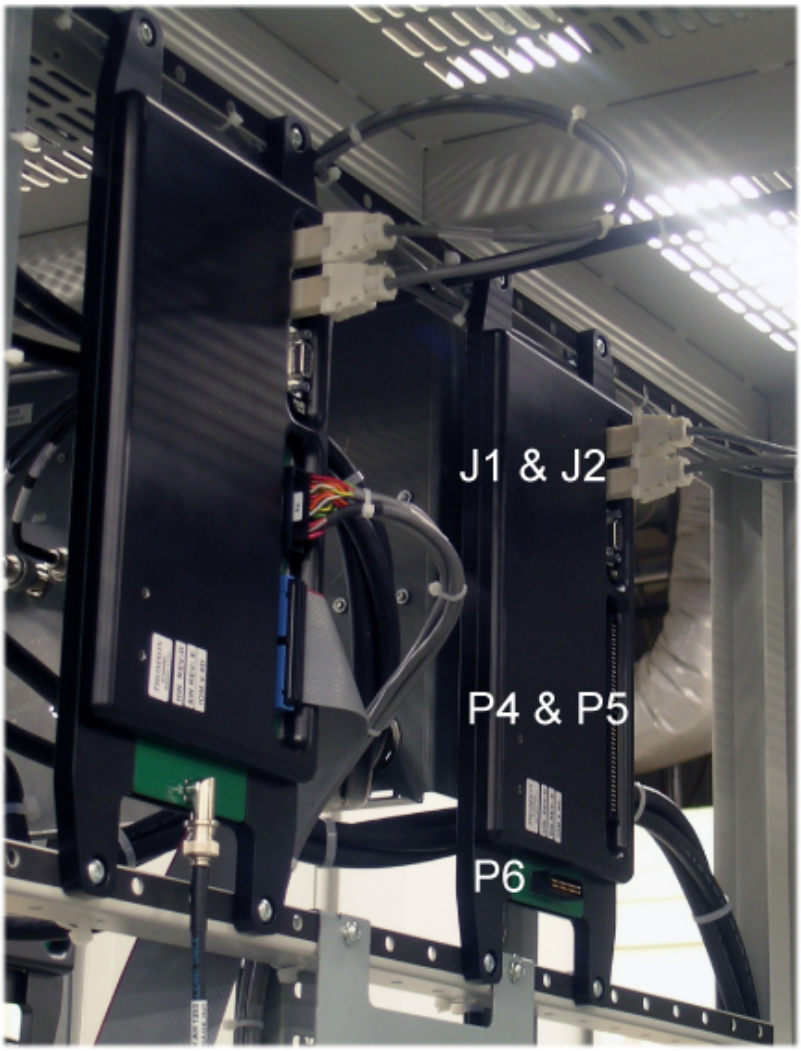


A/C Distribution Module Remote Interface Module

39. Unplug both CAN bus cables (J1 and J2) from top of the A/C Distribution-I/O module.
40. Unplug P4 and P5 from the right side of the I/O.
41. Unplug P6 from the bottom of the I/O.
42. Use the T-25 Torx ® driver to remove the four screws from the I/O Module.
43. Using the counterbore bit in the drill, hold the I/O module on a secure surface and slowly but carefully drill out the top left and bottom right mounting holes -- just enough to remove the paint. Avoid removing excessive amounts of metal during this process. Also keep any metal shavings generated during this process from getting into the module.

44. Connect both CAN bus cables (J1 and J2) from top of the I/O module.
45. Connect P4 and P5 from the right side of the I/O.
46. Connect P6 from the bottom of the I/O.

Remote Interface IOM 61200555

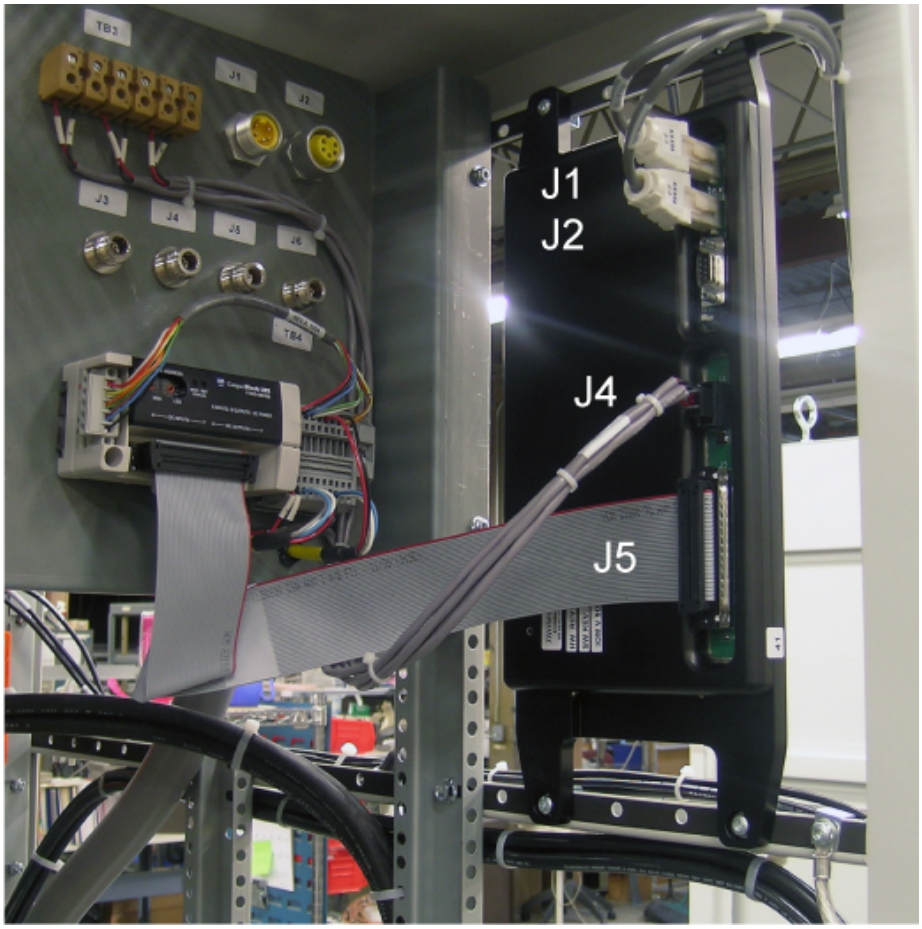


A/C Distribution Module Remote Interface Module

47. Unplug both CAN bus cables (J1 and J2) from top of the Remote Interface- I/O module.
48. Unplug P4 and P5 from the right side of the I/O if applicable.
49. Unplug P6 from the bottom of the I/O if applicable.
50. Use the T-25 Torx ® driver to remove the four screws from the I/O Module.

51. Using the counterbore bit in the drill, hold the I/O module on a secure surface and slowly but carefully drill out the top left and bottom right mounting holes -- just enough to remove the paint. Avoid removing excessive amounts of metal during this process. Also keep any metal shavings generated during this process from getting into the module.
52. Connect both CAN bus cables (J1 and J2) from top of the I/O module.
53. Connect P4 and P5 from the right side of the I/O if applicable.
54. Connect P6 from the bottom of the I/O if applicable.

System Interface IOM 61200554



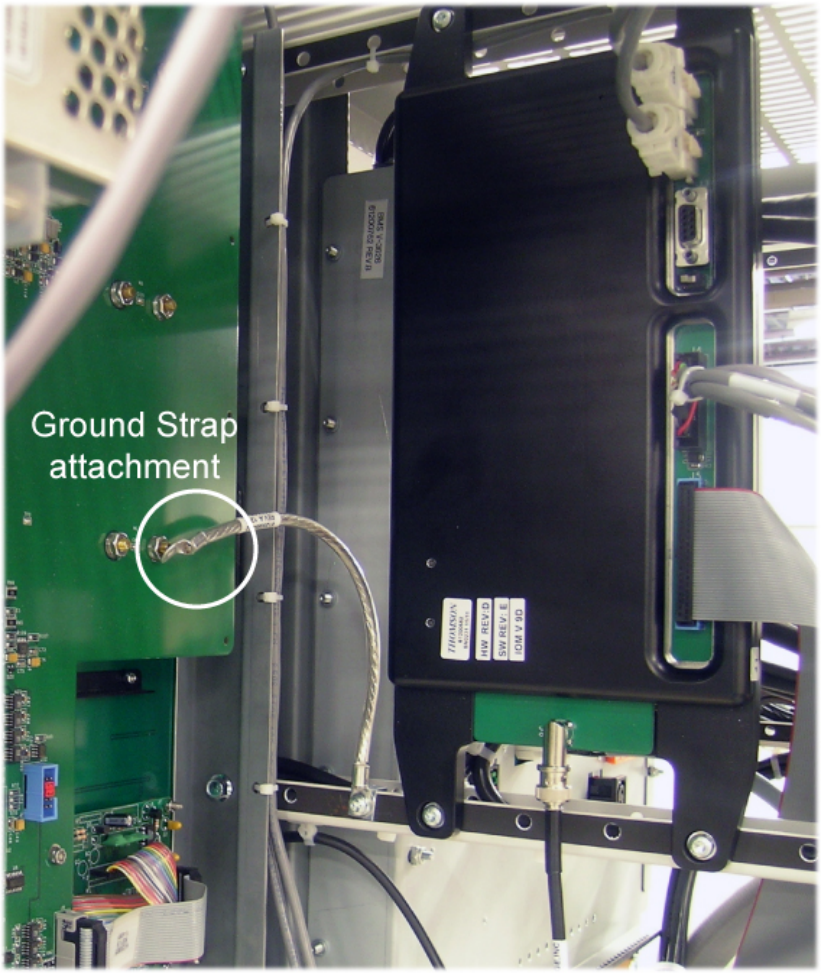
System Interface IOM

55. Unplug both CAN bus cables (J1 and J2) from top of the System Interface-I/O module.
56. Unplug P4 and P5 from the right side of the I/O.
57. Use the T-25 Torx ® driver to remove the four screws from the I/O Module.
58. Using the counterbore bit in the drill, hold the I/O module on a secure surface and slowly but carefully drill out the top left and bottom right mounting holes -- just enough to remove the

paint. Avoid removing excessive amounts of metal during this process. Also keep any metal shavings generated during this process from getting into the module.

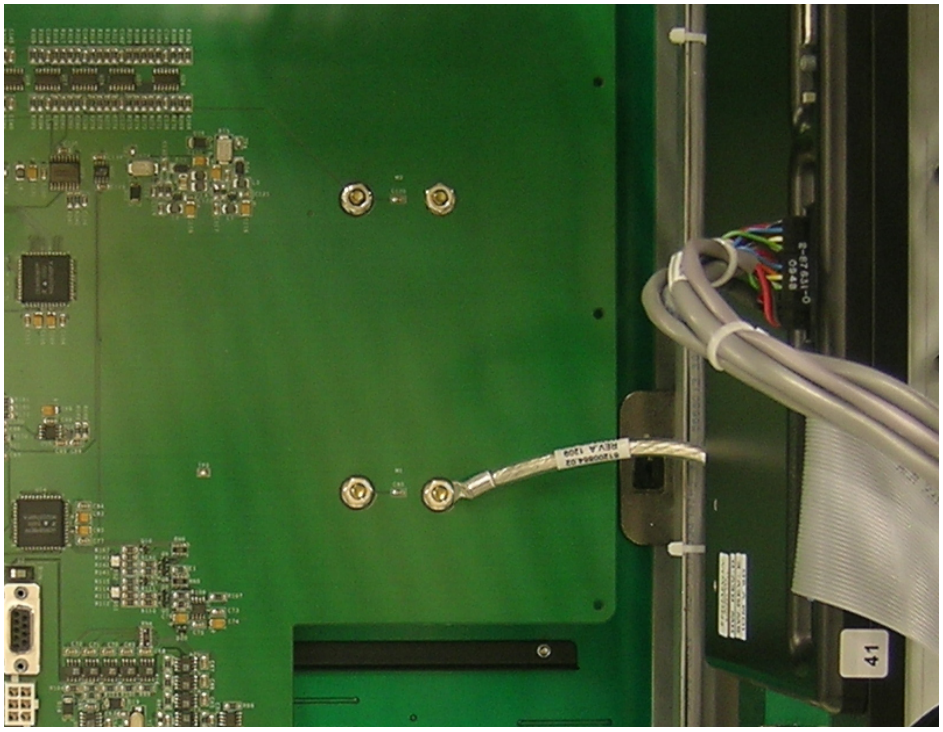
59. Connect both CAN bus cables (J1 and J2) from top of the I/O module.
60. Connect P4 and P5 from the right side of the I/O.

Front Panel Ground Strap



Install new speed nut and front panel ground strap

61. Install a speed nut (601216-01) on the hole left of the A/C Distribution IOM.
62. Using a Torx® driver, install the #25 Torx ® fastener (608110-01) and tighten the Ground strap (61200864.02) as shown.
63. Using a 3/8” nut driver, remove the negative nut off of the lowest meter and install the ground strap and tighten.



Ground Strap attached to panel lug

64. Power up the HPA, turn on the UPS and set the date and time (reference Service Bulletin 031207).
65. Bring HPA back online.
66. Procedure complete.

Here at Comark, we are constantly striving to improve the satisfaction of both our new and existing customers. Continually working to improve the reliability of the installed fleet of Comark transmitters in the field is another way in which we demonstrate our commitment to you, our valued customer.

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