Technical Service Bulletin 100318
IOX/DCX Flow Meter Upgrade Procedure

This Service Bulletin applies to all Comark IOX, CIOX, and DCX Millennium transmitters equipped with Universal Flow Monitors LL series flow meter (Comark part #606409-01 piston type). The now obsolete 606409-01 is identified by the offset input and output ports, see left picture below. The upgrade kit is offered in two versions. The typical kit number 453390-01 applies to HPA cabinets that have rubber hoses below the valve and flow monitor that “elbow” to the IOT plumbing. The 453390-02 kit is for the very early IOX that has copper tubing between the monitor and the IOT plumbing including the “elbow”. The purpose of this bulletin is to provide a brief guide to the simple straight forward installation of the flow meter upgrade kit.

Obsolete Piston-Type Flow Monitor

New Flow Monitor

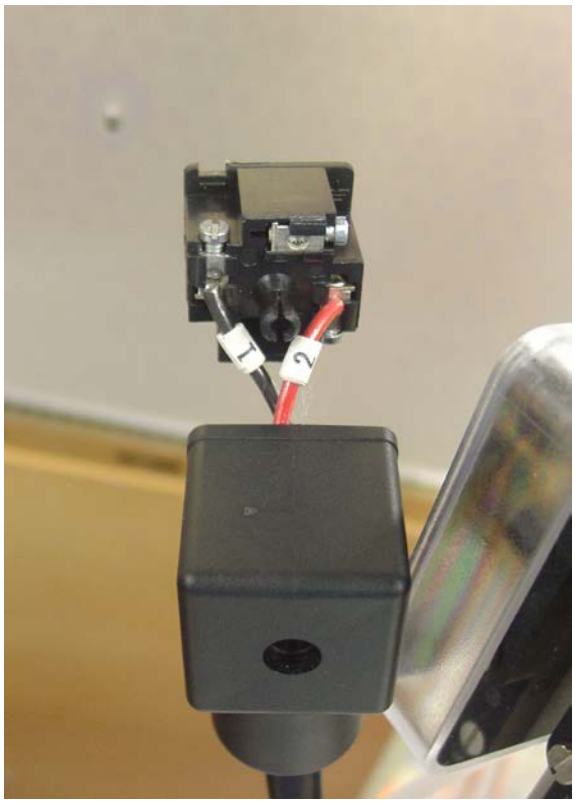
IOX/DCX Flow Meter Upgrade Procedure	
Applicability	All Comark IOX, CIOX, and DCX Millennium transmitters equipped with Universal Flow Monitors LL series flow meter (piston type).
Prerequisites	Fully read and understand this bulletin before attempting procedure.
Equipment Required	Appropriate plumbing wrenches, standard hand tools, and proper coolant recovery methods.
Comments	HPA must be off line and coolant in and out valves must be closed off. -01 Version skip step 5. -02 Version skip step 4.

1. Ensure that HPA is off line in STOP Mode and that the in and out valves are closed off. These valves are typically above the HPA cabinet where the plumbing enters. Consult Installation drawing plumbing schematic to determine if the HPA cooling system if going to turn off (3 minutes after cool down cycle) or if it will continue to run because of other loads (combiner, system) or if there is another HPA in the cooling loop.
2. Turn off the HPA shut off valves and turn off the IOT shut off valves.
3. Loosen the screws and remove the wires from the flow monitor switch, cut off any crimped lugs if present to aid in pulling out the harness out of the monitor housing. Move wire aside for later use.
4. **-01 Version only** - Disconnect rubber hose from IOT return assembly, capturing the escaping coolant. This is the rubber hose below and after the flow monitor. Loosen the union above the flow monitor and loosen the pipe clamp to remove the monitor assembly.
5. **-02 Version only** – Remove the IOT return (rigid) assembly by loosening the IOT hose, pipe mounting clamp(s) and loosening the union just above the flow monitor while capturing the escaping coolant. There may be a union that will allow the return assembly to come out in two pieces.

NOTE: In some HPA cabinet assemblies, the hose provided will not be needed because of reuse of existing longer hose assemblies.

6. Apply provided Teflon tape (clockwise, looking down at threaded end) to the (MPT) end of the union fitting and install in top of new flow monitor.
7. Apply Teflon tape (clockwise) on both ends of the S/S 10”, ¾” nipple. Install nipple into the bottom of the flow meter and install provided adapter on the other end of the nipple.
8. Attach the hose assembly below the nipple.
9. Remove the threaded rod from the old pipe clamp and install the provided set screw in its place.
10. Install the new assembly.

11. Loosen the screw enough to remove the connector plug from the flow monitor assembly. Once removed, fully remove the screw and set aside. There is a notch in the upper right hand corner of the plug. Use a small screwdriver to pry cover off the connector housing.
12. Feed the wire that was set aside in step 3, through the housing as shown below. The connector does unplug to aid in attaching the wire if needed, wire as shown below.



13. Upgraded flow meter installation complete, set collector coolant flow calibration as follows.
14. The trip point is set by unlocking the armature/switch on the flow meter by loosening the two locking screws and sliding it along the length of the meter. There is a calibrated gauge on the side of the meter along with a corresponding mark on the switch. Where this mark lines up along the gauge scale determines the trip level of the switch. Once this is set per the correct value as seen on the gauge, tighten the two locking screws to hold the switch in position. See the pictures below.

15. To test the Collector Coolant Flow trip, decrease the flow to the HPA cabinet with the inlet coolant shutoff valve while observing the coolant trip LED on the control panel. When the trip is exceeded (too little coolant) the LED will be lit RED and a message on the LCD screen will be displayed stating Collector Coolant Fault.
16. After it is tested return the valve to the original full open position.
17. 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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