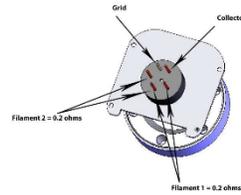


Issue	Possible Cause	Possible Solution
Clear ERROR message	Must be done before the ion gauge can be turned on after receiving an ERROR message	1. SETUP UNIT --> CLR IG ERROR
Indication	Possible Cause	Possible Solution
Display is off / blank	<ol style="list-style-type: none"> No power The connector may not be wired correctly 	<ol style="list-style-type: none"> Check cable connections Check cable connections
Readings are very different from expected pressure	<ol style="list-style-type: none"> Sensor not installed in the proper location The process gas is different from the gas used to calibrate the gauge (nitrogen) Sensor has been dropped Gauge sensor is contaminated Leak in the vacuum system 	<ol style="list-style-type: none"> Ensure sensor is located in the right place (page 10 of manual) Apply gas sensitivity correction factor if applicable or select the appropriate gas (page 46 of manual) Replace the ion gauge sensor Degas the sensor or replace the sensor Re-check for a leak in the system; metal seals should be used when operating below 1×10^{-7} Torr
Ion gauge cannot be turned on	<ol style="list-style-type: none"> Pressure exceeds 1.00×10^{-3} Torr at 4 mA emission Pressure exceeds 5.0×10^{-2} Torr at 0.10 mA (100 μA) emission Emission Control not functioning 	<ol style="list-style-type: none"> Decrease pressure below required value Decrease pressure below required value Switch to the other filament <ol style="list-style-type: none"> Front Panel Control - page 32 of manual (SETUP IG --> FILAMENT NUM --> FILAMENT 1/2) RS485 - page 66 of manual for ASCII commands Ion gauge sensor is possibly contaminated. <ol style="list-style-type: none"> Go into R&D Mode <ol style="list-style-type: none"> MENU --> SETUP DISP --> SHOW DATA --> IG ONLY RND After going to top of menu, it should display several things including FVI. The first digits are filament voltage, the second digits are current. <ol style="list-style-type: none"> If voltage > 1.7 V and current is > 2.5 A at 100 μA setting, there is possible contamination

		<ul style="list-style-type: none"> ii. If voltage > 2.3 V and current is > 2.7 A at 4 mA setting, there is possible contamination. <ol style="list-style-type: none"> 2. Degas sensor if values exceed limits from point 4.1 <ol style="list-style-type: none"> 1. Degassing basic information, page 20 of manual 2. Front Panel Control --> DEGAS ON 3. RS-485 - page 66 of manual for ASCII commands 3. Re-check R&D Mode Values. If nothing changed, sensor is contaminated. <p>5. Check the resistance between filaments 1 and 2 (page 73)</p> <ol style="list-style-type: none"> 1. Remove the ion gauge transducer from the control module (page 78, steps 1-5) 2. Measure the resistance using an ohmmeter; a good intact filament will have a resistance of 0.2 ohms (page 73 of manual) <div data-bbox="940 823 1354 1092" data-label="Image"> <p>The diagram shows a cross-section of the ion gauge assembly. It features a central grid, a collector, and two filaments. Filament 1 and Filament 2 are both labeled with a resistance of 0.2 ohms. The grid and collector are also labeled.</p> </div> <ol style="list-style-type: none"> 6. Contact sales@lesker.com with R&D and resistance values <ol style="list-style-type: none"> 1. Possibly need to replace the sensor
<p>Research Screen shows filament Voltage is present but filament current stays at 0</p>	<ol style="list-style-type: none"> 1. Filament is open 	<ol style="list-style-type: none"> 1. Switch to other filament <ol style="list-style-type: none"> 1. Switch filament <ol style="list-style-type: none"> a. Front panel -(SETUP IG --> FILAMENT NUM --> FILAMENT 1/2) b. RS485 - page 68 of manual 2. Check the resistance between filaments 1 and 2 (page 73) <ol style="list-style-type: none"> 1. Remove the ion gauge transducer from the control module (page 78, steps 1-5) 2. Measure the resistance using an ohmmeter; a good intact filament will have a resistance of 0.2 ohms (page 73 of manual)



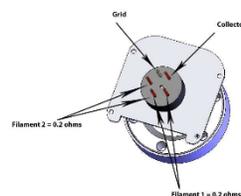
3.

3. Contact sales@lesker.com with resistance values
 1. Possibly need to replace the sensor

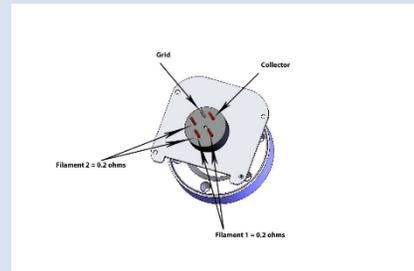
Research screen shows filament voltage and current are present but gauge is shutting off

1. Filament is contaminated or burned out

1. Check filament current
 1. MENU --> SETUP DISP --> SHOW DATA --> IG ONLY RND After going to top of menu, it should display several things including FVI. The first digits are filament voltage, the second digits are current.
 - a. If voltage > 1.7 V and current is > 2.5 A at 100 uA setting, there is possible contamination
 - b. If voltage > 2.3 V and current is > 2.7 A at 4 mA setting, there is possible contamination.
2. Degas sensor if values exceed limits from point 1
 1. Degassing basic information, page 20 of manual
 2. Front Panel Control --> DEGAS ON
 3. RS-485 - page 66 of manual for ASCII commands
3. Re-check R&D Mode Values. If nothing changed, sensor is contaminated.
4. Switch to other filament or replace sensor
 1. Switch filament
 - a. Front panel -(SETUP IG --> FILAMENT NUM --> FILAMENT 1/2)
 - b. RS485 - page 68 of manual
5. Check the resistance between filaments 1 and 2 (page 73)
 1. Remove the ion gauge transducer from the control module (page 78, steps 1-5)
 2. Measure the resistance using an ohmmeter; a good intact filament will have a resistance of 0.2 ohms (page 73 of manual)



		<ol style="list-style-type: none"> 6. Contact sales@lesker.com with R&D and resistance values <ol style="list-style-type: none"> 1. Possibly need to replace the sensor
Error Message - OVERPRESSURE	<ol style="list-style-type: none"> 1. The calculated pressure is greater than the maximum setting for emission current. System pressure is too high 	<ol style="list-style-type: none"> 1. Change to 100 μA emission current which will operate at higher pressures or reduce pressure <ol style="list-style-type: none"> 1. Front panel Control- page 24 of manual (EMISSION SEL --> 100 μA) 2. RS485 - page 66 of manual
Error Message - EMIS FAIL	<ol style="list-style-type: none"> 1. The desired emission current (IE) could not be established. 2. Gauge contamination, possible coating on filament or grid surfaces. 3. End of filament life 4. System pressure too high 	<ol style="list-style-type: none"> 1. Reduce the pressure (if applicable) 2. Check filament current <ol style="list-style-type: none"> 1. MENU --> SETUP DISP --> SHOW DATA --> IG ONLY RND After going to top of menu, it should display several things including FVI. The first digits are filament voltage, the second digits are current. <ol style="list-style-type: none"> a. If voltage > 1.7 V and current is > 2.5 A at 100 μA setting, there is possible contamination b. If voltage > 2.3 V and current is > 2.7 A at 4 mA setting, there is possible contamination. 3. Degas sensor if values exceed limits from point 2 <ol style="list-style-type: none"> 1. Degassing basic information, page 20 of manual 2. Front Panel Control --> DEGAS ON 3. RS-485 - page 66 of manual for ASCII commands 4. Re-check R&D Mode Values. If nothing changed, sensor is contaminated. 5. Switch to other filament or replace sensor <ol style="list-style-type: none"> 1. Switch filament <ol style="list-style-type: none"> a. Front panel -(SETUP IG --> FILAMENT NUM --> FILAMENT 1/2) b. RS485 - page 68 of manual 6. Check the resistance between filaments 1 and 2 (page 73) <ol style="list-style-type: none"> 1. Remove the ion gauge transducer from the control module (page 78, steps 1-5) 2. Measure the resistance using an ohmmeter; a good intact filament will have a resistance of 0.2 ohms (page 73 of manual)

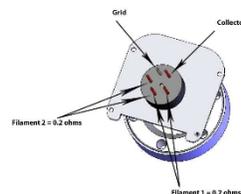


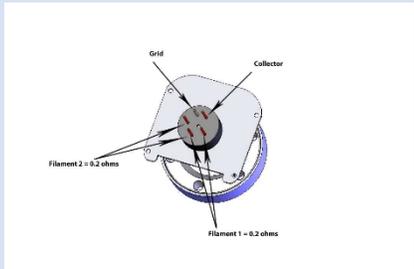
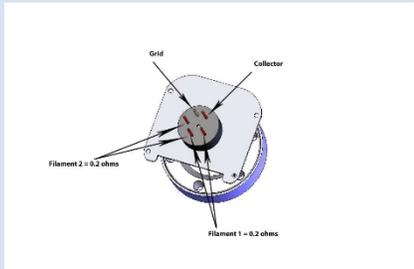
7. Contact sales@lesker.com with R&D and resistance values
 1. Possibly need to replace the sensor

Error Message - ION CUR FAIL

1. The ion current (IC) is below the minimum parameter. Sensor contamination, possible coating on collector inhibiting ion collection
2. Electrometer failure

1. Check filament current
 1. MENU --> SETUP DISP --> SHOW DATA --> IG ONLY RND After going to top of menu, it should display several things including FVI. The first digits are filament voltage, the second digits are current.
 - a. If voltage > 1.7 V and current is > 2.5 A at 100 uA setting, there is possible contamination
 - b. If voltage > 2.3 V and current is > 2.7 A at 4 mA setting, there is possible contamination.
2. Degas sensor if values exceed limits from point 1
 1. Degassing basic information, page 20 of manual
 2. Front Panel Control --> DEGAS ON
 3. RS-485 - page 66 of manual for ASCII commands
3. Re-check R&D Mode Values. If nothing changed, sensor is contaminated.
4. Switch to other filament or replace sensor
 1. Switch filament
 - a. Front panel -(SETUP IG --> FILAMENT NUM --> FILAMENT 1/2)
 - b. RS485 - page 68 of manual
5. Check the resistance between filaments 1 and 2 (page 73)
 1. Remove the ion gauge transducer from the control module (page 78, steps 1-5)
 2. Measure the resistance using an ohmmeter; a good intact filament will have a resistance of 0.2 ohms (page 73 of manual)



		<p>6. Contact sales@lesker.com with R&D and resistance values</p> <ol style="list-style-type: none"> 1. Possibly need to replace the sensor
Error Message - LV Failure	<ol style="list-style-type: none"> 1. The filament voltage could not be established; electronics failure. 	<ol style="list-style-type: none"> 1. Contact sales@lesker.com with R&D and Resistance Values (see Error Message - EMIS FAIL for instructions on how to obtain these values)
Error Message - LV OVR PRW	<ol style="list-style-type: none"> 1. The power applied to the filament is at maximum without establishing an emission current 	<ol style="list-style-type: none"> 1. Contact sales@lesker.com with R&D and Resistance Values (see Error Message - EMIS FAIL for instructions on how to obtain these values)
F1 or F2 open	<ol style="list-style-type: none"> 1. Filament 1 or 2 is open 2. Faulty electronics 	<ol style="list-style-type: none"> 1. Check the resistance between filaments 1 and 2 (page 73) <ol style="list-style-type: none"> 1. Remove the ion gauge transducer from the control module (page 78, steps 1-5) 2. Measure the resistance using an ohmmeter; a good intact filament will have a resistance of 0.2 ohms (page 73 of manual)  <ol style="list-style-type: none"> 3.  2. Contact sales@lesker.com with resistance values
		<p>R&D MODE Troubleshooting</p> <ol style="list-style-type: none"> 1. MENU --> SETUP DISP --> SHOW DATA --> IG ONLY RND
Filament voltage values are present for several seconds immediately after turning IG ON, but then the values are zero	<ol style="list-style-type: none"> 1. Filament is contaminated or filament has reached end-of-useful operating life for required emission current setting 	<ol style="list-style-type: none"> 1. Degas sensor <ol style="list-style-type: none"> 1. Degassing basic information, page 20 of manual 2. Front Panel Control --> DEGAS ON 3. RS-485 - page 66 of manual for ASCII commands 2. Re-check R&D Mode Values. If nothing changed, sensor is contaminated. 3. Switch emission current setting from initial setting and restart the IG; make several attempts to establish emission current at both 100 μA and 4 mA. <ol style="list-style-type: none"> 1. Front panel - page 31 (EMISSION SEL --> 4mA / 100 μA) 2. RS485 - page 66 of manual 4. Switch to second filament or replace ion gauge sensor

		<ol style="list-style-type: none"> 1. Front panel - page 32 (SETUP IG --> FILAMENT NUM --> FILAMENT 1/2) 2. RS485 - page 66
All parameters in the R&D screen are zero after IG turn ON is attempted	1. Failed Electronics	1. Contact sales@lesker.com for replacement electronics
354 filament voltage is greater than 1.7 V and filament current is greater than 2.5 A with emission current = 100 µA	1. Filament nearing end-of-useful operating-life	<ol style="list-style-type: none"> 1. Degas sensor <ol style="list-style-type: none"> 1. Degassing basic information, page 20 of manual 2. Front Panel Control --> DEGAS ON 3. RS-485 - page 66 of manual for ASCII commands 2. Re-check R&D Mode Values. If nothing changed, sensor is contaminated. 3. Switch to other filament or replace sensor <ol style="list-style-type: none"> 1. Switch filament <ol style="list-style-type: none"> a. Front panel -(SETUP IG --> FILAMENT NUM --> FILAMENT 1/2) b. RS485 - page 68 of manual 4. Contact sales@lesker.com with R&D values <ol style="list-style-type: none"> 1. Possibly need to replace the sensor
354 filament voltage is greater than 2.3 V and filament current is greater than 2.7 A with emission current = 4 mA	1. Filament nearing end-of-useful operating-life	<ol style="list-style-type: none"> 1. Degas sensor <ol style="list-style-type: none"> 1. Degassing basic information, page 20 of manual 2. Front Panel Control --> DEGAS ON 3. RS-485 - page 66 of manual for ASCII commands 2. Re-check R&D Mode Values. If nothing changed, sensor is contaminated. 3. Switch to other filament or replace sensor <ol style="list-style-type: none"> 1. Switch filament <ol style="list-style-type: none"> a. Front panel -(SETUP IG --> FILAMENT NUM --> FILAMENT 1/2) b. RS485 - page 68 of manual 4. Contact sales@lesker.com with R&D values <ol style="list-style-type: none"> 1. Possibly need to replace the sensor

If none of these steps help alleviate the issues, please contact sales@lesker.com with the Troubleshooting form as well as provide the R&D and Resistance Values (see Error Message - EMIS FAIL for instructions on how to obtain these values)