Lemo 3-Pin Connector Test

• Test Configuration:
  – Lemo F-Series environmental connector (3 contacts) as used on NGL Power Interface Cable
  – Contacts wired with #22AWG Teflon jacketed wire (M22759); approximately 12”
  – Lead wires are not bundled together
  – 2 contacts wired, thermocouple installed onto third contact
  – Test currents applied at both vacuum (<1x10^-5 Torr) and normal atmospheric pressure (760 Torr)
  – Test currents of: 4A, 8A, and 11.5A; simulating actual use, rated, and smart-short (failure) current levels respectively.

• Conclusion:
  – Connector operates within rated temperature range (200°C) for all configurations tested
  – Smart-short current exceeds manufacturer specified rated current but does not overstress the connector (overstress is characterized as an insert, shell, or contact temperature exceeding the manufacturer’s ratings).
8A Test (67% load)

Temperature (°C)

Time (Minutes)

Wire Temperature
Connector Insert Temperature
Wire Temperature
Connector Insert Temperature
Connector Shell (Cable Side)
Connector Shell (Bulkhead Side)
Bulkhead (Above connector)

Chamber sidewall Temp.
Chamber Ambient Temperature
Baseplate Temperature

8A Load (NGL Lemo Power Conn.)

- = Loaded Pin
- = Thermocouple
- = 1 atmos.
- = Vacuum

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EV5/Don Barr
11.5A Test (67% load)