VACCO
SPACE PRODUCTS

XENON FLOW CONTROL MODULE
09510000-01

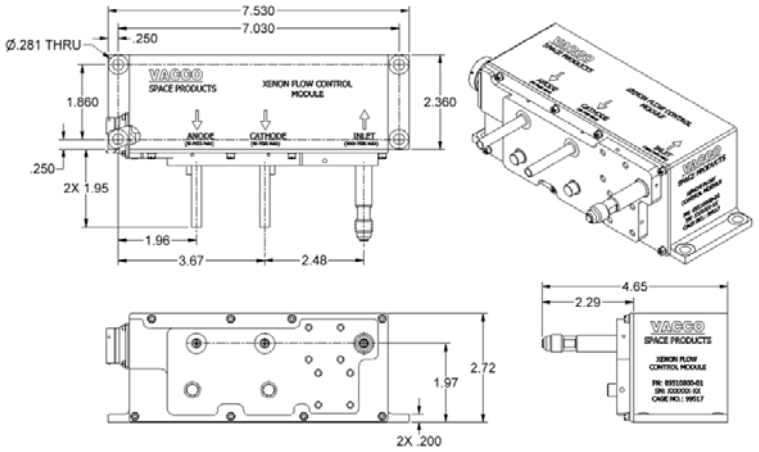
DESCRIPTION

VACCO's Xenon Flow Control Module (XFCM) is a highly integrated ChEMS™ assembly designed for high reliability, tight leakage, and precise flow accuracy in a light weight module that consumes almost no power. The XFCM accepts Xenon directly from the storage tank eliminating the need for a pressure regulator. To maximize reliability the XFCM is series redundant against leakage and has been tested to NASA Technology Readiness Level 5. Qualification is in progress.

The XFCM is an all-welded manifold assembly of (10) components; System Filter, Isolation Valves, Proportional Valves and Pressure/Temperature Sensors. Each XFCM can independently control anode and cathode flow to an HET.

FEATURES

- Inlet Pressure from 3,000 psi to 20 psi
- 2-Channel Flow from 0.1 to 80 sccm
- +/-1% Closed-Loop Flow Control Accuracy
- Integral 10 micron Etched System Filter
- Inlet High Pressure & Temperature Sensors
- (3) Pressure & Temperature Sensors
- Triple Redundant Against Internal Leakage
- All-Welded Machined Titanium Manifold
- Low Weight – 1.4 Kg (3.1 lbm)



OPERATING PARAMETERS

Inlet Pressure Range	3000 to 10 psia
Proof Pressure	4500 psia
Burst Pressure	7500 psia
Outlet Pressure Set-Point Range	0 to 50 psia
Operating Temperature	0ºC to +70ºC
Flow Range	0.1 to 80 sccm Xenon
Anode Control Accuracy (Closed Loop)	+/- 1%
Internal Leakage	<1 X 10^{-3} sccs GHe
External Leakage	<1 X 10^{-6} sccs GHe

Inlet/Oulet Tubes	1/4" Ti (CRES optional)
Proportional Valve Voltage	0 to 130 vdc
Iso Valve Operating Voltage	20 – 33 vdc
Iso Valve Response	< 20 mSec @ 24 vdc
Pressure Transducer Output	0 to 5 vdc
Pressure Transducer Accuracy	+/-0.5% Full Scale
Temperature Sensors	1000Ω RTD
Inlet Filter	10 microns absolute
Mass	<1.4 Kg (3.1 lbm)

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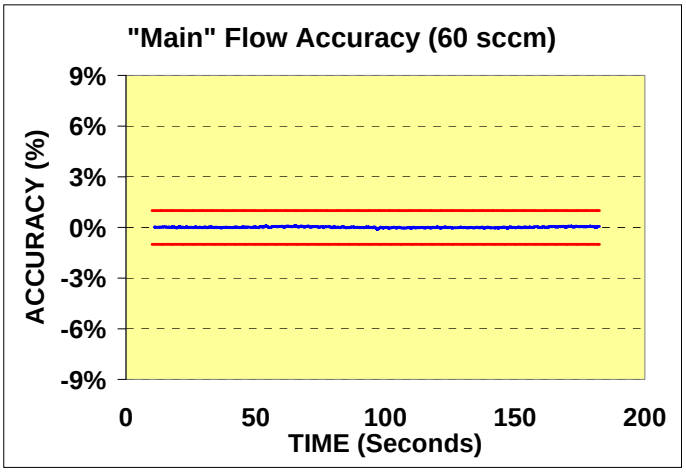
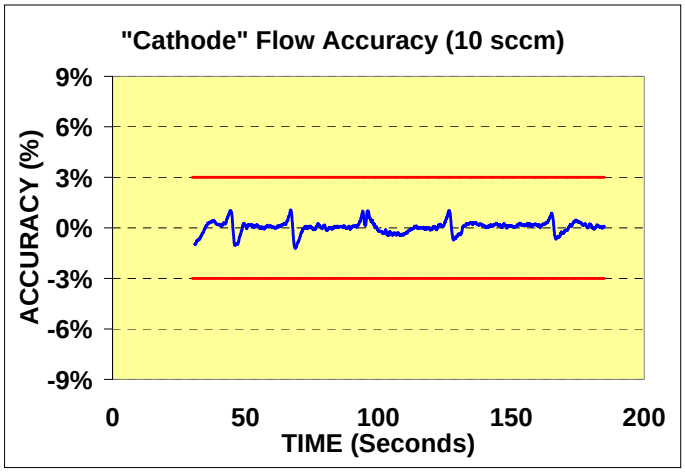
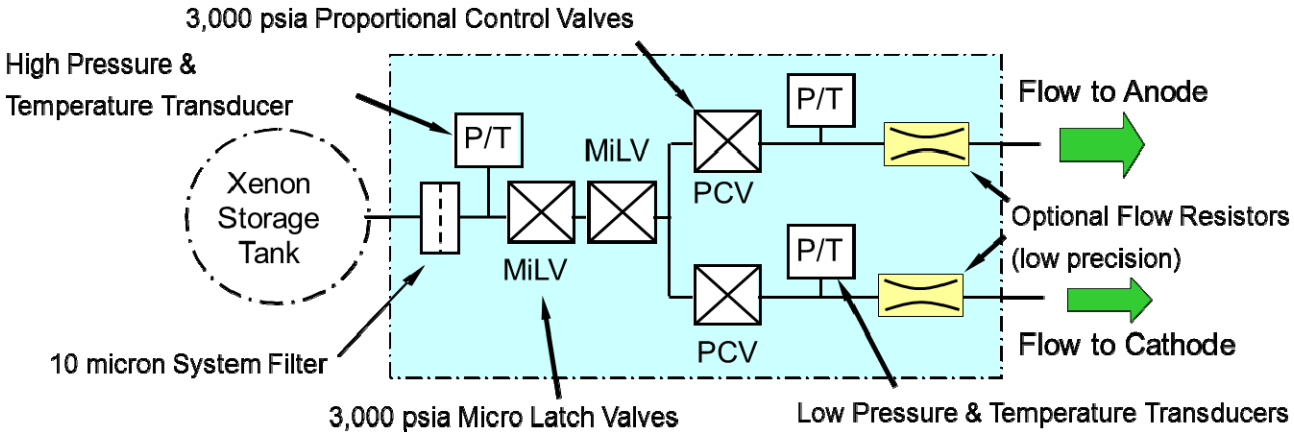
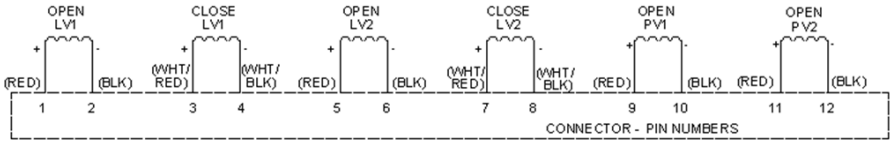
PERFORMANCE CHARACTERISTICS

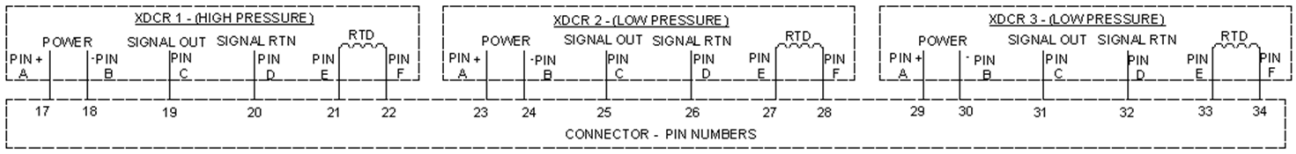




SCHEMATIC







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