Specification

Ground Operations Demonstration Unit for Liquid Hydrogen (GODU LH2)

Electrical Valve Actuators

Rev- Basic
June 1, 2012

SCOPE

The GODU LH2 project at Kennedy Space Center is developing a liquid hydrogen storage and distribution system intended to test advanced operational concepts for future space launch complexes. The system design and operations concepts include a number of remote operated valves for hydrogen flow control and isolation. Past KSC projects have used pneumatic actuation for valves, but the GODU LH2 project is looking to try a new approach with electrical actuators to minimize the number of fluid/pneumatic systems and components at the site.

GENERAL REQUIREMENTS

Description	Multi-turn rotary electric actuator with brushless DC motor. For use with PHPK and CPC Cryolab extended stem vacuum jacketed valves.
Gasses to be controller	Gaseous Nitrogen Gaseous Helium Gaseous hydrogen
Electrical Classification	Explosion proof; Class 1 Div 2, Group B
Electrical power	120 V, 1 phase, 60 hz
Max Stroke	2 inches
Full stroke Time	20 seconds
Maximum Thrust	1500 lbf
Feedback/Control	Modulating with analog 4-20 mA feedback signal
Manual Override	Yes
Fail Close	Yes

VALVE DETAILS

1. 3" VJ CPC Cryolab Isolation Globe Valve
2. 3" VJ CPC Cryolab Flow Control Globe Valve
3. 3" VJ PHPK Isolation Globe Valve
4. 1 ½" PHPK Flow Control Globe Valve
5. 3" VJ PHPK Isolation Globe Valve
6. 4" Annin Vent Valve
7.