Y9.ET4.1 Piezoelectric Actuated Fast Mechanical Switch (PA-FMS) for Hybrid Fault Isolation Device: FID Gen-III
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Overview
Development of SiC based solid state FID and hybrid FID are critical to meet the center’s strategic vision.

**PA-FMS**
- Series connected (0.4 mm) gaps increase voltage withstand
- 24 kV withstand possible (1 nBar)
- AC and DC testing in vacuum
- Completion of controller board
- Integration with solid-state main breaker

Methodology / Development

**AC Voltage Withstand Tests**
- (1 nBar Vacuum)

**Quasi-DC Withstand Tests**
- (1 nBar Vacuum)

Results / Outcomes

**AC Voltage Withstand Tests**
- (1 nBar Vacuum)
- Completion of controller board
- Integration with solid-state main breaker

**Future Work**
1. Final Integration of SS and FMS portions of Gen-III FID at NCSU
2. Prepare for
   - PHIL Demo of Gen-I and Gen-III FID within HILTB and
   - Demonstration of full functionality of FREEDM protection concept (including pilot protection) in Y10
3. Interaction with NCSU and MS&T for integration of FID within DGI

Partners

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