



*Technologies and Solutions
yet to be imagined.*

13003: C-5 EMERGENCY POWER BUS RELAY (EPBR)

The Emergency Power Bus Relay (EPBR) switches power to critical functions when main aircraft power is unavailable. When the main power system fails, the EPBR connects flight controls and vital flight instruments to the Emergency Power System.

The C-5 fleet is experiencing a high rate of EPBR failures, leading to critical in-flight emergencies and damaging the aircraft's Battery Charge Electronic Module (BCEM). The BCEM has a very high repair cost and contributes to a longer AOG time.

United Dynamics engineered a solid state solution for the high-current DC and 3-phase AC outputs. Our robust form, fit, function, and interface (F3I) design incorporates improvements to key performance parameters and reliability with the following benefits:

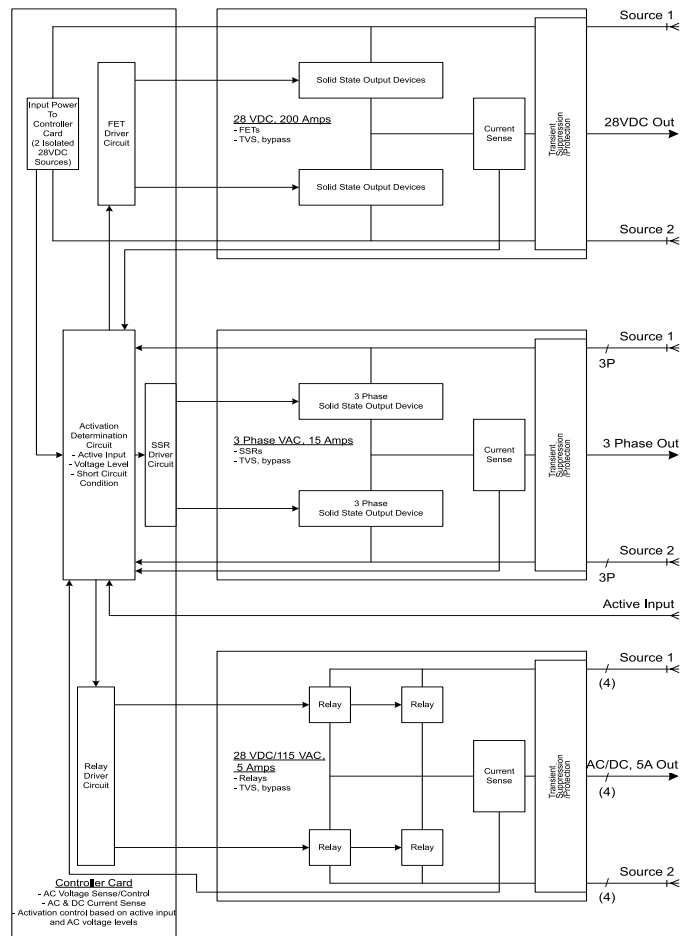
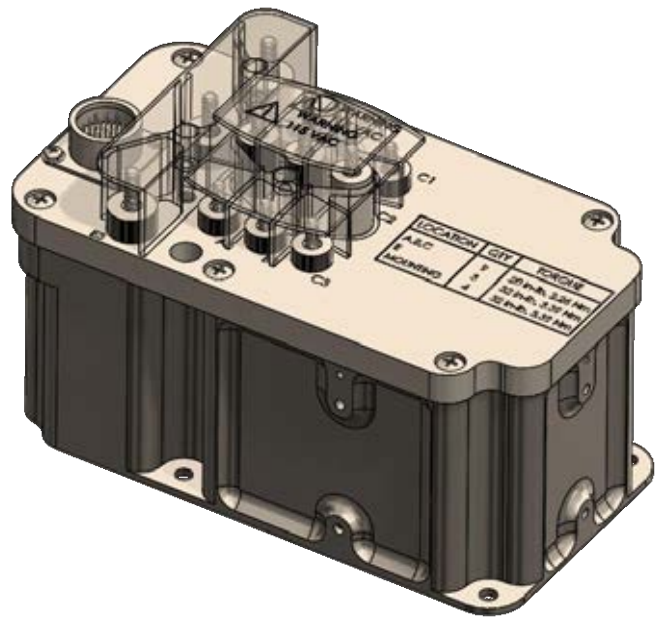
- ✓ increases functionality up to 200 ADC
- ✓ significantly improves thermal dissipation and performance issues
- ✓ reduces electromagnetic interference
- ✓ improves transient, on-state resistance and controllability
- ✓ corrects high-contact resistance issues

- ✓ Various output type selections: AC, DC, combined AC/DC and low, medium, or high current
- ✓ Controller card providing:
 - Voltage level sensing
 - Current Monitoring
 - Short Circuit Shut-Down
 - Voltage Level Shut-Down/Start-Up At Selectable Voltage Levels
 - Selectable time delays for output activation
- ✓ Transient Suppression (TVS devices, bypass capacitors, PCB layout optimization)
- ✓ EMI Suppression
- ✓ Mounting configured for direct installation into existing aircraft location
- ✓ Sealed enclosure for submersion up to electrical connections
- ✓ Selectable output cards for easy output type configurations
- ✓ Connector interfaces to existing aircraft harness, no modification required
- ✓ Ruggedized for vibration, shock and drop
- ✓ No airflow required for operation to 90° C
- ✓ Potting or conformal coating to ensure robustness for all environmental conditions



TECHNICAL SPECIFICATIONS

	Card Assy, 28 VDC, 200 Amp	Card Assy, 3 Φ , 115 VAC, 15 Amp	Card Assy, 115 V / 28 V, 5 Amp
Configuration	SPDT	SPDT	4 SPDT
Various enabling methods	✓	✓	✓
Voltage monitoring	✓	✓	✓
Current monitoring	✓	✓	✓
Short circuit shut down	✓	✓	✓
Transient protection	✓	✓	✓
Transient suppression	✓	✓	✓
Suitable for resistive loads	✓	✓	✓
Suitable for inductive loads	✓	✓	✓
Suitable for lamp loads	✓	✓	✓
Suitable for motor loads	✓	✓	✓
Solid state output devices	✓	✓	✓
Selectable activation delay time	✓	✓	✓
Short circuit shut down	✓	✓	✓
Fast turn on	<1ms	<10ms	<15ms
Max voltage	40 VDC	280 Vrms	30 VDC 277 VAC
Additional information	Low ON state <1mOh Slew rate control	50Hz to 2kHz Opto-Isolated Input Control Tight cross window for low EMI	



NAICS: 332510 332710 332721 332722 332911 332919 332991 332999 333415 333612 333613 333999 334418 334419 334513 334514 334519 335999 336411 336412 336419 339999 541330 541420 811310

For more information, please contact:

United Dynamics, Inc. | 41001 Wolverine Road | Shawnee, OK 74804 | 405-275-8041



United Dynamics
Aerospace & Defense
www.united-dynamics.com