

### Digital Control Upgrade for Legacy Constant Current Regulators

Westinghouse developed the RSS20 constant current regulator (CCR) in 1970, followed by its low voltage sibling, the RSSL. Known as the industry's most reliable switchgear CCRs, many are still in operation today. RSS and RSSL type regulators were produced by Westinghouse, Hughey & Phillips and Honeywell until 2003.

As part of our commitment to our existing customers, we are pleased to offer the *Freedom Series™* Digital Control Upgrade for the RSS, RSSL and Ascent Series regulators. By replacing the existing CCR controls with a new digital version, the airport is able to upgrade their CCRs to the latest in technology and performance while maintaining their capital investment. The Digital Control Upgrade is part of the *Freedom Series™* family of CCR products, setting new standards in performance, ease of maintenance, and personnel safety.

The *Freedom Series™* Digital Control Upgrade is available in kit form for all input voltage, output current and KW ratings. The kit includes a new door complete with digital display, digital control electronics, power supply and mating control connector. Existing power components including thyristors, heat-sinks, pulse transformers and fuses are relocated to the new door, making the upgrade cost effective. Analog metering is removed and a new panel or meter door is provided to give the CCR a brand new finish and appearance.

#### Technology Benefits

- Digital control for precise waveform accuracy, high-speed response, and local data storage using Digital Signal Processor technology.
- Digital output accuracy and drift-free circuitry for increased lamp life.
- Digital operator interface provides full monitoring, diagnostics, and alarm indication. Dedicated status LEDs provide clear indication of warning and fault conditions.
- Membrane keys with tactile response provide maintenance personnel with access to all display values and configuration parameters without opening the regulator door.
- Auto-calibration reduces maintenance costs by eliminating the need for scheduled preventative maintenance service.



Fig. 1 Door with digital operator display interface.

#### Control and Monitoring

- All CCRs are user configurable, including selection of 1 to 5 brightness steps, output current adjustment, selection of monitoring features, operational parameters and alarm setpoints.
- User-configurable failsafe capabilities allow last state (latching) or preset brightness selection upon failure of control system.
- Monitoring of CCR status including commanded and actual brightness, warning and fault conditions including door interlock, local switch position, fuse failure, over current, over voltage or open circuit trips, communications or hardware failure.
- Analog monitoring of output current, voltage, VA, power, power factor, elapsed time at each brightness step and number of operations.
- Supports redundant 24 VDC external power from the control system allowing monitoring and indication even on power failure to the CCR.
- Available L-829 monitoring functions including primary power, circuit trips, loss of VA, brightness within specifications, number of failed lamps per circuit with warning and alarm indication.
- Available insulation resistance monitoring to ground (Auto-Megger) and ground fault alarm indications.
- Available control and monitoring of up to six L-847 circuit selectors from the CCR front panel display.

### Ordering Information

**Type:**

FSU8 - Freedom Series Digital Upgrade L828  
 FSU9 - Freedom Series Digital Upgrade L829

**Legacy CCR Type:**

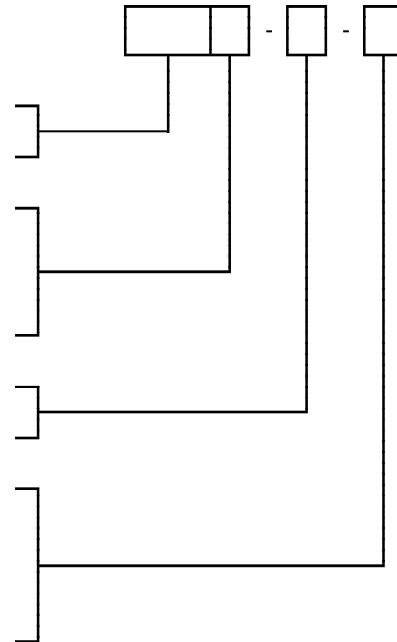
H - Westinghouse, H&P, Honeywell RSS or RSS6L (Hi-Boy)  
 L - Westinghouse, H&P, Honeywell RSSL or L828 (Lo-Boy)  
 T - Honeywell Ascent Thyristor (Phase-cut or Synchro-tap)  
 F - Honeywell Ascent Ferroresonant  
 O - Other

**Control Voltage:**

A - 24VDC Internal	C - 48VDC Internal	E - 120VAC Internal
B - 24VDC External	D - 48VDC External	F - 120VAC External

**Options (Select as Many as Required):**

23 - Insulation Resistance Monitor (Megger)  
 41 - Redundant Ethernet Network Interface  
 42 - Redundant RS485 Network Interface  
 43 - Single Ethernet Network Interface  
 44 - Single RS485 Network Interface  
 51 - Circuit Selector Control & Monitoring Interface



### Standards Compliance

- FAA Advisory Circular 150/5345-10F, June 24/05, Type L-828 and L-829.
- Transport Canada CCR Specification K290-2.
- Canadian Department of National Defence Standards.
- ICAO Aerodrome Design Manual Doc 9157, Part 5.

### Built-in Networking

- Available fully redundant RS-485 network support using Allen-Bradley DF1 or Modbus protocols.
- Available redundant 100 Mb Ethernet network support using Ethernet/IP, or Modbus TCP protocols.
- Direct communication interface to Liberty *Freedom Series™* or *Spirit SE Series™* Airfield Lighting Control and Monitoring Systems using Ethernet or RS-485 networks.
- Locally re-configurable using serial port. Remotely re-configurable via dial-up modem or internet using VPN access.

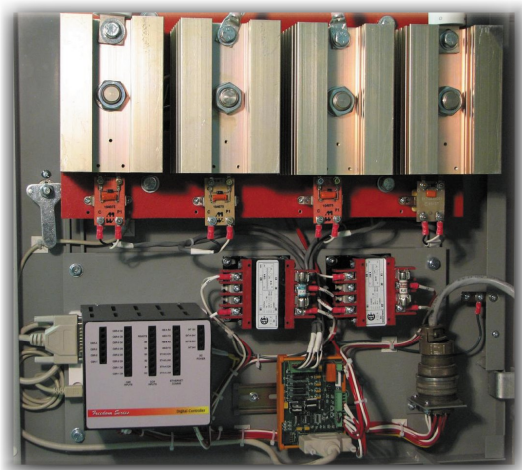


Fig. 2 Interior View - Freedom Series digital door



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