

Thermal Management > Air Platforms

Airborne Thermal Control Unit Model RS-374



An advanced pod electronic cooling system, Meggitt Defense System's RS-374 Thermal Control Unit (TCU) provides cooling and heating to a forward-looking infra-red (FLIR) electronics sensor pod. The pod is mounted on an adapter attached to the fuselage of an F/A-18C/D. An efficient ram air scoop captures required air flow over the entire flight profile with minimum drag.

TCU power requirements, 115Vav, 3 phase, 400Hz and 28Vdc, are obtained directly from the aircraft power supply. A built-in microprocessor based Digital Control Unit (DCU) continuously monitors the TCU's operation and detects and isolates faults in the TCU and its shop replaceable assemblies (SRAs). Faults are stored in non-volatile semiconductor memory. A high performance fan allows ground operation of the TCU.

This represents another exciting program in which Meggitt Defense Systems is proud to be a team member.

Key features

- High reliability components qualified to MIL-STD-810c including ESS
- High mtbf (4000 hours)
- Lightweight refrigeration compressor, operating at 11,000 rpm, provides cooling capability in refrigeration mode
- Operates in two modes: refrigeration and direct heat rejection to ambient
- Optically isolated serial communications link provides continuous status monitoring and fault reporting
- High corrosion resistance, suitable for carrier deck operation
- Designed to function in stringent aircraft carrier deck EMI environments

Meggitt Defense Systems

Our product competencies and services:
Ammunition Handling Systems | **Thermal Management** | Countermeasures | Towed Targets | Electronic Systems

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smart engineering for
extreme environments



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Specifications

Coolanol delivery	Coolanol 25 at 0.7 gpm minimum to FLIR electronics, at 104°F maximum
Pressure drop	25 psid minimum at 104°F
Thermal capacity	900 Watts minimum steady state
Digital control unit (DCU)	Provides control, fault detection, and isolation. Executes BIT (initiated BIT and Periodic BIT)
Weight	62 lbs
Performance profile	Coolant delivery, at 104°F maximum, over the entire 30 minute continuous tactical jet aircraft flight profile. Delivery temperature will be 135°F maximum during transient flight profiles.
MIL-STD-210 flight performance	
Hot day	0.98 mach from 0 ft. altitude to 0.92 mach at 50,000 ft., continuous. Up to 1.6 mach at 40,000 ft. altitude, transient. 0.2 mach from 0 ft. altitude to 0.92 mach at 50,000 ft., continuous.
Cold day	Up to 2.2 mach at 50,000 ft. altitude, transient.
Sea level	-65°F to +125°F ambient.
Envelope	10.0 diameter, length 27.0 in.

Specification subject to change - TCO Review # 120

Contact

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