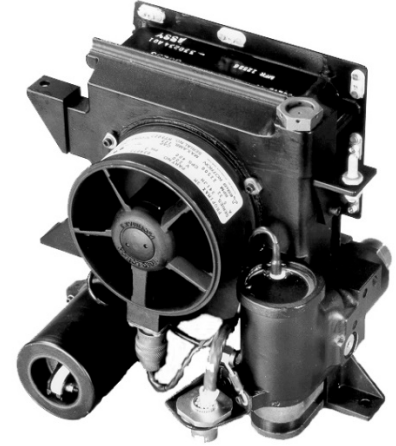


DATA SHEET

OH-58D AHIP Airborne Thermal Control Unit Model 3180



01 Description

The Model 3180 Thermal Control Unit is a compact, lightweight, self-contained heat transfer system that operates on 115/200 Vac, 3 phase, 400 Hz power.

This TCU is used on the Advanced Helicopter Improvement Program (AHIP) to remove heat from the electronics payload of the Mast Mounted Sight (MMS), located above the rotor plane on the OH-58D Army helicopter. It permits operation of the MMS under all environmental extremes.

A highly efficient positive displacement pump provides a constant temperature conditioned one GPM water-glycol mixture flow to cold plates in the MMS.

The TCU incorporates a lightweight cast aluminum manifold integrating pump, motor, thermal and check valves, accumulator assembly and cored fluid passages. This totally eliminates fluid tubes and fittings enhancing maintainability and eliminating any potential fluid leakage. A visual level indicator monitors fluid level in the system at all times.

The TCU requires 290 VA power input while handling 396 watts external load with 17° F rise of coolant temperature above ambient.

02 Key features and benefits

- Provides Thermal Management for OH-58 Mast Mounted Sight
- Reliability: High MTBF (5000 HRS)
- Qualified To MIL-STD-810C and withstands severe vibration associated with helicopter blade rotation
- Fully operational from -24° F to 131° F and from sea level to 12,000 feet
- High performance plate fin heat exchanger, designed for minimum size and weight transfers heat to ambient air

03 Applications

Mast Mounted Sight on the OH-58D Army helicopter

04 Contact

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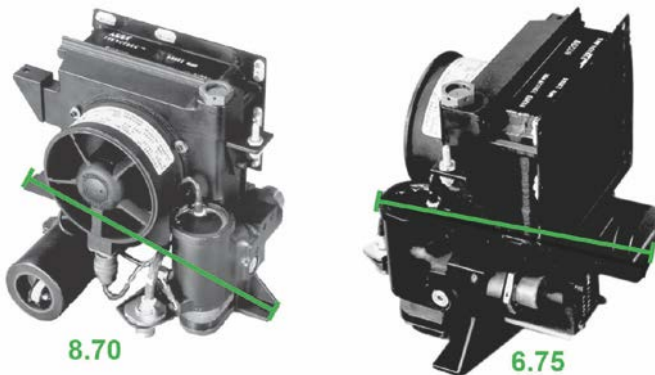
DATA SHEET

OH-58D AHIP Airborne Thermal Control Unit Model 3180

05 Specifications

Cooling capacity	228 watts while delivering coolant at 11° F above ambient air. 396 watts at 17° F above ambient.
Coolant	60/40 ethylene glycol/water mix
Coolant flow	1 GPM at 23 psi external pressure drop. 40 psi pressure relief with flow blocked.
Low temperature bypass	Thermal valve diverts coolant flow around heat exchanger at ambient temperature below 60° F nominal.
Operating conditions	Sea level to 12,000 feet, -24° F to 131° F Severe shock and vibration. Rainfall, blowing dust and sand, salt fog, high humidity, explosive atmosphere and aerodynamic loading at airspeeds to 145 knots
Electromagnetic radiation	Meets emission requirements of MIL-STD-461B, CEO3 (steady state) and CEO7 (transients).
Power	115/200 volts, 3 phase, 400 Hz, 290 VA, maximum at 68° F.
Weight	6.2 lbs

06 Outline details



Note: Due to continuous process improvement, specifications are subject to change without notice. TCO Review # 123