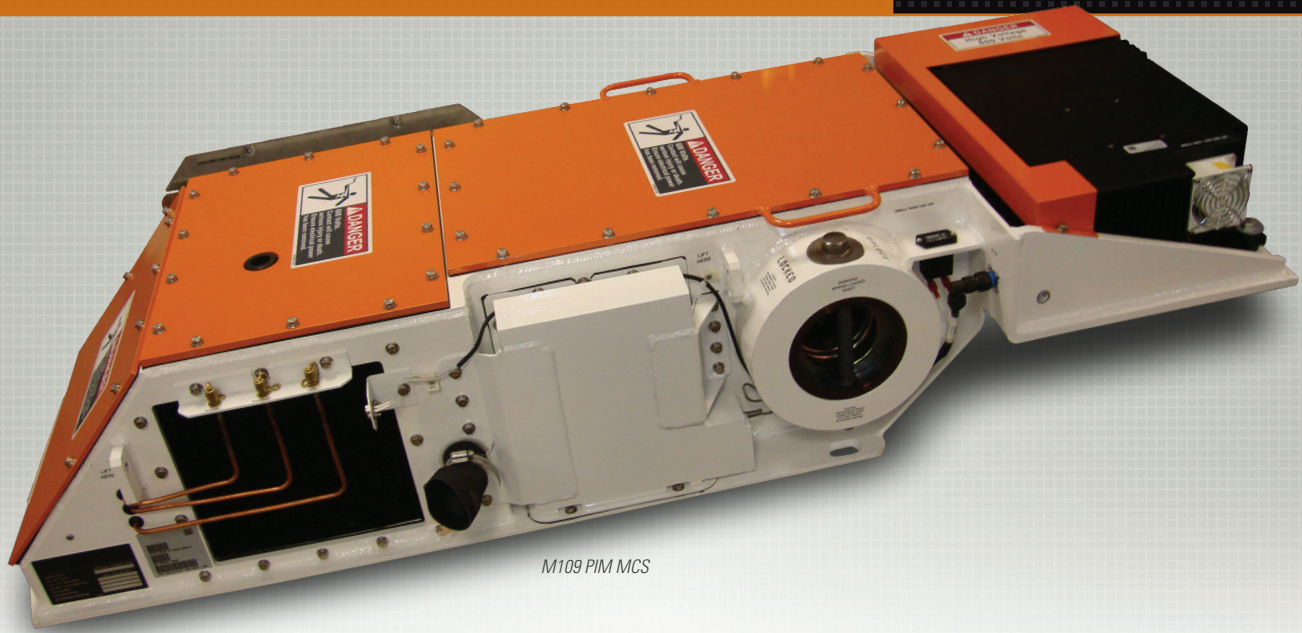


M109 AND M113 MCS

Vehicle ECUs and CBRN Filtration



M109 PIM MCS

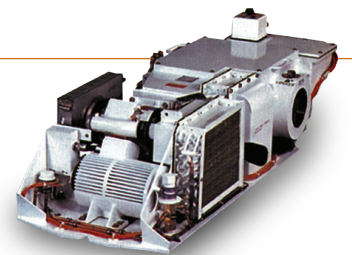
As a leading developer of specialized heating and air conditioning equipment for military applications, HDT understands the complexities involved in the battle against heat and the associated risks high temperatures present inside combat vehicles. We leverage our years of thermal management experience to develop vehicle environmental control systems that address the heat loads generated by the latest vehicle electronics and provide climate control for operator comfort and safety.

Our rugged systems are carefully designed for each military platform to provide critical cooling and heating within the dimensional constraints of the vehicle. Cooling and CBRN filtering can be incorporated into the system at the individual personnel level or entire vehicle level depending on requirements. Some HDT vehicle environmental control systems operate using digital control architecture to interface via CANBus with the latest vehicle system controls and vehicle health management systems.

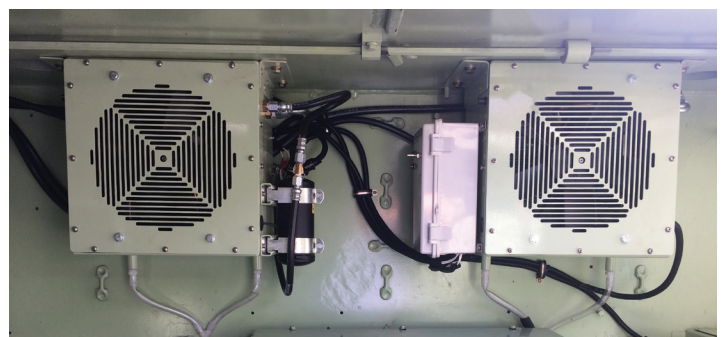
KEY FEATURES

- Low or high-voltage operation
- Improved cooling performance
- Cooling capacity from 14,000 BTU/H to 45,000 BTU/H* (9.4 kW to 13.2 kW)
- Micro channel condenser technology
- Optional secondary cooling loop
- NBC filtration
- Environmentally acceptable refrigerant
- High efficiency DC brushless fans
- Diagnostics and system health
- Full military qualification program

* Configuration dependent



M109 MCS



M113 MCS

M109 AND M113 MCS

Vehicle ECUs and CBRN Filtration



M109 AND M113 MCS SPECIFICATIONS

Ordering information	M109 MCS	M109 PIM MCS	M113 MCS
HDT part number	12553830	199K1000-102	222K0000
NSN	N/A	N/A	N/A
On GSA Contract	N/A	N/A	N/A
Capacity			
Cooling total*	14,000 BTU/H 4.1 kW	16,000 BTU/H 4.7 kW	30,000 BTU/H to 45,000 BTU/H 8.8 kW to 13.2 kW
Design	Self-contained	Self-contained	Modular
Refrigerant	R134A	R134A	R134A
Electrical	28VDC	28VDC or 610VDC	28VDC
Extreme environments			
Operating temperatures	130°F/8% RH, 95°F/74% RH, -50°F 54.4°C/8% RH, 35°C/74% RH, -45.6°C	131°F/8% RH, 95°F/74% RH, -40°F 55°C/8% RH, 35°C/74% RH, -40°C	130°F/8% RH, 95°F/75% RH, -50°F 54.4°C/8% RH, 35°C/75% RH, -45.6°C
Conditions	Temp, rain, salt fog, sand/dust, humidity, gunfire/ballistic/mobility shock, road/transport vibration	Temp, rain, salt fog, sand/dust, humidity, gunfire/ballistic/mobility shock, road/transport vibration	
Storage temperatures	-50°F to 160°F -45.6°C TO 71.1°C	-40°F to 160°F -40°C to 71.1°C	-50°F to 160°F -45.6°C TO 71.1°C
Physical characteristics			
L x W x H	63.5" x 22" x 13" 161.3 x 55.9 x 33 cm	66.4" x 23.66" x 14.25" 168.7 x 60.1 x 36.2 cm	14" x 14" x 10" 35.6 x 35.6 x 25.4 cm
Weight*	360 lbs 163.3 kg	375 lbs 170.1 kg	<250 lbs <114 kg
Compressors	Belt driven scroll	Electric scroll	Belt driven scroll
Engine integration	Electric motor belt		Belt driven compressor and waste heat integration
Coil technologies	Tube and fin	Tube and fin	Microchannel, tube and fin
Refrigeration components	COTS	COTS	COTS
CBRN compatibility	Available	Available	Not available
Diagnostics		CANBus	N/A
Maintenance and maintainability	MIL-STD-1472 Compliant	MIL-STD-1472 Compliant	SAE/MIL Compliant

* Configuration dependent

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NON-EXPORT CONTROLLED INFORMATION

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