

Air Conditioning Systems from Eberspächer



**Original Eberspächer Equipment
for Military Applications**


Eberspächer
The Thermomanagement Specialists



Qualification Testing

- * Preliminary hot cycle diurnal climatic testing to A1 (Def Stan 00-35) in the Eberspächer chamber, including storage. This allows system testing in isolation from the vehicle/shelter installation, verifying performance and capacity.
- * Low temperature testing to -33°C in the Eberspächer chamber.
- * Complete system testing in the Eberspächer main vehicle workshop where ambient temperatures up to 40°C can be achieved to enable functional testing at higher ambients prior to external test house testing.
- * Complete system testing when integrated into the vehicle is carried out at external test facilities.
- * EMC testing to Def Stan 59-41.
- * Automotive trials for completed systems is normally carried out by the customer as part of the total system testing and has included off-road wheeled vehicles and tracked vehicles.
- * Vibration and shock testing of defence standards.



Defence Sectors Covered

Civil Defence

Light armour vehicles normally for civil defence operations.

Military Vehicles

Purpose designed complete or part systems to meet defence standards for both wheeled and tracked vehicles.

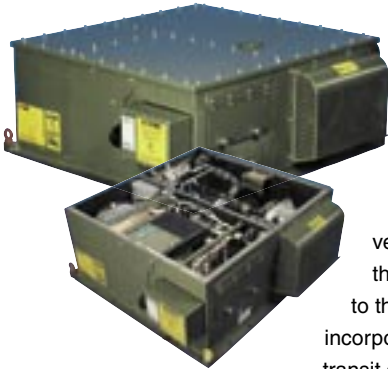
Military Mobile Shelters

Shelter environmental cooling systems (ECS) are normally based around mains voltage technology from single phase 230V 50 Hz to three phase 400V 50 Hz. These are purpose designed to meet mission critical performance including weight, cooling and heating capacities and space envelope constraints.



Air Conditioning and Heating for Shelters

Type 93001



Designed for cooling and heating of a closed loop equipment transit case system when installed in military vehicles. Using power from a 230V AC 50 Hz source, the ACU can provide climate control across a wide band of Def Stan 00-35 climate conditions from C2 to A1.

Designed to be externally mounted, the conditioned air is ducted into the vehicle and from there split between up to three transit cases before returning the air to the ACU. An optional 'hand portable' system incorporating the Type 93001 ACU enables the transit case system to operate in a demounted role from the parent vehicle.

Type 93001 Specification

Size (H x W x L) (mm)	299 x 868 x 822
Weight (kg)	65
Cooling Capacity (kW) Total	1.4
Heating Capacity (kW)	1.0
Evaporator Airflow (m ³ /hr)	350
Power Input Requirement	230v AC 50Hz 1200W
Operating Ambient Temperature (°C)	-46 To +49
Storage Temperature Range (°C)	-46 To +71
EMC Compliance	Def Stan 59-41 Land Class A

Type 93003



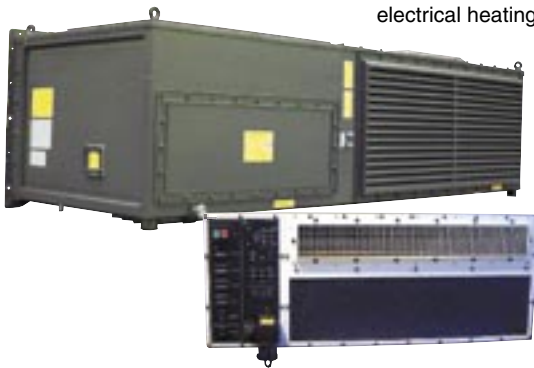
Designed for both equipment and user climate control on mobile shelters. Using power from a 28V DC source, the ACU can provide cooling across a wide band of Def Stan 00-35 climate conditions from C2 to A1.

The ACU is designed as a two part system to enable it to be fitted to shelters with limited space where a single piece system cannot be used.

Type 93003 Specification

Size (H x W x L) (mm)	851 x 510 x 504 x + 890 x 430 x 481
Weight (kg)	152
Cooling Capacity (kW) Total	5.5
Heating Capacity (kW)	-
Evaporator Airflow (m ³ /hr)	350
Power Input Requirement	28v DC 4200W
Operating Ambient Temperature (°C)	-46 To +49
Storage Temperature Range (°C)	-46 To +71
EMC Compliance	Def Stan 59-41 Land Class C

Type 93017



Designed for both equipment and user climate control on mobile shelters. Incorporating both electrical heating and cooling, the ACU can be used across a wide band of Def Stan 00-35 climate conditions from C2 to A1.

A fresh air intake with particulate filter provides a variable level of fresh air into the shelter with automatic shut-off when connected to an independent NBC unit.

Type 93017 Specification

Size (H x W x L) (mm)	495 x 650 x 1800
Weight (kg)	183
Cooling Capacity (kW) Total	9.0
Heating Capacity (kW)	6 and 3kW
Evaporator Airflow (m ³ /hr)	1000
Power Input Requirement	415v AC 50Hz 6900W
Operating Ambient Temperature (°C)	-46 To +49
Storage Temperature Range (°C)	-46 To +71
EMC Compliance	Def Stan 59-41 Land Class A

Type 93025



The type 93025 Air Conditioning Unit (ACU) has been designed for both equipment and user climate control on mobile shelters. Incorporating both electrical heating and cooling, the ACU can be used across a wide band of Def Stan 00-35 climate conditions from C1 to A2.

A fresh air intake with particulate filter provides a fixed level of fresh air into the shelter. Typical installations bury the ACU within a false bulkhead on the vehicle installation enabling a clean vehicle configuration. The ACU is mounted on sliding rails allowing the ACU to be withdrawn from its compartment for servicing.

Type 93025 Specification

Size (H x W x L) (mm)	1245 x 650 x 800
Weight (kg)	206
Cooling Capacity (kW) Total	7.5
Heating Capacity (kW)	3.0
Evaporator Airflow (m ³ /hr)	1800
Power Input Requirement	230v AC 50Hz 7245W
Operating Ambient Temperature (°C)	-31 To +44
Storage Temperature Range (°C)	-33 To +63
EMC Compliance	Def Stan 59-41 Land Class B

Bespoke Vehicle Air Conditioning Systems

Vehicle systems typically use engine mounted compressors to provide cooling for the vehicle occupants whilst the vehicle is on the move.

Using standard Eberspächer product, which is then modified to meet military requirements, systems are available to operate up to 49°C.

All types of military vehicles are supported including “white” general service vehicles through to “green” armoured, light defence and specialist vehicles.

General Specification

Cooling Capacity	Up to 12kW
Heating Capacity	Up to 12kW
Voltage	12 or 24v DC
Compressor	Engine Driven
Operating Ambient Temperature (°C)	-46 To +49
Storage Temperature Range (°C)	-46 To +71
EMC Compliance	Def Stan 59-41 Land Class A
Suitable for worldwide operating conditions	



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