

## DC THERMOSIPHON 150 FOR ELECTRONICS



The DC Thermosiphon 150 is used for cooling of cabinets and enclosures containing sensitive electronic equipment. The Thermosiphon uses the thermodynamic method of passive heat exchange based on internal natural convection. In the cooling process, it circulates cooling fluid without the necessity of a compressor, due to a vertical, closed loop circuit.

Convective movement of the fluid starts when fluid is heated by the heat load inside a cabinet causing the fluid to evaporate into gas. The phase shift from fluid into gas demands energy. The Thermosiphon utilizes the phase-shifting energy to cool down the inside of the cabinet. Convection moves the heated gas upwards in the system, as it is simultaneously replaced by cool, heavier fluid returning via gravity. The only mechanically moving parts are the internal and external fans.

Dantherm DC Thermosiphon has been widely applied in radio base stations, telecom cabinets/shelters, battery cabinets and enclosures, indoor/outdoor cabinets.

## FEATURES AND BENEFITS

### Energy efficiency and environment

- High energy-efficient cooling system. Energy-efficient fans with long lifetime and minimal power consumption. Efficient cooling circuit using environmental friendly refrigeration R134a.

### Cabinet

- Mono-block plug and play unit ensure an easy installation.
- Closed loop cooling protects equipment against ambient environment.
- Constructed of sheet metal (EN 10143 & EN 10327), power coated with RAL 7035.
- Environment protected components in ambient air circuit for prolonged air stream.

### Heat Management

- Thermosiphon cooling method—passive heat exchange based on natural convection, without requiring a compressor.
- Passive cooling utilizes natural principle of heat transfer. No need for compressor; just a normal cooling circuit with coils and refrigerant.
- The unit works in extreme temperatures from -33°C to +55°C.

### Controller

- Built-in digital controller—Dantherm CC1 controller, temperature sensor placed on control board.
- Energy saving control strategy. Fans are controlled with unique, stable RPM independent of supply voltage fluctuations.
- Configuration parameters stored in on-board, non-volatile memory. Configurable digital in/outputs.
- Regulates internal and external fans to achieve optimum inside temperature at minimum power consumption.



## TECHNICAL DATA

### DC THERMOSIPHON 150

<b>Dimensions, weight &amp; mounting</b>		
Unit dimensions (height×width×depth)	mm	790×540×318
Single packing dimensions (height×width×depth) (cardboard + pallet)	mm	980×635×445
Multi packing dimensions (height×width×depth) (6 pieces in 1 cardboard)	mm	991×1189×1145
Net weight	kg	35
Single package weight incl. unit (multi package, ask Dantherm)	Kg	43
Mounting method		Through door/wall
Controller location/interface		On the interface of the unit
<b>Environmental protection &amp; performance</b>		
Operational temperature range	°C	-33 ~ +55
Storage temperature	°C	-40~ +70
Storage relative humidity	RH	5~95%
Noise level, outside 2m distance from front at 80% fan speed	dB(A)	64
Protection from dust, water and wind driven rain according to EN 60529	IP Class 2	55
Refrigerant / amount	Kg	R134a 0.70×2
CE, RoHS, and WEEE compliant		Yes
Expected service life		Min. 10 years
<b>Cooling capacity &amp; operational data</b>		
Cooling capacity W/K	W/K	150
Cooling capacity at $\Delta t$ of 10°C e.g. 40°C internal and 30°C ambient	W	1500
Internal airflow	m <sup>3</sup> /h	1000
External airflow	m <sup>3</sup> /h	1100
Power consumption	W	Max 200
<b>Power, frequency &amp; range</b>		
Input voltage range	VDC	36-57
<b>Key components</b>		
Controller		Dantherm CC1
Fans		2 EBm Papst
Sheet metal parts		SGCC + power coating
colour	RAL	7035

## DIMENSIONS

