

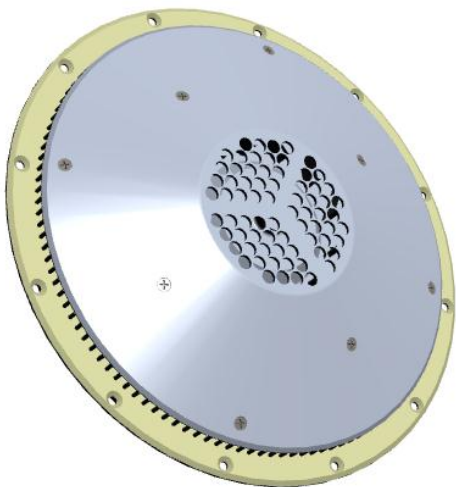


# Rotron Discus Fan Thermal Management System

## General Heat Exchanger Information

The Discus Self Ventilating Heat Exchanger (SVHE) is a duplex pin fin heat exchanger with an integral motorized duplex impeller system designed to remove heat from a confined compartment without direct air exchange. The product incorporates a single brushless DC motor which turns two impellers on a common shaft, each circulating air past the exposed pin fin exchanger surface. Since there are two sets of pin fins and a separate internal and external airflow channels, compartment air does not mix with external air, with heat transfer occurring via convection from the circulating air and then by conduction through a common bulkhead connecting the two sets of integrated aluminum pin fins. Both surfaces of the product have attached aluminum covers to direct the airflow from the centrally mounted impeller with radial distribution out to the exit port ring located at the outer diameter of the product. The product mounting bracket, common bulkhead and both sets of pin fins are all incorporated into a single homogenous aluminum structure for maximum heat conduction, product robustness and precise product dimensions.

## Rotron Discus Fan



### General

- Full Thermal Management System
  - Pin-Finned Heat Exchanger
  - Motorized Impeller-Brushless DC
- Weight: Approximately 3.0 lbs (1.4 kg)
- Nominal Speed: 9,200 RPM
- Maximum Ambient Temperature: 71°C
- Line Amps: 3.25 Amps (28VDC)
- Scalable Design
- Integrated EMI Filter
  - Compliant to CE101, CE102, RE101, RE102, CS101, CS114, CS115, CS116, RS101 and RS103

### Applications

- Specifically designed for cooling electronics in airborne and ground based applications

### Environmental Resistance Guide

Designed to meet MIL-STD-810 / DO-160

<b>Altitude</b>	Method 500.4 pr II & III
<b>Acceleration</b>	Method 513.5, pr III
<b>Vibration</b>	Method 514.2
<b>Shock</b>	Method 516.5 pr. I, V & VI
<b>Salt Fog</b>	DO-160C sec. 14, cat S
<b>Rain</b>	DO-160C sec. 10, cat R
<b>Fungus</b>	Method 508.5 grade 0 or 1
<b>Humidity</b>	Method 507.4 pr I
<b>Explos. Atm.</b>	Method 511.4, pr I

For specifics, please contact the factory.



### Standard Features

- EMI Filter
- Current Limiting
- Potted Electronics
- Meets or exceeds the requirements of MIL-B-28873 and other applicable US military and commercial aerospace specifications<sup>1</sup>

<sup>1</sup> Please contact for further information concerning applicable U.S. military and commercial aerospace specifications

### Options/Accessories

- LWSD
- Finger Guards
- Connectors
- Locked Rotor Protection
- Various Installation options
- Reverse Polarity Protection

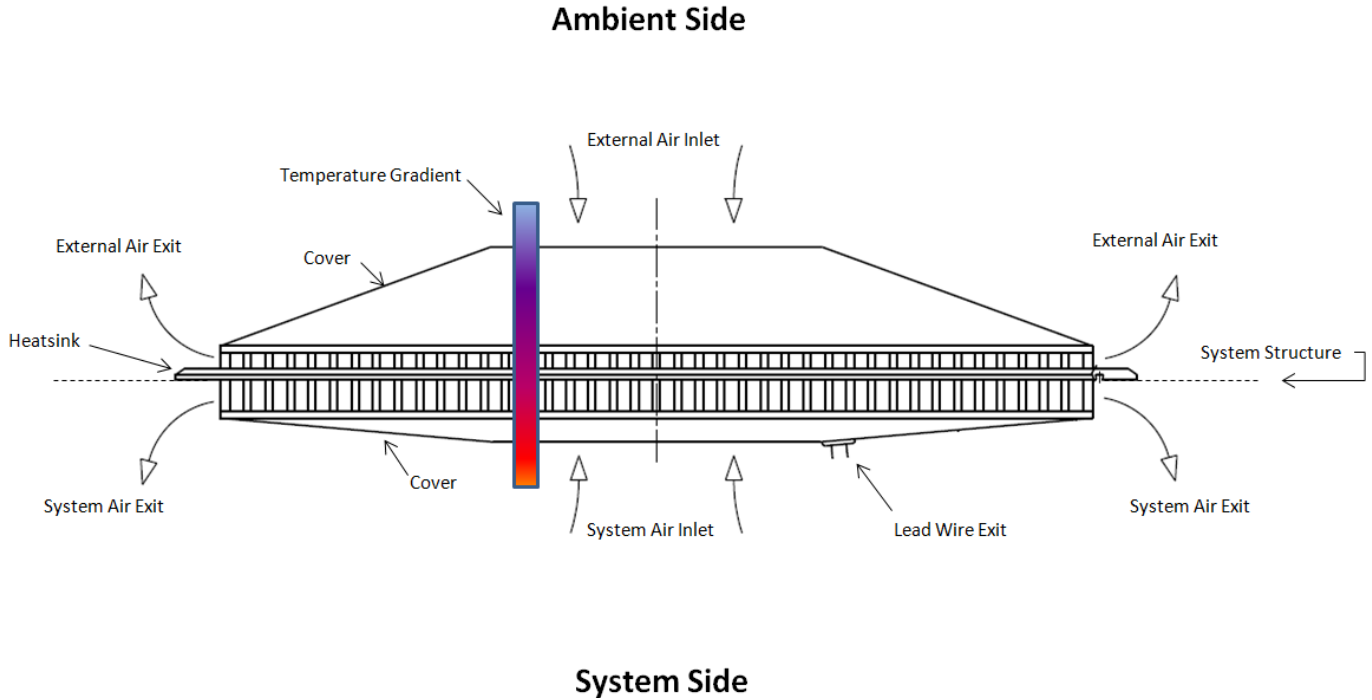
### Standard Product Offering of DC Product Models

Part #	Product Descr.	Nominal RPM	Line Amps (A)	Max Ambient °C	Weight (Pounds)	Volts DC	Features
012566000	DCS89401C 3823RF	9200	3.0	71	3	28	Molex Connector 39-01-3029 (Flying Lead) 6-32 inserts in mounting flange Gland Seal design
012567000	DCS89401C 3823RF	9200	3.0	71	3	28	Molex Connector 39-01-3029 (Body mounted ) Thru hole mounting Dovetail Seal design
012505000	DCS89401L 3823RF	9200	3.0	71	3	28	24" Leadwires (Flying Lead) Thru hole mounting Locked Rotor Protection Opto- Isolated Low Speed Warning O-ring seal design



## Standard Product Capabilities

Following is data examining the capability of a Rotron Discus to dissipate heat. The discus is tested in a fully insulated box.



### Thermal Capability (Heat Rejection)

Heat <sub>System</sub>	$\Delta T (T_{\text{system}} - T_{\text{ambient}})$
250 Watts	31.5°C
200 Watts	26°C
150 Watts	21°C
100 Watts	15.5°C

### Performance – Rotron Discus

CFM	RPM	Chamber Ambient	Amps	Vdc	Comments
58.3	9833	21°C	3.1	28	No Impedance, External side
63.5	10715	20.9 °C	3.63	32	No Impedance, External side
58.5	9905	20.7 °C	3.11	28	No Impedance, System Side
63.6	10789	20.7 °C	3.64	32	No Impedance, System Side