

# MicroStar Network

## Networkable Precision Air Heater (Load Bank) for Hot Aisle/Cold Aisle Testing of Data Center Cooling Systems

### Description

Simplex MicroStar Precision Air Heaters (Load Banks) enable comprehensive testing of data center hot aisle/cold aisle cooling systems. The MicroStar is a 19-inch rack mountable device (10U high) that can be easily installed into a wide range of standard server racks. Precision heat generation is possible via the integration of adjustable heat levels (load steps) and adjustable airflow (velocity and CFM). The MicroStar is designed and manufactured by Simplex, the leading manufacturer of data center load banks and OEM Generator Production Test Cells.

The MicroStar is rated up to 17.5kw at 240vAC, single-phase, and connects to the rack power distribution bus via standard C19 plugs.

Weighing only 45 pounds, the Microstar can be easily rack mounted by a single person. With its exclusive quarter-turn, key-lockable mounting tabs, the Microstar can be installed in any standard rack, including square-hole rails, non-threaded round hole or threaded hole (#10, #12, M6) rails.

The MicroStar Precision Heater features six (6) independent heater circuits, each powered from a plug/power inlet.

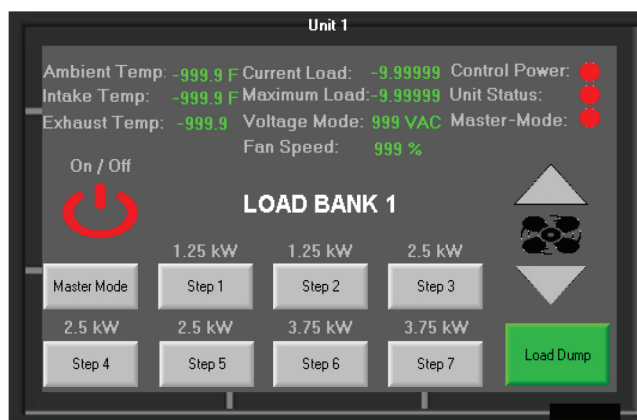
A rack of up to three load banks is locally controlled and monitored from a control "Hub" mounted in the same rack. Up to 66 of these hubs can be networked for central control from a PC.

The single 10-inch cooling fan has a solid-state variable speed control with safety override to allow precision adjustment of heat rejection/temperature rise/airflow.

The controlling PLC sets a minimum fan speed based on the load selected. Above the minimum, fan speed may be varied as desired.



### Local HMI Control



### Buy or Rent

- Available to purchase at Simplex, Inc.
- Available to rent at Simplex Onsite

### Design Features

- Precision thermal control of heat load, temp rise and airflow via step control and fan speed control
- Standard unit can be installed in any standard server rack
- Exclusive quarter-turn, key lockable mounting tabs
- Light weight (45 pounds)
- Automatic overload protection: fan reverts to higher speed above a preset power level
- Over temperature sensor with master disconnect and alarm
- Internal fuse protection of heat circuits
- Master control of all steps
- All 24vDC control circuits via internal power supply
- An industrial-duty product by Simplex, the leading manufacturer of load banks

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for Hot Aisle/Cold Aisle Testing of Data Center Cooling Systems • Page 2

# SIMPLEX®

## Network Operations



### System Status At A Glance

A Microstar Network is controlled from a central laptop, tablet or PC. As seen above, the control screen conveys all essential system information.

The left 2/3 of the control screen (the Overview Field) displays a system overview for a quick heads up status report. Each rack of up to three MicroStar load banks is represented by a rectangular icon:



The individual status of each load bank and the total KW applied on the rack are displayed in the interior of the icon, surrounded by a color ring indicating the ambient temperature measured at the rack.

These icons are arranged on the screen by the operator to reflect the physical layout of the racks in the data center. At the top of this field on the screen is a user defined "landmark" indication to help orient users to the representation on the screen.

### Control Flexibility

Each of the icons is also a selector button that will bring up the controls and detailed indications for that rack in the Control Field at the right of the screen. In this control mode, "Hub Control," all three load banks in the rack are controlled as one. Any requested load will be divided as evenly as possible among the three.

Each load bank's indication field within the Hub control field can also be touched to bring up individual controls and details for that load bank.

In addition to selecting individual hubs for control, entire rows or columns of hubs may be selected with the arrow shaped buttons to the left and along the bottom of the Overview Field. In this mode the same load and fan speed will be applied to all hubs within the selected row or column.

In Broadcast Control Mode, all hubs in the system are controlled together.

### User Configurability

In addition to all of the previously described control modes, a Group Control mode is also available. Operators can pre define an unlimited number of saved control groups that can then be called up for control.

As mentioned, the Overview Field is completely user configured. The Hub icons can be custom arranged within a 12 x 12 field to reflect the physical layout of the server racks or in any way that makes sense to the operator.

Ambient temperature is indicated in the overview screen on a user defined color scale and alarms based on measured ambient temperatures are completely user defined.

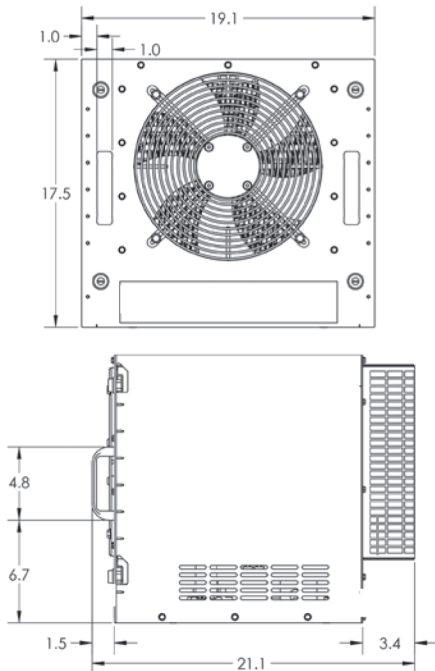
The PC controls have been designed with either mouse or touchscreen control in mind for complete operator flexibility with today's technology options.

## Ratings

	Capacity			Max Amps at 240v
240vAC, 1-ph	230vAC, 1-ph	208vAC, 1-ph		
17.5kw	16.1kw	13.15kw		74a

## Thermal Steps

Section 1	1.25 kw	1.15 kw	0.9 kw	5.2 a
Section 2	1.25 kw	1.15 kw	0.9 kw	5.2 a
Section 3	2.5 kw	2.3 kw	1.88 kw	10.4 a
Section 4	2.5 kw	2.3 kw	1.88 kw	10.4 a
Section 5	2.5 kw	2.3 kw	1.88 kw	10.4 a
Section 6	3.75 kw	3.21 kw	2.81 kw	15.62 a
Section 7	3.75 kw	3.21 kw	2.81 kw	15.62 a



One, two, and three unit cases available for purchase or rental.

## Airflow

MicroStar: Solid-state speed control, 400-1520 cfm

## Connection

Each section above connected via C19 power inlet/plug

## Control

24vDC control via internal power supply

Locally control up to 3 load banks via touchscreen HMI

Remotely control up to 198 networked load banks via laptop, tablet or PC

Control Discreet load steps

Control Fan Speed beyond minimum required for load level applied.

## Dimensions and Mounting

Height	10U (17.5 inches)
Width	Fits 19-inch server rack
Depth	19 inches
Weight	45 pounds
Mounting	Quarter-turn, key lockable tabs Adaptor pins for square hole, non-threaded round hole and threaded round hole (#10, #12, M6)

