

# Nebula Controller



Nebula is the latest embedded controller in the Integritas™ family of products with advanced system monitoring and control features. Built on a modern ARM-based platform, the controller monitors system components within the charger including rectifiers, inputs, outputs, and alarms utilizing a high speed digital communications bus.

The Nebula controller has a 7-inch LCD full color touch screen with object-oriented graphics that present concise data about the system. On the left side of the display are quick view status indicators that change color to indicate a problem. A host of information is available at the touch of the screen including system status, alarms, and key parameters; all in a quick, easy to view graphic user interface. From the front panel display the user can quickly gather information on how the charger is operating.

Connecting to the Nebula controller via an Ethernet port, and using standard secure login protocol, provides for complete access to all assignments, configurations, alarms, inputs, and outputs. Remote connectivity through a high-speed dual port network connection is available that allows the battery charger to be connected to plant-wide DCS systems. The Nebula controller is built to deliver connectivity between the battery charger and your data networks.

## Nebula Key Features

### Standard System Features

- Standard and user defined alarms
- Four “quick view” color changing status indicators (AC, DC, System, Ground Fault) plus alarm cutoff (ACO)
- 10 auxiliary inputs
- 10 alarm relay outputs
- Rectifier management features
- Multiple Low Voltage Load and Low Voltage Battery Disconnect thresholds
- Configuration, statistics, and history all stored in non-volatile memory
- Detailed event history

### Standard Battery Management Features

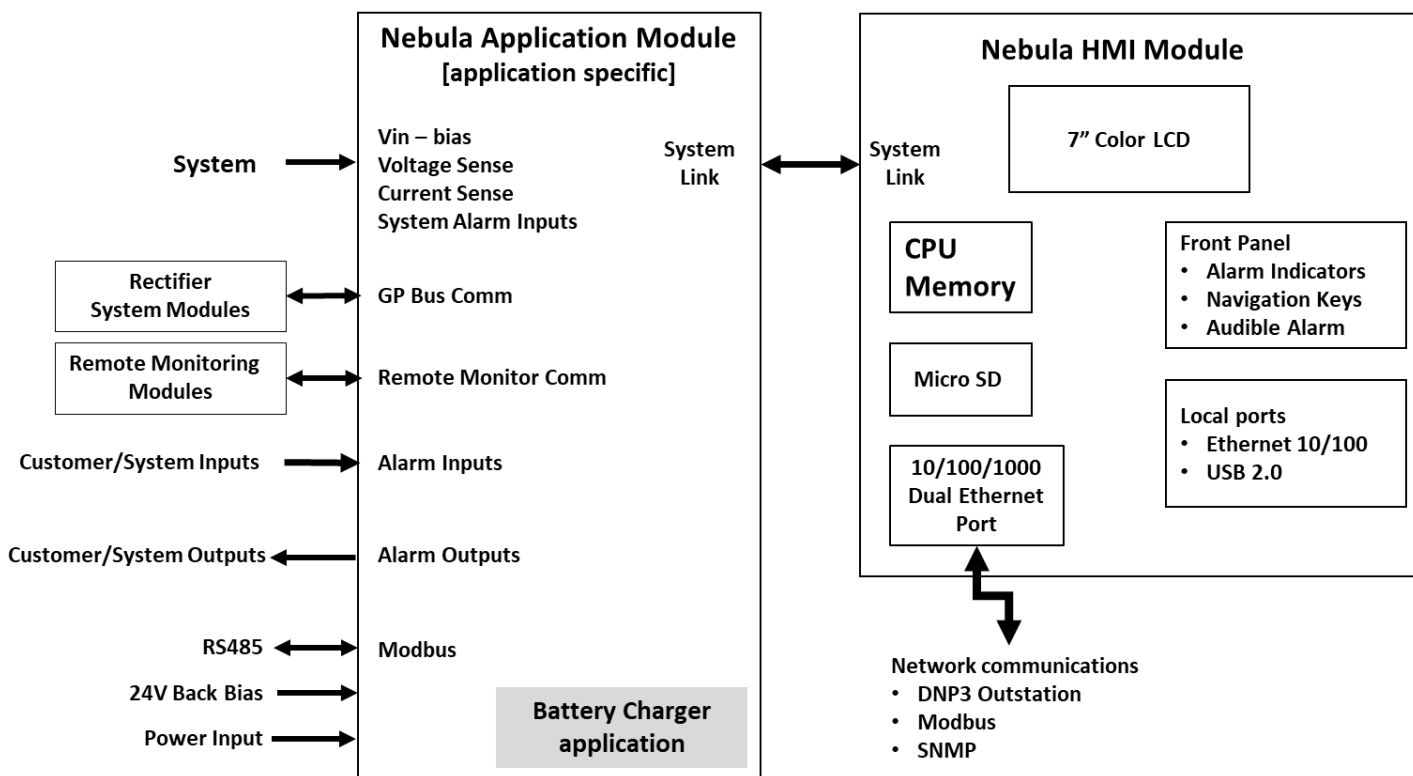
- Float/boost mode control
- Battery discharge testing
- Slope thermal compensation

### Communication Features

- 10/100/1000 Base-T dual-port Ethernet
  - TCP/IP, TLS
- SMTP allowing for email notification of alarms
- Built-in web browser interface
- SCADA communication protocols
  - DNP3 Outstation
  - Modbus
- 3 password protected security levels

# Nebula Controller (Continued)

## Nebula Block Diagram



## Technical Specifications

General	Description
Operating System	Embedded Linux
CPU	NXP ARM Cortex
Memory	Internal DDR3
Input Power	20 watts minimum
Communications	(2) 10/100/1000 Base-T Ethernet ports (rear) (1) 10/100 Base-T Ethernet (front, local management only) (1) USB 2.0 (front) supports connection of a mouse or keyboard or combination of both
Digital Inputs	10 binary total (6 "dry" no voltage, 4 opto-isolated 24V sourced) user assignable
Digital Outputs	10 form-C alarm (125 Vdc @ 0.5 A), 7 user assignable
1-Wire Bus Devices	Up to 16 temperature probes (via optional QS873 device),
Display	7 in. full color 640 x 480 touch screen and traditional tactile navigation buttons
Radiated Emissions	European Directive 2014/30/EU; EN55032, (CISPR22) Class B, EN55035 (CISPR24)



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