

Vortex[®] SMART Monitoring System

Key Features

- **Flexibility**—monitors +24V and -48V systems
- **Remote Relay Trip**—provides alarm testing, engine start-up and load transfer without on-site personnel
- **Modular**—custom configurable software and hardware
- **Remote Access by Modem**—enables monitoring from central location, user friendly
- **Extensive Help Menu**—saves time with simple access commands
- **Custom Alarm Capability**—programmable alarm reporting configurations to meet your system requirements
- **Front Access Cabinets**—provide fast installation and service
- **Environmentally Hardened**—may be used in uncontrolled and extended temperature environments
- **Reporting**—configurable to report to terminals and pagers

Description

Vortex SMART is an advanced monitoring product for power equipment. It combines the best features of the Lorain[®] Data Gathering Unit (DGU) and Cub Reporter into a flexible design which includes battery management and remotely downloadable software.

Vortex SMART is designed to be compatible with any power system and its modularity allows for easy customization. It has a built-in communications port for connection directly to a Vortex power system. This simple connection taps into the intelligence of the meter-control-alarm (MCA) panel and allows Vortex SMART to easily and cost effectively monitor an entire Vortex power system and its distribution without any I/O cards. Separate I/O cards allow for the monitoring of conventional power equipment and other external points.

Application

Vortex SMART is compatible with any small power systems being used in CEVs, huts, cellular sites, microwave stations and small switch sites. With its extended operating temperature range of -40° C to +65° C (-40° F to +149° F), Vortex SMART may be used successfully in remote terminals and other cabinet applications where wide and varying temperature ranges are experienced.

Software

The operational software of Vortex SMART is based upon the proven and familiar DGU software, plus it has been upgraded to include a variety of new features. Highlights of the Vortex SMART software include:

- **Remote Software Download Capability**— allows new software features to be easily upgraded over the phone line
- **Built-In Interface to a Vortex Power System**— provides 104 virtual analog channels and 102 virtual binary channels plus the ability to query for detailed information including inventory item, such as serial number, part number, etc.
- **Function Channels**—use mathematical formulas to derive new information such as total plant current; power, battery imbalance, etc.
- **Standard Statistics**—include a maximum, minimum and three high hourly averages for each analog and function channel
- **User LEDs Software**—selectable for both color and function



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Components

Cabinet

Standard cabinets are designed for front access and hold a maximum number of I/O cards as shown in the table. The flexible circuit-pack design easily permits custom cabinets and wire harnesses for various applications.

| Rack Size | Rack Spaces | Unit Depth | Max I/O Cards |
|---------------|-------------|---------------|---------------|
| 23" (58.42cm) | 1 | 12" (30.48cm) | 5 |
| 19" (48.26cm) | 2 | 14" (35.56cm) | 7 |
| 23" (58.42cm) | 2 | 14" (35.56cm) | 10 |

CPU (Central Processing Unit) Card

The heart of Vortex SMART is a circuit card that provides numerous functions including system power and communications. Input power may be either 24V or 48V nominal. Standard on the CPU card are four comm ports (a local port, two equipment ports and a Vortex power system port) plus one optional port that can accept a plug-in modem. The main microprocessor has an on-board communications processor making Vortex SMART ideal for demanding communications tasks such as transmitting data over fiber. Eight user-programmable LEDs allow for customization of alarm features, and two LEDs provide operational status. Vortex SMART is also equipped with a reset push-button and a user-programmable push-button.

I/O Cards

Vortex SMART contains a brand new flexible I/O subsystem that is easier to configure and setup than earlier systems. The I/O cards are connected to one another in a daisy-chain fashion using a ribbon cable, which eliminates the need for dip switches to uniquely identify cards. The I/O card lineup also features a new temperature input card and analog input card. The temperature input card accepts a direct connection to an accurate digital temperature sensor, eliminating the need for an external transducer. The new analog card provides four general purpose transformer isolated inputs and does not require any plug-in modules.

| I/O Cards Available | Description |
|---------------------|---|
| 4-Input Analog | General purpose analog inputs to measure signals from shunts to 60 VDC |
| 4-Input Binary | Double-ended inputs accept up to 60V AC or DC |
| 8-Input Binary | Single-ended inputs accept either plus or minus battery |
| 4-Output Relay | Provides Form-C contacts for each output |
| 8-Input Temperature | Uses digital sensor lug to measure temperatures from -40° C to +80° C (-40° F to +179° F) |

Additional Information

For additional engineering, ordering and installation information, specify model SMART, spec. number 586504100.



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