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FIRE & EVACUATION SYSTEMS

Centaur Alarm Signalling Equipment

Vigilant's Centaur alarm signalling equipment is designed to control the communication of alarms on a monitoring system network.
Equipment to be monitored connects to Centaur at a remote site via analogue inputs and/or an optional serial port. Centaur's firmware monitors input conditions, communicating with the central monitoring system (CMS), and carries out automatic liaison between whatever communications paths are provided, to ensure that the data arrives at its correct destination.
Because it supports dual communications media - typically a radio network and landline (direct or PSTN) - using built-in radio and landline modems, this unit is of particular value where secure and reliable communications are a prime requirement. However its flexible configuration features make it ideal for a variety of other applications using either single or dual communications.

Features

- Supports dual communications media.
- Six analogue inputs.
- Two open collector outputs.
- Analogue inputs also compatible with 4-20mA current loop.
- Inputs can be configured as digital outputs to give remote control.
- Fifteen status LED indicators.
- Serial port interface available.
- Secure control access using personalised electronic keys.
- Wide power supply range.
- Supervised power supply voltage.
- Easily reconfigured by down-loading from CMS.
- Maintains internal, time-stamped event log, which can be read by remote monitoring equipment.
- Compact size readily able to be incorporated in other equipment.
- Internal Y2K compliant clock.
- Compatible with radio packet networks, such as Ericsson Mobitex, and GSM phones.
- Dual PSTN option.
- ACA and Telecom NZ approved for PSTN and leased line use.
- Tested to AS 4428.0 for immunity to voltage impulses, high frequency disturbances and EMC.
- Complies with the Class A, EMC requirements of AS/NZS 3548 - 1992.

Potential Applications

- Alarm monitoring and control
- Remote electricity metering
- Remote water metering
- Remote monitoring of water flow
- Reservoir level monitoring
- Remote pump control
- Remote control of building services

Reliable and Secure Communications

Centaur's built-in support for two communications media means communications can be maintained under exacting conditions. The primary medium is normally a radio link to a base station. If this fails, Centaur will automatically switch to the other communications channel - usually a landline modem.
Centaur is designed to run from the 12V or 24V batteries commonly used to supply back-up power to alarm systems. Built-in supervision of the power supply voltage can be enabled if required. Where an external power supply unit carries out this function, a "PF" input allows a power supply fault signal to be transferred to Centaur for transmission on the network.
A hardware driven "watchdog" monitors Centaur's microprocessor forcing a reset condition if program execution should fail for any reason. In addition, the processor reset output is connected to a "Fault" LED on the facia and to an open collector output, so that an external alarm can be raised in the unlikely event of a continuous processor fault.
To ensure security of access for PSTN use, units using dual media are normally configured not to answer incoming calls. PSTN calls must be initiated by a Centaur, either on central command over the radio network, or automatically when a Centaur has lost radio contact with the CMS.
Electronic keys provide secure control of manual access for test and service. To permit access, keys must first be validated by communication with the CMS. Keys can also be personalised with the user's details, and access of individual keys to individual Centaur units can be centrally managed.

Flexible Configuration

Centaur's software can be readily customised for different applications. Changes in configuration can also be made on-line with new software downloaded over the network. To support this, Centaur's operating system maintains download strategies for fast and efficient transfer and validation of software on an individual or network-wide basis.
The functions of most LEDs on Centaur's facia are assigned in software for each application. A slide-in card forms the LED label on the polyester facia so that labelling can easily be changed to reflect the assigned LED functions. Custom facias are available for custom applications.
Further flexibility can be achieved by reconfiguring the six analogue inputs. These may be programmed to also function as digital outputs.

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Specifications

Enclosure Size (mm):	96H x 170W x 78D.
Enclosure material:	Die cast aluminium body; 1.2mm mild steel front panel; polycarbonate membrane fascia.
Enclosure finish:	Baked epoxy powdercoat.
Enclosure protection:	IP51.
Weight:	1.15kg (with radio fitted), 1.0 kg without radio.
Operating temperature:	-5°C to 45°C.
Humidity:	Up to 95% RH (non-condensing).
Power supply voltage:	9.6 to 30.0Vdc.
Power supply current:	At 12V - 230mA receive, 730mA transmit (nominal); At 24V - 115mA receive, 365mA transmit (nominal).
Power supply terminals:	Demountable screw terminals, 2.5mm^2 cable capacity.
Analogue inputs:	0-5V, 8 bit resolution; 4 to 20mA compatible (with added resistor), demountable screw terminals, 2.5mm^2 cable capacity.
Power Fail input (PF-):	Closure to 0V; demountable screw terminal, 2.5mm^2 cable capacity.
Open collector outputs:	30V, 20mA transistor pull-down; demountable screw terminals, 2.5mm^2 cable capacity.
Electronic key reader:	Compatible with Vigilant Key Unit.
Serial Port:	CMOS level, 10 pin header, TXD, RXD, RTS-, CTS-, 0V, +5V.
PSTN modem:	2400 baud, full duplex, CCITT V.22 bis.
Radio modem:	Compatible with Mobitex radio network, UWT NMX400 or compatible.
Antenna termination:	TNC bulkhead jack.
RF power at antenna:	1.0W nominal.
Radio modem frequency:	400MHz to 435MHz.

Control functions as well as single direction monitoring can therefore also be achieved. One of the two open collector outputs is also software controlled and can be used in a similar manner.

System Testing and Diagnostics

First-line testing of Centaur can be carried out using electronic keys. The functions supported by keys include:
- Isolation of alarm inputs for testing.
- Generation of Test signal to test communication link functionality.
- Received signal strength indication.

Received signal strength indication mode (RSSI) uses the front panel LEDs to display as a "bar-graph" the received signal strength of the two strongest radio base stations. This simplifies antenna adjustments and can be used to perform other radio setup functions.

Centaur also supports a comprehensive range of diagnostic functions available from a remote PC connected to the network. These functions simplify system setup and maintenance and currently include:
- Recall of the Centaur internal event log of the last 99 events.
- Logging of the current received signal strength indication (RSSI).
- Total time the radio link has been out of contact with the base station since last polled.
- Maximum length of time the radio has been out of contact with the base station since last polled.
- Average, minimum and maximum RSSI since last polled, for the three base stations with the strongest signals.

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