RMS INSTRUMENTS
Data Recording Systems

GR33U2

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GR33U2 POWER LINE MONITORING RECORDER & DATA LOGGER

- ***MONITOR AC VOLTAGE (100-140 VAC) AND/OR FREQUENCY (55-65 HZ) - OTHER RANGES ARE AVAILABLE***
- ***REAL-TIME REMOTE MONITORING WITH OR WITHOUT PAPER***
- ***FULLY PROGRAMMABLE BY FRONT PANEL OR PC***
- ***REAL-TIME DATA OUTPUT VIA RS232 (MODEM SUPPORT)***
- ***BATTERY BACKED DATA LOGGER MEMORY***
- ***THERMAL ARRAY TECHNOLOGY (8 DOTS/MM, 200 DOTS/INCH)***
- ***16-BIT, SELF-CALIBRATING A/D CONVERTER PER CHANNEL***
- ***DC-500 HZ BANDWIDTH PER CHANNEL (-3dB)***
- ***ANALOG RECORDING WITH ALPHANUMERICS***
- ***COMPREHENSIVE SELF-TESTING AND ERROR REPORTING***
- ***STATION IDENTIFICATION, TRACE AND DATE/TIME PRINTING***
- ***321 MM (12.625 INCH) WIDE CHART***
- ***RELIABLE, LOW MAINTENANCE***
- ***DC / AC POWER INPUT***

GR33U2 POWER LINE MONITORING RECORDER

The GR33U2 Power Line Monitoring Recorder with its selection of signal conditioning inputs (Voltage, Frequency), offers reliable, low-maintenance, thermal array recording technology. The high resolution thermal head has a printing width of 296 mm (11.65 in) with 8 printing elements or dots per mm (203 per in). The grid is printed simultaneously with the signal waveforms, eliminating any drift between waveforms and grid.

The analog section has a 16 bit A/D converter per channel which is self calibrating, ensuring high accuracy and long term stability.

Alphanumeric labeling of the traces and chart can be readily entered from the keyboard, terminal or computer.

The operation of the recorder is controlled by a unique and compact control panel. A single rotary control scrolls through the recorder menus, allowing the user to quickly alter items such as chart speed and grids. This technique eliminates the numerous front panel controls usually found on this type of recorder.

Alternatively, the recorder can be controlled externally by a host computer or by a PC using the optional PC33 Control and Interface Software.

This results in a versatile, accurate, reliable and low maintenance recorder with a wide chart presentation, with high resolution and easy viewing.

DATA LOGGING

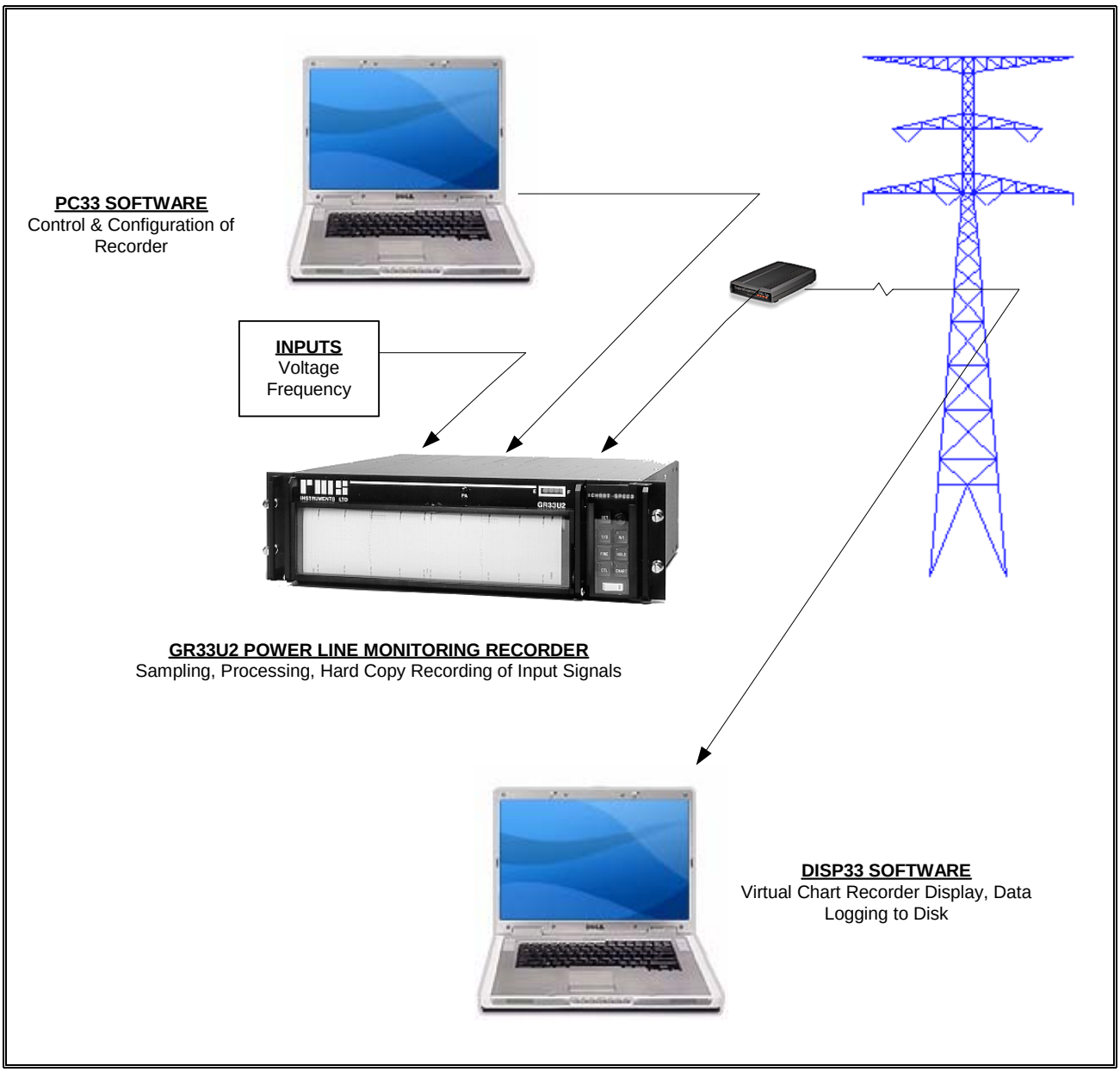
In addition to producing hard copy, the recorder may also be operated in a logging mode where data for up to 320 days is kept in battery-backed memory. The log data is tagged with time, date and “Station I.D.”. The data may be periodically retrieved on a daily, weekly etc. basis by an external computer with a standard RS232 port, or via a modem.

REMOTE REAL-TIME MONITORING

The trace data can be transmitted by the serial port or a modem to a remote host computer for monitoring or recording. The transmission interval is user selectable.

Both the data logging and real-time outputs will operate with or without paper recording. In addition, these two features have a simplified command set and status alarms provided for the host computer.

TEST & MEASUREMENT MONITORING STATION



A powerful and versatile Test & Measurement Monitoring Station may be built around a GR33U2 Power Line Monitoring Recorder & Data Logger, combined with RMS INSTRUMENTS' software running on a Notebook PC.

- RMS INSTRUMENTS' PC33 Software package allows complete configuration and control of the GR33U2 from a Notebook PC. In addition to real-time recording on paper, the GR33U2 also outputs serially, in real-time, all sampled (and processed) data.
- This data may be used by the DISP33 Virtual Chart Recorder Software package to (remotely, via modem) monitor signal waveforms on the screen, and optionally log the data to disk.
- The data is recorded as waveforms on the chart in real-time, or in internal solid-state memory, and it may also be output to a Notebook PC.
- The resulting system is a practical, compact, powerful tool in monitoring electrical utilities and distribution installations.

GR33U2 2-CHANNEL MONITORING RECORDER & DATA LOGGER SPECIFICATIONS

RECORD:

Recording Method:
Thermal array technology consisting of 2368 printing elements on 0.125 mm centres with 203 dots per in. (8 dots per mm).

Size:
11.65 in. (296 mm) record on 12.625 in. (321 mm) paper.

Resolution:
200 x 200 dots per in. in both axis at all speeds (approximate).

Number of Channels: *
2 traces with alphanumeric capability.

Grid Description and Printing:*
4 pre-defined grids selectable from front panel printed simultaneously with waveform. Each channel has 140 mm wide grid, with 4 major divisions, and 20 minor divisions to each major division. Different styles of annotation are provided.

Paper:
Plain thermal sensitive roll paper 12.625 in. (321 mm) wide by 200 ft. (60 m) long (P/N RMS2030-4).

Chart Annotation: *
a) Programmable trace identification label.
b) Programmable date and time printing.
c) 8 character programmable "Station I.D.", printed with time.

PAPER TRANSPORT:

Paper Viewing Area:
3.3 in. (84 mm) using take-up spool.

Drive Mechanism:
Roller type, driven by microprocessor controlled stepper motor with an internal take-up spool.

Chart Speeds:
a) Fixed - 1, 5 mm/min & 25 mm/sec.
b) Variable - 0.01 mm/sec - 25.0 mm/sec in 0.01 increments.
c) Paper advance at 25 mm/sec activated by push button with or without simultaneous printing.
d) Chart On/Off - local or remote.
e) Millimeters or inches - user selectable.

Paper Level:
4 segment LED bargraph paper level indicator using solid state level sensor. Alarm indicating out of paper.

DIGITAL INPUT:
1) Parallel port to be used with a host computer or a PC using the optional PC33 Interface and Control Program Software.
2) Serial port to be used with host computer as control port.

DIGITAL OUTPUT:
Serial port for data logger memory and real time data transmission (refer to DISP33 Software).

DATA LOGGING CAPACITY:
120 Kbytes
Recording time dependent on chart speed and user selectable K factor -
e.g. 30 Hrs (1mm/min, K=1)
320 days (1 mm/min, K=256)

ANALOG INPUT:

Number:
Two analog signals via rear panel (one A/D converter per channel).

Input Voltage Range: *
Nominally 110 VAC - measuring over the range of 100 to 140 VAC, or nominally 220 VAC - measuring over the range of 200 - 240 VAC.

Real-time Bandwidth:
DC - 500Hz per channel (-3dB).

A/D Resolution:
16 bits, self calibrating

FREQUENCY INPUT: (optional)

Sensitivity:
Nominally 60 Hz - measuring over the range of 55 to 65 Hz, or 50 Hz - measuring over the range of 45 to 55 Hz.

FRONT PANEL CONTROLS & INDICATORS:
- paper advance push button (25mm/sec).
- illuminated power On/Off switch.
- LED 4 segment paper level gauge
- Chart On/Off.
- operator control panel consisting of a 12 digit alphanumeric display and a rotary control to scroll system items, for example, real-time clock, grids, chart speed etc.

REAR PANEL:

Exposed:
- 12 point screw-type terminal block for the two signal inputs, power, misc. control signals.
- 25 pin 'D' type connector; parallel control port.
- 9 pin 'D' type connector; serial output port.
- 9 pin 'D' type connector; serial control port.

INSTALLATION:

Size:
19 in. (482.6 mm) rack mountable x 5.25 in. (133.4 mm) high. Overall depth 19.3 in. (490 mm), extending 17.5 in. (445 mm) behind mounting surface.

Weight:
approximately 24.5 lbs (11.2 kg.).

Finish:
Black anodized.

POWER REQUIREMENTS:
85-250 VAC, 47-440 Hz and 110-330 VDC; typically 100 watts.

ENVIRONMENT:

Operating Temperature:
0°C to +50°C, thermostatically controlled cooling fan

Storage Temperature:
-40°C to +60°C Humidity: 5% to 95% non-condensing.

Vibration:
10 cycles of 6 hour cycles, each cycle consists of 4 hours at +40°C with 10 minutes of vibration at 1g, 60 Hz every hour, and one hour cold cycle to 0°C.

ACCESSORIES:
RMS3712 Control Panel Cover
RMS3713 Front Cover

- ***CONSULT THE FACTORY FOR OTHER CONFIGURATIONS***

Specifications subject to change without notice

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