RMS INSTRUMENTS
Data Recording Systems

GR33U2S

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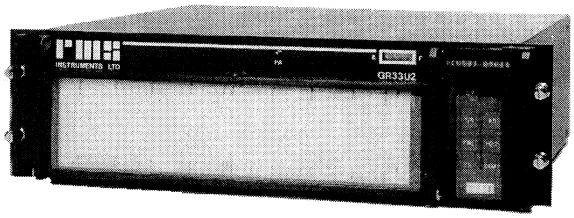
CHART RECORDER/DATA LOGGER

* ***WIDE SELECTION OF SIGNAL CONDITIONING INPUTS: VOLTAGE, CURRENT, THERMOCOUPLE, RTD, ETC.***
* ***TWO CHANNELS, 16 BIT RESOLUTION, 500 HZ BANDWIDTH***
* ***REAL-TIME MONITORING ON PAPER (UP TO 25 MM/SEC), OR VIA SERIAL OUTPUT (DIRECT RS232 OR MODEM)***
* ***THERMAL ARRAY TECHNOLOGY (8 DOTS/MM)***
* ***SIMPLE OPERATION, STAND ALONE OR FROM PC***
* ***BATTERY BACKED DATA LOGGER MEMORY***
* ***LOW MAINTENANCE***
* ***SELF-CALIBRATING***
* ***RELIABLE***



The GR33U2S is a two channel, rack mountable, direct thermal array printing, chart recorder. It incorporates two Industry Standard SCM5B-series isolated signal conditioning modules. A wide selection of modules are available, including Voltage and Current in narrow and wide bandwidths, Thermocouple, RTD, etc.

CHART RECORDER

This reliable and low maintenance instrument features the proven thermal array writing 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 collected on a daily, weekly etc. basis by an external host computer via a standard RS232 port or via a modem.

REMOTE REAL-TIME MONITORING

The 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.

The RMS Instruments' DISP33 Software can create a display in real-time on a PC screen that resembles the output of a chart recorder.

GR33U2S - 2 CHANNEL CHART RECORDER/DATA LOGGER SPECIFICATIONS

RECORD:

Recording Method: Thermal array technology, 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 channels with alphanumeric annotation capability.

Grid Description and Printing:

Selectable self-printing grid.

- 2 overlapping channels
- 2 non-overlapping channels

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, 4-character channel identification.
b) Programmable time/date printing.
c) 8 character programmable "Station I.D.", printed with time.

PAPER TRANSPORT:

Chart Speeds:

a) Fixed - 1, 5 mm/min. & 25 mm/sec.
b) Variable (programmable)
- 0.01 mm/sec - 25.0 mm/sec
- 0.001 in/sec - 1.00 in/sec
c) Chart On/Off - local or remote
d) Fast paper advance switch.

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

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

Paper Level Indicator: 4 segment LED bargraph, using solid state paper motion sensor. Alarm indicating out of paper.

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: approx. 24.5 lbs (11.2 kg.).

Finish: Black anodized.

POWER REQUIREMENTS:

85-250 VAC, 47-440 Hz or 110-330 VDC; typically 100 watts.

ENVIRONMENT:

Operating Temperature:

0°C to +50°C, thermostatically controlled cooling fan

Storage Temperature: -40°C - +60°C

Humidity: 5%-95% non-condensing (excluding paper).

Vibration: ten 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.

ANALOG INPUT

Real-time Bandwidth:

DC - 500Hz per channel (-3dB).

A/D Resolution: one A/D per channel

16 bits, self calibration

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.

DATA LOGGING CAPACITY:

120 Kbytes (solid state memory)
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)

FRONT PANEL CONTROLS & INDICATORS:

- illuminated power On/Off switch.
- LED 4 segment paper level indicator
- Chart On/Off.
- operator control panel consisting of a 12 digit alphanumeric display and a rotary control to scroll through menus of functions, for example, real-time clock, grids, chart speed etc.

REAR PANEL:

- screw-type terminal block for the signal inputs, power, etc.
- 25 pin 'D' conn.; parallel control port.
- 9 pin 'D' conn.; serial output port.
- 9 pin 'D' conn.; serial control port.

OPTIONAL ACCESSORIES

- RMS3712 Control Panel Cover
- RMS3713 Front Cover
- RMS3335 Desk Top Enclosure
- PC33 Control/Interface Software
- DISP33 PC Graphic Display Software
- RMS2030-4 Thermal Recording Paper

ISOLATED SIGNAL CONDITIONING MODULES

(SCM5B- Series, 2-input terminals, ± 5 volt output range)

(A) ***Analog Input, Narrow Bandwidth (4Hz)***
Input ranges from ±10mV to ±10V

(B) ***Analog Input, Wide Bandwidth (10kHz)***
Input ranges from ±10mV to ±10V

(C) ***Current Input, Narrow Bandwidth (4Hz)***
4 to 20mA or 0-20mA

(D) ***Thermocouple Input (4Hz Bandwidth)***
J, K, T, E, R, S, B

(E) ***Linearized Thermocouple Input (4Hz Bandwidth)***
J, K, T (several ranges), E, R, S, B

(F) ***Linearized 2-Wire RTD (4Hz Bandwidth)***
100 Ω Pt, 10Ω Cu - several ranges

(G) ***Isolated Frequency to Voltage***
Several Input ranges between 0 and 250kHz

(H) ***Consult RMS Instruments for other Modules***

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE ***11/2000***
**** CONSULT FACTORY FOR OTHER CONFIGURATIONS***