



Biofeedback



Parameters

- Pulse
- GSR
- Temperature
- EEG
- EMG

Relax - I

- Pulse
- GSR
- Temperature

Relax - II

- EEG
- EMG

'RMS' biofeedback instruments are rugged low cost, compact in size and through its ergonomically designed front panel facilitates ease of operation. Each biofeedback instrument converts patients physiological changes (GSR, Pulse rate, temperature, EEG & EMG) into audio as well as visual signals which helps the patient's perform self control or autogenic training leading to relaxation.

Relax-I

GSR

INPUT :- Through two silver - chloride electrodes, one connected to the sweat glands and the other to any inactive point forming the reference.

GSR Balance Range :- 0 to 1999 K ohms

DISPLAY :- Visual LED bar in 21 steps (Green 10 Steps, Yellow 1 step, Red 10 Steps) each steps changed by deviation of $\pm 10\%$, $\pm 5\%$ or $\pm 1\%$ (switch selectable) from the mean GSR value.

Actual change in GSR value in K ohms is also displayed on a digital panel meter.

TEMPERATURE

INPUT :- Through a surface temperature probe.

Temperature Balance Range :- 20°C to 40°C .

Display :- Visual LED bar in 21 steps (Green 10 steps, Yellow 1 step, Red 10 steps) each steps are changed by deviation of $\pm 5\%$, $\pm 0.25^{\circ}\text{C}$ and $\pm 0.05^{\circ}\text{C}$ (switch selectable). The value of temperature change in $^{\circ}\text{C}$ is also displayed on DPM.

PULSE RATE

INPUT :- Through an infrared sensor.

Pulse Balance Range :- 0 to 199 Pulses.

Display :- Visual LED bar in 21 steps (Green 10 steps, Yellow 1 step, Red 10 steps) each steps are changed by deviation of $\pm 2\%$ or $\pm 5\%$ (Switch selectable) from pulse rate. The pulse rate change is also displayed on a DPM.

Audio :- The audio signal is available through a pair of head phones (provided along with the instrument). The sound availability depends on the relaxation or tension achieved by the patient. At balance GSR value a sinusoidal pulse at 500 Hz is feed to the headphone. The pulses frequency reduces gradually as more and more relaxation is achieved similarly. It increases with increasing tension. The volume of the sound can be controlled with the front panel volume control.

Relax-II

EEG/EMG

The Relax - II monitors EEG/EMG. The alpha components of EEG of a subject and feeds it back to the subject through a light bargraph or through Headphones. By learning to enhance the generation of Alpha EEG activity, the patient suffering from a chronic mental posture constituting a component Psychosomatic and Physiological disorders can cultivate a more normal mental posture.

- The EEG signals are picked up from the scalp through silver electrodes.
- The EMG signals are detected with silver electrodes (surface electrode) and amplified by a low noise pre-amplifier.
- A band pass filter is used to segregate the EEG (Alpha) activity interest in the frequency range of (18-12 Hz). And to remove physiological signals not related to EMG also to select the required frequency spectrum.
- The change in EEG/EMG activity (signal strength) can be seen on the light bar graph as well as through headphones.

INPUT: Through silver electrodes

DISPLAY : Visual LED bar in 21 steps (Green 10 steps, Yellow 1 step, Red 10 steps)

POWER SOURCE : 220 V - 50 Hz AC

ACCESSORIES

Relax - I : Pulse Transducer, GSR Transducer, Temperature Transducer, Head Phone, Dust Cover, Fuse 2Amp., Recording jelly

Relax - II : Silver disc electrode, 3 Pin junction box, Headphone, Dust Cover, Fuse 2Amp., Recording jelly

Since R&D is a continuous process features & specifications subject to change without notice.



RECORDERS & MEDICARE SYSTEMS (P) LTD.

181/5, Industrial Area, Phase-1, Chandigarh 160 002, INDIA.
Ph. : 91-172-2658701-705 Fax : 91-172-2653415, 5073626
e-mail : rmshelpdesk@rmsindia.com
website : www.rmsindia.com

Certifications: ISO 9001:2000, EN ISO 13485:2003

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