Special features

1. High short-circuit protection and high interrupting capability.
2. No danger of explosion or fire: element totally enclosed and leak-proof.
3. By observing fusible element, interruption of circuit is indicated and can be easily recognized.
4. Safe and easy removal; refill with the refill tool.

(*By* H. Tarumi, Standard Electric Machine and Apparatus Dep't.)

PORTABLE POINTER-TYPE FREQUENCY METER

The unique Portable Pointer-type Frequency Meter has recently been added to the growing line of Fuji products as the newest type of portable electric meters.

Measuring Principle and Construction

Measuring frequency is indicated by a moving coil type measuring element, after conversion to d-c voltage by means of solid state circuit. This principle has already been employed by our pointer type frequency meter for switchboards which has provided research for the development of this smaller, lighter pointer-type frequency meter. Principle diagram is shown in *Fig. 2.*

Transistor switching circuit operated at measuring frequency f alternating the output voltage polarity of transistor-zener constant voltage circuit, generates the square wave at the same frequency. This square wave is applied to a saturated transformer type frequency-direct current transducer to obtain a d-c voltage Va which is proportional to the frequency f. From this Va, the output voltage Vb of the Zener constant voltage circuit is subtracted as base component and the difference $(Va-Vb)$ is applied to the moving coil type measuring element. The saturable transformer type frequency to d-c converter has been employed as a receiving unit of pulsative frequency

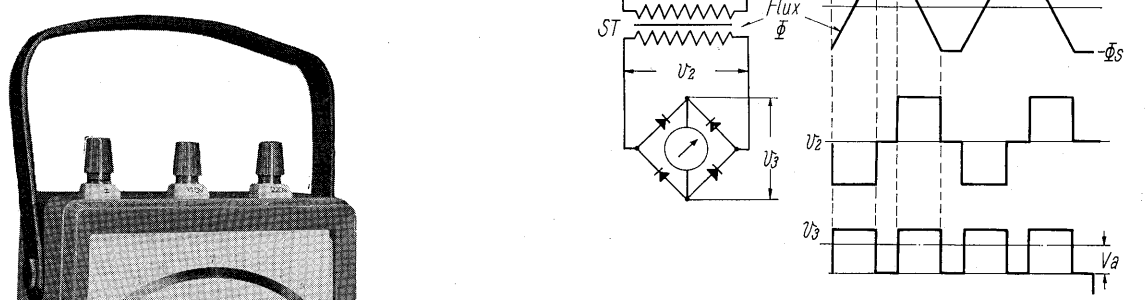

Fig. 2 Diagram of principle

Fig. 3 Saturated-transformer frequency d-c converter

Fig. 1 Outer view

type telemeter since 1958. When the square wave v_1 with frequency f is applied to the primary winding of saturable transformer ST, consisting of rectangular hysteresis core, the flux Φ of the core and the voltage $Va=N_2\ d\Phi/dt$ of the secondary winding follow the course shown in *Fig. 3.*

Mean value voltage Va of the voltage v_3 which is v_2 full wave rectified becomes

$$Va=2f\int_0^{\frac{1}{2f}} v_2\,dt=2f\int_{-\Phi s}^{+\Phi s} N_2\,d\Phi=4N_2\Phi_s f$$

and is proportional to frequency f (saturation flux Φ is constant). Voltage v_1 does not have direct relation to frequency f.

Measuring element of the new frequency meter employs Fuji's unique 'Tautband' suspension system and internal magnet construction. The external dimensions are the same as those of other Fuji Portable Electric Meters. The printed circuit is built in.

Outstanding Features

1) Approximately four times smaller and three times lighter than any other frequency meter on the market.
2) Consumes only half as much power.
3) Its operating principle makes it impervious to external magnetic fields and voltage variation.
4) Durable Tautband suspension system operates without friction, withstanding vibration and impacts.
5) Functionally designed throughout:
   a. Handsome styrol case withstands impacts
   b. Constructed for easy transportation and storage
   c. Universal terminals for secure connection of all types of lead wires
   d. Easy scale reading

Specifications

Measuring range:	45～55 cycles or 55～65 cycles
Rated voltage:	110/220v (terminal changeover)
Tolerance:	±0.2% of central frequency
Dimensions:	16 × 17 × 8.5 cm (without terminal)
Weight:	2.5 kg

(*By* S. Ishibashi, Toyoda Factary)

FUJI ELECTRIC AUTOMATIC COOKER, MODEL BC 801

Here's the newest multi-purpose electric cooker: Model BC 801, with unique Fuji design and all-new ideas It's several cooking appliances in one ... can be used for cooking rice, warming food, roasting, baking, steaming, boiling, stewing, and braising. All cooking becomes easier, faster and more delicious with this wonderful cooker, Model BC 801. You'll find enjoyment in cooking everything from custard pudding to sukiyaki.

Features

1) Cooks hundreds of recipes
   In addition to preparing rice without fuss, it can be used as a casserole, steamer, griddle or food warmer.
2) Excellent heating efficiency
   Heating element is cast in the bottom for fast, economical direct heating.
3) Immersible for easy cleaning
   Easy to wash...can be dipped into water (after removal of heat control).
4) Convenient heat control plug
   Detachable thermostat control has an infinite variety of settings: rice-cook, on-off, from 80°C (176°F) to 220°C (422°F) settings. No guess work; simply turn the dial to the desired setting and thermostat maintains the temperature.
5) Delicious soft rice
   Always prepares delicious rice, cooked by steam and not by direct heat. Water in the outer pan is heated to boiling temperature: the steam which suffuses the whole inner pan cooks the rice quickly.
6) Sturdy and all-new styling
7) Many useful accessories
   Lid for inner pan, multi-purpose steam plate (ideal for egg boiling, custard pudding etc.), handle for removing inner pan...all designed for maximum efficiency.