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The AB Autometer-Hortenaus System

AN ELECTRIC HEAT-QUANTITY METER*

The measurement of consumption is one of the most important tasks of rational operating economy. Exact instruments measure the consumption of gas, water and electric current, but for the measurement of heat consumption a rational and reliable measuring apparatus has up to now been lacking.

The previously invented heat-consumption meters are either too expensive or unreliable—particularly when we are concerned with small heat quantities—or are exposed to strong mechanical wear, which quickly worsens the measuring precision.

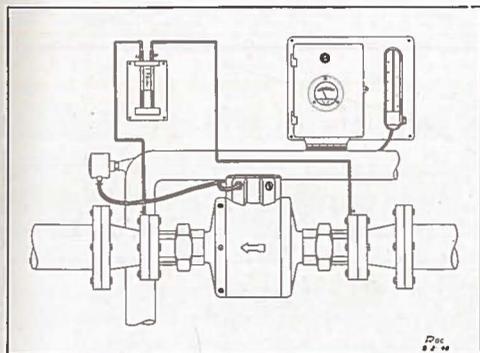
For the purpose of satisfying the need of the modern expert there has been created and patented—after many years of intensive scientific and constructive work, and the overcoming of a large number of mechanical, electrical and hy-

draulic difficulties—the Autometer heat-quantity meter. The Autometer is primarily intended for continuous measurement of heat consumption in a closed circulating hot water system, in which the heat consumption is determined by the product of the water quantity and the temperature difference between two measuring points in the feed line and the return line respectively, although the Autometer is also employed for measurement of water consumption.

CONSTRUCTION

The water quantity or velocity is measured through a flow meter, electrically, by means of an impulse organ, a specially constructed turbine-wheel, which constitutes the only moving part of the apparatus. A patented mechanism enables the turbine-wheel to generate an electric current, which is, at both small and great water velocities, directly proportional to the water quantity. The pressure loss occurring in the flow meter is very small. The temperatures in the feed and return lines are exactly measured through a specially built electrical resistance thermometer. The product of the water quantity and the temperature difference is formed in a bridge, and the product is converted into an electric current, whose varying magnitude is continuously integrated on an instrument.

The instrument indicates on a scale the heat consumption in a certain time interval, which is read off directly in ton-calories. The multiplication equipment together with the rest of the



The Autometer

electrical control and regulating equipment, as well as the integrator, are assembled in the so-called Autometer "central". An indicating instrument, connected in the electric circuit, and installed in the front side of the Autometer central, together with a differential pressure manometer, connected with two outlets on the flanges of the water pipe, enables constant control and readjustment of the apparatus. (The meter is equipped with an indicating and integrating device and also a demand attachment.)

The operation of the apparatus is very simple, and does not require any special technical training of the personnel.

APPLICATIONS

With central heating of buildings the Autometer enables, through establishment of the ac-

tual heat consumption in comparison with the fuel consumption, the desired rational firing. With the employment of different kinds of fuel there can be obtained therewith savings up to 40 per cent, or, with the same kind of fuel, up to 20 per cent.

With central heating the Autometer enables calculation of the exact heat distribution. It is also possible to introduce a collective debiting method in rented buildings, by which the total heat consumption of the building, as established with the help of the meter, is written each day on a tablet. In this way the tenants are induced to be interested in saving heat.

In industrial installations the Autometer measures the exact heat consumption in industrial processes. It measures the consumption of water in large installations, such as laundries.

*The information given above is taken from the descriptive bulletin of AB Autometer, Inc., 128 Lindhagensgatan, Stockholm, Sweden, of which Hans von Hortenau is general manager. The leaflet was translated by Carl Demrick and the translation furnished us by George H. Tuttle. He says there is still another European hot water meter, one manufactured by Siemens and Halske of Berlin, a description of which we hope to supply in a later number.

NEW MEMBERSHIP CERTIFICATES

The Membership Committee has prepared new National District Heating Association membership certificates which indicate the new membership classifications as provided in the 1946 revision of the constitution. Each member who joined the Association on or after June 4, 1946

and all future members will receive one without charge. For all other members provision has been made whereby for 50 cents the member's name may be inscribed in plain scroll, or for \$1.00 the inscription will be made in Old English. Upon receipt of the fee at Headquarters a proper certificate will be issued.