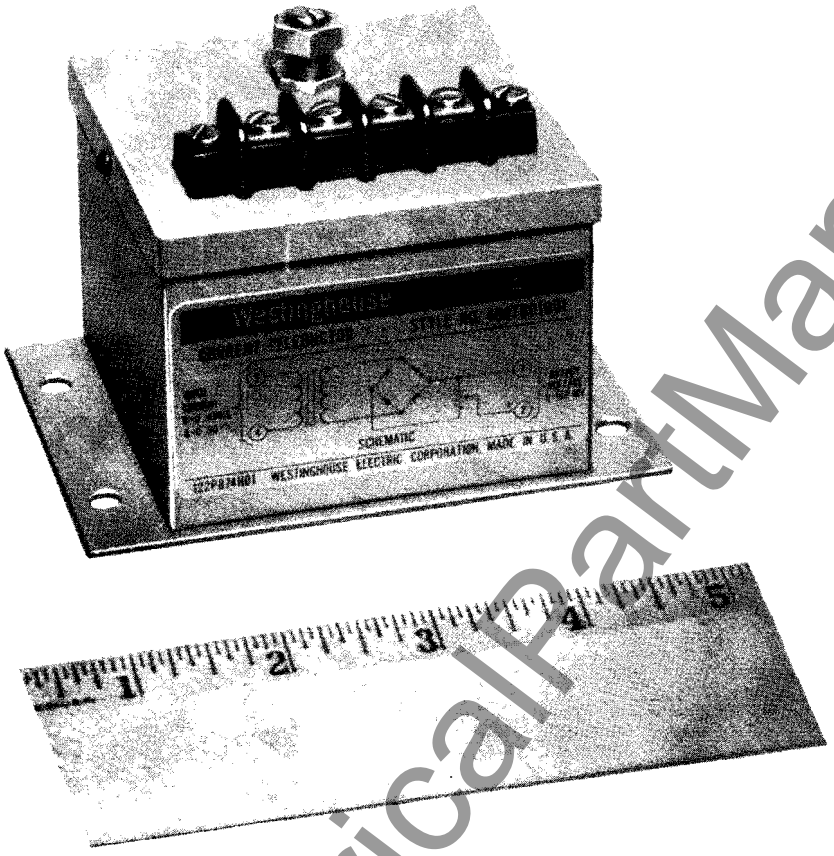
Westinghouse

Teleductor®

For Ac Current and Potential Measurements

Input: Ac From Instrument Transformers
Output: Dc Proportional to Current or Voltage



Application

Teleductors with dc milliampere outputs can be used as inexpensive telemetering transmitters where the interconnecting channel is a dc circuit having a resistance as high as 10,000 ohms when adjusted for the actual load resistance.

Teleductors with dc voltage outputs can be used as general purpose transducers for operating recorders, controllers, telemetering transmitters, and analog-to-digital converters.

The Teleductor is particularly suited for use with supervisory systems. Its small size and low cost make it practical to have a separate Teleductor permanently connected to each instrument transformer, thus avoiding the necessity of switching current and potential transformer circuits to a common telemetering transducer or transmitter.

Teleductors with dc milliampere outputs are useful where ammeters or voltmeters must be located at a distance from the current or potential transformers. Mounting the Teleductors at the instrument transformers permits running small gauge wires to the switchboard instruments. The instruments in such case would be dc milliammeters calibrated in terms of ac current or voltage. A further advantage in the case of ac current measurements is that the Teleductor output leads can be open-circuited without causing high voltages on either the current transformer secondary or the Teleductor output.

Standard Ratings

Type	Input: Ac	Output: Dc
Current	③0-5 amperes	0-100 mv (unfiltered)
Voltage	③0-150 volts	0-100 mv (unfiltered)
Current	③0-5 amperes	0-3 ma (unfiltered)
Current	③0-6.25 amperes	0-3.75 ma (unfiltered)
Voltage	③0-150 volts	0-3 ma (unfiltered)
Voltage	①0-150 volts	0-100 mv (filtered)
Current	①0-5 amperes	0-100 mv (filtered)
Current	②0-5 amperes	0-10 v (filtered)
Voltage	②0-150 volts	0-10 v (filtered)

① Maximum output ripple is 0.1% rms.
② Maximum output ripple is 1.0% rms.
③ Maximum output ripple is 48% rms.

Advantages

Accuracy: Nominally within 0.5 percent over full range with wide variation in ambient temperature.

Linear: Output is linearly proportional to current or voltage input.

Reliable: No moving parts, vacuum tubes, or transistors.

Isolation: Isolates current and potential transformers from instrument circuit.

Safety: Eliminates hazards to personnel and equipment from accidental open-circuiting of current transformer secondaries. Load on current transformer remains practically constant when Teleductor output is open-circuited.

Economical: Eliminates switching of instrument transformer circuits. Permits use of small gauge wires to instruments.

Convenient: Small size. Can easily be mounted in any position.

March, 1975
Supersedes DB 40-571 dated February, 1969
E, D, C/2043/DB

Teleductor

For Ac Current and Potential Measurements

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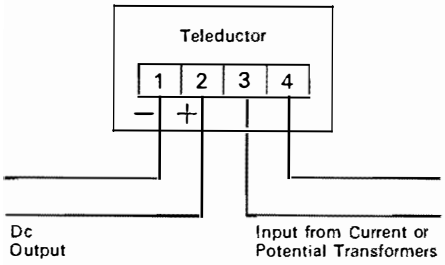
Output: Dc Proportional to Current or Voltage

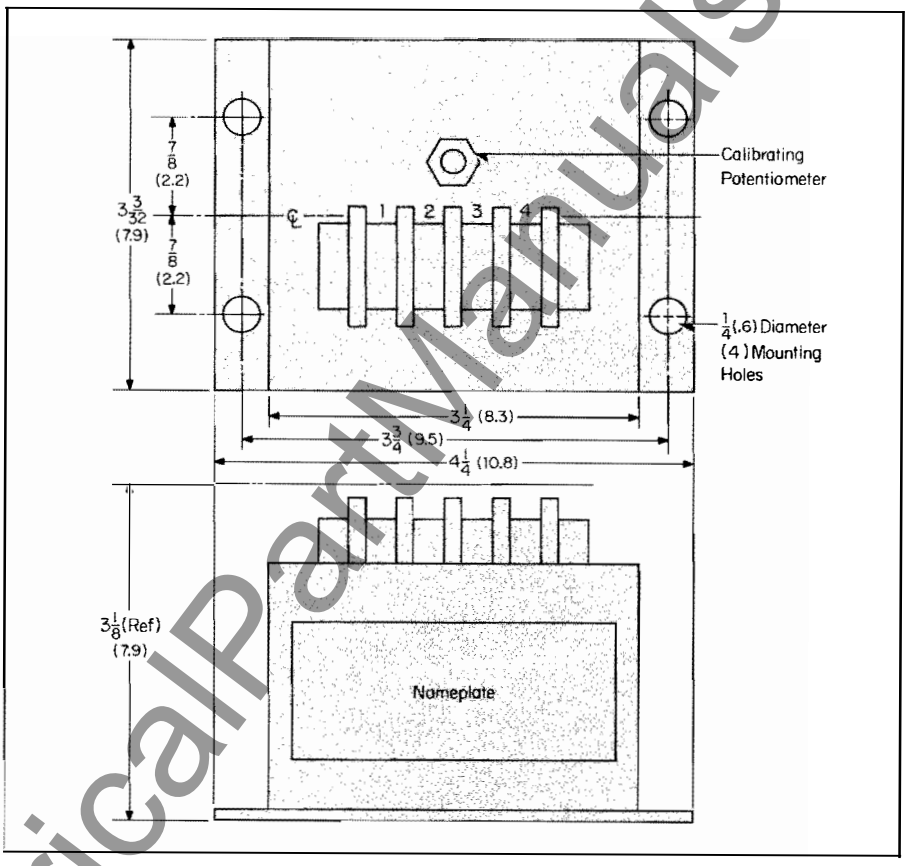
Description

The Teleductor is a transducer for measuring ac current or voltage by converting it to a directly proportional dc milliampere value. Two basic types are available: a current measuring type, and a voltage measuring type. The output of the basic Teleductor element is 0-3 milliamperes dc into a fixed load up to 10,000 ohms. A constant current output is maintained for a given input, over a wide range of load resistance and temperature. Other outputs are obtained by the use of suitable voltage dividing resistors and filters. A calibrating adjustment is provided to obtain the exact output value required.



The Teleductor consists of a two-winding toroidal transformer having iron with specifically selected characteristics, a full-wave rectifier bridge, and loading and calibrating resistors. The two-winding transformer isolates the input circuit from the output circuit.

Dimensions in Inches (Centimeters)



Characteristics

Input

Current type: Nominally 0-5 amperes.
Voltage type: Nominally 0-150 volts.

Input Burden

Current Type:
Less than 1.0 volt-amperes

Voltage Type:
5.0 volt-amperes.

Overload

Current Type:
60 times rated input for 1 second.
7 amperes continuous thermal rating.

Voltage Type:
2 times rated input for 1 second.
180 volts continuous thermal rating.

Frequency

50/60 hertz and above. Operation at 25 hertz is satisfactory with millivolt output, and with milliampere output if load does not exceed 5,000 ohms.

Output

0-3 ma dc into fixed loads up to 10,000 ohms. (For inductive loads a capacitor must be used across the output to prevent saturation of the transformer.)

0-100 mv or 10 v dc into loads above 50,000 ohms. (Other ranges can be supplied on special request.)

Unfiltered dc output has the 120 pulse per second characteristic of a full-wave rectifier.

Less than ±0.5% of full scale variation with temperature changes from −28°C to +72°C.

Dc Mv Output: ±0.5% of full scale variation with load changes above minimum load of 50K ohms.

Less than ±0.5% of full scale variation over the rated input range under conditions of standard temperature and load.

Response Time

Practically instantaneous. (Unfiltered)

High Potential Test

Between all terminals (connected together) and case: 1,500 volts, 60 hertz.
Between windings: 1,000 volts, 60 hertz.

Temperature Range

−28°C to +72°C.

Mounting

May be mounted in any position with minimum of two .10-32 machine screws.

Terminals

#6-32 binding head screw (4) spaced 7/16" (1.1 cm) center to center with 21/64" (.8 cm) maximum width for terminal lug.

Weight

1 pound.

Further Information

Prices, Ordering Information:
See PL 43-840.

Westinghouse Electric Corporation
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