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Letter
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DEPARTMENT OF COMMERCE
BUREAU OF STANDARDS
WASHINGTON

(Superseding
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(April 4, 1933)

# PUBLICATIONS RELATING TO ELECTRICAL MEASURING INSTRUMENTS, METERS AND THEIR ACCESSORIES

This letter circular gives a selected list of publications originating at the Bureau of Standards which deal with design, testing, or performance of electrical measuring instruments and meters. In making up the list, a number of the older publications of the Bureau were omitted because they have been virtually superseded by later papers, or because the particular devices treated in them are no longer in general use.

Many requests for information in this field, received by the Bureau of Standards, can best be answered by reference to some standard text-book. Accordingly there are listed below a few such books which contain in convenient form the information which is most frequently requested.

The Bureau makes no tests on motors, generators, or transformers used for power or lighting service, and has no current publications on their design or performance. It can not undertake to answer questions concerning the design, construction, repair, or rewinding of such apparatus in cases where the matter is not one of general interest.

The publications listed can be consulted in almost any large public library and in particular at the "Government depository libraries," a list of which is given in the Supplement to Bureau of Standards Circular 24. A star (*) indicates a Bureau publication, and if a price is stated, a copy may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C. Only those marked "(f)" are available for distribution by the Bureau of Standards.

Scientific Papers. (The earlier Scientific Papers were issued in the Bulletin of the Bureau of Standards.)

*Agnew, P. G., and Fitch, T. T., The determination of the constants of instrument transformers, B. S. Bull., vol. 6, p. 281, 1909. (S130)

*Agnew, P. G., A device for measuring the torque of electrical instruments, B. S. Bull., vol. 7, p. 45, 1911. (S145)

*Agnew, P. G., A study of the current transformer with particular reference to iron loss, B. S. Bull., vol. 7, p. 423, 1911. (S164, 10¢)

*Brooks, H. B., Deflection potentiometers for current and voltage measurements, B. S. Bull., vol. 8, p. 395, 1912. (S172)

*Brooks, H. B., Outline of design of deflection potentiometers, with notes on the design of moving-coil galvanometers, B. S. Bull., vol. 8, p. 419, 1912. (S173)

*Fitch, T. T., and Huber, C. J., A comparative study of American direct-current watthour meters, B. S. Bull., vol. 10, p. 161, 1914. (S207, 15¢)

*Agnew, P. G., and Silsbee, F. B., Accuracy of the formulas for the ratio, regulation, and phase angle of transformers, B. S. Bull., vol. 10, p. 279, 1914. (S211)

*Brooks, H. B., Testing potential transformers, B. S. Bull., vol. 10, p. 419, 1914. (S217, 5¢)

*Agnew, P. G., A watthour meter method of testing instrument transformers, B. S. Bull. vol. 11, p. 347, 1915. (S233)

*Silsbee, F. B., A study of the inductance of four-terminal resistance standards, B. S. Bull., vol. 13, p. 375, 1916-17. (S281, 15¢)

*Brooks, H. B., and Weaver, F. C., A variable self and mutual inductor, B. S. Bull., vol. 13, p. 569, 1916-17. (S290)

*Agnew, P. G., Stannard, W. H., and Fearing, J. L., A system of remote control for an electric testing laboratory, B. S. Bull., vol. 13, p. 581, 1916-17. (S291)

*Silsbee, F. B., A method for testing current transformers, B. S. Bull., vol. 14, p. 317, 1918-19. (S309)

*Agnew, P. G., A new form of vibration galvanometer, B. S. Sci. Papers, vol. 16, p. 37, 1920. (S370)

*Silsbee, F. B., A shielded resistor for voltage transformer testing, B. S. Sci. Papers, vol. 20, p. 489, 1924-26. (S516, 15¢)

Research Papers

*Brooks, H. B., and Defandorf, F. M., An experimental study of the corona voltmeter, B. S. Jour. Research, vol. 1, p. 589, 1928. (RP21, 20¢)

*Harris, F. K., A suppressed-zero electrodynamic voltmeter, B. S. Jour. Research, vol. 3, p. 445, 1929. (RP105, 5¢)

*Silsbee, F. B., Notes on the design of 4-terminal resistance standards for alternating currents, B. S. Jour. Research, vol. 4, p. 73, 1930. (RP133, 15¢)

*Brooks, H. B., Sensitivity of a galvanometer as a function of its resistance, B. S. Jour. Research, vol. 4, p. 297, 1930. (RP150, 5¢)

*Silsbee, F. B., Composite-coil electrodynamic instruments, B. S. Jour. Research, vol. 8, p. 217, 1932. (RP411, 10¢)

*Brooks, H. B., and Spinks, A. W., A multi-range potentiometer and its application to the measurement of small temperature differences, B. S. Jour. Research, vol. 9, p. 781, 1932. (RP506, 5¢)

*Park, J. H., Effect of service temperature conditions on the electromotive force of unsaturated portable standard cells, B. S. Jour. Research, vol. 10, p. 89, 1933. (RP518, 5¢)

Circulars

*Electrical measuring instruments, B. S. Circular No. 20, 2nd ed., 1915, 57 pp. (C20, 15¢)

*Publications of the Bureau of Standards, B. S. Circular No. 24, 7th ed., 1925, 271 pp. (C24) (f)

*Copper wire tables, B. S. Circular No. 31, 3d ed., 1914, 76 pp. (C31, 20¢)

*Standards for electric service, B. S. Circular No. 56, 2nd ed., 1923, 344 pp. (C56, 60¢)

*Electric units and standards, B. S. Circular No. 60, 2nd ed., 1920, 68 pp. (C60, 15¢)

*Copper, B. S. Circular No. 73, 2nd ed., 1922, 108 pp. (C73, 20¢)

*Radio instruments and measurements, B. S. Circular No. 74, 2nd ed., 1924, 345 pp. (C74, 60¢)

Handbooks

*National electrical safety code, Handbook No. 3, 4th ed., 1926. (H3, $1.00)

*Discussion of national electrical safety code (to accompany the fourth edition of the code), Handbook No. 4, 1928. (H4, $1.00)

*Code for protection against lightning; Parts I, II, and III. (Supersedes H12, formerly M92) Handbook No. 17, 1933. (H17, 15¢).

Miscellaneous Publications

*Protection of electrical circuits and equipment against lightning, Miscellaneous Publication No. 95, 1929. (M95, 25¢)

Fee Schedules (f)

131, Resistance standards for current measurements
132, Direct-current ammeters
133, Direct-current voltmeters and millivoltmeters
134, Alternating-current ammeters
135, Alternating-current voltmeters
136, Wattmeters
137, Direct-current watthour meters
138, Alternating-current watthour meters
139, Frequency meters for power and lighting frequencies
1310, Current transformers
1311, Voltage (potential) transformers
1312, Volt boxes.

Letter Circulars (f)

Testing of electrical instruments, meters, and instrument transformers (In explanation of fee schedules), August 15, 1932. (LC 342)

Articles Published in Outside Journals by Members of the Bureau Staff

Agnew, P. G., and Silsbee, F. B., The testing of instrument transformers, Trans. Amer. Inst. Elec. Engrs. (American Institute of Electrical Engineers, New York City), vol. 31, p. 1635, 1912.

Brooks, H. B., Accuracy of commercial electrical measurements, Trans. Amer. Inst. Elec. Engrs., vol. 39, p. 495, 1920.

Brooks, H. B., and Holtz, F. C., The two-stage current transformer, Trans. Amer. Inst. Elec. Engrs., vol. 41, p. 382, 1922.

Silsbee, F. B., Lead resistance for current transformers, Electrical World (McGraw-Hill Publishing Co., Inc., New York City), vol. 81, p. 1082, May 12, 1923.

Brooks, H. B., The standardization of electrical measuring instruments, Trans. Amer. Inst. Elec. Engrs., vol. 42, p. 894, 1923.

Silsbee, F. B., Methods for testing current transformers, Trans. Amer. Inst. Elec. Engrs., vol. 43, p. 282, 1924.

Brooks, H. B., Accuracy tests for meggers, Electrical World, vol. 85, p. 973, 1925.

Brooks, H. B., The unit of electrical resistance, past history and impending change, Trans. Amer. Inst. Elec. Engrs., vol. 50, p. 1318, 1931.

Publications by Outside Organizations

Standards of the American Institute of Electrical Engineers, (33 West 39th Street, New York City)

No. 14, Standards for instrument transformers, March, 1925, 30¢

No. 33, Standards for electrical measuring instruments, January 1927, 30¢

Note.--At the date of issue of this letter circular, both of the above standards are being revised.

Annual reports of the Meter Committee of the National Electric Light Association (Edison Electric Institute, 420 Lexington Avenue, New York City).

Handbook for Electrical Metermen, 4th ed., 1923 (Edison Electric Institute, 420 Lexington Ave., New York City).

Code for Electricity Meters (Edison Electric Institute, 420 Lexington Ave., New York City)

Pender's Handbook for Electrical Engineers, 2nd ed., 1922 (John Wiley & Sons, New York City).

Standard Handbook for Electrical Engineers, 6th ed., 1933 (McGraw-Hill Book Co., New York City).

Laws, F. A., Electrical measurements, 1917 (McGraw-Hill Book Co., New York City).

Edgcumbe, Kenelm, Industrial electrical measuring instruments, 2nd ed., 1918 (D. Van Nostrand Co., New York City).

Keinath, G., Technik der elektrischen messgeräte, 3d ed., 1928 (R. Oldenbourg, Munich and Berlin).

Drysdale and Jolley, Electrical measuring instruments, Part 1, Commercial and indicating instruments; Part 2, Induction instruments, supply meters and auxiliary apparatus, 1924 (Ernest Benn Ltd., London).

Werner, O., Empfindliche galvanometer für gleich- und wechselstrom, 1928 (Walter de Gruyter & Co., Berlin and Leipzig).

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