681.208 NBS sp300 V.3 C.2

CONTENTS

General Papers on Electrical Measurements

| Papers | |
|---|-----|
| International weights and measures | 1 |
| Electrical units | 4 |
| Definition of "ampere" and "magnetic constant | 8 |
| Electrical standards and measurements | 9 |
| Electrical calibration accuracies at NBS | 29 |
| Suggested practices for electrical standardizing laboratories | 33 |
| Achievement of measurement agreement among electrical standards laboratories | 44 |
| List of publications, | 48 |
| Abstracts | |
| Physical entities and mathematical representation, | 67 |
| Systems of electrical units | 67 |
| Establishment and maintenance of the electrical units, | 68 |
| Extension and dissemination of the electrical and magnetic units by the National Bureau of | |
| Standards | 68 |
| Measurement of current with a Pellat-type electrodynamometer | 69 |
| Measurement of current with the National Bureau of Standards current balance | 69 |
| Evaluation of the NBS unit of resistance based on a computable capacitor | 70 |
| Standard Cells and Zener Diodes | |
| Papers | |
| Standard cells, their construction, maintenance, and characteristics, | 73 |
| Oil baths for saturated standard cells, P.H. Lowrie | 114 |
| The Operating characteristics of zener diode voltages, | 125 |
| Abstracts | |
| Designs for surveillance of the volt maintained by a small group of saturated standard cells, | 131 |
| Resistors and Resistance Apparatus | |
| Papers | |
| Stability of double-walled manganin resistors | 135 |
| Errors in the series-parallel buildup of four-terminal resistors | 140 |
| Precision resistors and their measurement | 149 |
| Calibration of potentiometers by resistance bridge methods | 184 |
| Resistors and Resistance Apparatus-Continued | |
| Papers | |
| Notes on the calibration of the direct reading ratio set | 187 |
| Direct ratio readings from a URS | 198 |
| A method of controlling the effect of resistance in the link circuit of the Thomson or Kelvin | |

| Double bridge | 200 |
|---|-----|
| Method for calibrating a standard volt box | 204 |
| Human engineering a console for the comparison of volt boxes | 217 |
| A method for calibrating volt boxes, with analysis of volt-box self-heating characteristics | 222 |
| Abstracts | |
| Methods apparatus and procedures for the comparison of precision standard resistors | 231 |
| Notes on the design of 4-terminal resistance standards for alternating currents | 231 |
| Measurement of multimegohm resistors | 232 |
| Calibration procedures for direct-current resistance apparatus, P. P. B. Brooks | 232 |
| Practical methods for calibration of potentiometers | 233 |
| Some modifications in methods of calibration of universal ratio sets | 233 |
| A versatile ratio instrument for the high ratio comparison of voltage or resistance | 234 |
| See also, A system for accurate direct and alternating voltage measurements | 290 |
| Capacitors and Inductors | |
| Papers | |
| Improved ten-picofarad fused silica dielectric capacitor | 237 |
| Voltage dependence of precision air capacitors | 244 |
| Capacitor calibration by step-up methods | 254 |
| Calibration of inductance standards in the Maxwell-Wien bridge circuit | 259 |
| Some techniques for measuring small mutual inductances | 265 |
| Abstracts | |
| New apparatus at the National Bureau of Standards for absolute capacitance measurement | 271 |
| Active and passive direct-reading ratio sets for the comparison of audiofrequency admittances | 271 |
| Four-terminal-pair networks as precision admittance and impedance standards | 272 |
| Variable capacitor calibration with an inductive voltage divider bridge | 272 |
| A new type of computable inductor | 272 |
| Instruments and AC-DC Transfer Standards | |
| Papers | |
| Ac-dc transfer instruments for current and voltage measurements | 275 |
| Thermal converters for audio-frequency voltage measurements of high accuracy | 281 |
| A system for accurate direct and alternating voltage measurements | 290 |
| A comparator for thermal ac-dc transfer standards | 300 |
| Calibration of peak a-c to d-c comparators | 310 |
| A differential thermocouple voltmeter | 318 |
| Instruments and AC-DC Transfer Standards-Continued | |
| Abstracts | |
| Practical aspects of the use of ac-dc transfer instruments | 324 |
| Calibration of volt-ampere converters | 324 |
| Standard electrodynamics wattmeter and ac-dc transfer instrument | 325 |
| Precise comparison method of testing alternating-current watthour meters | 325 |

| Voltage ratio detector for millivolt signals | 326 |
|---|--------------------------|
| Notes on the care and use of electrical instrkuments | 326 |
| Transformers and Inductive Voltage Dividers | |
| Papers | |
| An international comparison of current-ration standards at audio frequencies | 329 |
| The precision measurement of transformer ratios | 342 |
| Comparator for calibration of inductive voltage dividers from 1 to 10 | 362 |
| An international comparison of inductive voltage divider calibrations at 400 and 1000 Hz | 371 |
| Abstracts | |
| Equipment for testing current transformers | 379 |
| The design and performance of multirange current transformer standards for audio frequencies | 379 |
| Inductive voltage dividers with calculable relative corrections | 380 |
| The calibration of inductive voltage dividers and analysis of their operational characteristics | 380 |
| High Voltage and Surge Measurements | |
| Papers | |
| | |
| Special shielded resistor for high-voltage d-c measurements | 383 |
| Special shielded resistor for high-voltage d-c measurements Shunts and inductors for surge-current measurements | 383 389 |
| | |
| Shunts and inductors for surge-current measurements | 389 |
| Shunts and inductors for surge-current measurements Spark-gap flashover measurements for steeply rising voltage impulses | 389 |
| Shunts and inductors for surge-current measurements Spark-gap flashover measurements for steeply rising voltage impulses Abstracts | 389 413 |
| Shunts and inductors for surge-current measurements Spark-gap flashover measurements for steeply rising voltage impulses Abstracts The measurement of high voltage | 389 413 |
| Shunts and inductors for surge-current measurements Spark-gap flashover measurements for steeply rising voltage impulses Abstracts The measurement of high voltage Dielectric and Magnetic Measurements | 389 413 |
| Shunts and inductors for surge-current measurements Spark-gap flashover measurements for steeply rising voltage impulses Abstracts The measurement of high voltage Dielectric and Magnetic Measurements Papers | 389 413 424 |
| Shunts and inductors for surge-current measurements Spark-gap flashover measurements for steeply rising voltage impulses Abstracts The measurement of high voltage Dielectric and Magnetic Measurements Papers Standard tests for electrical properties | 389 413 424 427 |