DOWNLOAD PDF SUPERIOR INSTRUMENTS MODEL 70 UTILITY TESTER

Chapter 1 : superior instruments | eBay

VINTAGE SUPERIOR INSTRUMENTS co. ~ Model 70 ~ utility tester Extra Nice - $ Vintage Superior instruments co. ~ Model 70 ~ utility tester Extra Nice Very nice no cracks or chip extra clean not tested Thanks Rich

Some of the test and monitoring equipment for the military was the best that could be produced at the time and no expense was spared in its construction. At the budget-built end, there were the countless test-gadgets intended for radio repairmen or radio hobbyists that might seem to barely be able to perform the intended task but clever designs sometimes resulted in very useful test instruments. Biddle of Philadelphia imported these instruments and each box has his tag attached. Biddle was also a very early major builder and supplier of wireless equipment with Reginald Fessenden being one of his prominent customers over a long period of time. A known precision resistance allowed one part of the equation to be selected and the remainder was then calculated. These types of boxes were used in DC Resistance bridge circuits for precise measurements of an unknown resistance Wheatstone Bridge circuits or in other circuits for calculating current flow, low voltage levels or comparison evaluations. Many experiments were carried out at Mt. Wilson and the facility there had has a lot of very early test gear. I was given these boxes by my old Virginia City friend, Maynard Clark who worked at Mount Wilson Observatory Maynard designed much of the computer software for the various telescope drive systems at Mt. Biddle Company - "JAGABI" Adjustable Slide Rheostat-Potentiometer These large, adjustable wire-wound rheostat-potentiometers were generally used in college and university physics laboratories when performing experiments in electricity where fairly large currents were involved. Most of these types of devices used nickel-chromium wire wound on ceramic forms. All of these rheostats will have a slide adjustment to vary the value of resistance or voltage when connected as a potentiometer as necessary for the experiment. Also, these types of rheostats were available in many different values of total resistance and maximum current flow ratings. This JAGABI has a screw-thread drive within the square tubing to allow minute adjustment of the slide contact position. Biddle Company in the s. The small German rheostat shown is 48 ohms, only rated at 1. Central Scientific Company Shunt-pin Resistance Boxes Central Scientific Company was located in Chicago, IL and generally built various types of devices for laboratory experimental use, mainly for schools, colleges and universities. Early resistance boxes require some calculation as to how to achieve the desired resistance from the placement of the various shunt pins into the numerous junction slots. Each junction slot can shunt the resistor selected by inserting the shunt-pin. To select a R value one first has to know the total resistance of the box. In the case of the Central Scientific box shown, the total R is ohms. Next one has to look at the specific resistance values shown next to the junction slots. These values show how much resistance is to be subtracted if the junction is shunted by a pin. With the box shown, each junction is a different value of R starting at ohms and reducing in value down to. One has to calculate the value that needs to be subtracted from to result in the value of R desired and then insert the shunt pins into the necessary junctions to have those values of R total the subtracted value. The end result is the desired resistance at the large binding posts. Also, one could calibrate a device by using the box and moving the shunt pins around for the desired result and then total up the shunted R value and subtract that from the total R ohms for this box and that would give the calibration resistance necessary to achieve the result desired. All very laborious and antiquated. However, it shows the process necessary before "dial in" decade boxes were available. The long shunt pin with knurled nut allows connection as a potentiometer if desired. Northrup was a professor at Princeton and only stayed with Leeds for about seven years but his name remained with the company. These would be thermocouples, RTDs and other temperature sensors or transducers. Some of the Resistance Bridges were used to locate shorts in long runs of multi-conductor cable. The R decade box shown is probably from the s. The box is mahogany and the top is hard rubber. Originally these panels were black. As can be seen from the property asset decal on the front, this instrument was used a Mount Wilson Observatory. Cell voltage was nominally 1. A Standard Cell provided a reference voltage for calculation of various circuit values or a specific voltage supplied for precision measurement type comparisons. Anywhere that a precise DC potential of known value was needed, the Standard Cell provided that function. Most Standard Cells were used in

college and university physics laboratories as the source of an exact DC potential that could be then calculated into the known circuit values for determining an unknown value. In the industry, Standard Cells provided the same function - a precise known DC potential for various purposes. Used in various hook-ups a variety of measurements were possible although some had to be calculated from other data. Early designs used straight length resistance rods but these proved to be difficult to handle and store. The idea of using a resistance wire coil that was wound in a spiral configuration saved a lot of room and allowed for better portability. The maximum voltage that could be measured was usually around 1. The galvanometers used with Type K potentiometers was usually a sensitive device that used a mirror mounted to the moving coil and a light source. There are several binding posts on the rear of the Type K potentiometer to allow connecting various instruments, i. Cell, the galvanometer, external EMF inputs, etc. The controls on the right side of the potentiometer are for "rough" R adjustments and then the large drum is turned to fine adjust the potentiometer. The scale on the drum dial appears to change as the potentiometer arm and drum rides up the resistance wire spiral. The scale of the drum is read through the window that has 10 levels shown giving resolution of x 10 for the span of the potentiometer. Switches allow for selecting either an external Std. Cell for source voltage or for connecting an external source of EMF that could be used by the potentiometer. Also, there is a control to compensate for slight changes in the Std. Scaling can be selected via the voltage switch. Most Type K Potentiometers were either in colleges or universities in Physics classrooms usually but were also found in laboratories where a precise measurement of low level DC voltages were necessary. Within an industrial environment, the K Pot could be used for special test and calibration. Testing and measuring thermocouples was a common use in industry. The photo left shows the construction underneath the K Pot. Note that the hard rubber underside is black since it was protected from exposure to light. Photo right shows the K Pot with its protective cover installed. The wooden base and the cover are made out of mahogany. The K-3 performs the same functions with much easier to read dials, adjustments and connections. The K-3 was produced in the late-fifties and early-sixties. Various inputs are "guarded" which are protection circuits for the K Circuitry inside appears quite different from the Type K with modern color coded wiring along with many plastic forms and parts. These types of potentiometers were used to measure very small voltages accurately. Generally, the industrial use was in testing or measuring thermocouples TC. The TC uses two dissimilar metal wires in a junction that when heated will generate a small voltage. The voltage is incredibly small but changes in temperature to the TC junction cause a linear change in TC output voltage. TCs are used in the industry for measuring temperature inside furnaces or other high temperature areas. Before accurate low-level digital metering was available, potentiometers and galvanometers were used to test and measure low-level voltages. Adjustable Slide Rheostats Many different companies built these slide rheostat-potentiometers. Some of the slide contacts use carbon brush contacts that were spring-loaded. Others used metal finger contacts against the windings. Some forms are ceramic while others are a molded slate-like material. Some of the slides are gear driven while other use a "pinch" type of release for adjustment. Most of these large rheostats were sold to colleges and universities for their physics laboratories but rheostats were also sent to various industrial sites for test and repair uses. As would be expected for their typical users, the various slide rheostats shown in the photo came from St. The oil provided a way to allow for greater dissipation of heat and the hole in the top of the resistor allowed for venting due to expansion or allowed the users to insert a thermometer to monitor the heat build-up. The four-terminal connections are part of the Reichsanstalt-type resistor standard description. The terminals are 0. These NBS resistor standards could be purchased in a set and were sometimes supplied in a wooden storage box. Each resistor usually had paperwork showing its traceability to the NBS. These NBS resistor standards are values of 1 ohm, 10 ohms, ohms and ohms. They were used at St. It was developed by Edward Weston in the late-nineteenth century as a stable zero-coefficient of resistance material. Federal Pacific Electric Company Capacitance and Resistance Decade Boxes Cornell-Dubilier built these small hand-held Decade Boxes that provided both resistance and capacitance in various wattages and working voltages. Generally used in prototype construction or "factory select" component calibrations where a value R or C needed to be connected into a circuit. Left to Right and Top to Bottom: The capacitors are probably leaky and the carbon resistors may have drifted in value. These CDE boxes were a set from Mt. These "low current"

boxes are not suitable for power supplies or for high current loads. Many times the internal resistors are only good for 0. This rack mount "decade box" is entirely made up of high current WW resistances - usually 50 watt but some are watt resistances. Maximum current is shown below each step switch. A series connection is provided the red binding posts for inserting a current measuring instrument and the resistance connection is via the black binding posts. Note that the schematic for the binding post connections is on the front panel.

Chapter 2 : Nostalgia Air: Online Manuals

Cover is good minus to fair; inside is good; 64 pages. If you have any questions, you can email me at. Please see my Ebay Store for shipping and email schedule.

No Up for auction is a Superior Instruments model tube tester. This is in very nice condition. It has been kept in a climate controlled room for about 35 years. The control panel and gauge are both like new. The hinges are fine. The bottom part of the case has separated from the front side piece in one area. The last photo shows the separation. There is no weakness in the integrity of the bottom of the wooden case though, despite the separation. It is right at the edge. Seller assumes all responsibility for this listing. Shipping and handling This item will ship to United States, but the seller has not specified shipping options. Contact the seller- opens in a new window or tab and request a shipping method to your location. Shipping cost cannot be calculated. Please enter a valid ZIP Code. United States No additional import charges at delivery! This item will be shipped through the Global Shipping Program and includes international tracking. Learn more- opens in a new window or tab Change country: There are 1 items available. Please enter a number less than or equal to 1. Select a valid country. Please enter 5 or 9 numbers for the ZIP Code. Handling time Will usually ship within 2 business days of receiving cleared payment - opens in a new window or tab. Return policy Return policy details Seller does not offer returns. Refer to eWaft Return policy for more details. You are covered by the eWaft Money Back Guarantee if you receive an item that is not as described in the listing.

Chapter 3 : Auto Battery Voltage Utility Tester Superior Instruments Co. Vintage Model 70 | eBay

*Operating Instructions for the Model 70 Utility Tester [Superior Instruments Co.] on calendrierdelascience.com *FREE* shipping on qualifying offers.*

TV11 from the inside. Wiring to the transformer is at the right. Link to TV11 tube supplement Calibration and repair. I am send often technical questions from people using the TV10 or TV11, based on my recommendation here. It has been some 10 years ago when I had this TV10, so I am doing this from memory. So far, TV10 was the only one fo those "simple" testers that really picked out the bad tubes. Sometimes these very old testers do am amazing job. There is one with and one without the tube sockets extender, if you want to use a tubatest, better buy the one that has a unit attached to it, with all sockets, like Octal sockets For repair, I recommend you to go this way: Send me high quality pictures of the inside if you want. Also you need to that anyway before you begin. TV10 is just the tube rectifier version of TV You may have a bad acorn tube in there. The tube is very small, and has no socket. You may not recognize it as a tube at first. You do need to find out if the acorn tube is good. For this, remove it, so you can nicely see what you are doing. Then, glow the heater wire with an external transformer. The one from the TV10 is connected to the mains, because the inside transformer is only an auto transformer. When you have the heater glowing, there is a cathode and an anode of a working diode. You need to flow some DC current through this diode, simply with an adjustable DC power supply directly to the diode. But for instance at 20 Volt forward voltage at 20mA the tube is probably good. You really MUST take this from a datasheet, or use another tube tester. Simply replace it with a tube from Ebay or so, is unreliable, it may be a bad one as well from too long storage, and on Ebay lots of crap is sold. So one way or another you have to test it. I could test mine on another tube tester. In my TV10 all parts were still ok, but when some resistors are off value, the whole rest is suspicious too. These are carbon powder compound resistors, so just carbon powder baked into something like resin or clay, or whatever it was. This compound was in contact with air and humidity all those Specially when you soldered the wires, these resistors are junk, as the compound is brittle and will crack. So replace them, without further thinking. These are always bad. Best is take a foil type also for the 5uF one you see in the schematic. Check the potmeters too! Take them apart if needed. After put it back together again, it should basically work right away, with so few parts inside. For calibration, the calibration pot meter is the one that is not accessible from the outside. This needs to be set such that the mains calibration mark is the center, BUT If somebody knows, please write me, so I can add it here. With the Hickoks I believe that is 94 Volts at the internal transformer. So after the series resistor. So the series resistor is set such that you have 94 Volts across the transformer, regardless the mains voltage. So that would be for the lowest possible mains voltage in the days of V. I assume something similar with the TV10, but not really assume this is 94 Volts. It can be another voltage. The problem is, the internal calibration is important, and I have no reference for you how to set it. In the end, you may have to set it by trial and error, and that works pretty good actually with such a tester like TV In that case I recommend to take the AC voltage directly across the transformer as a reference. Then you change the mains voltage know somewhat, until the tester begins to indicate a "weak tube". Then you let that as is, and re-adjust the calibration mark on the panel meter. You need to do this with some collection of tubes of course. Not just one tube. However you need really tubes that you know are weak. So any random tubes will only confuse you. So when the tubes in your box of "weak tubes" are indicated "weak" and the tubes in your box of "strong tubes" are indicated "strong", the tester is calibrated right. It is a good idea to check the panel meter, it should read 5mA full scale. Issue with panel meters are quite common, though this one here is 5mA, so it is a rugged version. You may want to protect the meter with a parallel capacitor. I do this with all my tube testers. Some small negative overshoot is ok, and not even all meters or testers do that. Check the leakage neon lamp by using an external 2 Meg pot meter and connect it between grid and anode of the UX socket, while set it for a 2A3 tube, but put no tube inside. At values of appr k If that value is totally another, you have to find out why. This is determined by the 2Megs resistor on the schematic. If the lamp already burns much below k, and the 2Meg resistor is good, the problem is NOT this resistor. The problem is another, like socket leakage from

coffee drops on the flying lead sockets. Or somebody cleaned the tester deck with water or fluid, to make it look nice for Ebay, but dirt went into the flying lead sockets. These are not water proof, or solvent proof, there can be some strange "glue" like compound inside. If you suspect a problem here, just measure form pin to pin, using the octal socket, with a good ohms meter. Then 2 to 2, 3 to 3, etc. So lots of possibilities for a leak, and you have to check them all. In the manual, there are several tests described and ways how to use it. Like how to test light bulbs, and how to test capacitors for leakage. It is a good idea to go all through all procedures at least once. Some problems with a leaky or bad switch, may pop up here as well, so you know what to look at. TV10 is simple of course, but problems are not there where you expect them. You may want to check what the heater voltage of a 5U4G is doing. I would expect the 5V to be like 5. Then, with the mains adjustment knob, you should at least be able to get it back to 5V. So that is actually two settings of the mains knob. You may want to check what the main calibration mark is saying with these options. That gives you some idea what the mains calibration mark is for, and perhaps also if it is set right or wrong, internally. Though better for re-calibration is looking at what a known to be bad tube is doing. And not so much heater voltage. Specially for very powerful tubes like 2A3 that is even a good way. So this little tester can not load that tube with 15 Watt, but it can do with less, and do so at reduced heater voltage, which takes place automatically with 2A3. So I just write this here, in fact to tell you, to look not so much at the heater voltage. It is sometimes "not right" and yet this was intended. If you found a better calibration procedure, please let me know. I will be glad to place it here. It is interesting to see, so many people use this tester.

Chapter 4 : Sic - Superior Instruments Co Tube Tester Model Tw - Original Box for Sale - calendrierdelasci

For model Utility Tester 70, Superior Instruments Co.; New York (NY): Ebay auction by user imsheri

Chapter 5 : Vintage Test Equipment

VINTAGE SUPERIOR INSTRUMENTS Co. Model 40 Utility Tester - $ See Photos. I have not been able to find any references to this early model 40 unit. Lots of references to model 70, but not M Ohms and 0 to 15 Amps if I am reading the dial correctly.

Chapter 6 : vintage voltage tester | eBay

Description. For sale is reprint of Superior Model 70 Utility Tester Manual. Manual is 64 pages long, Dated Sections include: Measuring current, voltage, resistance, House wiring systems Etc. Manual includes schematic.

Chapter 7 : SUPERIOR INSTRUMENTS COMPANY (SICO)

Vintage Utility Model 70 Tester Instruments Voltage Auto Superior Co. Battery 70 Battery Model Voltage Superior Vintage Tester Instruments Auto Utility Co. $ Superior Instruments Co.

Chapter 8 : TubeSound Â» Manuals

New Listing Superior Instrument Company Model TD 55 Tube Tester. Pre-Owned. Vintage Superior Instruments Model 70 Utility Tester Manual Only , $

Chapter 9 : VINTAGE SUPERIOR INSTRUMENTS co. ~ Model 70 ~ utility tester Extra Nice - $ | PicClick C

Vintage Superior Instruments Model 70 Utility Tester Manual Only , Complete Manual Set - $