



Measurement technology and more ...

(/)



Chopper Fluke 335-332

details

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Fluke Calibrators 332/335

Improvements to the Fluke Calibrators 332 and 335

The Fluke Calibrators 332 and 335 are devices with 7-decade switches and therefore a maximum resolution of $10e-7$. The basic accuracy is between 5 ... 10ppm. They are pure analog devices of the development generation at the end of the 70's. They are fully transistorized. However, the first device generation in the chopper assembly had a mechanical chopper. Later followed by an electronic chopper with a MOSFET transistor. Both solutions were quite useful for the respective development epoch, but had considerable disadvantages compared to today's modern chopper ICs. The stability and interference voltage were higher than today's solutions and caused a relatively large drift within the Anheizphase. The mechanical chopper was still the better solution, but it brought with it quite a lot of noise. The task of the chopper module in the device is to monitor and compensate the zero point error in the output voltage. Here you will find a circuit that is built with a modern chopper IC and avoids all the aforementioned disadvantages. However, it is expressly pointed out that the replica should only be made by electronics technicians with appropriate experience. In the device voltages of over 1000V arise and are therefore life-threatening !!! On this picture you can see the complete circuit diagram. that the replica should only be made by electronics technicians with appropriate experience. In the device voltages of over 1000V arise and are therefore life-threatening !!! On this picture you can see the complete circuit diagram. that the replica should only be made by electronics technicians with appropriate experience. In the device voltages of over 1000V arise and are therefore life-threatening !!! On this picture you can see the complete circuit diagram.

The second picture shows the mechanical chopper and next to it a first experimental setup of the self developed circuit. The replica is straightforward.

Afterwards, the zero point of the three voltage ranges 10, 100 and 1000 V must be readjusted on the device. It may be necessary to make a small adjustment of the control range of the 1000V zero point controller.

If you have any questions about the replica, please contact me.

One more word about purchases of used equipment. If you are not able to recalibrate the devices yourself, you should only purchase calibrated devices. With the age of the devices with high probability the values certified by the manufacturer are not reached anymore.

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