

The JV High-precision AC-DC current shunts

Justervesenet has developed a complete shunt suite ranging from 30 mA to 20 A. The shunts are primarily intended as AC-DC standards to be used with 90Ω planar multi-junction thermal converters. At nominal current input, the shunts produce a voltage output of about 1 V.

The current shunts are produced in these nominal values: 30 mA, 100 mA, 300 mA, 1 A (N-contact or banana plugs), 3 A, 5 A, 10 A and 20 A. The low current ranges, 30 mA and 100 mA, are covered by "planar" shunts, whereas the current ranges 300 mA to 20 A are covered by shunts of the coaxial "modified cage" design. All of the shunts being coaxial, their external stray magnetic fields are kept to a minimum in order to minimize possible interference to other measurement circuits. The shunts are designed for a frequency range from DC to 100 kHz, but they can be used well above this with predictable behavior.



Figure 1: A set of current shunts with nominal values ranging from 30 mA to 20 A.

AC-DC difference

The AC-DC difference of the current shunts vary with frequency in a predictable way. The graphs below, show the AC-DC difference of a typical set, as well as the variation in production from three 20 A shunts produced in the same batch. [The results have been verified in a bilateral comparison between JV and PTB.](#)

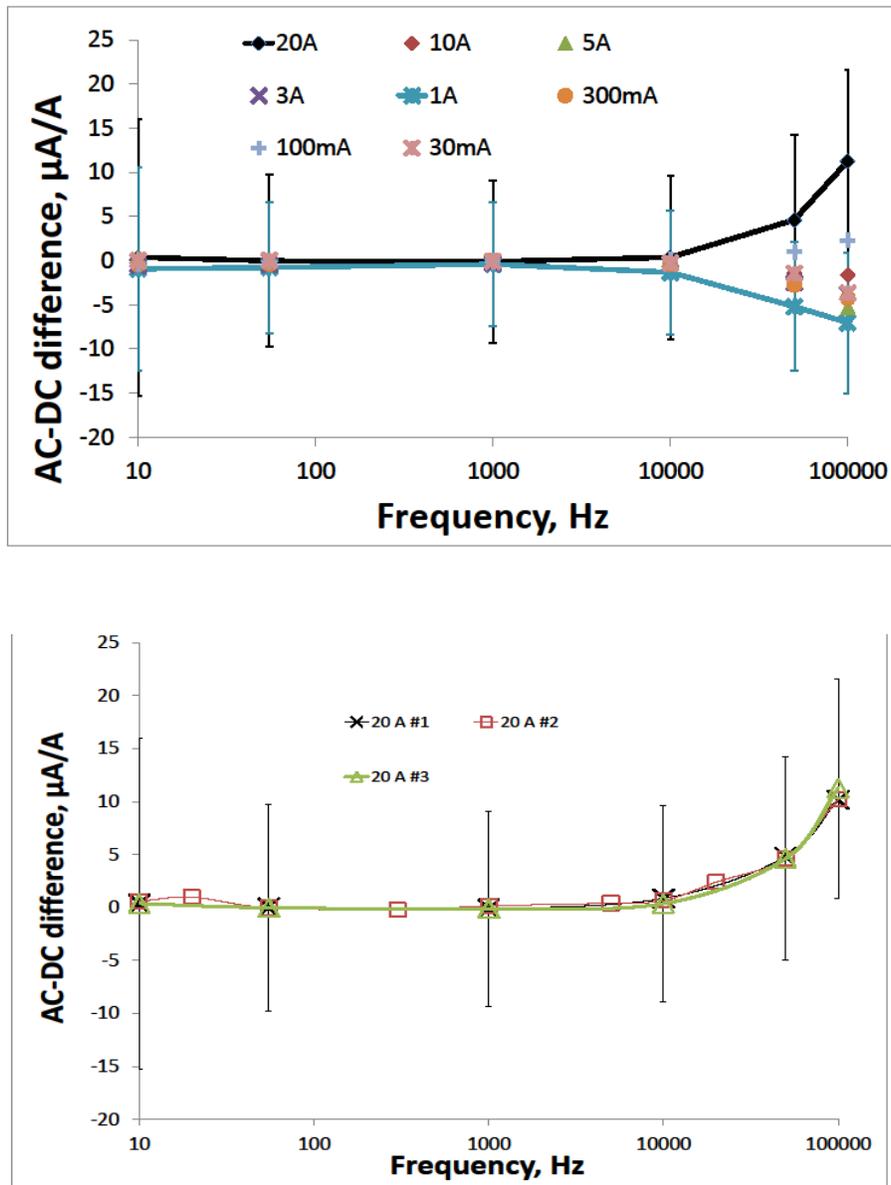


Figure 2: AC-DC difference measured at frequencies of 10 Hz to 100 kHz for a set of current shunts with nominal values from 30 mA to 20 A (top) and three 20 A shunts (bottom). The error bars indicate calculated uncertainties in the AC-DC difference

Price estimates

The current shunts have been produced in two batches, which are almost sold out. We will produce a new batch, if there are interested buyers. The prices of the shunts are between EUR 1300 and EUR 3500 per unit increasing with current. For complete sets of shunts there will be a discount of 10 %. Calibration will be offered as an additional option.

For additional information or ordering/quotation, please contact use the following contact information:

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Referances

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