

KORAD / RND KA3305

The KORAD / RND [KA3305](#) series lab power supply units are nice linear regulated power supply units for general purpose use. Besides the two 0-30 V, 0-5 A programmable channels (with digital interface for KA3305P), it features a third output channel at fixed 5 V, 3 A. This hack shows how to get a different output voltage (in this example 7.3 V, just enough to feed standard 5 V regulators with 2 V dropout voltage like 7805 or LM340).

The fixed channel voltage regulation is done with a [TL431](#) shunt programmable voltage reference (U18) and a NPN bipolar transistor (see fig. 27 of the datasheet, adding a transistor for the current boost). The voltage divider programming the voltage reference is made from R92 and R93 on the front panel PCB. Factory values from R92 and R93 are 1k. Changing R92 to 510 moves the output voltage from 5 V to ca. 7.3 V as wanted (with no significant variation across 1A-3A load).

We also located what seems to be the current limiter for this channel, on the large PCB in the back just next to the mains input. The limiter is made using [AZ432](#) adjustable shunt regulator. The principle seems to be application schematic shown in the datasheet. The trimmer seems to allow to set the current limit (but this is not totally clear yet).

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