

JUMA PA100D

100W RF amplifier - technical file (S/N: RPAD-03-21)

Thank you for purchasing the PA100D RF amplifier from roWaves Technologies. JUMA PA100 is a small-sized true 100 W linear amplifier for all amateur HF bands. The device was designed by JUMA (OH2NLT & OH7SV) and built under license by roWaves Technologies.

For this unit the PCB revision is B and SW version is 4.1a. The technical specifications of the equipment in the package (as well as some general ones) are described in the table below. All power values listed below are obtained with 14Vdc/20A power supply, continuous carrier (CW) tone, on a 200W/50R dummy load, RF in 2.5...8W in all HF bands.

Parameter	Symbol	Value	Unit	Conditions / comments
Frequency range	Bnds	160/80/40/30/20/17/15/12/10	m	user selectable, MHz or Meters
Standard RF power	Po nom.	100*	W	85-90W in 10m, PWR display in W or dB
Max. RF power (valid for your S/N: RPAD-03-21product) @ 13.8Vdc	Po max.	134.5	W	160m
		146.5		80m
		134.5		40m
		111.6		30m
		122.6		20m
		123.9		17m
		122		15m
		101		12m
		84.2		10m

SWR prot. limit	SWR	3:1	default	sound/display alarm ONLY in OPERATE mode, can be configured by user
Overtemp. prot.	Tprot.	70 158	°C °F	limits: 50°C...100°C / 120°F..212°F, sound/display alarm, can be configured by user, °C or °F
Overcurrent prot.	lprot.	24	Adc	sound/display alarm @ 24Adc, not configurable
Input PWR	RF in	2.5...10max.	W	keep RF in PWR in safe limits: 2...5W
Gain settings	Gstep	2	dB	G1-G4, 4 steps, 2 dB step
Operating modes	OPM	CW (CW-L/CW-U), SSB (USB/LSB)		
Supply voltage range	Vdc range	12-15	Vdc	voltage monitoring on LCD
Nominal supply voltage	Vcc nom.	14	Vdc	@13.8Vdc can deliver full power

Nominal current	Idc nom.	16	Adc	@ 100W all bands
Undervoltage limit	UV	11	Vdc	limits: 10.5...11.5Vdc
Overvoltage limit	OV	14.8	Vdc	limits: 14...15Vdc
Min. op. voltage	Vmin.	10.5	Vdc	Ulim. needs to be configured (convenient for portable battery usage)
ON currents	Idc	90	mA	- @13.8Vdc, standby (LCD on, backlight set to default brightness, fan OFF)
		18	Adc	- @ 13.8Vdc & max. RF power (Pin - 2W, gain 4, 160m), current monitoring on LCD
FW version	FW	4.1a		-current firmware installed revision on this unit (apr. 2021)
Supply voltage connector		6P	Molex	4 x 1m wires, 1.5mm diameter each, fused @ 25Adc
Output IMD3	IMD3	-37	dBc	@90W
		-41	dBc	@22W
Fan noise	Fn	25	dBA	very silent fan, user selectable options
Fan ON temp.	fan ON	40	°C	limits: 0°C...80°C / 32°F..170°F
		104	°F	

LCD		2 x 16	CH	with blue backlight, contrast can be set by user
Dimensions	L x I X H	190 x 176 x 66	mm	with case
Weight	G	1200	g	with case

The device is fully assembled, calibrated and ready to use. Runs firmware 4.1a. The language used is ENG. All PA100D amplifiers assembled, calibrated and sold by roWaves Technologies have the latest firmware pre-flashed. **Before attempting to flash any firmware by any means, please be aware that any malfunction that results from this action is not covered by warranty!**

Some unique aspects and improvements:

- quality rugged metal housing
- compact design
- band selection via transceiver connection (for FT-817/818, Elecraft KX-3, Elad FM-DUO)
- PTT (T/R) controlled
- software controlled LCD backlight and contrast
- all protections (overvoltage, undervoltage, overtemperature, overcurrent)
- output power: up to 150W with 13.8Vdc/17A power supply*
- min. supply voltage: down to 10.5Vdc (battery usage – portable operation)
- STBY current down to 90mA (*depends on LCD luminosity)

- silent cooling fan noise (25.6dBA)
- adjustable gain (2W-10W drive), memorized on each band with 2dB steps (G1-G4)
- protection and optical alarm in case of over-temperature, over-current, exceeded SWR
- IMD3 distortions: -37dBc @ 90W, -41dBc @ 22W
- input level: 2.5W (max. 10W)
- output adjustable gain in 2dB steps
- compatible with QRP transceivers type FT-817, mcHF, KX-2 etc (connection cables available on this website)
- dimensions: approx. 19 x 17 x 6cm, 1.2kg weight.
- latest FW version (4.1a – extensive tested by Adrian 5B4AIY)

General specs:

The JUMA PA100D amplifier can be used with any low power transceiver or transmitter with output power range from 2.5W...10W.

The size of the JUMA PA100D is compact and it is equipped with a fan over the heatsink. The fan is typically OFF by default and starts depending on heatsink temperature or user settings.

The above specifications are valid only for fully assembled and calibrated PA100Ds by roWaves Technologies.

Thank you!

team roWaves Technologies