

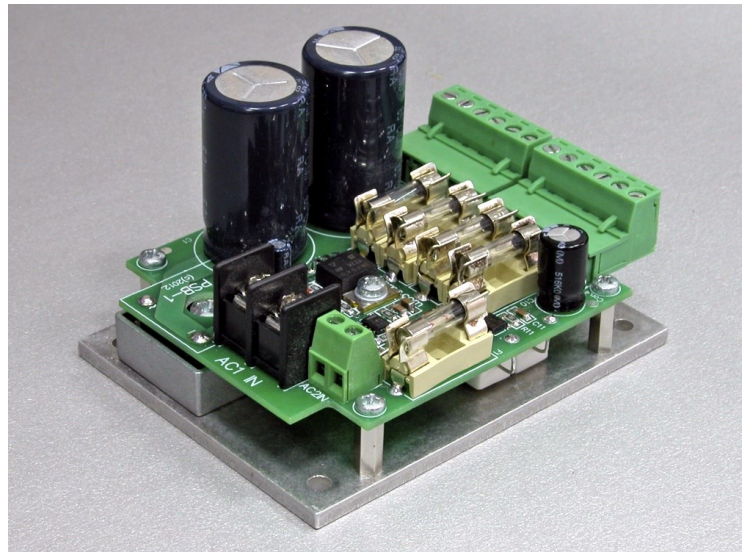
PSB-1

POWER SUPPLY BOARD WITH MOTOR BRAKE

1. DESCRIPTION

Power supply board with motor brake PSB-1 has 2 galvanically isolated power supply sources. The first one is used for power supply of up to 4 microstep stepper motor drives MST-107 and the second one for power supply of breakout board.

PSB-1 has integrated motor brake circuit. When rapid deceleration occurs, especially of loads with high inertia, the stepper motor will act as a generator. Regenerative currents are rectified by the MOSFETs and the energy returns to the main DC rail. As the capacitors on the DC rail charge, the voltage rises. The brake circuit allows excess power to be dissipated if the DC power rail exceeds a certain limit.



In cases of big moving mass and severe deceleration, increasing of supply voltage can lead to permanent damage of motor drive.

Motor brake circuit follows amplitude of input AC voltage and output DC voltage of rectifier for stepper motor power supply. If voltage generated by stepper motor increases more than 3V compared to amplitude of input AC voltage, brake circuit will be activated. In that way, it prevents uncontrolled increasing of power supply voltage. LED indicator built in power supply board PSB-1 signal when the brake circuit is active.

2. SPECIFICATIONS

Description	Power supply board with motor brake
Inputs	From transformer AC1 = 18 ÷ 28 VAC / 10 ÷ 14 A (for power supply of stepper motor drives) AC2 = 12 ÷ 18 VAC / 350 mA (for power supply of breakout board)
Outputs	U _{out1} = 24 ÷ 40 VDC / 7 ÷ 10 A (for power supply of stepper motor drives) U _{out2} = 15 ÷ 24 VDC / 250 mA (for power supply of breakout board)
Built-in fuses	2.5 ÷ 3 A fast blow fuse, 4 pieces (for power supply of stepper motor drives) 250 ÷ 500 mA slow blow fuse, 1 piece (for power supply of breakout board)
Brake voltage activation	U _{out1} + 3 V DC
Power of brake resistor	20 W, short-term 100 W
Dimensions (W x L x H)	77 mm x 102 mm x 60 mm
Weight	~250 g

NOTE: Specifications are subject to change without notice

3. THE CONNECTION OF POWER SUPPLYBOARDS BRAKE PSB-1

Connecting the power supply board with motor brake PSB-1 is shown in Figure 3.1.

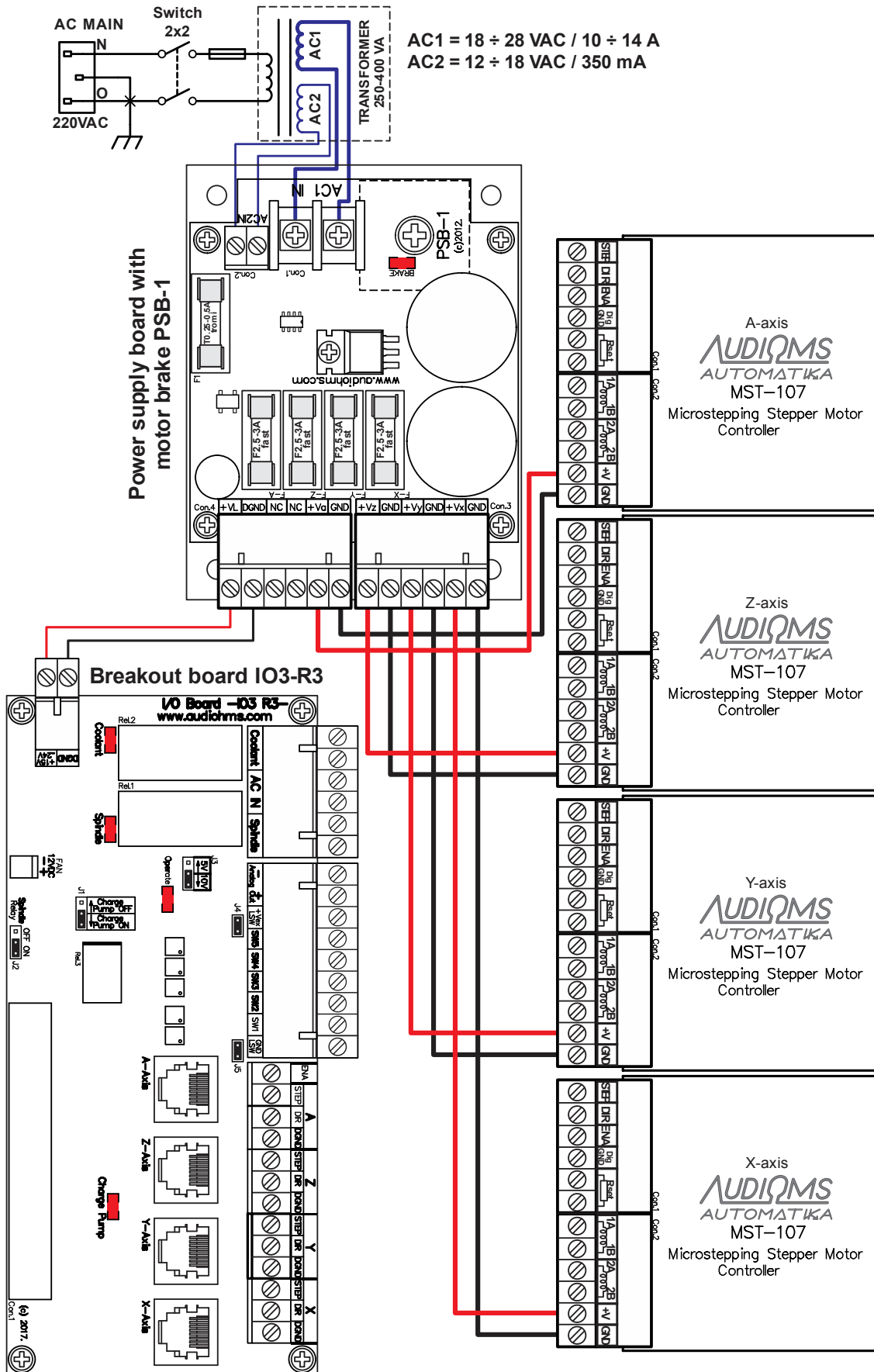


Figure 3.1