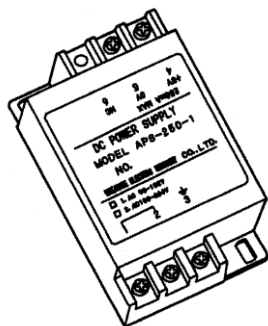


STABILIZED DC POWER SUPPLY

+5V/250mA

MODEL APS-250

INSTRUCTION MANUAL

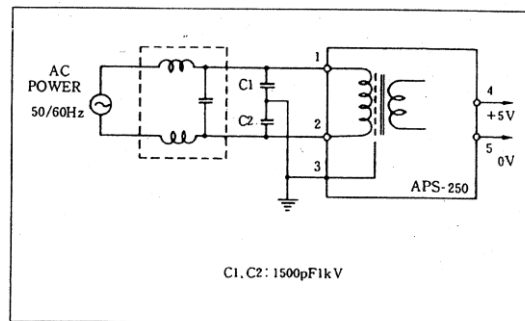


Caution

- (1) The application of voltage or current exceeding its maximum allowable value to the input terminals may result in instrument damage.
- (2) The supply of power out of its allowable range may cause fire, electric shock or instrument failure.
- (3) The content of this manual may subject to change without prior notice for product improvement.
- (4) This manual is carefully prepared. However, if any question arises, or any mistake, omission or suggestion is found in the content of this manual, contact your nearest our sales agent.
- (5) Keep this manual, available easily anytime.

Features

- Small size and light weight.
- High stability (Output impedance: 30mΩ)
- Input and output isolated by transformer with electrostatic shield.
- Low ripples (2mVrms)
- Overload protection circuit built in this device.
- Highly stabilized output voltage/extremely small temperature drift.
- Same mounting dimensions as those for HP3 relay (manufactured by Matsushita Denko)
- Input power supply voltages: Both 90 to 132V AC (Model APS-250-1) and 180 to 264V AC (Model APS-250-2) are available.



C1, C2: 1500pF1kV

Fig. 1 DC power supply with external line filter

1. Outline

The Model APS-250 Series stabilized DC power supply is a power module developed for DPM Models driven by 5V DC in Watanabe's AP/MP Series DPMs. It can input a power supply voltage level of 100V AC or 200V AC and can output a stabilized output of +5V/250mA in such small size as one power relay.

In order to prevent induction noises from AC lines, the device employs a power transformer with electrostatic shield. It is so designed that the stabilized circuit causes extremely small temperature drift.

2. Operation

As an example, the operation of digital panel meters (called the DPM, hereafter) with a voltage output of +5V is described in the following. For the DPM of not the floating input type (or differential input type), the 0V power supply line is internally connected to the 0V (Low) measurement input line, which causes the following problems when using different power supply.

- Much attention should be paid when extending the 0V line.
- Mutual interference may occur in parallel operation.

In order to solve the above problems, it is necessary to completely isolate the individual DPMs from other circuits. Fig.2 shows an application example when the DPM is floated by using the Model APS-250 DC power supply.

In this case, connect the 0V line of the DPM to the 0V measurement voltage line at one point on the DPM (one-point earth). Otherwise, operation becomes instable to cause a measurement error.

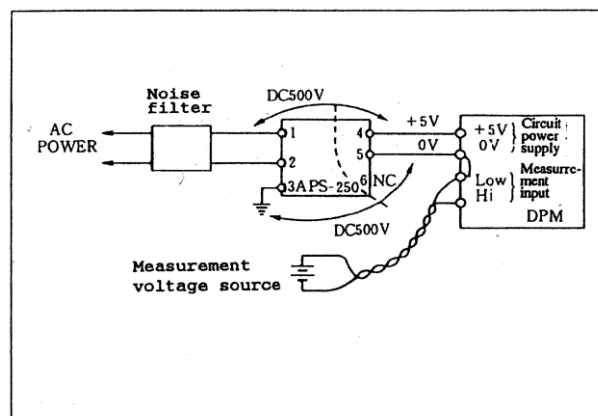
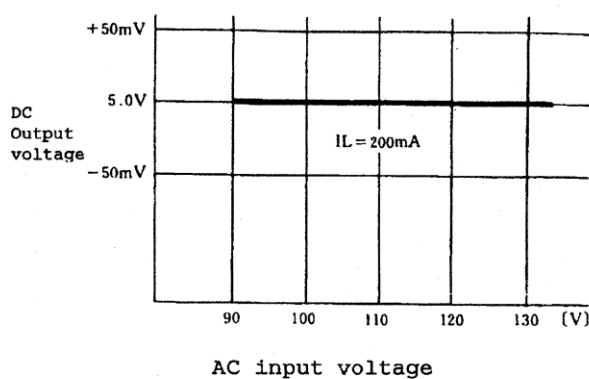


Fig. 2

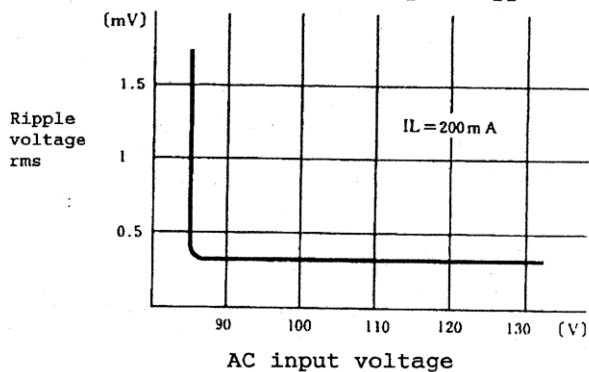
3. Specifications

Input voltage	: 90 to 132V AC, 50/60Hz, APS-250-1 180 to 264V AC, 50/60Hz, APS-250-2
Operating ambient temperature	: 0 to 50°C
Output voltage range	: -4.85 to +5.15V
Maximum output current	: 250mA
Ripple voltage	: 2mA(rms)
Output resistance	: 30mΩ
Overload	: 3-terminal regulator output
Protection	: *A protection circuit is built in this device, but long term shorting may generate heat to damage the device.
Insulation resistance	: Between ① and ③, ④ and ③, and ① and ④ terminals More than 100MΩ at 500V DC
Dielectric strength	: Between the above terminals. For 1 min. at 1000V AC However between ④ and ③, For 1 min. at 500V AC
Weight	: Approx. 200g

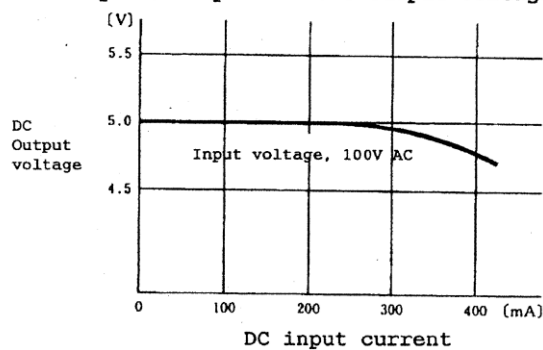
Graph 1 Input voltage-Output voltage



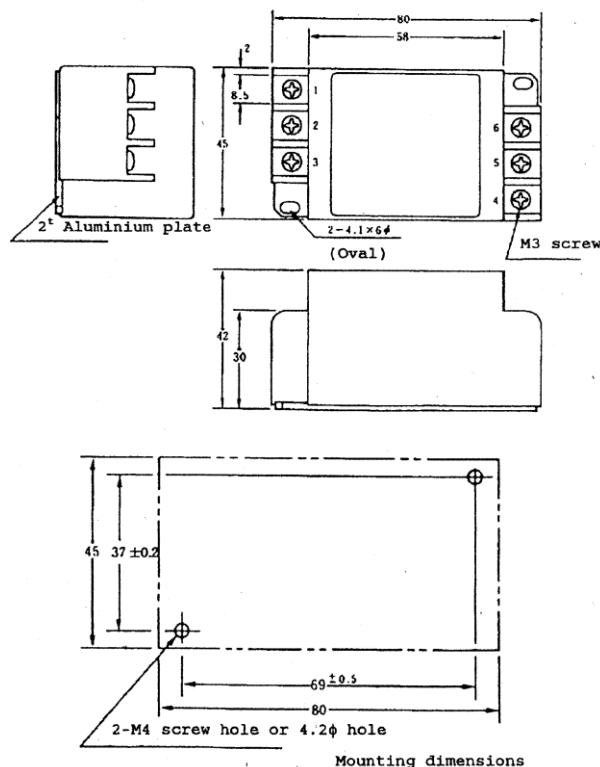
Graph 2 Input voltage-Output ripple



Graph 3 Output current-Output voltage



4. Dimensions



5. Warranty

The warranty lasts for one year from the date of delivery. If this product fails during this period and the reason is considered to be clearly.

The manufacturer warrants to the original retail customer its indicator to be free of defects in material and workmanship for use under normal care and will repair or replace any

6. After Sales Service

Under strict quality control measures, this product was manufactured, tested, inspected and shipped. Should a defect in manufacture or Workmanship be identified, please return the product to our distributor or directly to us. It would be highly appreciated if you could give a detailed account of the fault and enclose it with the product.

watanabe

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