

Unless otherwise specified, the specifications of the unit are based on the following conditions.

- The load is a pure resistance.
- The - (neg.) output terminal is connected to the chassis ground terminal ( $\perp$ ) with the supplied shorting bar.
- The unit should be used after 30 minutes warming-up time (with current flowing), at an ambient temperature of  $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , with 80% RH max.
- TYP value, standard value and theoretical value do not guarantee performance. They should be referred to as target values only.

# Specifications

Item		PAN350-3.5A	PAN600-2A
Input			
Input voltage and frequency	100VAC±10%, 50/60Hz, 1-phase, Crest factor: 1.2-1.41		
	(110, 120, 200, 220, 230 and 240VAC input are factory option.*1)		
Power consumption, at 100VAC, rated load	Approx. 2100VA	Approx. 2000VA	
Output			
Voltage	Rated voltage	350V	600V
	Variable range	0-350V	0-600V
	Resolution (theoretical value) *2	63mV	108mV
	Number of turns of panel control	10 turns	
Current	Rated current	3.5A	2A
	Variable range	0-3.5A	0-2A
	Resolution (theoretical value) *2	0.7mA	0.36mA
	Number of turns of panel control	10 turns	
Constant voltage characteristics			
Ripple and noise (5Hz-1MHz) RMS	1mV		
Source effect (to±10% of AC input voltage)	0.005%+1mV	0.002%+1mV	
Load effect (to 0-100% of output current) *3	0.005%+1mV	0.002%+1mV	
Transient response (standard value) *3, *4	50μs		
Temperature coefficient	100ppm/°C (TYP value)		
Constant current characteristics			
Ripple and noise (5Hz-1MHz) RMS	2mA	0.5mA	
Source effect (to±10% of AC input voltage)	1mA	0.5mA	
Load effect (to approx. 1 V-100% of output voltage)	2mA	1mA	
Temperature coefficient	300ppm/°C (TYP value)		

\*1: For 230 and 240VAC input requirement, maximum input voltage is limited to 250VAC.

\*2: The value is calculated from the number of turns of the wire-wound potentiometer.  
In practice, use 3-5 times each value as a target.

\*3: Measured at the OUTPUT terminal board on the rear panel using the remote sensing function.

\*4: Time necessary for output voltage to return to  $\pm(0.05\%+10\text{mV})$  max. of rated value at 5%-100% changes of output current.

Item		PAN350-3.5A	PAN600-2A
Constant voltage operation indication		C.V, green LED indication	
Constant current operation indication		C.C, red LED indication	
Range of operation temperature and humidity		0-40°C/10-90% RH (no dew condensation allowed)	
Range of storage temperature and humidity		-10-60°C/ 0-70% RH max. (no dew condensation allowed)	
Cooling system		Forced air cooling with fan	
Output polarity		Positive or negative grounding possible	
Isolation		±1000V	
Insulation resistance			
Across chassis and input terminals		500VDC, 30MΩmin. (measured at ambient humidity 70% RH max.)	
Across chassis and output terminals		1000VDC, 20MΩmin. (measured at ambient humidity 70% RH max.)	
Withstanding voltage			
Across input terminals and output terminals		Should withstand 1500VAC, 1 min. with no abnormalities	
Across input terminals and chassis			
Meter display			
Output voltage	Max. displayed (fixed range)	1999	
	Display error	±(0.5%rdg+2digits) at 23°C±5°C	
	Temperature coefficient	300 ppm/°C(TYP value)	
Output current	Max. figure displayed (fixed range)	19.99	
	Display error	±(1%rdg+5digits) at 23°C±5°C	
	Temperature coefficient	400ppm/°C (TYP value)	
Remote control			
Output voltage/control voltage ratio		350V/approx. 10V	600V/approx. 10V
Output voltage/control resistance ratio		350V/approx. 10kΩ	600V/approx. 10kΩ
Output current/control voltage ratio		3.5A/approx. 10V	2A/approx. 10V
Output current/control resistance ratio		3.5A/approx. 10kΩ	2A/approx. 10kΩ
Remote sensing		Possible (compensation one way approx. 0.6V max.)	
Master-slave-control parallel operation		Possible	

Item	PAN350-3.5A	PAN600-2A
Protective circuit		
Over-voltage protection (OVP) for output	Preset range: Approx. 10-110% of rated output voltage, ALM LED lightsup, control transistor cut off, and rectification circuit and circuit breaker shut down when OVP tripped.	
Input fuse, 15mm dia._40mm	30A, 125VAC/250VAC	
Output fuse, standard pre-arcing time-current type	5A	3A
Thermal fuse	Incorporated in sub-transformer	
EMC	<p>Complied with the following standards *5</p> <p>IEC61326-1:1997-03 / A1:1998-05 Electrical Equipment for Measurement, Control and Laboratory Use - EMC requirements</p> <p>Radiated Emissions: Class A Conducted Emissions: Class A</p> <p>IEC61000-4-2:1995-01 / A1:1998-01 Electrostatic discharge</p> <p>IEC61000-4-3:1995-02 Radiated, radio-frequency, electromagnetic field</p> <p>IEC61000-4-4:1995-01 Electrical fast transient/Burst</p> <p>IEC61000-4-5:1995-02 Surge</p> <p>IEC61000-4-6:1996-04 Conducted disturbances</p> <p>IEC61000-4-11:1994-06 Voltage dips, short interruptions and voltage variations</p>	
Safty	<p>Complied with the following standard *5</p> <p>European Community Requirements (73/23/EEC)</p>	

\*5: CE marking are put only on the PAN-A series sold in Europe.

Item	PAN350-3.5A	PAN600-2A
Weight	Approx. 36kg	Approx. 37kg
Dimensions	See outline drawing.	
Accessory		
Operation manual	1 copy	
Power cable	1pc. (Nominal cross section 3.5 mm <sup>2</sup> , cabtyre cable, no plug, approx. 3m)*6	
Protection cover	Guard cap 2 pcs., Rear output terminal cover 1 pc., Front auxiliary output terminal cover 1 pc., (Mounting screw (M3_20) 1 pc.)	
Cable clamp	1 pc.	

\*6: 1pc. (Normal cross section 2.5mm<sup>2</sup>, cabtyre cable, no plug, approx.3m) for the PAN-A put on CE marking.

## Outline Drawing

