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Nippon Avionics Co., Ltd.

<http://www.avio.co.jp/english/>

New High Power Inverter Type Welding Power Supply

NRW-IN16K4

- Welds High Conductivity Materials (Cu, Al, etc.) and Large Fusing Parts! -



Nippon Avionics Co., Ltd. (Head office in Tokyo, Japan, hereinafter Avio), a subsidiary of NEC Corporation, announced today the availability of a newly developed, large capacity inverter type welding power supply, Model NRW-IN16K4 ^{(*)1}. This powerful unit provides the high quality joining of Copper (Cu) and Aluminum (Al); important materials increasingly being used in the manufacturing of high capacity motors for electric motorization of automobiles, batteries, and energy related devices.

<New Product Features>

- **Fuse welding (welding of coil wire and terminals) of large motors that require large current capacity and long welding duration.**
- **Weld high conductivity materials, such as Cu and Al, using the efficient control of large current uniquely provided by this new welding inverter power supply system.**
- **New standard features include a welding waveform graphic color display and waveform memory; an industry first for models offering the same output current level ^{(*)2}. This convenient display allows easy setting of welding conditions and control of weld quality.**

Welding Performance

1) Maximum Welding Current of 16,000 Amperes is Twice the Level Previously Offered by Avio.

This higher current capacity allows fuse welding of large parts and welding of high conductivity materials.

2) Industry's Longest Welding Time for Same Output Current Capacity Level ^(*2) ^(*3); Up to Three (3) Seconds Duration.

With up to 3 seconds welding duration, Avio's new Model NRW-IN16K4 can be used for resistance brazing where long welding duration is required.

Multiple Useful Functions

1) Accommodates Various Welding Requirements Based on Its Multi Control Modes

Various welding procedures, including welding quality and productivity, are easily implemented by selection of constant current, constant voltage or constant power modes.

2) Stable Welding Quality Based on Pre-weld Judgment Function

Abnormality of welded object or electrode can be detected by flowing extremely small current for a short time and measuring the resistance between the objects to be welded before the actual welding process. This avoids damage to products and to the welding electrode due to sparking.

3) Expanded Welding Applications with Increased Memory Capacity for up to 255 Welding Conditions - an 8 Times Increase from Avio's Earlier Models

Multiple welding points can be welded under different welding conditions, for example, in the production of motors.

4) Input Voltage of 400 V Standard is Useful in the Global Market

Standard: 3 phase / 400 V (380 – 415 V)

Optional: 3 phase / 200 V (200 – 230 V)

Setting and Monitoring Functions - Another Industry First for Same Output Current Capacity Level ^(*2)

1) Graphic Display of Welding Waveform Simplifies the Setting of Welding Conditions and Enhances Quality Control

As the welding conditions and welding result are displayed graphically, setting of welding conditions or judgment conditions is straightforward.

2) Waveform Memory Function Enables Efficient Setting of Optimum Conditions

Graphically displayed welding waveforms may be stored for review, analysis of the welding data, and comparison with past data for analysis of defective welds.

3) Ample Monitoring Functions Contribute to Improvement of Welding Reliability and to Stable Production

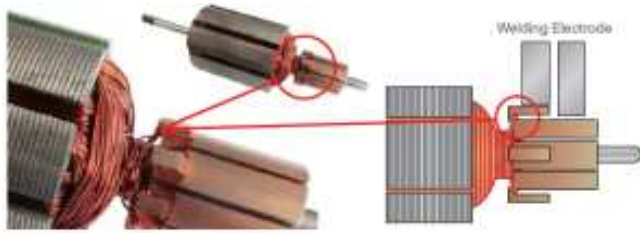
In addition to the limit monitor, profile monitor and trace monitor, functions to detect overcurrent, overheating and no-current are also included as standard safety features.

(*1) CE Mark approval scheduled in November

(*2) Based on our research as of September 2013

(*3) Maximum current of 9,500A at 3 seconds welding duration

<Application Examples>



Welding of Large Motor Coil and Terminal



Welding of Copper (Cu) Bus Bar

<New large capacity welding head, Model NA-126>

Avio will concurrently release a new, large capacity welding head, Model NA-126, to be used with the new high current capacity Model NRW-IN16K4 power supply.

The NA-126 weld head can apply maximum force of 1,800N (Newton), 405 lb-f (pound-force).



Model NRW- IN16K4 Welding Power Supply
with Model NA-126 Welding Head

<Specifications>

Power Supply

Items	NRW-IN16K4
Welding Transformer	NT-IN16K4
Maximum Current	16000 A (200V Option: 12000 A)
Control Frequency	2 kHz
Control Mode	Constant Current, Constant Voltage, Constant Power, Fixed Pulse Width
Range of Timer Setting	1st, 2nd, 3rd, UP, WELD, DOWN Total Time 1 - 3000 ms
Setting Range for Weld Type	Current: 0.4 - 16 KA Voltage: 0.4 - 6.2 V Power: 0.2 - 49.2 KW
Current, Voltage, Power, Resistance, Monitoring	Average / Peak / Profile
Trace Monitoring	Current, Voltage, Power, Resistance
Display of Wave Form	Current, Voltage, Power, Resistance
Number of Condition	255
Interface	RS232C
Cooling Method	Forced-air
Power Source	AC380 - 415 V, 3Φ (Option: AC200 - 230 V, 3Φ)
Dimension / Weight	W280 x D410 x H470 mm / ≈35 kg

Transformer

Items	NT-IN16K4
Maximum Current	16000 A (200V Option: 12000 A)
Cooling Method	Water
Dimension / Weight	W198 x D420 x H357 mm / ≈48 kg

High Power Welding Head

Items	NA-126
Pressure Range	300 - 1800 N
Pressurizing Method	Spring
Drive Method	Air
Dimension / Weight	W309 x D305 x H908 mm / ≈60 kg

For Questions Regarding the Above, Please Contact

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