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Nippon Avionics Co., Ltd.

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

Nippon Avionics releases their first IoT compatible “High reliability inverter type resistance welding power supply” and “Highly functional welding monitor”!

Nippon Avionics Co., Ltd. (Headquarters: Shinagawa-ku, Tokyo. President: Katsuhiko Akitsu) released [Highly functional welding monitor QC-450] which improves welding reliability by visualizing the welding process and [High reliability inverter type welding power supply NRW-IN400P] which realizes high definition control in manufacturing and assembly of automotive parts and parts for electronic equipment.



Highly functional welding monitor
【QC-450】



High reliability inverter type
welding power supply
【NRW-IN400P】

■ Features

Highly functional welding monitor (hereinafter QC-450) is the first monitor in the industry to be equipped with “run chart display function” which visualizes the progress of welding process. Wearing of electrodes and/or degradation of equipment are detected and/or predicted based on the transition of electric current and resistance value enabling early detection of problems and early action such as electrode replacement and equipment maintenance.

“Analog 2ch input” is equipped for easy feedback of temperature. Furthermore, “Ethernet connection” is provided for the first time enabling total control of production history, and realizing high level quality control as well as high level control by various signal output. Run chart display function helps to recognize variation of measured result due to wearing of electrode enabling prediction of electrode replacement timing, and early detection of problems, thus maintaining high quality of products. On top of that, Ethernet connection enables “visualization” of production process and uniform quality control anywhere in the world, and total control of production history (traceability).

By employment of a “program BOX”, high reliability inverter type welding power supply (hereinafter NRW-IN400P) enables remote control which is suitable for automobile production line. In order to realize high quality welding for various work shape and material, “discretional

weld setting of max 127 steps (combination of slope, weld and cool)” first in the industry and “output frequency selection type (2kHz, 4kHz and 5kHz)” are equipped as standard configuration, and “8000A secondary current output at 5kHz” is also realized.

Furthermore, by combining with QC-450 welding monitor, various control including welding stop due to displacement or change of welding current depending on the temperature are possible. For example, by sending the signal informing reaching of desired crush amount (QC-450) during welding to NRW-IN400P instantly and stopping welding, more precise and uniform work finish can be expected.

This product enables “welding stop within 2ms” and “stop variation within 1ms” (shortest and smallest in the industry, according to Avio research) contributing to the improvement of yield.

■ Benefit by the new product

Highly functional welding monitor 【QC-450】

◆10 items simultaneous measurement and judgment function, “first in the industry”.

Measurement value from maximum 6 sensors can be displayed as maximum 10 items.

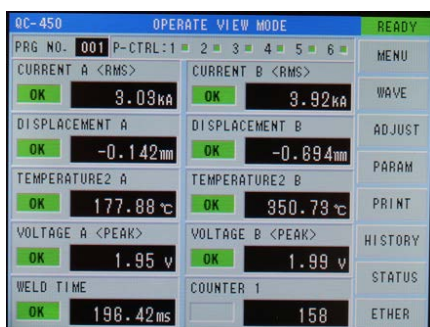
Troidal coil : Current value / Welding time

Secondary voltage detection : Secondary voltage value

Displacement sensor : Displacement amount 1 / Displacement amount 2 /
Work dimension / Product dimension

Load cell : Applied force

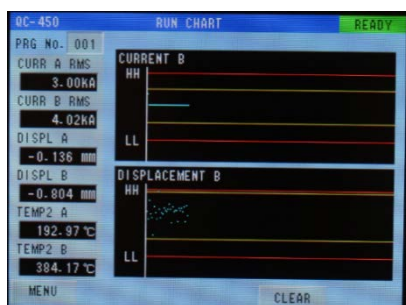
Analog input 1/2 : Current / Voltage / Displacement / Applied force /
Temperature / Pressure etc.



◆“Visualization” of measured data transition, first in the industry.

2 items can be selected from the measured data for run chart display.

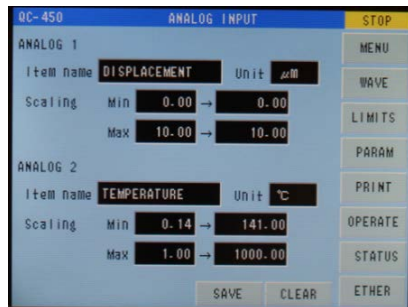
Upper and lower limit lines (LIMIT setting) are displayed to enable “visualization”.



◆ **Connection to sensor amps, other than those for current, voltage, displacement and applied force, can be made.**

2 channels of input compatible to $\pm 10V$ input are provided.

Connection can be made to sensor amps other than those for current, voltage, displacement and applied force as well, which helps to realize “visualization” of phenomenon related to welding processes. Name of measurement items can be selected out of 11, and discretionary scale can be applied to the input values.



High reliability inverter type welding power supply 【NRW-IN400P】

◆ **Enhanced dust-proof structure**

Ventilation type is changed to improve dust-proof characteristic. Malfunction or failure due to suction of dust will be mitigated under the environment of dust and oil mist. Spare filter is also available.



◆ **Unit suitable for installation in automated system.**

It is designed to be a remote control type from the program BOX.

Because of more freedom in terms of arrangement of welding power supply in an automated system, it will contribute in the reduction of facility design man-hour.



◆**Free inverter frequency selection type**

2000Hz (welding time resolution 0.5ms) being the basic frequency, switching can be made to 4000Hz (welding time resolution 0.25ms) or 5000Hz (welding time resolution 0.2ms). Because frequency can be selected for each program number, the frequency most suitable for the work can be selected, and high quality welding with less current ripple can be achieved.

◆**127 step free style welding profile, first in the industry, is equipped.**

A mode where “SLOPE”, “WELD” and “COOL” can be freely set within the maximum 127 steps is provided as standard configuration.

Multi-step sloped welding and multi-step welding have become available, and satisfactory welding can be achieved by heat input control not only for resistance welding but also for resistance heating application.

◆**Primary input multi power supply is employed.**

It is compatible to 3 phase AC200~480V for worldwide usage.

◆**Compatible to multi transformer system**

One power supply can be connected to up to 4 transformers.



For Further Information, Please Contact;

Nippon Avionics Co., Ltd.

Overseas Sales Department

Industrial Electronic Products Sales Division

4475, Ikonobe-cho, Tsuzuki-ku, Yokohama, 224-0053, Japan

Phone: +81-45-930-3596

E-mail: Product-mj@ml.avio.co.jp

<**Sample welding accommodated**>

We will be pleased to accommodate sample welding so that customers can verify the performance of our new product with their own work.

If a sample welding is desired, please contact Overseas Department or local distributor near you.