

WeldComputer

HIGH PERFORMANCE WELDVIEW[®] MONITOR



The WeldView[®] Monitor offers Resistance Welding operations a proven method of preventing substandard welds from passing through production undetected.

The high-performance WeldView[®] Monitor is what manufacturers employ in Spot, Projection, Seam, Flash, Stud and other critical resistance welding applications. The WeldView[®] Monitor provides a level of signal integrity and reliability not achievable with other resistance weld monitoring products.

During each weld, voltage, current, conductance, power, force and set-down / expansion profiles are automatically monitored and recorded for future proof of weld quality. The WeldView[®] Monitor typically performs more than a thousand separate checks to verify the performance and repeatability of each weld while the weld is taking place. Any failed check results in an immediate alarm actuation to alert production about the problem.

The WeldView[®] Monitor can monitor any single phase, three phase, capacitive discharge or inverter type power supply. The system is capable of local, remote or networked operation. The WeldView[®] Monitor is available in multi-channel configurations that can *simultaneously* monitor all parameters for up to eight welding heads per module.

WeldComputer[®] technology is protected by the following U.S. Patents:

4,714,913 4,742,473 4,803,331.

Other Patents Pending.

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WELDVIEW[®] MONITOR FEATURES

WeldGraphics[™] Graphical Quality Monitoring System.

WeldGraphics[™] is a monitoring system that provides an instant graphical display of the weld process information in an easy-to-interpret format. Conditions such as flattening electrodes, current shunting, poor parts fit-up, surface contamination, expulsion, and other welding problems are easily detected. The use of WeldGraphics[™] reduces weld schedule development time and facilitates the development of more robust weld schedules that deliver superior performance to weld operations.

New Teach, Teach, and other interactive graphic editing modes facilitate the rapid generation of warning limits and/or upper and lower limits of acceptability and provide for automatic monitoring of the quality of each weld. Upper and lower limits are displayed on the screen in a fashion that allows the user to readily interpret if a variable is within predefined limits.

Modes are also available within the menu to provide a broad range of user-selectable functions such as:

- Fault output activation
- External alarm clearing
- External schedule selection
- Archiving mode selection (all welds, out-of-limits welds, periodic)
- Automatic setup loading
- Automatic monitor arming
- Password protection
- Network access
- Programmable Stepper
- And many others

WeldView[®] Monitor Data Archive System.

The WeldView[®] Data Archive System provides automatic collection and archiving of weld data without affecting production rates. Choices for frequency of weld data archiving (all welds, periodic welds, welds exceeding limits, periodic plus welds exceeding limits) are available to the user. The data are stored in a format that is easily transported to a spreadsheet using conversion programs supplied with the system. A statistical process analysis can be easily implemented and the stored proof of weld quality will increase customer confidence. Archive data can be backed up on removable media or sent to a network drive for a permanent record of weld quality. Archive data can also be read directly from a network into the WeldView[®] Monitor for immediate viewing.

The data archive, provided with every configuration of the WeldView[®] Monitor, may also be used to automatically determine upper and lower limits of acceptability that are representative of the group of welds selected. Simply enter the range of welds to be used and the number of standard deviations to be incorporated into the limits and the WeldView[®] Monitor does the rest.

Extended Monitoring Functionality.

The WeldView[®] Monitor may be easily customized to extend its functionality beyond typical weld monitoring functionality. Associating Serial or VIN numbers with individual welds or groups of welds, keeping track of the number of welds produced in a weld sequence, counting welds, automatically selecting the appropriate monitor setup, and many other functions are readily available for more sophisticated applications.

BASIC WELDING PARAMETERS MONITORED

For every selected parameter, the WeldView[®] Monitor collects the response for each half-cycle (or, for higher speed applications, every 1msec or multiple thereof) of each weld as it is being produced and compares the actual values to predetermined upper and lower limits. Fault signal outputs may be activated whenever an "out-of-limits" condition occurs. Weld parameter information may be displayed for every data point collected during the weld. All data can be recorded for SPC purposes and for future proof of weld quality and repeatability.

The Basic WeldView[®] Monitor is configured to monitor autonomously and simultaneously the following key welding parameters for up to eight welding heads:

- RMS Current
- Conductance
- KAmp-Sec
- Secondary Voltage
- Power
- KWatt-Sec

OPTIONAL WELDING PARAMETERS MONITORED

Thermal Nugget Expansion / Displacement.

The Thermal Nugget Expansion / Displacement option enables monitoring of workpiece thickness and thermal nugget expansion (in the case of spot welds) or set-down (in the case of projection welds). Metric or English linear transducers (supplied with the WeldView[®] Monitor when this option is selected) are available in a variety of sizes and resolutions for easy integration into most welding machines. Thermal Nugget Expansion / Displacement Monitoring is the most reliable means of discriminating good resistance welds from inferior resistance welds.

Electrode Force.

The Electrode Force option enables monitoring of the force applied to the workpiece by the electrodes. Monitoring electrode force is important for verifying the reliable mechanical operation of the welding machine during welding. The WeldView[®] Monitor is designed to interface to any strain-gage type load cells or piezoelectric force sensors, both of which are available in a wide variety of shapes, sizes and capacities.

Cylinder Pressure.

The Cylinder Pressure option enables monitoring of the weld cylinder pressure. This is an inexpensive and easy-to-install method of monitoring the applied electrode force indirectly and, since many electrode force variation problems are due to incorrect pressures, can be very effective in maintaining weld quality through monitoring of a key input variable. Sensors and cables are included with this option. A **Differential Cylinder Pressure** option is also available to measure the differential pressure between the weld and bucking cylinders for systems equipped with "UP" and "DOWN" pressures.

OTHER WELDVIEW[®] MONITOR OPTIONS

External Setup Selection System.

The External Setup Selection System allows an automated system (or an operator with a selector switch) to select multiple different monitor setups per channel. This function is particularly useful in robotic applications where multiple weld schedules are typically employed.

Network Interface.

For users who want to transfer instructions and/ or data between the monitor and a remote server, the WeldView[®] Monitor is available with networking capability. As many as 1000 WeldView[®] Monitors can be connected to each network with built-in safeguards to protect against data loss.

Seam Weld Upgrade.

The seam weld upgrade provides the ability to monitor weld impulses that are up to 65000 half-cycles – more than 9 minutes at 60Hz -- in duration.

Special High-Performance Monitoring Package.

A special high-performance monitoring package is available for single channel applications. Time intervals as short as 10 μ sec can be selected. Since this version has more than 100 times the dynamic range of other monitors, the same equipment can monitor primary current under 100 amps and secondary current over 200000 amps. Displacement for two series welds may be monitored. The system can be supplied with a scanner and scanner interface for associating serial numbers, VIN numbers, model numbers, etc. with welds or sequences of welds.

Stepper/ Setup Sequencing Upgrade.

Enables up to 20 Monitor Setups to be chained together in a sequence. The number of welds per monitor setup is user-selectable so that the monitor can be synchronized with a stepping weld controller. This option can reduce the PLC programming effort and eliminate the need for External Setup Selection.

Prevent Bad Welds From Passing Through Production Undetected

For more information on The WeldView[®] Monitor or WeldComputer's other High Performance Resistance Weld Controls and Monitors contact:

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SENSORS

The WeldView® Monitor utilizes the following types of sensors.

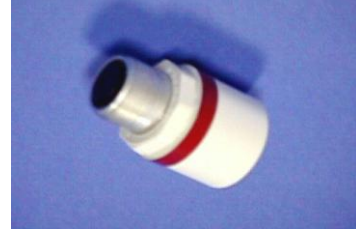
CURRENT:



Primary Toroid Coil

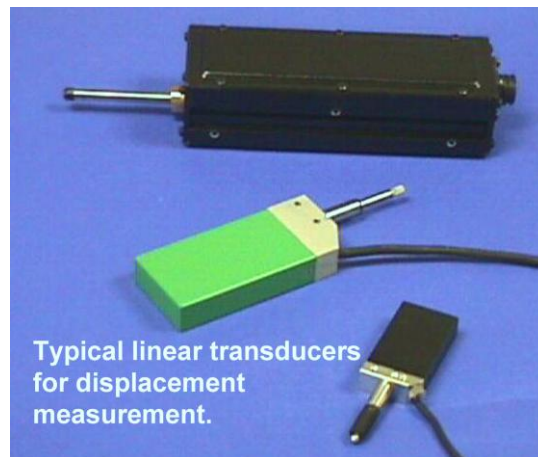


Rogowski Coil



Hall Effect Transducer

DISPLACEMENT:



FORCE:



Piezoelectric



Cylindrical



Pancake

For more information, please contact WeldComputer Corporation.

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