resistance weld monitoring



ADAM Advanced Data Analysis Monitor Welders

Data Processing Module

MIYACHI

- 360° View of Your Weld Including Pre- and Post- Weld Trigger Data
- Measure Current, Voltage, Force, Displacement and Cover Gas Flow/Auxiliary Input
- Production Run Screen with Run Charts, Histogram and Process Results

- Sensor Interface Module
- High Resolution Sensors
- · Easy to Setup User-Interface Includes Large Color Display
- Monitor ANY Resistance Welder
- TCP/IP Communications Enabled
- Integrated database and Minitab® 15 Statistical Software*

ADAM is an invaluable tool for:

Production Monitoring with Real Time Limits and Machine I/O

- Run Charts, Histogram, Sigma, Cp, Cpk
- Data Logging, Setting Process Limits, Electrode Maintenance, Troubleshooting, Set-up
- Verification, Remote Welder Performance Interrogation, Statistical Process Control

Process Development

- Welding Evaluation and Research, DoE
- Studies, Process Optimization, Process Validation

Weld Quality Analysis

 Traceability, Process Certification and Analysis, Calibration Confirmation, Statistical Process Control With an ever-increasing emphasis on process accountability, Miyachi Unitek's new Advanced Data Analysis Monitor (ADAM) is the most advanced resistance welding monitor available from any manufacturer. It offers more of the information you need for process development, production monitoring and data to support your ISO, GMP and TQM requirements. Not only will it monitor what happens during the weld, but also before weld monitoring is triggered, giving you a true 360-degree view of your process!

Feature	Benefit
Current, Voltage, Power, Resistance Monitoring	Detects shifts in welding process
High Resolution Displacement Monitor with Part Detection	Improved process control
Force or Pressure Monitor	Ensures welding at proper electrode force
Cover Gas Flow Monitor	Confirms displacement of oxygen from weld area
PreTrigger Viewing	Captures important pre-weld data
Envelope Limits	Catches slight changes in waveform shapes
Numeric Limits	Evaluates peak and RMS data
Graphical Waveforms with Cursors	Interrogates waveforms for better understanding of process
Multi Level Security Screens	Protects settings from unauthorized changes
Comprehensive I/O for Automation	Easily integrated into automated systems
Wide Screen Color Display	Easy to view settings and process results
Multiple Schedules with Schedule Naming	Customized schedules for ease of use
Traceability to NIST standards	Meets regulatory guidelines
Ethernet Communications	Remote reading of database
Weld to Displacement	Improves process control



RUN Screen:

Comprehensive production screen provides graphical and numeric viewing of the present weld as well as trend data. Two run charts with limits, histogram, event logger and alarm indications. Programmable weld counter with easy to view process monitor shows ratio of In/Out of limits welds.



EXPANDED MONITOR Screen:

Expandable graphic data windows allow user to overlap multiple graphs to analyze the dynamic relationships between the variables. Waveform cursors with advanced measurement tools allow precise interrogation of the welding sequence.

TUIN .			Voltage			Resistance			Power	
Poek Cimit Mex.(84)	Pole 1	Pake 7	Frak Linit Max (V)	Paka 1 2.4	Pater 2	Produit limit Mass (succ)	Pabe 1	Polis 2	Tules 1 Peak Linds Nex (HW)	Pube 2
ak Warning Max (k/a)	1.8	1	Peak Warning Mex (V)	12	C	Pauk Warning Max (mai)	10	1	Posk Warning Max (kW) 3	11
ok Wanning Min (AA) . Peak Linek Min (AA) .	1	0	Posic Limit Min (V)	11	1	Posk Wanning Min (mc) Pask Livit Min (mc)	0.8	-	Pools Carel Min (MI) 3	jp jp
HIS LINE Max 840	1	20	KINS LIWH Max (V)	7	C	HINS Livest Max beaut	1	1	HMS Landt Max (kW)	1
S Warning Max (rd)	0.95	1	RUS Warning Mex (V)	18	C C	RMS Warring Max (sec)	1.0		BUS Warning Max (W)	10
us Waning Min (M)	0.5	. 0	RHS Warning Min (V)	35	0	RNS Warning Min (max)	0.6	1	SMS Worning Min (kW)	12
nik Type Peok			Linu type (RM2)			Linit Type Preck			Link type (4cros	

on Plots Line Style E Line Width Anti-Aliase Bar Plots Fill Base Line Interp ation System Point Style S R:255 G: 0 B: 0 X Scale Y Scale Space bar toggles co

LIMITS Setup Screen:

Programmable limits screen for setting upper and lower numeric limits on peak and RMS data. Envelope limits can be placed around waveforms to detect slight changes in process stability. Part thickness and displacement limits measure the mechanical aspects of the welding process.

SCREEN FORMATS:

Very flexible formatting capabilities allows user to customize data, colors, and styles on graph displays for easy viewing and emphasis of key parameters.

LOGGER Screen:

Monitored results with time and date stamps are updated in real time. Data is stored on large internal hard disk and is integrated to Minitab Statistical Software package for process analysis and quality improvement.



EVENT and error table Screen:

Errors and Events are captured with time and date stamps for record keeping and process analysis. User can also log events such as a change of electrodes so these actions are readily available when analyzing data.





Simple menu access to setup and view screens with multiple levels of security to protect against unauthorized program changes.

Envelope Setup SCREEN:

An easy to use graphic interface provides quick setup of envelope limits and allows user to target a specific section of the waveform to evaluate process results.





resistance welding

specifications

Measurement Capability Single Channel Current, Voltage, and Gas Flow/Auxiliary 0-10 volt input. Two channels each of Force and Displacement. (Displacement, Force, and Cover Gas Flow Sensors are optional.)

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Parameter	Ranges	Displayed Resolution				
Current	2, 6, 20, 60, 200 kA	3 significant digits				
Voltage	0-15 V	3 significant digits				
Displacement	12, 25, 30mm	0.0001" or 0.01mm				
Force	0-10V	3 significant digits				
Gas flow/Auxiliary 0-10 Volt	0-10V	3 significant digits				
Derived Parameters						
Power and Resistance						
Measurement Time	2 Seconds					
Maximum						
Sampling Rates	125K Samples per Second					
Repetition Rate	1 per second for 100 milli second measurement period					
Limits	Numeric Peak and RMS; Min/Max; Graphical Envelope, Weld Time, Counter					
Displayed Resolution	Approximately 1000 Data Points Per Waveform					
Triggering	Current, Voltage, Force with Adjustable Threshold or External Signal					
Digital Inputs	External Trigger, Reset, Tare Displacement, Reset Counter, Inibit Measurement, Start Part Measurement, Initial Thickness Measurement					
Digital Outputs	Ready to Measure, In Progress, In Limits, Out of Limits, In Warning, Out of Warning, Counter Limit, Force Fire, Thickness Pass, Thickness Fail					
Relay Outputs	4 User Configurable Relays Rated: 30VDC and up to 1 A					
Weld Counter	User Programmable Counter Limit					
Power Supply Cutoff	Weld to Displacement Based on Electrode Position					
Number of Schedules	Unlimited					
Communications	RS-232 (output of weld data after each weld o	nly) Ethernet TCP/IP (remote reading of database)				
Memory	1 TB	Hard Disc				
Electrical Requirements	115V/23	80V 50/60 Hz				

ADAM Ordering Guide	
Basic System	Includes Data Processing Module, 21.6" (Diagonal) XGA Display, Keyboard, Mouse, Sensor Interface Module
Included SPC Package	Integrated Database and Minitab Statistical Software
Included Accessories	(Qty 1 each) MB-400k Current Coil, Voltage Pick-up Leads
Optional Accessories	Displacement Sensors, Force Sensor, Gas Flow Sensor (Part No. 270-473)
Displacement Sensor Part Nos.	(Part No. 270-458 25mm range, 0.2um accuracy), (Part No. 460-235 12mm range, 0.2um accuracy) (Part No. 311-022 30mm range, 1um accuracy), (Part No. 311-017 12mm range, 1um accuracy)



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