



**AFSM**

INTERNATIONAL

September 16 – 18, 2007

ORLANDO, FLORIDA

***S-Business  
World Conference  
& Expo***



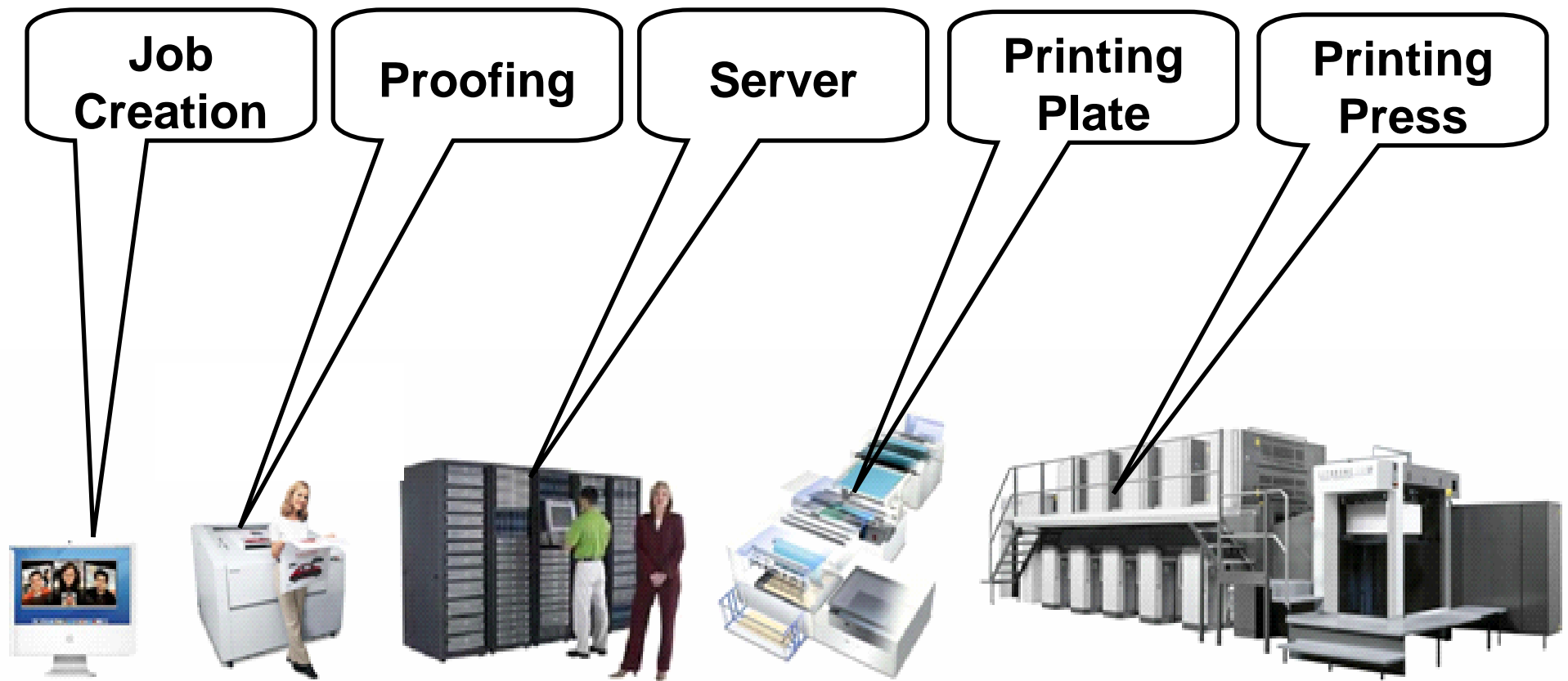
## **Win-Win-Win**

**How Fujifilm uses RxMS to improve machine  
performance, lower costs, and improve customer  
satisfaction**

**Neil Johnson**  
**VP Fujifilm Technical Solutions &**  
**Support**

## **“Value Added Vendor Partnership”**

# Fujifilm Graphic Systems Market



# Fuji Technical Solutions & Support Departmental Responsibilities:



- Materials Support
- Hardware Support
- Solutions Development
- Professional Services
- Customer Satisfaction
- Profit Center

# Equipment Environment Issues Will Cause:



- **Temperature**
  - Too High = component & materials failure
- **Humidity**
  - Too Low = static, materials jams, component failure, etc
  - Too High = ink drying, paper saturation, etc.
- **Electrical Power**
  - Noise = Component Failure & Data Loss
  - Fluctuation = Component Failure & Data Loss
  - Power Factor Correction = Component Failure & Data Loss

# Equipment Environment Issues Will Cause:



- Unreliable Equipment Performance
- Customer Loss of Production
- Poor Customer Satisfaction
- Fujifilm Cost:
  - Materials Support
  - Warranty
  - Labor & Travel
  - Parts

# Equipment Environment Issues

## Original Process



Pre-Site

Installation

Warranty  
Coverage

Non-Warranty  
Coverage

### Pre-Site

- Check environment (*typically room is not even complete*)
- Recommend power, temp & humidity improvements
- Problems verified through labor to install/de-install & reporting or results from monitoring device
- Convince customer of unbiased evaluation
- Sell improvements when possible



# Equipment Environment Issues

## Original Process



Pre-Site

Installation

Warranty  
Coverage

Non-Warranty  
Coverage

### Installation

- Install in questionable conditions
- If serious enough threaten to:
  - stop installation
  - void warranty
  - charge for services
- Problems verified through labor to install/de-install & reporting or results from monitoring device
- Convince customer of unbiased evaluation
- Sell improvements when possible

# Equipment Environment Issues

## Original Process



Pre-Site

Installation

Warranty  
Coverage

Non-Warranty  
Coverage

### Warranty Period

- Support within questionable conditions
- If serious enough threaten to:
  - Void warranty
  - Charge for services
- Problems verified through labor to install/de-install & reporting or results from monitoring device
- Convince customer of unbiased evaluation
- Sell improvements when possible

# Equipment Environment Issues

## Original Process



Pre-Site

Installation

Warranty  
Coverage

Non-Warranty  
Coverage

### Non-Warranty Support

*(T&M or Contract Coverage)*

- Support within questionable conditions
- If serious enough threaten to
  - Void contract
  - Charge for services
- Problems verified through labor to install/de-install & reporting or results from monitoring device
- Convince customer of unbiased evaluation
- Sell improvements when possible

# Equipment Environment Issues

## Original Process



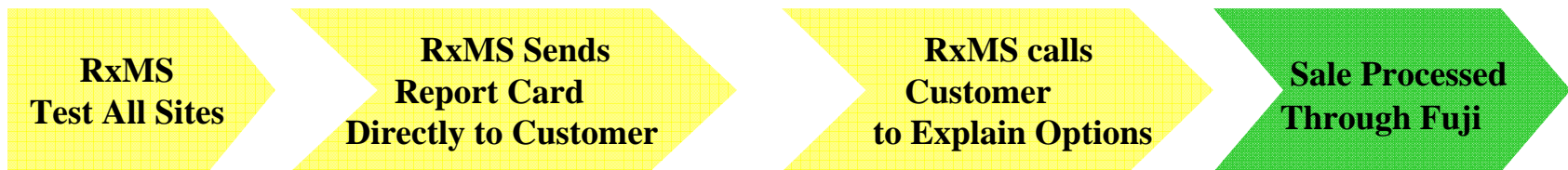
- **High Cost**
  - Testing Devices (Purchase, Management & Calibration)
  - Labor
- **Low % of True Resolution**
- **Low Customer Satisfaction**
- **Unreliable Machine Performance**



# Fujifilm & RX-Monitoring RxMS Partnership Process



- **Lower Cost**
- **High % of True Resolution**
- **High Customer Satisfaction**
- **More Reliable Equipment Performance**



# **Fujifilm & RX-Monitoring Partnership Benefits:**



- **Little Fuji staff involvement**
- **Improved equipment performance**
- **Increased system up-time**
- **Reduced workload**
- **Reduced warranty costs**
- **Improved customer satisfaction**

**“How Fujifilm uses RxMS to improve machine performance, lower costs, and improve customer satisfaction.”**

## **“Value Added Vendor Partnership”**





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**Bob Thomas**

**Rx Monitoring Services**

**603-666-6606**

**Bob@rxms.com**

# Fujifilm uses RxMS



- Improve machine performance
- Lower Warranty and Service costs
- Improve customer satisfaction
- Assist the service group's success



# First step is to set-up a PQ Program



- Determine what equipment & what parameters will get pre-site PQ monitoring
- Determine by site location (rural), failure level and system complexity
- Take current measurements of all equipment – for sizing power protection
- Determine how to deliver solutions (Nationwide distributor – like Gryphon, Inc)

# What should a power quality monitoring program include?



- Logistics of getting the test equipment to the site on time
- Process of installing the monitor
- Process for removing the monitor and getting the data into a report
- All reports written & distributed <48 hrs.
- Explaining the report to the customer
- Getting the customer to take appropriate action
- Following up to make sure action was taken
- Archiving the report for future

# What do you do with the data ?



- Download the data collected for Voltage, Current, Line Impedance, Temperature and Humidity
- The data must be accurate -All test equipment must be calibrated & maintained at least annually
- Ideally the data should include a method of self testing for calibration and notification when the monitor channel is out of spec. or must be tested
- Data in the report should verify that the customer's site meets the initial site prep guidelines
- All data and test results must be repeatable

# How RxMS adjusts to Fuji's needs



- Designed program around install process and initial site certification program (no extra trips)
- Determine the equipment and parameters (equipment profile)
- Work with selected Distributor to size equipment protection needs
- Develop efficient method for getting action from the report by the customer (RxMS works with supplier)

# How Does RxMS Increase Fujifilm's System Performance



- Power & Environmental conditions affect system performance
- Verifying that the correct power treatment device was added by the customer
- Quickly eliminate or confirm power or environmental issues
- Air pressure and dust as well as T&H

## How does Rx assist FujiFilm in lowering their service costs?



- By adding the correct power treatment, less service calls and repair parts = lower costs
- All sites now will be on the same “Power & Environmental Plane.” Ideal for nationwide troubleshooting @ HQ
- Cost of monitoring offset by revenues generated by selling solution
- Chasing known issues / eliminates unknown



# How does Rx assist Fuji Improve Customer Satisfaction?



- Unbiased Expert discusses report with customer (not adversarial)
- Customer knows why they have to buy power protection (proven with data from their site - not some study)
- Done at install – quickly, so that it is still in the acceptance stage and before they paid the electrician

# What we have learned over 10 years



- Monitor must be easy to install and uninstall
- Developed AC Adapters for safety
- Color code for voltage and current
- Added extra parameters: T&H then Dust particles and finally Air Pressure
- Return labels (and customs paperwork) are shipped with the unit (for easy return)
- Letter overcomes customer waiting for notice from Fujifilm

# The site monitor must be easy to install – no settings

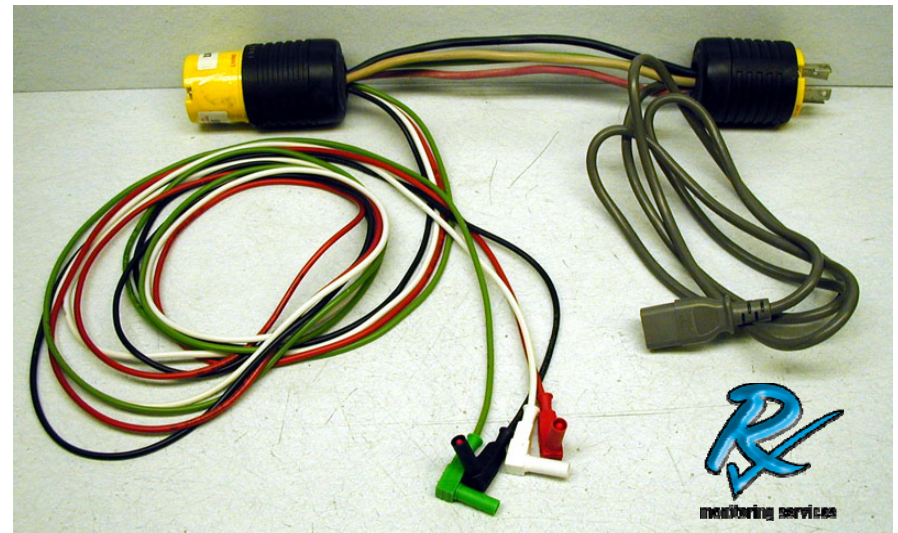


- Voltage & Current color coded
- Temperature & Humidity
- Display to check that the probes are connected



# Plug and play installation

- AC Adapter is a “break-out” cable in which the phase wires are separated in order to measure the current flow in each phase (by attaching the current probe)
- Power the Monitor directly from the AC Adapter



# Customer friendly “Direct Connect” Monitors



- Plugs directly into the wall receptacle
- Acts like an extension cord
- Measure Voltage, Current, Frequency
- Small and compact





# Monitor both voltage and current



- Provides actual load application data
- Helps understand the source (or eliminate some)
- Good for logging as well as Impulse & sag/swell events
- Provides Dynamic Impedance info.



# Added Environmental Logger



- Temperature
- Humidity
- Air Pressure
- Dust particles
- Ideally stand alone or Wireless!



# Rx generates a custom letter for every report



**FUJIFILM**

FujiFilm Graphics Systems, Inc  
850 Central Ave.  
Hanover Park, IL 60133

August 31, 2007

Bob Morgan  
Morgan Printing Services Inc  
333 South Pine Avenue  
South Amboy, NJ 08879  
732-721-2959

Re: Warranty compliance issues requiring attention

Dear FujiFilm customer:

As part of our quality process and our desire to ensure system reliability and utmost customer satisfaction, FujiFilm has hired Rx Monitoring Services, Inc. to provide a Site Certification™ survey for every FujiFilm installation for compliance with optimal system performance standards. These standards, as outlined in the Pre-Site guidelines will enable your New Platesetter to perform at its optimal level. This process allows for consistent data tracking, improved system quality and maximized system reliability and uptime.

The Site Survey (#11574) is attached for your review. It consists of both electrical and environmental data gathered over a number of days. Please note that the survey shows certain items that may require your attention to ensure maximum system reliability and quality output. If you have any questions about the site survey results, please contact Rx at Sales@rxms.com or call 1-888-329-2321. Failure to correct these items may impact your equipment's quality and reliability.

#### **Power Quality**

According to the survey, your site had a few events that will cause system interruption and resets along with eventual decay of the electronic modules themselves. Some events can cause registration problems and often needs more power protection than is typically required for all systems (on-line UPS). These events could be low frequency Power Factor Correction (PFC) or HVAC controls that require special attention and additional power treatment. These facility events may cause extra service calls and repair parts that are not covered under the existing warranty or service contracts. Please contact Rx with any questions that you have in understanding the information provided in the report.

Events with a Minor rating (Blue) mean that the system most likely will experience disruption over the next year of usage. Events with a Moderate rating (Yellow) mean that damage is possible and disruption is very likely within the next year of operation. Events with a Severe or Safety rating (Red) mean that the system will likely incur damage within the next year or that there is a significant health and safety issue that you must address immediately.

#### **Environmental Quality**

According to the survey, the site's HVAC needs some adjustments to lower the temperature (slightly) and to greatly increase the humidity. Please maintain the proper HVAC adjustments in order to avoid the medium from changing thickness and cause system jams and resets. This will cause service calls that are not covered under the warranty and service agreements. Please address immediately. A room humidifier is recommended to increase humidity and prevent static.

Gryphon Inc., a nationwide distributor of power protection products, and PAT, a manufacturer of environmental control products for dust and humidity, will be contacting you to assist you in solving any power or environmental issue mentioned above. To reach Gryphon, please call them toll free at 1-800-POWER-OK. To reach PAT, please call them toll free at 1-888-655-8455.

Thank you for your support on these matters.

A handwritten signature in cursive script, appearing to read "Bob Kenley".

Bob Kenley  
Eastern Regional Support Manag

800-877-0555 Ext. 7218

- Letter from Regional Service Manager
- On Fuji letter head with signature
- Addresses PQ & Environmental needs
- Included with report
- Part of quality process



# RxMS report designed to get results



- Easy to read
- Red= Bad
- Green = Good
- Provides basic direction
- Non-technical
- Covers PQ and T&H



## Executive Summary

8/30/2007

FujiFilm Graphics - Morgan Printing Services Inc

8/15/2007 - 8/28/2007

Site Certified ®

### Customer Information

Bob Kenley  
FujiFilm Graphics  
850 Central Ave.  
Hanover Park, IL 60133, US  
800-877-0555 Ext. 7218

### Site Information

Bob Morgan  
Morgan Printing Services Inc  
333 South Pine Avenue  
South Amboy, NJ 08879, US  
732-721-2959

Rx Site #: 11574  
Monitor S/N: 40145

Client Site Code: 47023224  
Site Equipment: DART 208V L6-30P  
Monitor Location: Output of ONEAC

Power Quality	Chan L1-L2	Chan L1-G	Chan L2-G		Rx Rating	Meets Specs	Comments
Power Failures	0	0	0		Good	Yes	
Sags	5	5	5		Severe	No	Severe - Caused by nearby loads
Surges	0	0	0		Good	Yes	
Transients	46	28	29		Severe	No	Low frequency & Low level
Impedance mΩ	N/A	N/A	N/A				

Data Logging	Actual Low	Actual High	Low Spec	High Spec	Rx Rating	Meets Specs	Comments
Chan L1-L2	148	223	200	250	Severe	No	Possible PFC: remove or add UPS
Chan L1-G	73.9	111	100	132	Severe	No	Waveform distortion
Chan L2-G	73.9	111	100	128	Severe	No	
Frequency	60.0	60.0	59.0	61.0	Good	Yes	Within Spec.
Max V Imbalance							
Temperature	76	90	69	77	Severe	No	High Temperature
Humidity	28	58	50	70	Severe	No	Low Humidity / Adjust HVAC Controls
L1 Current	N/A	39.5	N/A	N/A	N/A	N/A	L1 Current Peak RMS
L2 Current	N/A	39.2	N/A	N/A	N/A	N/A	L2 Current Peak RMS
L3 Current							
Neutral							
Ground	N/A	2.0	N/A	N/A	N/A	N/A	Excessive ground current
DC Volts - CH 1							
DC Volts - CH 2							

### Rx Ratings

Safety	Severe	Moderate	Minor	Good
NEC Violation or other Safety Hazard	Damage is likely. Disruption is Highly likely	Damage is possible. Disruption is likely	Damage unlikely. Disruption is possible	Meets Manufacturer Specifications

Please email [Sales@rxms.com](mailto:Sales@rxms.com) or call **Rx Monitoring Services, Inc. at (603) 666-6606** for answers to any questions regarding this report.  
Bedford, NH. USA - [WWW.RXMS.COM](http://WWW.RXMS.COM)

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# Two biggest issues: Un-bonded Transformers and Delta vs. Wye



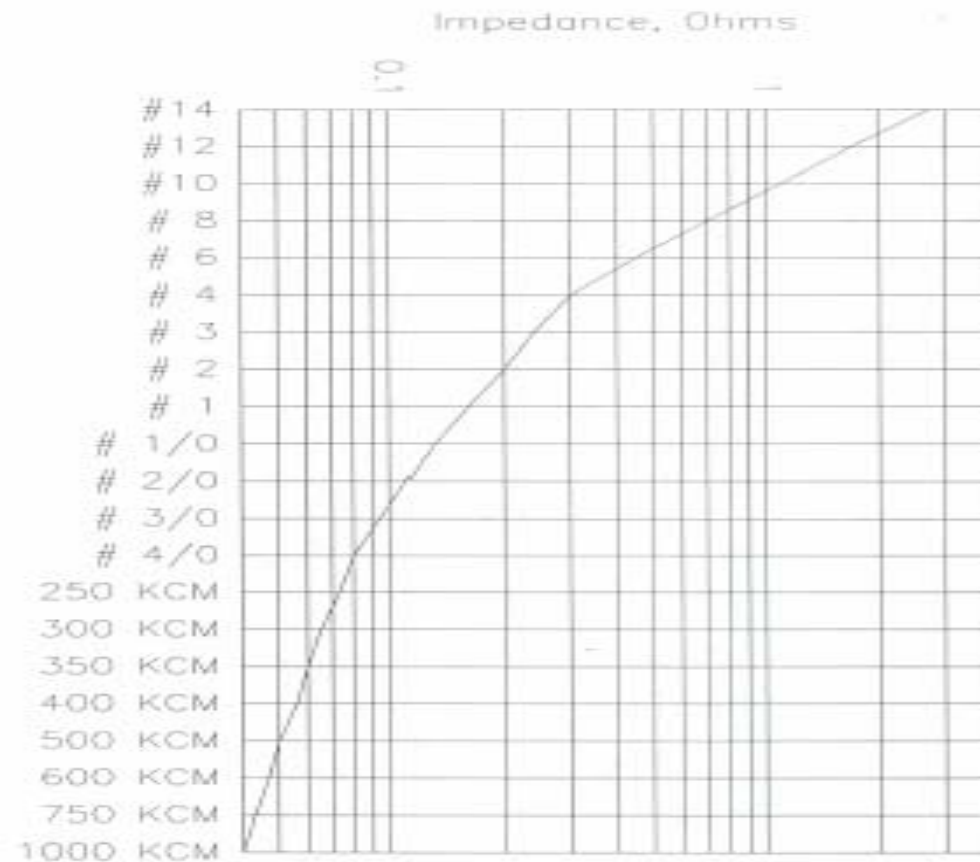
# Wire Size & Length vs. Impedance



monitoring services

Impedance per 1000 Ft. for copper conductors  
in Steel Conduit. Based on NEC-90, TAB. 9

Wire size



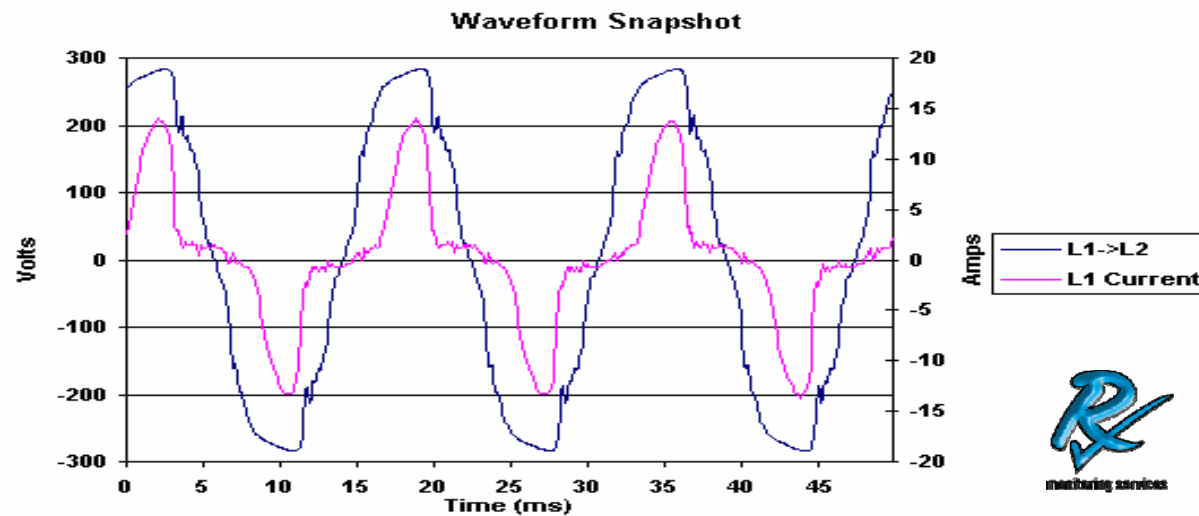
# Rx makes the unknown - known



- Open breaker slots does not = ampacity
- Understanding of steady state loads vs. pulsed loads
- Know feeder components
- Know connection types



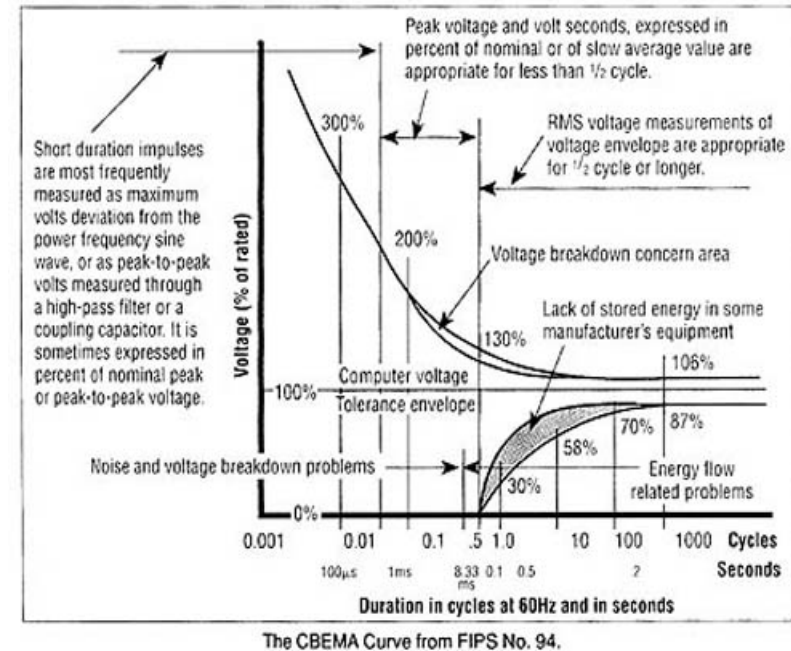
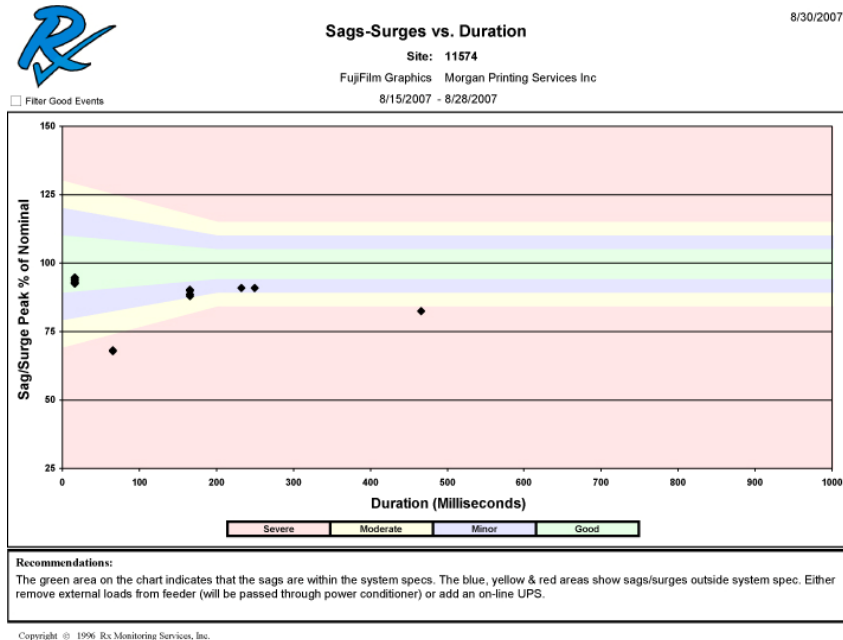
# Can you explain what is wrong?



- If you can explain it – Will the customer believe that is the feeder's impedance and not the load?
- Will they believe an Un-Biased consultant?

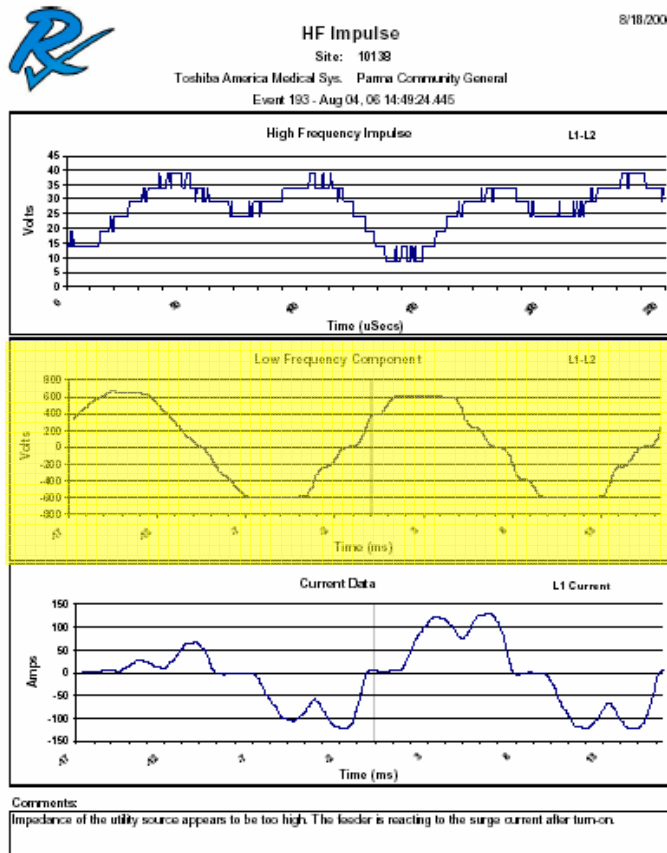


# What's easier to read?



- Color coding & X-Y vs. a logarithmic scale (right)
- Rx has recommendations for each section (left)
- Industry standard charts are hard to understand

# Transient events are shown in detail with voltage and current

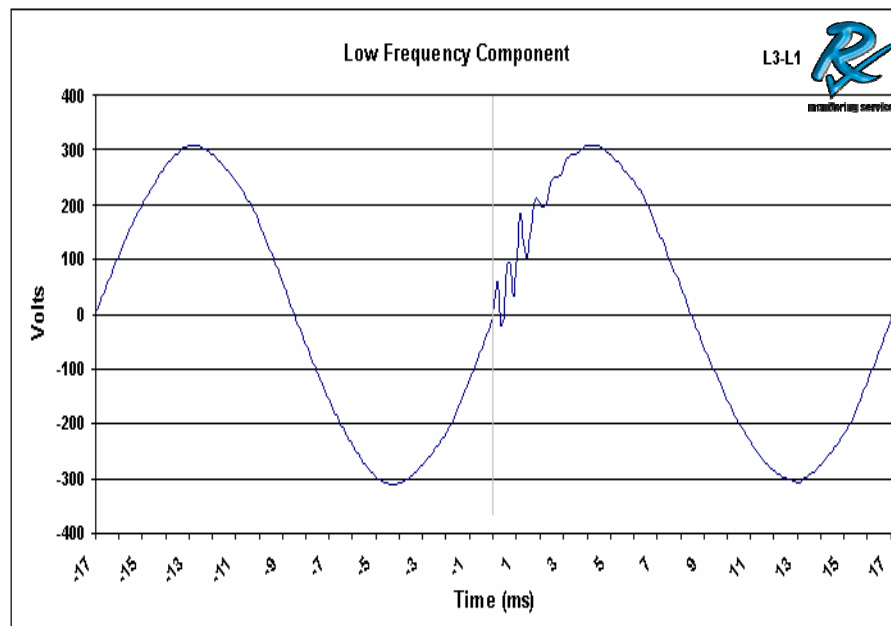


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Page 1

- High Frequency
  - Flash Converter
- AC Voltage
  - 256 Samples / Cycle
  - 2 Cycles Shown
- AC Current
  - 2 Cycles Shown
  - Assist in Determining if Load-Generated

## Utility Power Factor Correction Capacitors & the multiple zero-crossing impulse's adverse affect on Laser Diodes





# Why have a Site Inspection Service?



- **Pro-actively prevents problems**
  - A Pre-site survey verifies that the customer's contractor is meeting the Site Prep Guidelines
  - One trouble site could cost over \$20,000 (not to mention potential lost sales due to "bad press")
- **Lower cost when compared to doing it yourselves**
  - Previous cost studies showed that it costs over \$1,200 per site to conduct a survey using the field labor & the information is not understood by the stores and the electrical contractor as it is when presented by an un-biased expert
- **Effective results due to the Un-biased aspect**
  - Quick turn-around of the report allows for things to be fixed before the contractors are paid
  - Rx Tech Support available for conference calls Reports provide baseline data which aids in future troubleshooting

# What are we doing in the future for Fujifilm?

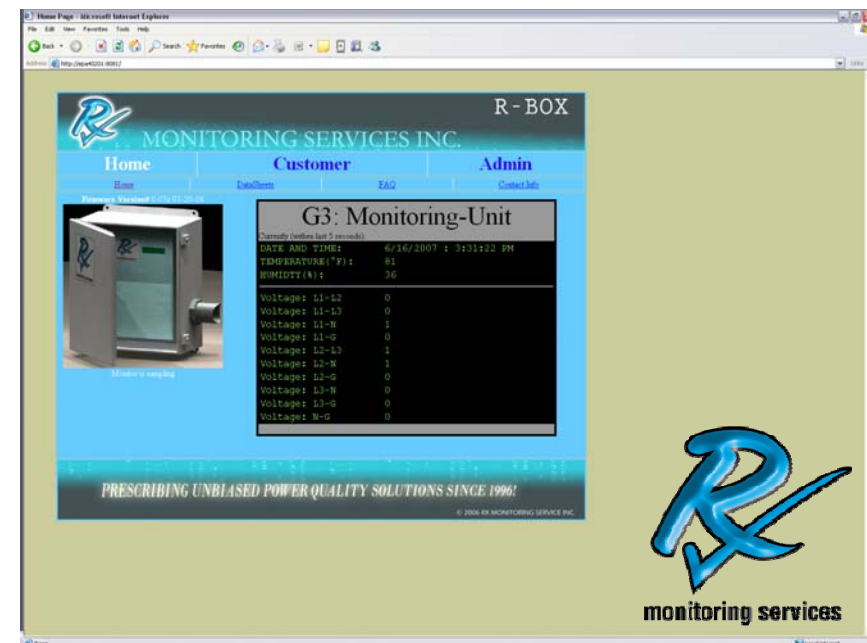


- Wireless Temperature and Humidity
- Wireless air pressure
- Wireless dust particles
- With and without a power monitor!
- Real time monitoring 24x7x365

# Real time data 24x7x365 web based



- Each R-Box has internal Web site
- Continuous V,I and T&H monitoring
- Real time settable alarms
- As low as \$1,950/yr.
- Expert support
- USB, RS232, & Ethernet interfaces





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Questions?

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