

PSL

“We make bad quality power!”

Sag 발생시험기 소개

(Industrial Power Corruptor)

2009. 06



(주)재신정보

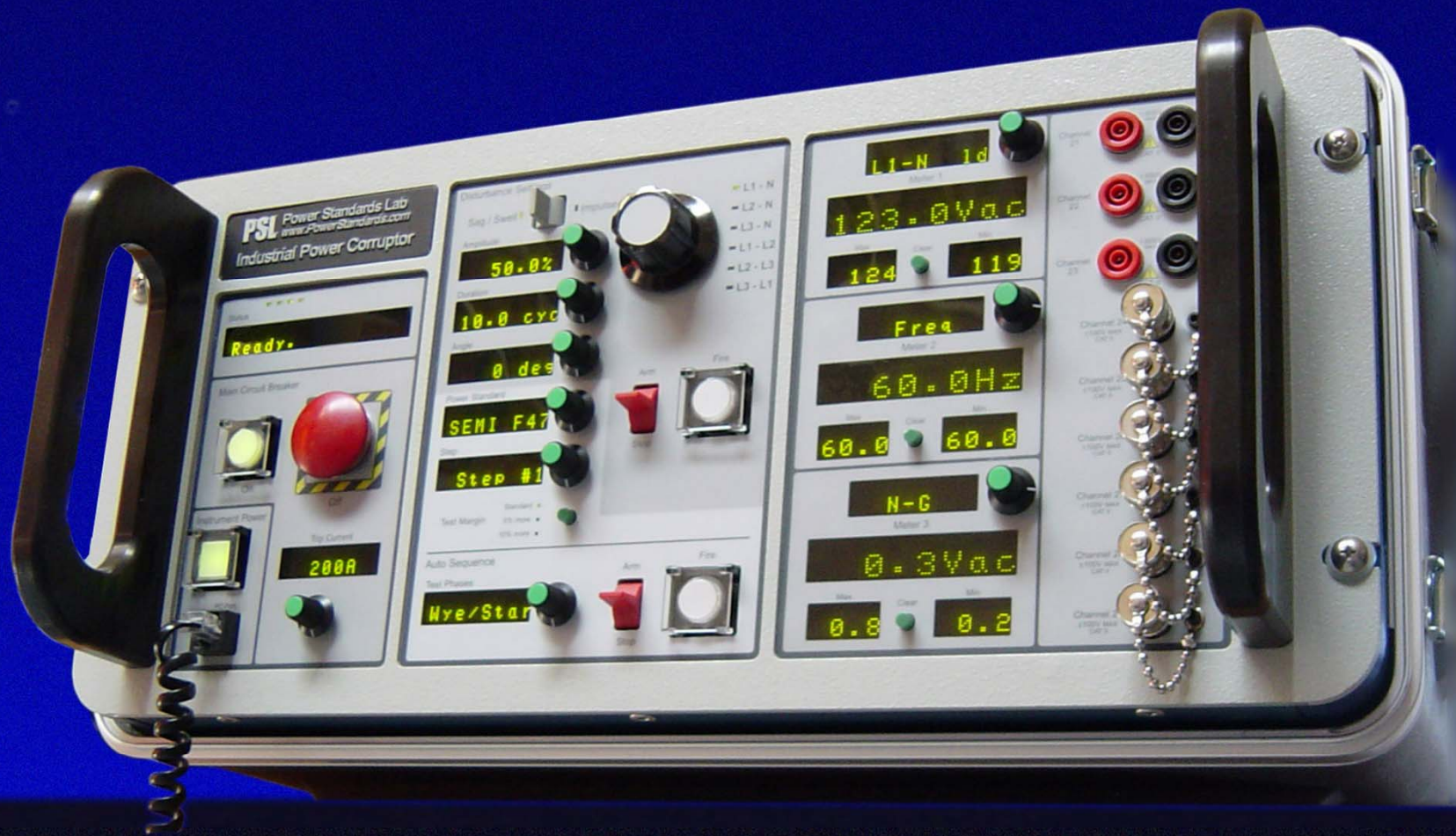
www.jsdata.co.kr

주요 기능

- Industrial Power Corruptor는 순간과전압/저전압/정전 등과 같은 불량한 품질의 전기를 100V~480V 범위에서 1A~200A까지 각 상에 지속적으로 재현, 발생시키는 “산업용 전원왜곡 발생기”기능과,
- 28채널 디지털 오실로스코우프 기능이 내장되어 종합적인 “전력품질의 특성분석기” 기능 등을 동시에 수행할 수 있는 최첨단 고출력, 고성능의 현장 이동형 “전기품질 종합시험기”입니다.

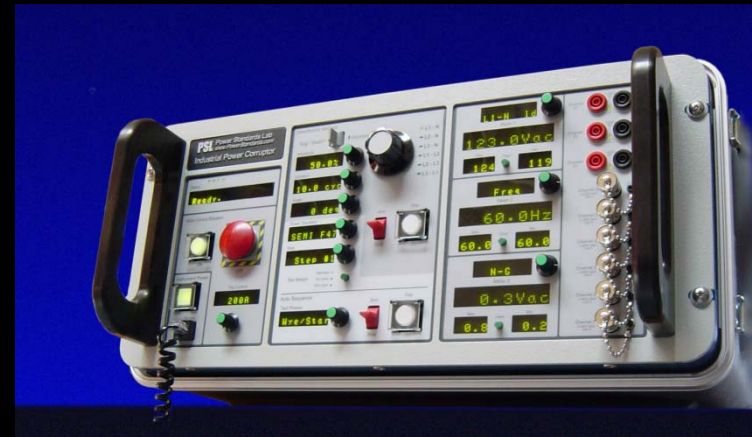
IPC 도입 필요성

- 신규 도입장비의 SAG/SWELL에 대한 내성 적합 검사 시
- 수출제품에 대한 국제기준의 인증서 발행 시
 - SEMI F47, SEMI E6, IEC61000, IEEE1100(CBEMA), IEC, MIL SPEC
- 삼성반도체 제조장비 순간정전 모의 시험 시 (파워백신규격 만족)
- 발 · 변전소/플랜트 생산라인 시운전 및 정기 점검시 순간과전압, 순간저전압, 순간정전에 대한 영향 모의 시험 시
- 통신, 항공, 레이더, 교통제어장비, 군용장비에 대한 전원특성 시험 시
- 전기품질의 신뢰도 향상과 에너지 절감기술이 필요한 반도체 생산공장, 마이크로프로세서 제조, 연속공정 (생명공학, 제철, 화학) 제조, 엘리베이터 제어 및 빌딩제어 부문, 대학, 연구실 등
- UPS 시험시



Industrial Power Corruptor:

- Voltage sags and swells, from 0% to 125% of nominal, from 200 μ Sec to 30 seconds.
- 100 Vrms to 480 Vrms nominal. True phase-to-phase sags and swells – no neutral required.
- Built-in standards: SEMI F47, SEMI E6, IEC 61000-4-11, IEC 61000-4-34, SAMSUNG, FAA, MIL SPEC, CBEMA, ITIC, and more. (Total 16 Modes)
- Built-in 28-channel data acquisition system / digital oscilloscope with internal voltage and current sensors.



IPC Front Panel



IPC Front Panel



Status Display

- Shows status of IPC, alarms, etc.

IPC Front Panel



Main Circuit Breaker controls

- Emergency Off (**EMO**)
- C.B. on (with CBMO option)
- C.B. Trip setting

IPC Front Panel



- IPC ON/OFF switch
- Serial Port for PC Interface

IPC Front Panel



Disturbance Settings

- Depth & Duration
- Angle
- Phase
- Arm & Fire

2009-06-25

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10

IPC Front Panel



Pre-programmed standards

- Select international standard, step, and test margin
(Total 16 Modes)

IPC Front Panel



Semi-Automatic Sequencing

- Automatically step through each step of selected standard

IPC Front Panel



Meters

- 3 sets of meters
- Each monitors up to 42 parameters
- Max/Min recorders with reset buttons

IPC Front Panel



External Data Acquisition Inputs

- $3 \pm 600V$ channels
- $6 \pm 100V$ channels

IPC Rear Panel



IPC Rear Panel



Instrument Power

- 100-240Vac in.

IPC Rear Panel



CBMO Connection

- For connection to optional CB Motor Operator.

IPC Rear Panel



- “From Source” Terminal Blocks
- Connections from power source.

IPC Rear Panel



“To Load” Terminal Blocks

- Connections to equipment under test.

IPC Rear Panel



Circuit Breaker

- Tripped by CB curve, IPC hardware / firmware.

IPC Rear Panel



Future Option

- Impulse Generator connections.(현재는 수용하지 않음)

IPC Rear Panel



External triggers and
Specialized communication ports

IPC Rear Panel



Analog Outputs

- 10V full scale Voltage and Current measurement outputs

IPC Rear Panel



- Optional Circuit Breaker Motor Operator
- Allows front panel control of CB.

Inside the IPC (top side)



The IPC has a very modular construction.



Inside the IPC (top side)



The IGBT Module (insulated gate bipolar transistor)

- Uses 1200 volt, 400 amp bipolar transistors to perform precision power transitions.



Inside the IPC (top side)



DAQ Board Assembly

- 28 channels of Voltage, Current, and Temperature data acquisition.



Inside the IPC (top side)



The Power Supply Board Assembly

- Power storage / distribution
- Trouble shooting indicators



Inside the IPC (top side)



The Power Supply Assembly

- 100-240Vac in, 24Vdc out



Inside the IPC (top side)



The Cooling System

- Cooling Fans maintain optimum internal temperature



Inside the IPC (top side)



The Front Panel Assembly

- External user interface controls
- Control and Display printed circuit boards.



Inside the IPC (under side)



Inside the IPC (under side)



Patent-Pending Multi-Tap Transformer Assembly
• allows sags and swells in 2.5% increments.



Inside the IPC (under side)



Tap Relay Assembly

- Configures transformer outputs to required percentage levels



Inside the IPC (under side)

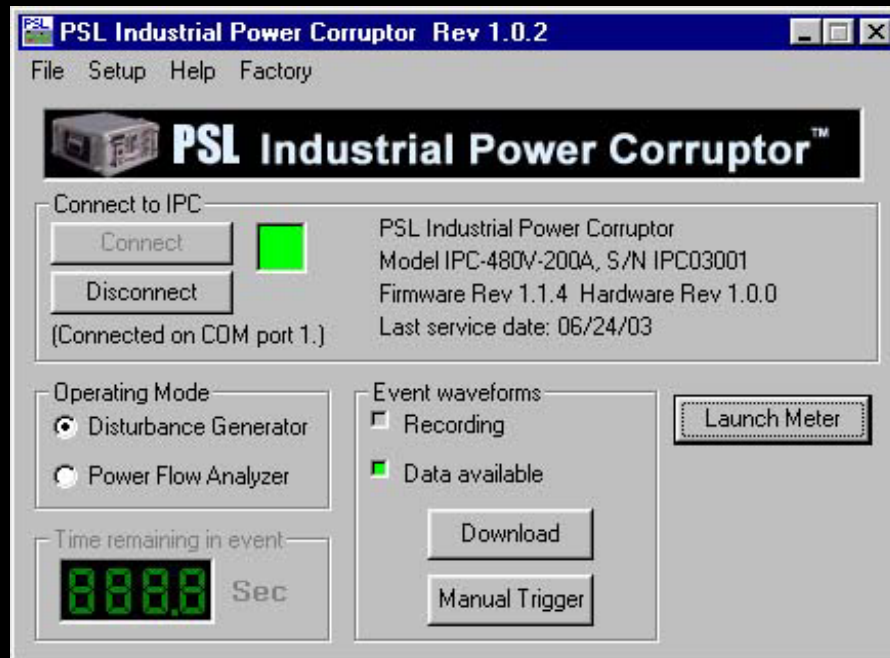


Rear Panel Assembly

- IPC interface along with Voltage / Current sensors and 16 configuration relays



Standard IPC Control Software



The IPC software package runs on Windows® computers



Standard IPC Control Software

PSL Industrial Power Corruptor Rev 1.0.2

Set up testing session

File

Save testing session setup
Recall testing session setup

EUT Model Number
G-300

Manufacturer of EUT
Intratech Technology

Manufacturer location
Santa Clara, California, USA

EUT status
☐ Engineering model
☐ Prototype
☒ Pre-production
☐ Production

EUT Serial number
G300-04-5

100-03-45-002

Process or Recipe
Etch #45

Test session

Test engineer
George Smith

Company
Power Standards Lab

Job Number
INTR-002

Nominal power - voltage, freq, configuration
480V, 60 Hz, Delta

Industrial Power Corruptor

Model Number
IPC-480V-200A

Serial number
IPC03001

Service date
06/24/03

Comments
Follow-up on Job INTR-001

Default directory for all files in this testing session
C:\Program Files\PSL\

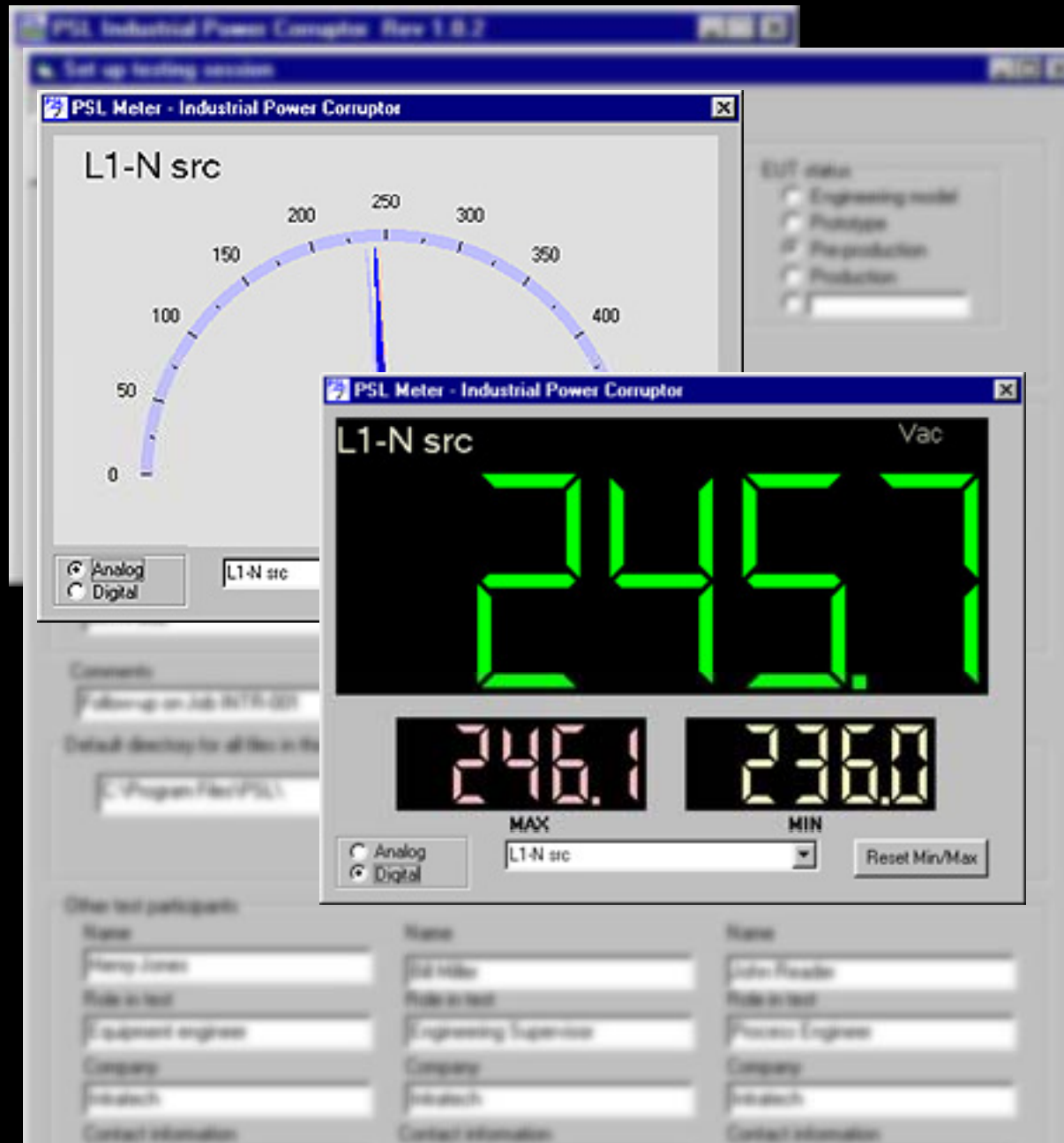
(Open any file in the desired directory.) Browse

Other test participants

Name	Name	Name
Henry Jones	Bill Miller	John Reader
Role in test	Role in test	Role in test
Equipment engineer	Engineering Supervisor	Process Engineer
Company	Company	Company
Intratech	Intratech	Intratech
Contact information	Contact information	Contact information

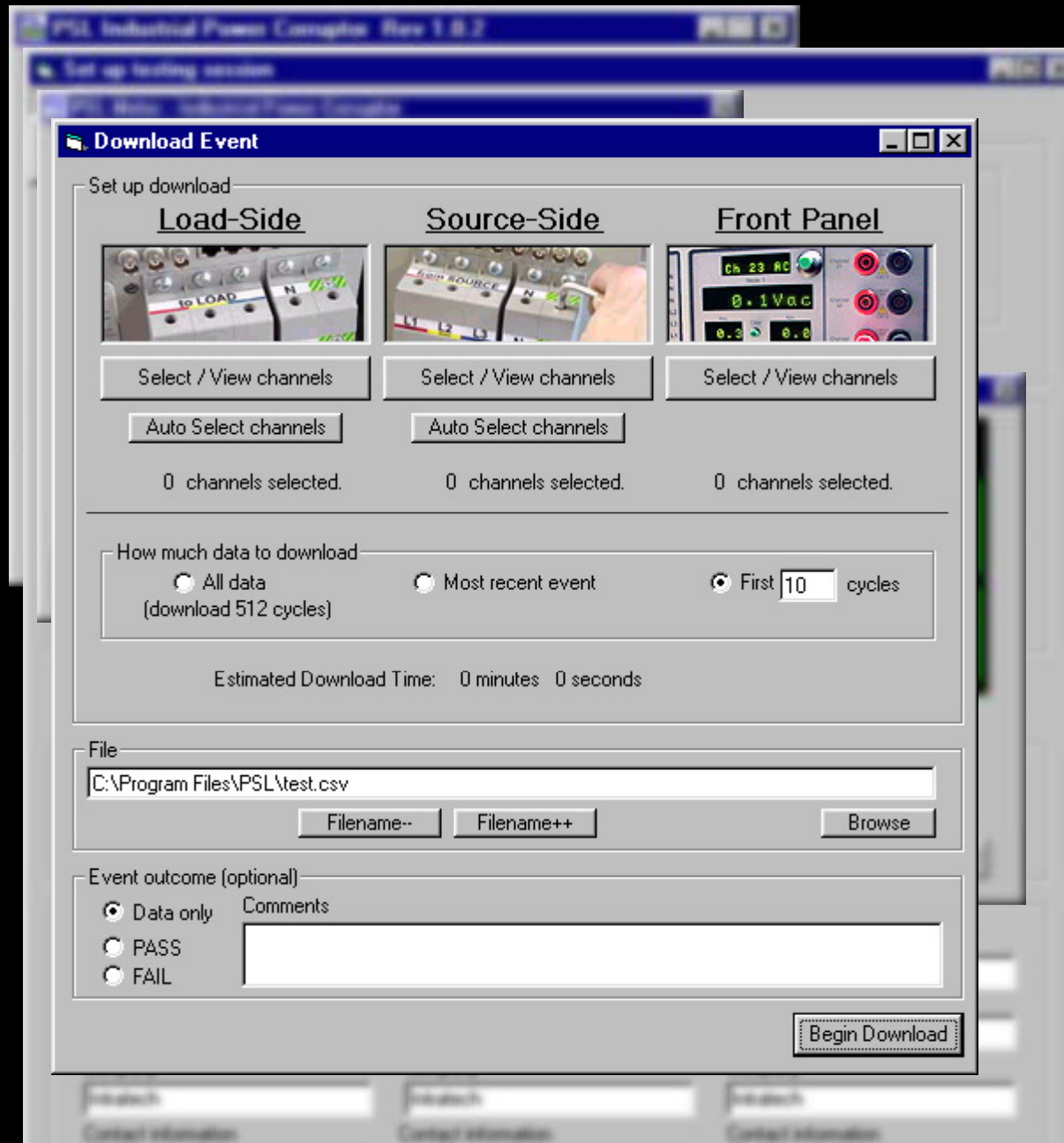
The IPC Software
helps you document
every aspect of your
testing

Standard IPC Control Software



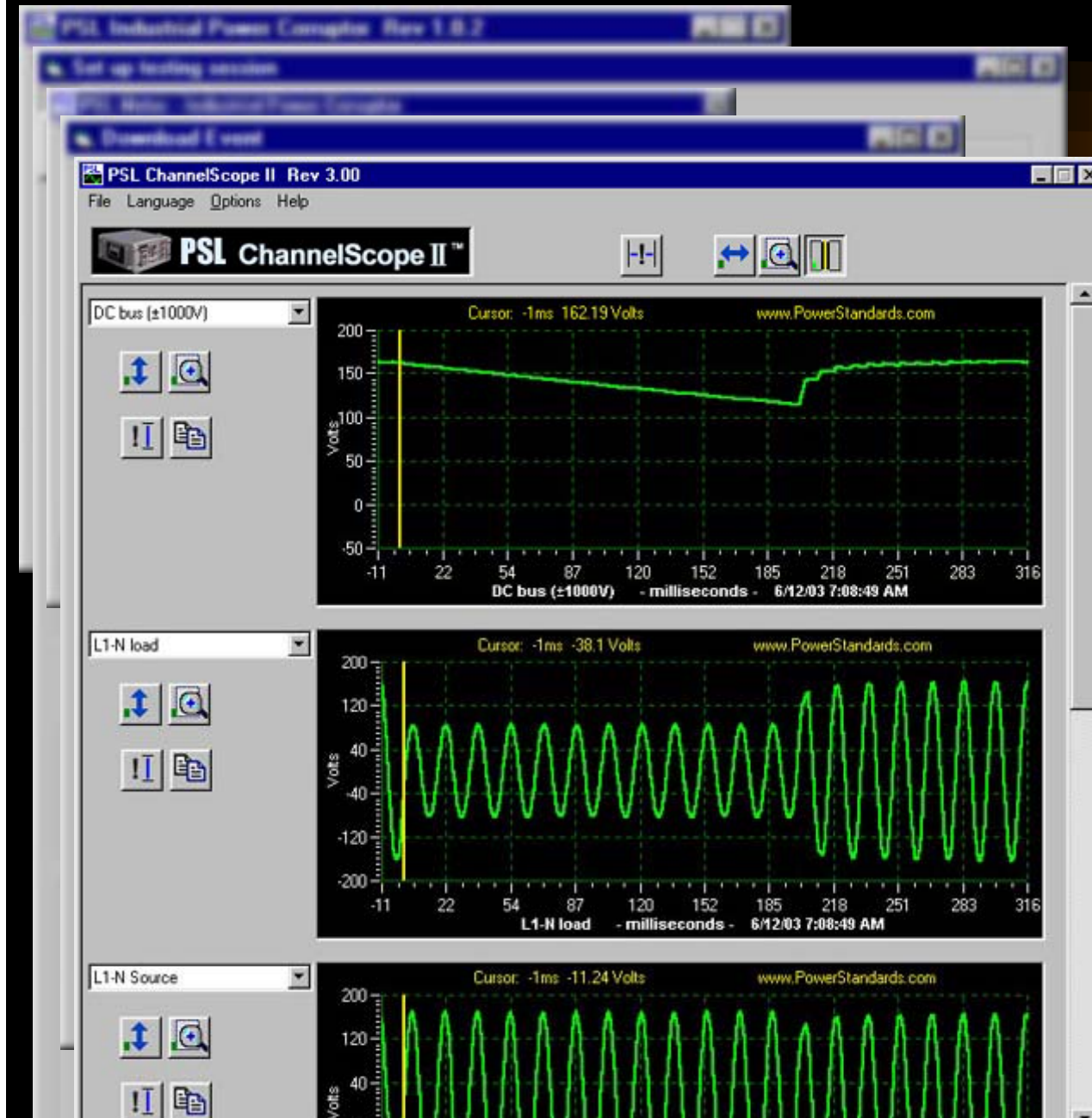
You can choose an analog or digital meter to display the data acquisition channels on your PC

Standard IPC Control Software



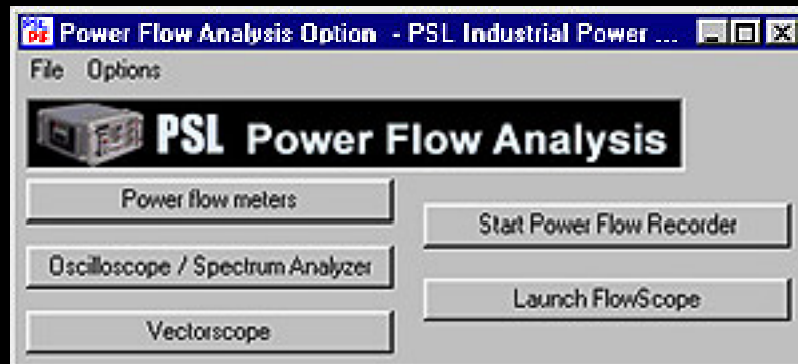
Downloading is simple:
You can choose which
channels, how much
data, and where to
download.

Standard IPC Control Software



You can view the downloaded data with the included ChannelScope software.

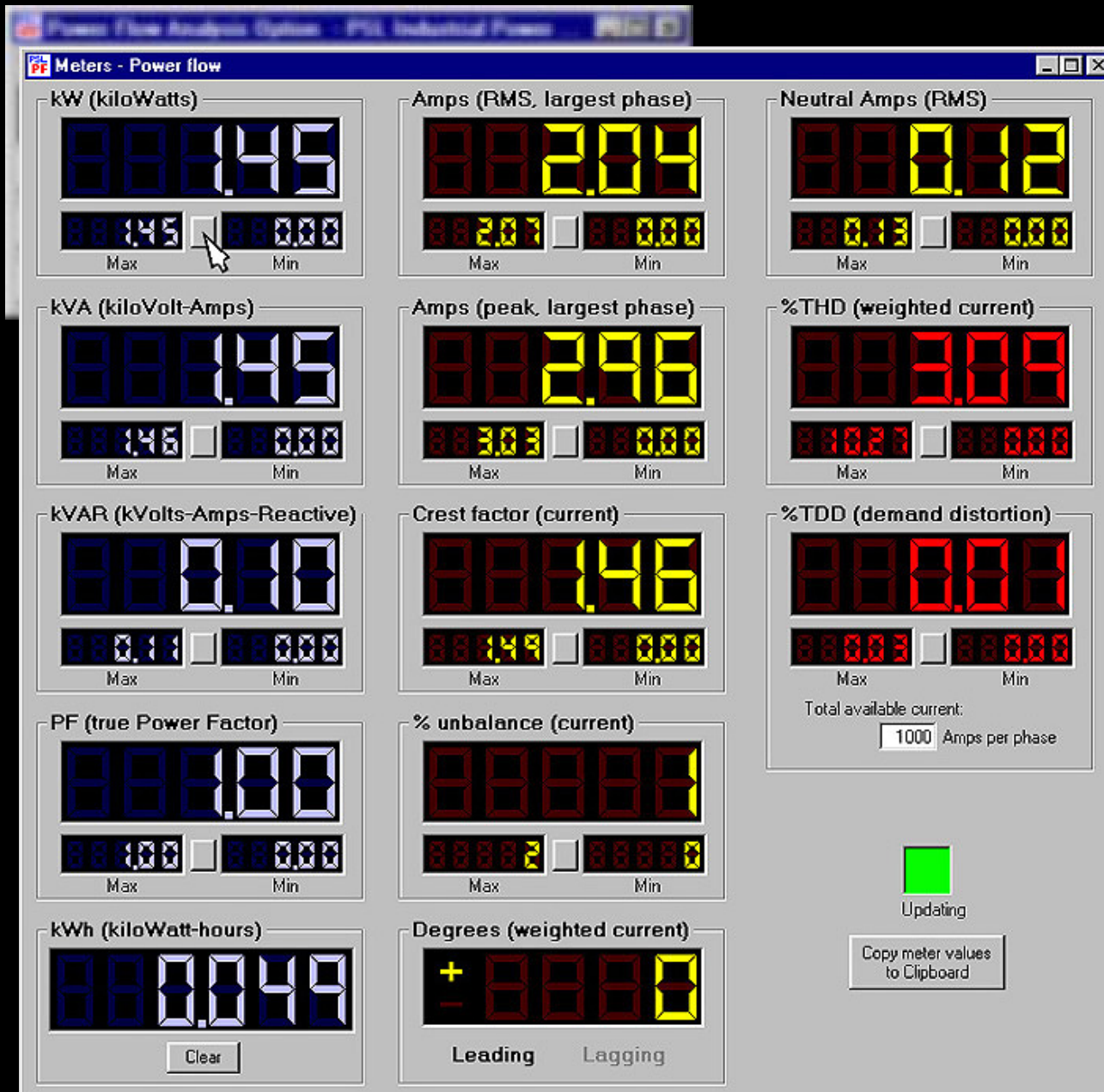
Optional IPC Software



The Power Flow Analysis Option allows you to analyze power flow on the load side of the IPC

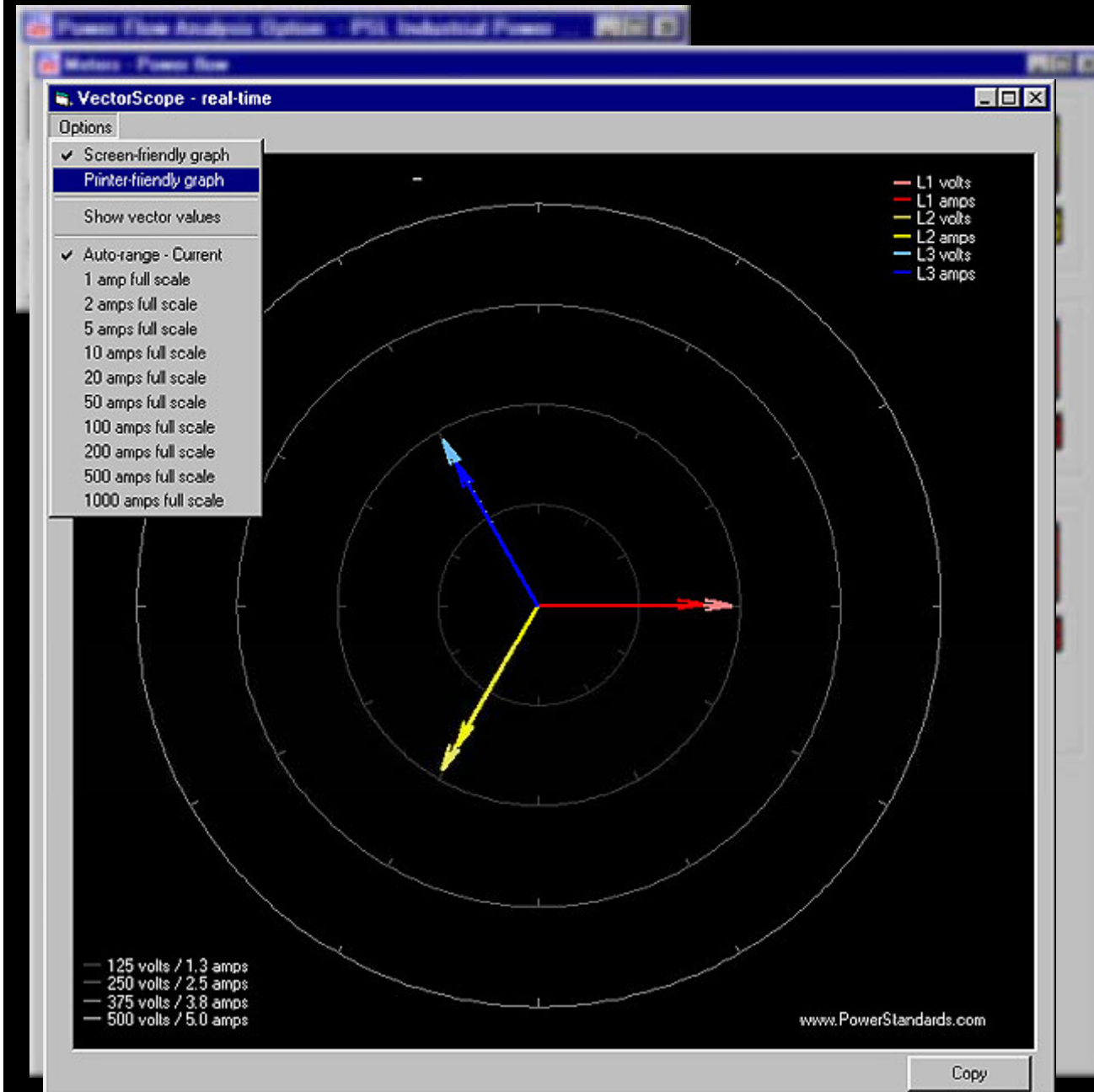


Optional IPC Software



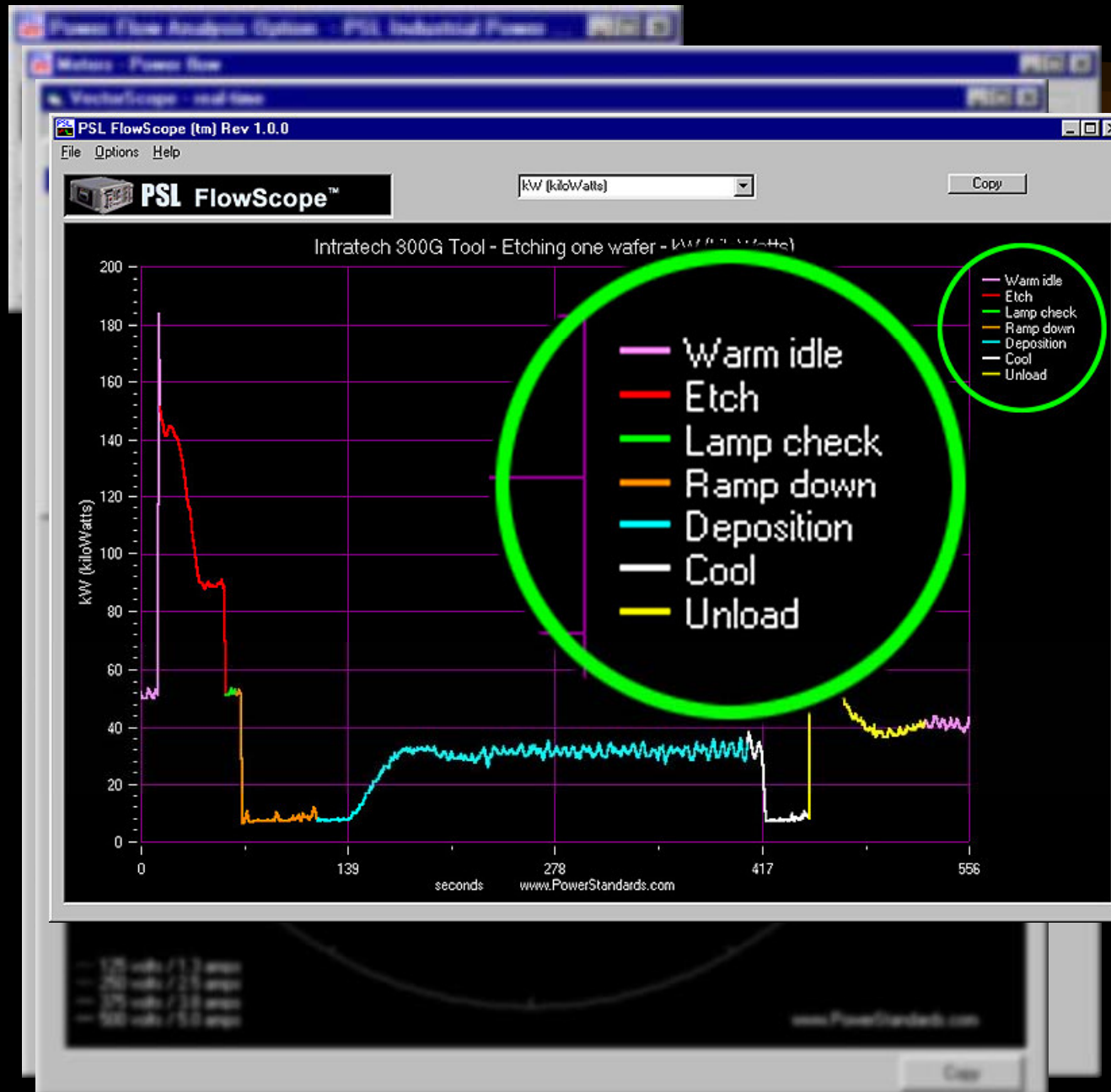
The power flow meters show the present value, as well as the minimum and maximum value, for each parameter.

Optional IPC Software



The VectorScope can verify phase rotation and check the angles and balance of voltages and currents.

Optional IPC Software



The FlowScope software lets you analyze and graph power flow parameters. Great for SEMI E6 reporting!

How to test with your IPC:



1. Plug in the IPC



How to test with your IPC:



1. Plug in the IPC
2. Turn it on



How to test with your IPC:



1. Plug in the IPC
2. Turn it on
3. Connect to PC



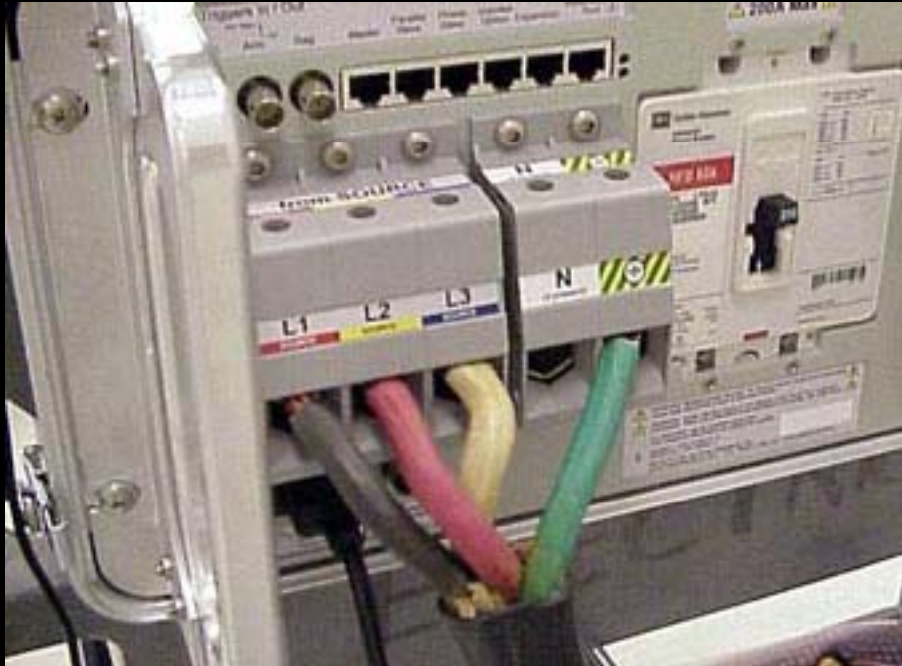
How to test with your IPC:



1. Plug in the IPC
2. Turn it on
3. Connect to PC
4. Start Software



How to test with your IPC:



1. Plug in the IPC
2. Turn it on
3. Connect to PC
4. Start Software
5. Make source/load connections



How to test with your IPC:



1. Plug in the IPC
2. Turn it on
3. Connect to PC
4. Start Software
5. Make source/load connections
6. Select settings



How to test with your IPC:



1. Plug in the IPC
2. Turn it on
3. Connect to PC
4. Start Software
5. Make source/load connections
6. Select settings
7. Turn on the CB



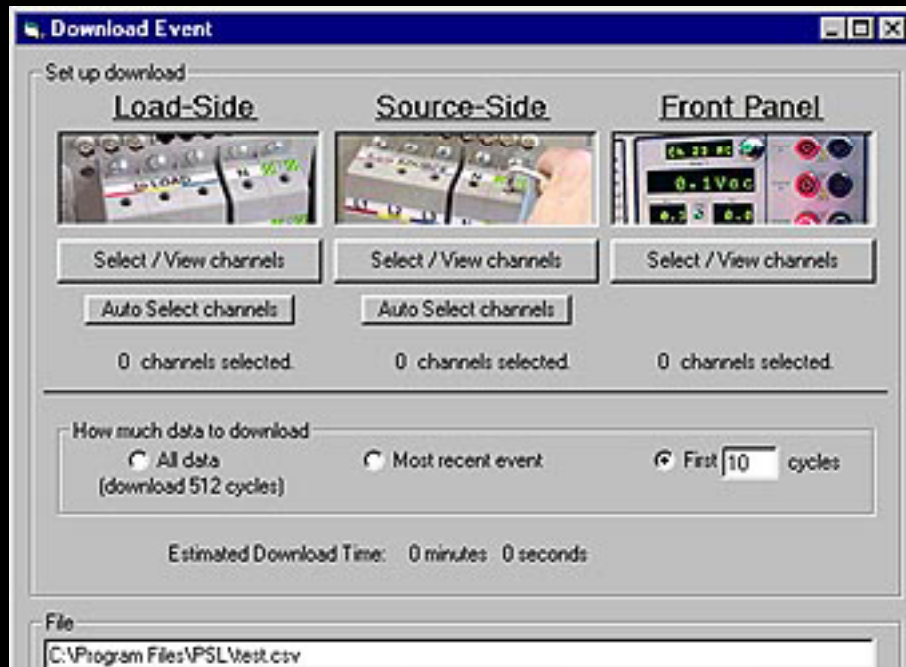
How to test with your IPC:



1. Plug in the IPC
2. Turn it on
3. Connect to PC
4. Start Software
5. Make source/load connections
6. Select settings
7. Turn on the CB
8. Arm and Fire

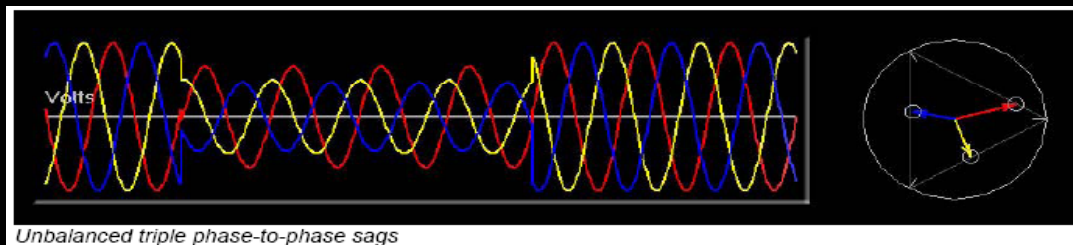
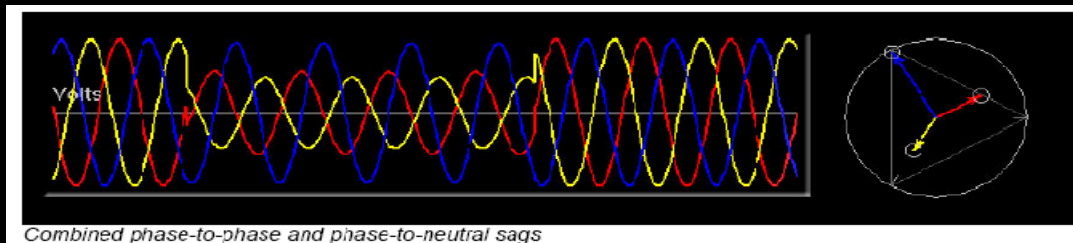
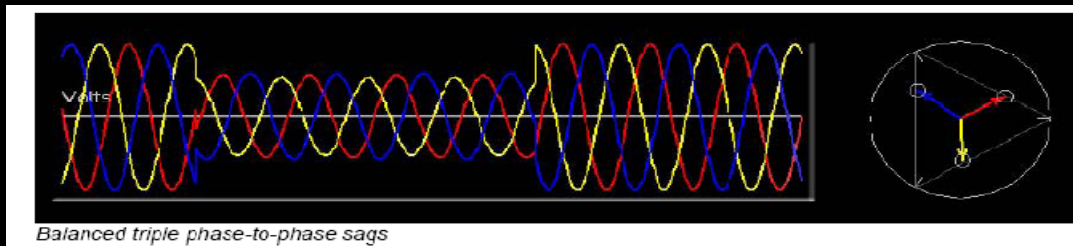
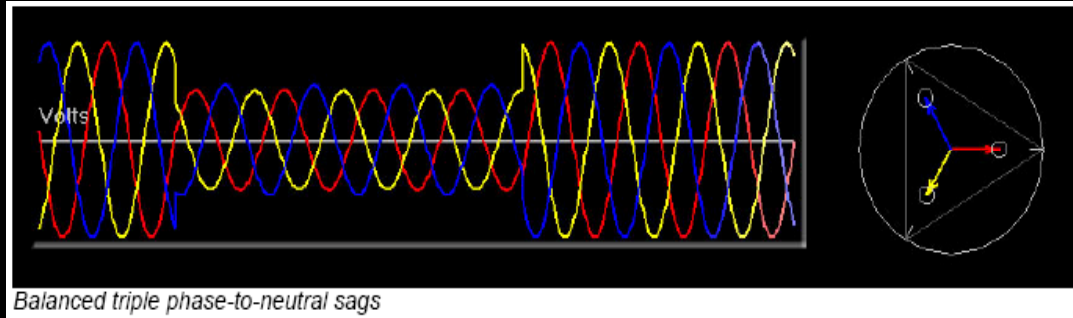


How to test with your IPC:



1. Plug in the IPC
2. Turn it on
3. Connect to PC
4. Start Software
5. Make source/load connections
6. Select settings
7. Turn on the CB
8. Arm and Fire
9. Observe / Download results

완전한 3상 Sag Generator – 2005. 8 출시



in Ko



Typical IPC Users

Semiconductor tool manufacturers, and their component suppliers, use the Industrial Power Corruptor to test and design for **SEMI F47 compliance and completing data sheet 400** of the SEMI E6 standard.



Typical IPC Users

University and national research labs use the Industrial Power Corruptor for training, research projects, and pre-testing critical equipment for voltage sag and swell sensitivity. Typical standards include IEEE 1100 (CBEMA).



Typical IPC Users

Industrial engineers use the Industrial Power Corruptor to verify that new electronic equipment will tolerate voltage sags and swells, and determine requirement for power quality sensing, such as the PQ1.



Typical IPC Users

Military and government agencies use the Industrial Power Corruptor to test critical electronic systems. Typical standards include FAA G-2100G and MIL SPEC standards.



Typical IPC Users

Compliance engineers and test labs use the Industrial Power Corruptor to verify compliance with IEC standards, including IEC 61000-4-11 and 61000-4-34, and other national and international voltage sag immunity standards.



IPC Testing, and you!



PSL's **TestingPartner** program is a simple, low-cost way to certify compliance with several standards, including SEMI F47 SEMI E6 , and IEC 61000, IEEE 1100 . It is based on PSL's latest generation of test equipment, which -- if you allow it to -- lets us look over your shoulder electronically while you perform the tests.



Companies Lists for SEMI F47 testing

반도체 인증관련 기술내용은 www.powerstandards.com 참조

- Applied Materials
- Schlumberger
- Cutler Hammer
- Dainippon Screen
- Comdel
- Mattson
- CPI
- IGC-Polycold
- ASM
- ASML
- BOC Edwards
- **Novellus**
- Advanced Energy
- **WaferTech**
- LAM Research
- Brookhaven National Lab
- Cisco
- Mattson Technology
- **Therma-Wave**
- Ion Systems
- Leybold
- Matrix KLA-Tencor
- Verateq
- **Nikon**
- **Siemens**
- Cymer
- Harmonics Ltd.
- Nanometrics
- Ion Systems
- Newport Kensington
- Read-Rite
- Wastech

국내 보급 실적

- 전기안전공사 연구원 엘리베이터 동작 이상 원인 분석 연구 프로젝트에 공식 계측기로 채택
- IEC61000-4-11, SEMI F47 시험성적서 발행기관 : TUV, SGS, DASTEK
- 대학연구소 : 충북과학대
- 반도체 공장 : LG-LCD
- 반도체장비 순간전압강하 대책 공사용 : ASTEC
- 한국철도기술연구원

국내 반도체 장비시험



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발전소 인버터 시험



2009-06-25

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64

대단히
감사합니다.!



(주) 재신정보

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