Industrial Power Corruptor

Brochure

The **Industrial Power Corruptor.** Creating bad quality power. Precisely.

Power Sensors Limited

PQube® 3
Power Analysis

Revision 1
Power Sensors Ltd. 980 Atlantic Ave, Alameda CA 94501, USA
Tel ***++1-510-522-4400*** Fax ***++1-510-522-4455*** www.PowerSensorsLtd.com

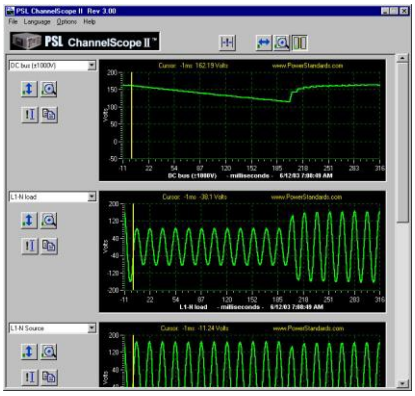
Highlights

- Creates voltage sags and swells, from 0% to 125% of nominal, from 1 cycle to 30 seconds
- High power handling: up to 480 Vrms, 200 amps continuous
- Safe, knob selected, true phase-to-phase sags and swells – no neutral required, no manual rewiring
- Optional power flow monitoring
- Compact size for convenient transport to testing sites
- PSL's unique TestingPartner® program lets you perform your own certification testing

The IPC is designed for optimum ease of use and user safety.

Features

- 100Vrms to 480Vrms nominal, 50/60 Hz, single-phase, three-phase delta, and three-phase wye/star
- Up to 200 amps continuous per phase
- Built-in standards: SEMI F47, SEMI E6, SEMI S23, IEC 61000-4-11, IEC 61000-4-34, SAMSUNG POWER VACCINE, FAA, MIL SPEC, CBEMA, ITIC, and more
- Built-in 28 channel data acquisition system/digital oscilloscope with voltage and current sensors
- User-friendly front panel control switches and displays
- Optional spectrum analyzer and vector scope optimized for power system harmonic monitoring
- Customized padded rugged polyethylene shipping crate for safe delivery between test sites



Typical result of a voltage sag – the tool's DC bus collapses (top). The Industrial Power Corruptor created a 12-cycle, 50% voltage sag (middle), typical of sags that hit manufacturing facilities around the world. The solution: increase the size of the bulk capacitors on the DC bus – there's no need for expensive power conditioners.

Applications

- The Industrial Power Corruptor (IPC) is the ideal tool to help answer a wide range of questions on your new or existing equipment:
- Will your new design work with local power disturbances?
- Does your design meet the upcoming CE requirements for industrial equipment voltage sag immunity?
- Do you need to self-certify to SEMI F47 and SEMI E6 standards?
- How many kilowatt-hours does it take to process your product?
- How much inrush current does your equipment really require – could you use a smaller breaker?

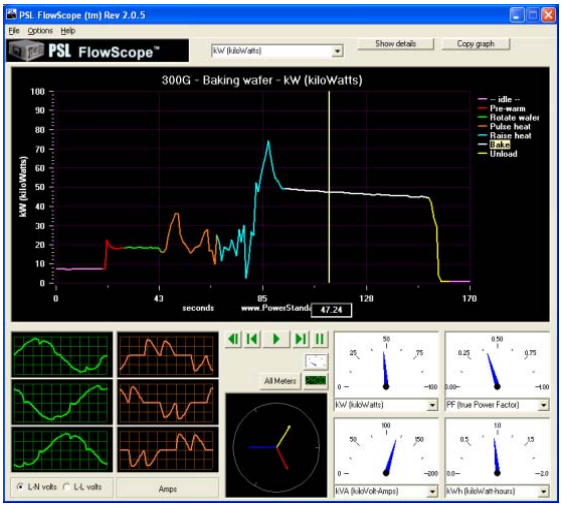
PSL PQube® 3 Power Analysis

Revision 1
Power Sensors Ltd. 980 Atlantic Ave, Alameda CA 94501, USA
Tel ***++1-510-522-4400*** Fax ***++1-510-522-4455*** www.PowerSensorsLtd.com

Advanced Technology

The IPC uses advanced patented technology to generate perfect voltage transitions. Special new technology permits 480V, 200 amp, 3-phase control in a single, clean, portable package less than 9 inches (23cm) high.

Power Flow Analysis

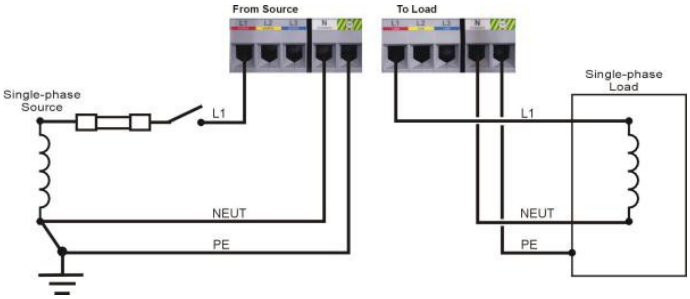


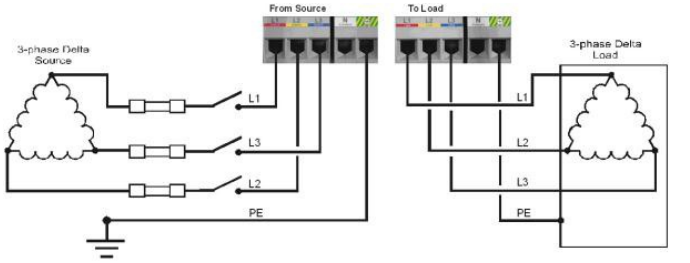
The Power Flow Analysis option turns the IPC into a powerful power flow recorder, meter, oscilloscope, spectrum analyzer, and vector scope. Record kW, kVA, kVAR, PF, THD, phase angles, and more, all optimized for power consumption in industrial equipment.

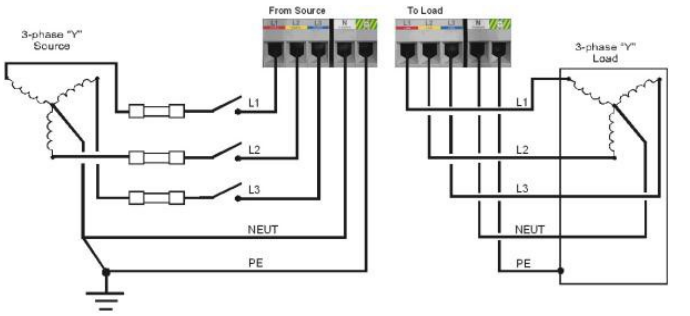
Connections

Connecting to the IPC is simple. Just connect your AC source to the input terminal blocks on the left, and connect your load to the output terminal blocks on the right.

Every IPC comes complete with a set of wire size adaptors for safely connecting smaller wires, too. Use the same terminals for single-phase, three-phase delta, and three-phase wye/star systems.







Insert the IPC between your AC source and your AC load. The IPC is happy with any nominal voltage between 100V and 480V, and currents up to 200 amps per phase (continuous). Both 50Hz and 60Hz will be accepted by any IPC. And the IPC generates true phase-to-phase sags, not simulated phase-to-phase sags generated by some other sag generators.

PSL PQube® 3 Power Analysis

Revision 1
Power Sensors Ltd. 980 Atlantic Ave, Alameda CA 94501, USA
Tel ***++1-510-522-4400*** Fax ***++1-510-522-4455*** www.PowerSensorsLtd.com

Industrial Power Corruptor Specifications

General Information

Functional	Voltage Sag/Dip and Swell testing per SEMI F47, IEC 61000-4-11, CBEMA, ITIC, MIL, STD, FAA, SAMSUNG, and other international standards. With Power Flow Analysis option, also performs to SEMI E6, current inrush testing, harmonic current testing, and more.
Agency approvals	Designed to meet U.S. and Canadian safety standards, CE certification requirements, FCC requirements. Fully meets requirements of IEC-1010, and IEC-61000-4-11. Fully meets requirements and recommendations of SEMI F47.
Equipment ratings	Rated as Class I equipment. Rated for Installation Category II (local level, appliances, portable equipment). Rated for Pollution Degree 2 (Normally, only non-conductive pollution occurs.)
Operating environment	Indoor use. Altitude up to 2000 m. Temperature between 5°C and 40°C. Max relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C.
Instrument Power	100 to 240 Vac (±10%), 50/60 Hz, 4 Amps max
Software	Industrial Power Corruptor program for setup/operation of IPC, viewing real-time and downloaded data, and collecting information for test report generation. With Power Flow Analysis option, software includes vector scope, real-time oscilloscope, and real-time spectrum analyzer. ChannelScope II software for viewing, zooming, scrolling, and synchronizing power waveforms. FlowScope software for graphing and examining power flow over time. Requires PC with Windows 98 or XP.
Communications	Front panel RJ-45 jack for serial connection to PC.
Physical	19 inch rack-mount unit in rugged polyethylene case measuring 21in. W x 11in. H x 30in. L (50cm x 28cm x 76cm). 130lb (59Kg)

Permissible Test Conditions

Voltage Range	100-480 Vrms, 50 or 60 Hz, 1-phase or 3-phase. Voltage is limited to 240Vrms on some model numbers.
Voltage Configuration	Single phase or 3-phase (Y or delta) connection to unit. Voltage dropout testing can occur on all phases simultaneously. Voltage sag and swell testing on a single pair of phases, or phase to neutral. Phase selection for events is done with front panel dial.
Load Current	Up to 200 Amps per phase continuous, depending on model number, 600 Amps peak. Front panel dial for user selection of current trip point.

Sag / Swell Testing

Magnitude	0% (high impedance) to 125% of nominal voltage in 2.5% steps, limited a maximum of 550Vrms.
Duration	User selected duration from 1 cycle to 34 seconds in 1 cycle steps.
Magnitude/Duration Margin	A front panel switch allows quick 5% or 10% increase in event magnitude and duration.
Phase Angle	0 to 355 degrees in 5 degree steps.
Event Trigger Input/Output	Manual front panel "Arm" and "Fire" switches locally trigger event. Rear panel BNC connectors provide bi-directional 24V logic level (falling edge) trigger output and input capability.
Semiautomatic Sequencing	As well as manual event configuration, the user can semi-automatically step through an industry standard recipe on a single or 3-phase system.
Switching Method	High speed, gapless switching, IGBT package with patented override design for long duration events.

Three Phase Voltage Dropout and Current Inrush Testing

Magnitude	Full voltage and current rating of Industrial Power Corruptor
Max instantaneous current recording	±600A instantaneous
Interruption Duration	0.3 to 34 seconds.
Phase Angle	0 degrees to 355 degrees in 5 degree steps. Referenced to user selected voltage channel.
Switching Method	Mechanical relays, with calibrated switching times to 0.4 milliseconds

Data Acquisition

Internal Analog Input Channels	13 internal voltage channels, 6 internal current channels, 3 protective earth current monitoring channels.
External Analog Input Channels	3 front panel ±600V (AC or DC) channels, 6 front panel ±100V (AC or DC) channels.
Analog Input Viewing	Three front panel meters (including min. and max. values) can be selected to display any data acquisition channel in real-time. Alternatively, these channels can be monitored using a connected PC and the software provided.
Resolution	15 bits equivalent per individual sample on 1000V / 1000A channels, 12 bits per individual sample on other channels, 16 bit equivalent for average and RMS measurements
Accuracy	Guaranteed accuracy ±1,0% FS on voltage and current. Typical accuracy ±0,25% FS (voltage and current), ±0,5% FS (power parameters), ±1,0% FS (harmonics), ±1° (between any voltage and current channel)
Sampling Rate	0.8 KHz to 7.68 KHz
Phase lock	With Power Flow Analysis option, software phase-lock to user-selected voltage channel - for precision harmonic and power flow calculations.

PSL PQube® 3 Power Analysis

Revision 1
Power Sensors Ltd. 980 Atlantic Ave, Alameda CA 94501, USA
Tel ***++1-510-522-4400*** Fax ***++1-510-522-4455*** www.PowerSensorsLtd.com