



## Ultra Capacitor

Power

Conditioning

Solutions



Unirom Electronics Ltd.

## Company Profile

Unirom has been a key provider of Power Solutions for over 20 years, and Unirom Electronics Ltd. (the engineering and marketing arm) was established in 1996.

The company imports, markets, distributes, and integrates state-of-the-art Power Conditioning systems and UPS solutions produced by world leading manufacturers. Unirom's highly experienced engineering team advises its customers on choosing the optimal solution to meet their power requirements, and offers comprehensive, ongoing technical service and support.

Quality is paramount at Unirom. The company complies with ISO 9000 and other international standards (such as UL approval from Underwriters Laboratories Inc.) and is officially qualified by the Israeli Standards Institute.

Unirom is a major representative and service provider in Israel for Eaton Power Quality (Powerware) - subsidiary of the multinational conglomerate Eaton. The Eaton Corporation is a leading global provider of comprehensive power quality and power management solutions.

### Unirom Introduces Ultra Capacitor Technology

Specializing in Power Conditioning - SRT (Sag Ride Through) solutions, Unirom's engineering team has gone one step further by identifying and addressing the unique requirements of an important niche market - the FAB Semi-conductor arena. As regular, battery operated power protection systems are not a viable option for the ultra clean environment demanded in semi-conductor production, Unirom developed the UNICap Semi 2 F47 (SRT), an enhanced Semi 2 SRT device, based on the UL approved Eaton Powerware 9355 F-47, in which batteries are replaced by Ultra Capacitors. In fact, this new technology not only corrects momentary voltage sags to maintain uptime and productivity, but also delivers a number of additional improvements and advantages, offering customers higher performance than conventional voltage regulators.

Although the UNICap Semi 2 F47 (SRT) was specifically developed for use in FAB environments, this optimized, clean device will become the power conditioning solution of choice for a wide variety of key industries, equipment and processes affected by SAGS - especially those operating critical mission applications.



**EATON**

**Powerware**



## UNICap Semi 2 F47 (SRT)

### The Clean way to Power Up your Clean Room

The UNICap Semi 2 F47 (SRT) is a true double conversion online uninterruptible power protection system that prevents loss of valuable electronic information during Momentary Voltage Sags and/or blackouts. It drastically minimizes both equipment downtime and any adverse effect on production.

The new Ultra Capacitor technology in this enhanced device offers 5 Major Features that make it a cut above other Power Conditioners:

- Clean - No Batteries! Batteries are replaced by an Ultra Capacitor that eliminates pollution in Clean Rooms, is the optimal solution for critical mission applications, and makes costly maintenance and disposal requirements obsolete
- Back Up time of 1 - 3 seconds at full load
- Services Wide Range of Voltage Systems - designed to operate with voltage inputs across the international spectrum (tailor made in accordance with customer requirements), ranging from 200 to 480 VAC (3 phase). The default Output is 208 VAC, but this too can be modified as per customer needs
- Stand-Alone Solution up to 45 KVA (in a 3 device configuration) - triple the usual 15 KVA offered in most devices
- T.H.D. - (Input Current) of *less than 5 %*



EMO meet Semi S2 requirements



## **Quality Assurance:**

The UNICap Semi 2 F47 (SRT) meets the stringent requirements of the SEMI-F47 standard, a key requirement for sag correction in the FAB Semi-conductor industry.

### **Why do you need to protect your plant from Voltage SAGS?**

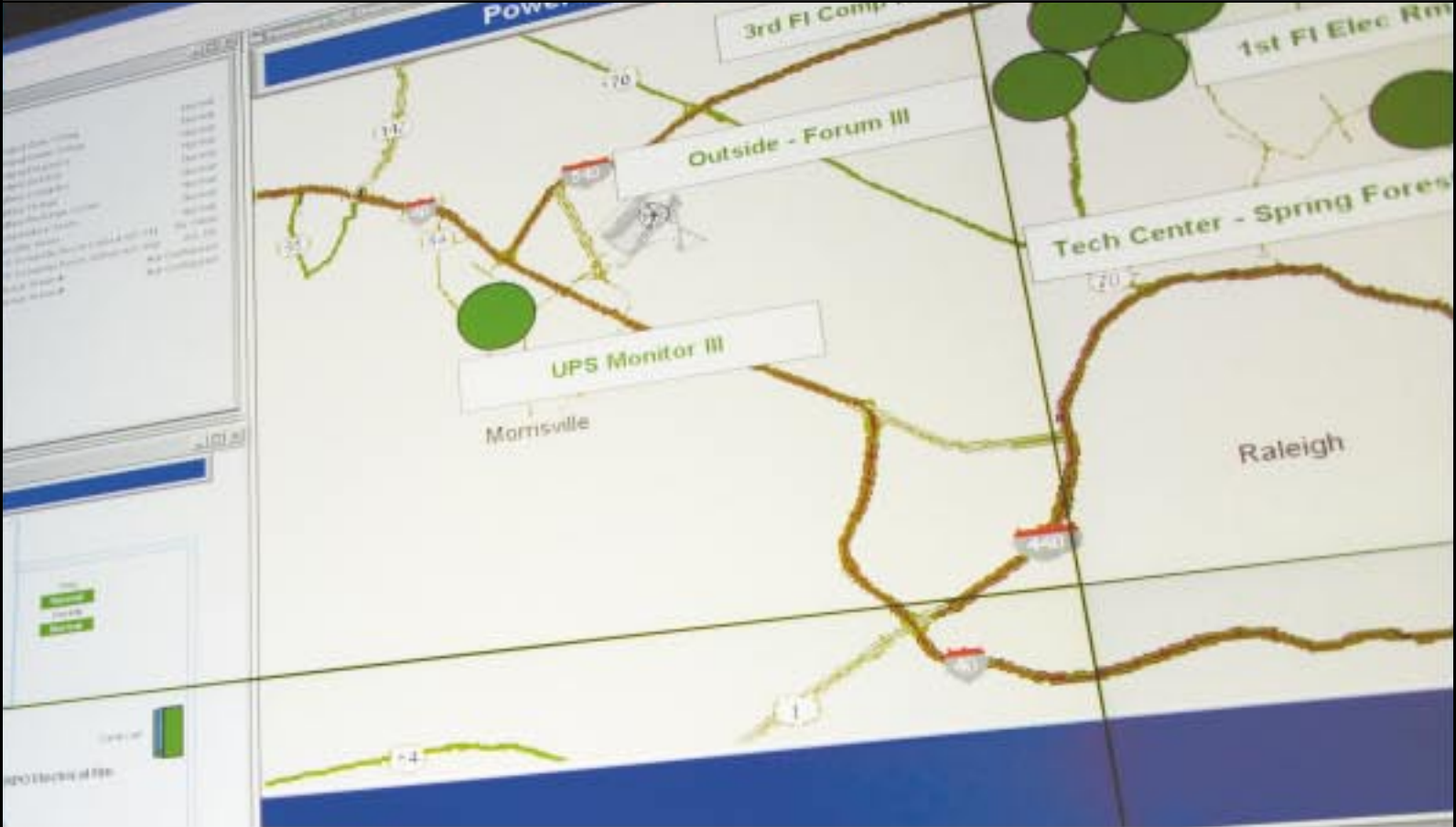
SAGS or DIPS are short duration events caused by a variety of factors (internal faults, starting up large motors, lightning strikes, animal contact etc.) that result in a sudden, momentary 10% to 90% drop in the supply voltage. SAGS are often accompanied by voltage distortion, transients and phase shifts. Voltage regulation is another potential problem when voltage fluctuates over 10% for long periods of time.

#### **The effects of a voltage SAG on a plant can be devastating!**

The long list of adverse effects includes safety hazards, increased operating costs, equipment failure or damage, need for product reworks, reduction in product quality, plus increased clean-up, labor costs, scrap materials and investigation costs.

Poor power quality, causing downtime and lost production, can cost between \$50 to \$400 per KVA of total load, which for a 10 MVA plant can translate into a loss of \$500K to \$4M annually.

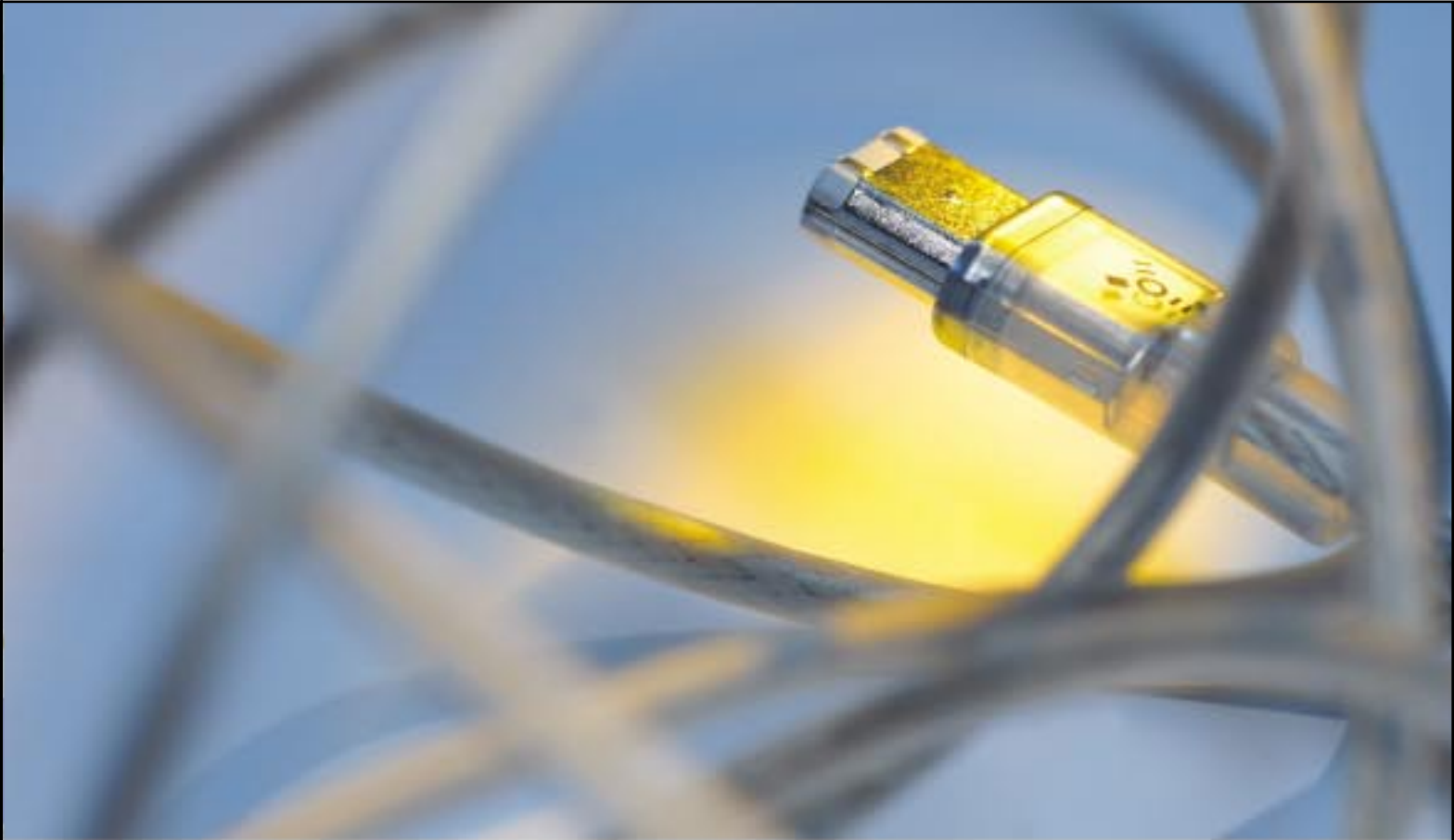
**Protect your sensitive equipment around the clock by installing the UNICap Semi 2 F47 (SRT) device**



## Features and Specifications

Feature	Specifications
Model catalogue reference	PW9355 F47 Unirom SRT
Model rating	15 KVA / 13.5 KW
MTBF	150 000 h
Dimensions length x depth x height	305 x 702 x 830 mm (Without transformer) 305 x 702 x 1370mm (With transformer)
Weight	168 kg (Without transformer) 270 kg (With transformer)
Ambient storage temperature range	-25 to +55°C in the protective package
Ambient operating temperature	Power of electronic part: +10 to +40°C, max.
Maximum operating altitude	3000 m (9843 ft) above sea level, max.
Relative humidity range	5 to 95%, non-condensing allowed
Degree of protection	IP20
Acoustic noise at 1 m	56 dBA
Rated input voltage and voltage tolerance	3x480 V, tolerance 409-528 V 3x400 V, tolerance 339-438 V 3x200 V, tolerance 170-219 V 3x208 V, tolerance 177-228 V
Rated input frequency and frequency tolerance	50 or 60 Hz, tolerance 45-65 Hz
Rated input current @ 208vac input	48 A (three phase input)
Input current distortion at rated input current	<5% THD
Input power factor	>0.99 at full load nominal line conditions
Number of input phases	3Phases +N+G (208 and 400V) 3Phases +G (208, 400 and 480V)
Waveform - Normal mode	Sine waveform
Waveform - Stored energy mode	Sine waveform
Transfer - Normal mode / Stored energy	No break
Break time / make time	No break





Feature	Specifications
Output voltage regulation	$\pm 1\%$ static, phase to neutral $\pm 2\%$ static, phase to neutral $\pm 5\%$ dynamic at 100% resistive load step Response time <1
Rated output frequency (nominal)	60 Hz or 50 Hz
Output voltage distortion	< 2% THD linear load < 5% THD non-linear load
Output Overload capability	101...110% load for 10min 111...125% load for 1min 126...149% load for 5 seconds >150% for 300 milliseconds
Rated output voltage	208/120 VAC, three phase +N
Number of input/output phase (multiphase only)	3 Phase
Efficiency (Minimum)	90%
Heat Rejection BTU/hr(kg-cal/hr)	5122(1290)
Range of frequency synch	$\pm 2$ (default), $\pm 0.5$ , or $\pm 1$ Hz with slew rate 1 Hz/s (default)
Stored energy time (for integral Ultra Capacitor at rated load)	Minimum 1 Second (Meet F-47)
Type of bypass (static bypass)	Manual and Automatic transfer
Break time / make time	No break
Galvanic isolation	Yes (for 200 and 480 Vac input)



## **UNICap Semi 2 F47 (SRT)**

### **The Optimal Clean Power Conditioning Solution for FAB Semi-Conductor plants and other industries**

The UNICap Semi 2 F47 (SRT) continually monitors incoming electrical power and removes the surges, spikes, sags, and other irregularities that are inherent in commercial utility power. It injects the appropriate correction voltage in series with the power supply, and supplies clean, consistent power that is imperative to your sensitive electronic equipment to ensure reliable operation.

During any momentary power interruptions the internal Capacitive Store provides emergency power of 1 - 3 seconds at full load to constantly safeguard your operation.

The UNICap Semi 2 F47 (SRT) provides extremely fast reaction time and sub cycle response to sag events that would otherwise cause loads to drop out. UNICap Semi 2 F47 (SRT) is designed for a wide range of voltage systems from 200 to 480 VAC (3-phase). The rated power of each single device is 15KVA, so that multiple configurations will double and/or triple the power - reaching as high as 45 KVA.

This active voltage conditioner will constantly respond to voltage drop up to 1-3 sec and voltage sags in the -15% +10% range with a regulated output in  $\pm 1\%$  range. Installation is simple. The device can be applied to the main service entrance, at branch locations or in front of critical loads. The UNICap Semi 2 F47 (SRT) provides outstanding ROI. It delivers operation productivity that is just not possible with traditional tap switching or Ferro resonant technologies.

### **More Features that make the Difference:**

- Input Current distortion - only 5%
- Eliminates phase shifts - restores a balanced 3 phase output
- Cost-effective - typically pays for itself in less than 1 year
- Continuous sag correction - survives multiple sag events
- High efficiency - ensures minimal operating costs
- On line design - provides +/-1% voltage regulation for +10% -15% voltage input deviations
- Small footprint - significantly reduces required floor space
- High Overload - withstands downstream faults or high inrush currents
- No minimum load - improves operating flexibility for fluctuating loads/processes





In addition to the UNICap Semi 2 F47 (SRT) being eminently suitable to FAB Semi-conductor plants, it is also the preferred solution for a vast range of other industries and applications that are typically affected by SAGs.

## Key Industries

- Semi-Conductor Manufacturers
- Communications
- Steel Mills
- Petroleum & Chemical Processing
- Health Care
- Paper Mills
- Automotives
- Telephone Systems
- HID Lighting
- HVAC Controls
- Medical Equipment

## Certifications

Safety Certifications: IEC 62040-1-1, IEC 60950, EN 62040-1-1,

UL 1778, Semi S2, UL MH29977 (Unirom)

EMC Compliance: EN 50091-2 Class A

Quality: ISO 9001, 2000 and ISO 14001:1996

Markings: CE, UL, CSA

## Equipment and/or Processes

- Textile
- Printing
- Plastics
- Manufacturing Process Controllers
- Variable Speed Drives
- Robotics
- Motor Conductor
- Computers



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