

■ AC Power Systems
For Business-Critical Continuity

Liebert Datawave® Magnetic Synthesizer
High Level Power Conditioning That Delivers The Highest Quality Power



A Simple, Dependable Solution To Power Quality Problems

Weekly malfunctioning of a critical system due to power problems would be unthinkable. But experience shows that this can be a reality — an average site will experience approximately 60 disruptive power disturbances each year. The Liebert Datawave magnetic synthesizer provides the answer by meeting the power quality needs of today's sensitive electronic systems. Available in capacities from 15 to 200 kVA, it conditions and distributes power, while offering convenient system control and monitoring — all in a single self-contained unit. Designed for expandability as your needs change, the system is parallelable, allowing you to add capacity or redundancy.

Reliability

- **Dependable components** — Power conditioning is accomplished using only magnetic components and capacitors — there are no moving parts to wear out or power semiconductors to fail. This rugged technology and simple design results in high reliability, minimal maintenance and many years of dependable operation.
- **Overload and unbalanced loads** — The Liebert Datawave is designed to support load imbalance, commonly caused by adding equipment to the load or by turning loads on and off. It also handles the high inrush and start-up currents demanded by electronic systems.
- **Deep sag protection** — The unit's broad input voltage regulation range protects computer systems and other sensitive electronics from deep sags, which other technologies would consider outages.
- **Transient voltage protection** — The Liebert Datawave's output voltage waveform is independent of input waveform, assuring protection from high energy spikes and ringing transients that can disrupt or damage your electronic systems.
- **Single-phase protection** — Shorting, opening or unbalance of an input phase typically causes motors and transformers to overheat or go off-line. The Liebert Datawave's unique design allows it to maintain 3-phase output voltage, even with the loss of one input phase, up to 60% load.
- **Harmonics isolation** — Today's electronic systems are non-linear loads, which can cause reflected distortion — a problem for conventional power systems. The Liebert Datawave's controlled input current distortion prevents the load's current distortion from affecting the power system, while its controlled output voltage distortion prevents the power system voltage distortion from affecting the load. High neutral current can also be handled without the need for oversizing.

Flexibility

- **Broad size range** — The Liebert Datawave is available in several kVA ratings and input voltage options, allowing flexible system design.
- **Model CA Liebert Datawave** — The basic Datawave power conditioning unit, the CA model is equipped with a main output breaker. It can be used with an existing distribution panel board. It is capable of remote distribution, multiple distribution and paralleling.
- **Model SC Liebert Datawave** — A complete system in a single package, with full conditioning, monitoring and distribution capabilities. The SC model has integral output circuit distribution with flexible output cables.
- **Secure distribution and circuit identification for SC units** — Each breaker has an adjacent identification tag for rapid circuit ID. Each output cable is labeled at each end with circuit number, length, type of receptacle and circuit identification.

Low Total Cost of Ownership

- **Energy efficient** — Nearly unity input power factor means lower input current, while high operating efficiency reduces utility costs and heat output.

Integral Power Monitoring Panel

Provides comprehensive metering and alarms for system power parameters. Monitoring features include:

- True RMS measurements.
- Autoscan of all parameters.
- Adjustable alarm thresholds.
- Programmable custom alarms.
- Battery-backed alarm memory.
- Summary alarm contact.
- Isolated RS-232 ASCII port.

Remote Monitoring Interface

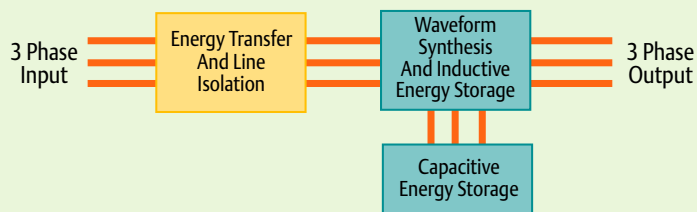
The Liebert Datawave can be interfaced with Liebert SiteScan centralized monitoring systems, allowing single point supervision and control of power conditions as well as alarm management. SiteScan systems provide historical data on power conditions for future requirement planning and troubleshooting.

Service Business of Emerson Network Power

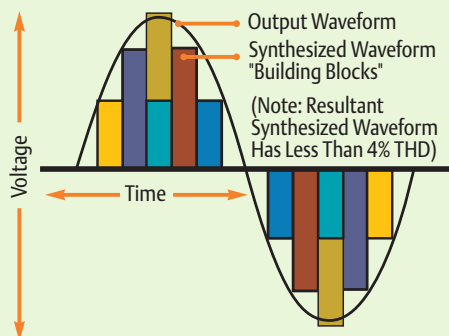
One call to 1-800-LIEBERT puts you in touch with a qualified service representative 24-hours-a-day. Service engineers are factory trained and equipped with the specialized tools and knowledge to respond to any service problem quickly.



Simplified Diagram, Magnetic Power Synthesizer



Synthesized Waveform, "Building Blocks"



Liebert Datawave® Magnetic Synthesizer

Specifications

60Hz							
Output kVA	kW	Three Phase Input Voltage ¹	Input Circuit Breaker (Amps)	Panel Board Poles ²	Dimensions (in) (Wx D xH)	Weight (lbs)	Heat Output (BTU/Hr) @ Full Load PF=1
15	15	208	60	42	36x34x64	1,200	6,350
		480	30				
		600	25				
20	20	208	80	42	36x34x64	1,500	8,450
		480	40				
		600	30				
30	30	208	125	42	36x34x64	1,600	10,125
		480	50				
		600	50				
50	50	208	200	84	44x32x68	2,400	12,850
		480	90				
		600	70				
75	75	208	300	84	44x32x68	2,750	19,270
		480	125				
		600	110				
100	100	208	400	120	66x36x76	3,900	25,700
		480	175				
		600	150				
125	125	208	500	120	66x36x76	4,300	32,100
		480	225				
		600	175				
150	150	208	600	120	104 ³ x36x76	5,800	38,500
		480	250				
		600	225				
200	200	208	800	120	104 ³ x36x76	6,500	51,400
		480	350				
		600	300				

50Hz							
Output kVA	kW	Three Phase Input Voltage ¹	Input Circuit Breaker (Amps)	Panel Board Poles ²	Dimensions (cm) (Wx D xH)	Weight (kg)	Heat Output (kW/Hr) @ Full Load PF=1
15	15	380	40	42	92x87x163	590	1.85
		400	40				
		415	30				
20	20	380	50	42	92x87x163	730	2.47
		400	50				
		415	40				
30	30	380	70	42	92x87x163	775	2.97
		400	70				
		415	60				
50	50	380	110	84	112x81x173	1,200	3.76
		400	110				
		415	100				
75	75	380	175	84	112x81x173	1,375	5.65
		400	175				
		415	150				
100	100	380	225	120	168x92x193	2,000	7.53
		400	225				
		415	200				
125	125	380	300	120	168x92x193	2,230	9.41
		400	250				
		415	250				
150	150	380	350	120	264 ³ x92x193	2,950	11.29
		400	350				
		415	300				
200	200	380	450	120	264 ³ x92x193	3,340	15.05
		400	450				
		415	400				

¹ Other input voltages available. Standard output voltages are 208/120, 480/277, and 600/346 volts.

For voltages not shown, consult factory.

² Panelboards furnished on 'SC' models. Main output breakers furnished on 'CA' models.

³ For ease in shipping and handling, unit shipped in two modules of 52 inches (132 cm) each.

⁴ Other input voltages available. Standard output voltages are 208/120, 380/220, 400/230 and 415/240 volts.

For voltages not shown, consult factory.

General Specifications

Voltage Regulation: For input voltages of $\pm 40\%$, output voltage is within $\pm 5\%$ for any load condition up to full load.

Overload Capacity: Supports 200% load until circuit breaker trips, 5 to 20 minutes typical.

Output Voltage Distortion: Less than 4% total, not additive to input distortion.

Noise Suppression: 120dB common mode and 120dB normal mode.

Efficiency: 89% for 15-20 kVA, 91% for 30 kVA, and 93% for 50-200 kVA at full load.

Input Power Factor: >0.96 half to full load, regardless of load power factor.

Unbalanced Loads: Output voltage is within $\pm 5\%$, -2% with 100% load current unbalance.

Single Phase Protection: For loss of one input phase, output voltages remain within 6% and -4% up to 60% load.

Audible Noise: 55-63 dBA at 5 feet.

Monitored Parameters: Input and Output Voltages; Output, Neutral and Ground Currents; Output Voltage THD; Output Current THD; K-Factor, Crest Factor; Output Power kVA, kW-Hours; Power Factor; Percent Load; Frequency.

Alarm Conditions: Output Over- and Under-voltages; Output Voltage THD; Output Overload; Neutral and Ground Overcurrents; Transformer Overtemperature; Frequency Deviation; Phase Sequence Error; Phase Loss; Five Customer Specified Alarm Conditions.

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