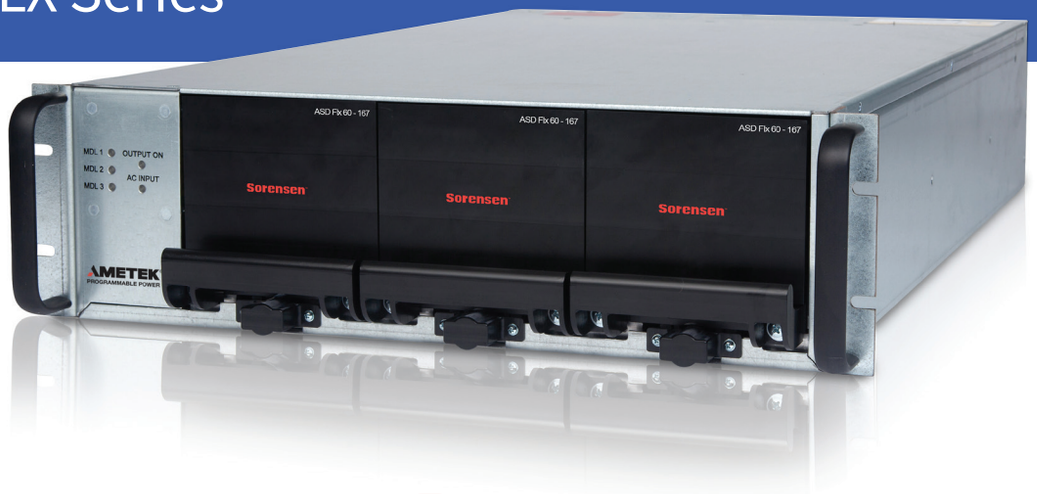
AMETEK®
PROGRAMMABLE POWER

Sorensen ASD FLX Series



Sorensen™

Programmable Precision High Power DC Power Supply

The ASD FLX with its 3U, 30kW water-cooled packaging provides one of the highest power densities available with outstanding output ripple and noise. The water-cooling allows for use in environments that normally exclude air-cooled power supplies.

The ASD FLX gets its name from its modular design with front loading modules for easy access and flexible voltage assignment. The chassis with removable, lightweight modules allows for easy one person installation. Furthermore, this product has a wide range of voltage input, 324 VAC to 528 VAC, giving it the flexibility to be utilized globally in a single configuration.

Advanced digital controls included in the ASD FLX have the ability to allow you to program slew rates, such as current and voltage, as well as program transient response times to emulate specific recovery times. The ASD FLX optional advanced features also allow you to program different "fault levels", enabling detection of output cabling, connections or load problems before they cause critical system problems. The factory flight data recorder feature has the ability to record parameters such as voltage, current, power, load impedance, faults and input voltages, allowing the factory to easily determine "why" you had an unexpected outcome.

The advanced digital monitoring and control features, flexible voltage assignment modules, combined with industry leading power density and reliability makes the Sorensen ASD FLX the supply of choice for stringent and high value processes and applications.

- **Modular, high power density: 30kW in 3U**
- **Front loading modules for flexible configuration or service**
- **Configure modules for available voltage easily with rear panel dip switches**
- **Water-cooled for broad environment operation**
- **Advanced fault detection**
- **Factory "flight data" recorder feature**

Advanced Features Include

- **Precise programming of voltage and current slew rate for sensitive loads.**
- **Industrial field bus interface (Modbus-TCP, Modbus-RTU, Ethernet) enable real-time digital control.**
- **Built in power quality monitoring detects and saves input voltage anomalies which can be saved for later diagnostic analysis.**
- **Programmable analog interface scaling facilitates integrating the ASD FLX with existing systems easily.**
- **Built-in energy meter calculates the delivered energy throughout a process or period of time.**
- **Optional real time clock enables accurate timestamping of events.**

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ASD FLX Series: Product Specifications

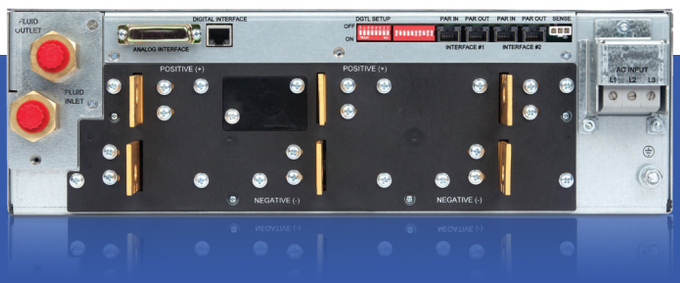
Input	**Type: 3-phase, 3-wire plus ground, neutral not required. Not phase rotation sensitive**		
Voltage Ranges	342VAC to 528VAC (model F) Nominal rating is 380/400/480VAC		
Frequency	Rated 47 through 63 Hz		
Efficiency	>89%, nominal line, full load		
Input Current, per phase, typical		400/380Vac	480Vac
	10kW unit (1 module)	21Arms	17Arms
	20kW unit (2 modules)	42Arms	33Arms
	30kW unit (3 modules)	63Arms	50Arms
Current Inrush	200A Typical		
Power Factor	>0.9 @ Full Load and at nominal line		
Brownout Provisions	Designed to meet SEMI F47-0706, S3, S8, S14 at nominal input voltages		

Output					
Voltage Output	10kW	20kW	30kW	Noise (pk-pk)***	Noise (RMS)***
40Vdc	250A	500A	750A	250mV	60mV
60Vdc	167A	334A	501A	250mV	60mV
80Vdc	125A	250A	375A	250mV	60mV
160Vdc	62A	125A	187A	250mV	60mV

(*) Measured at the load terminals, with 1uF in parallel and 6ft of low-inductance load cable with supply operating at full load and nominal input line voltage.
(**) RMS noise is measured directly across the output terminal with supply operating at full load and nominal input line voltage.
(***) Value is for 30kW, single voltage models. Other variations may increase value by 2x.

Sense	To compensate load cables voltage drop, units can generate 2% additional voltage at full scale of output voltage.

Output	
Load Regulation (Specified at No load to Full load change, nominal AC input)	
Voltage	0.1% of maximum output voltage/ current
Current	0.1% of maximum output voltage/ current
Line Regulation (Specified at ±10% of nominal AC input, constant load)	
Voltage	0.05% of maximum output voltage/ current
Current	0.05% of maximum output voltage/ current
Transient Response	A 50% step load will recover to within 0.75% of original value within 1mSec
Stability	±0.05% of set point after 8 hrs. at fixed line, load and temperature. After 30min warm-up.
Analog Remote Programming for chassis level, three (3) modules installed	
Voltage Accuracy	1% of full scale
Current Accuracy	1.5% of full scale
Power Accuracy	2% of full scale
Voltage Monitoring	1% of full scale
Current Monitoring	1.5% of full scale
Power Monitoring	2% of full scale
Programming range	0-10Vdc, 4-20mA (4-20mA available for advanced digital feature)



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