

**Sorensen**

**SFA**

High Slew Rate Current Source



### Applications

- High power laser diode driver
- Diode pumped solid state laser driver
- Laser diode test and burn-in

# SFA: High Slew Rate Current Source

The SFA family builds on the industry leading Sorensen SGA series to provide a high power current source for laser diode applications. State of the art high power laser diodes require well-regulated current control to avoid catastrophic damage. Under anomalous operating conditions, excessive stored energy in the output circuit of the power supply can result in peak stresses that can permanently damage the device. Providing a constant current regulation mode only, the SFA's low stored energy output minimizes damage potential for sensitive devices as well as enabling a current slew rate of up to 400 A/msec.

## SPECIFICATIONS

### ELECTRICAL CHARACTERISTICS

#### Control Mode

Current Control

#### Front Panel Meter Accuracy

Voltage  $\pm 0.5\%$  of full-scale + 1 digit

Current  $\pm 0.5\%$  of full-scale + 1 digit

#### Load Regulation

(no load to full load, nominal AC input)

Current 0.1% of rated output current

#### Line Regulation

( $\pm 10\%$  of nominal AC input)

Current 0.05% of rated output current

#### Current Ripple

1% p-p of full-scale current

#### Transient Response

Output current recovers to within 1% of current setpoint within 1ms for a 10 to 100% or 100% to 10% step load change

#### Output Slew Rate

250A/ms rise, 200A/ms fall at full load (minimum)

400A/ms typical

#### Current Overshoot

Maximum 8% of full-scale for 0 to 100% change into a resistive load

#### Output Capacitance

60V Models:  $< 2\mu\text{F}$

160V Models:  $< 3\mu\text{F}$

#### Stability

$\pm 0.05\%$  of setpoint after 8-hr. warm-up at fixed line, load, and temperature using remote sense

#### Power Factor

$> 0.9$  typical for 208/220VAC input

$> 0.78$  typical for 380/400VAC input

$> 0.7$  typical for 440/480VAC input

#### Remote Analog Control

Current Setpoint Accuracy

$\pm 0.8\%$  of full-scale output

Overcurrent Protection

$\pm 1\%$  of full-scale output

Resistive Control

0-5 kW = 0-100% Current

Voltage Control

0-5 or 0-10 VDC = 0-100% Current

Overcurrent Protection

0-5.5 VDC = 0-110%

#### Efficiency

87% typical at full load, nominal line

#### Remote Control/Monitor

On/Off control via contact closure, 6-120 VDC or 12-240VAC, and TTL or CMOS switch, current monitor, OCP limit set, summary fault status

#### Overvoltage Protection

Fixed at approximately 110% of the rating compliance voltage. Reset requires cycling the front panel standby power switch off/on

#### Isolated Analog Control (option)

Input to Output Isolation: 500 V

Compliant with maximum terminal float voltage.

Recommended operation under SELV normal conditions.

### ENVIRONMENTAL CHARACTERISTICS

#### Ambient Operating Temperature

0 to 50°C

#### Storage Temperature

-25 to 65°C

#### Temperature Coefficient

Current Setpoint

0.03%/°C of rated current

#### Cooling

Internal Fans. Zero clearance stacking

#### Humidity

0 to 90% at 40°C; 0 to 50% at 25°C

non-condensing

#### Altitude

Full power at 5,000 feet, 10% derating of full power for every 1,000 feet above 5,000 feet

#### Regulatory

Certified to UL/CSA 61010 and IEC/EN 61010-1

CE Compliant (LVD and EMC Directives)

### INPUT POWER OPTIONS

#### Configuration

3-phase, 3-wire plus ground. Not phase rotation sensitive. Neutral not used.

#### Voltage Selection

208/220 VAC  $\pm 10\%$ , 47 to 63 Hz

380/400 VAC  $\pm 10\%$ , 47 to 63 Hz

440/480 VAC  $\pm 10\%$ , 47 to 63 Hz

### PHYSICAL

#### Up to 15kW in 3U

19.00in W x 25.12in D x 5.25inH; 80 lbs.

(48.3cm W x 63.8cm D x 13.3cm H; 36 kg)

#### 15 - 30kW in 6U

19.00in W x 25.12in D x 10.5in x H; 160 lbs.

(48.3cm W x 63.8cm D x 36.7cm H; 73 kg)

### RATINGS

Voltage	5kW	10kW	15kW	20kW	25kW	30kW
0-60V	0-83A	0-167A	0-250A	0-333A	0-417A	0-500A
0-160V	0-31A	0-63A	0-94A	0-125A	0-156A	0-188A



P O W E R E V O L V E D

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