

SENSITRON SEMICONDUCTOR



Solid State Power Management

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135-1009

Solid State Power Management

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www.sensitron.com/solidstate.htm

Benefits:

Sensitron's SSPC technology and products combine functionalities of electro-mechanical breakers, solid state relays and system monitors and provide the following benefits to our customers:

- ✓ Electrical load protection and monitoring: current, voltage and temperature measurements
- ✓ Operational improvements by allowing for diagnostics, prognostics and condition-based maintenance
- ✓ Life cycle cost savings and reduced cost of ownership
- ✓ Increased radius of operation through power budgeting and load shedding

	SOLID STATE POWER CONTROLLERS						
	RELAYS		MODULES		BOARDS		Capabilities
	DC	AC	SPD, SRPC	SPD8A	Cobra	Diamondback	
Voltage	Up to 1200V	Up to 1600V	28 – 375VDC	115/150VAC	28 VDC	28VDC	600 VDC 230 VAC
Current	Up to 100A	Up to 75A	Up to 150A	8A	6x 1A-25A (150A)	8x 0.5A-5A 3x 1.5A-15A 5x 2.5A-25A	350A @ 28VDC 100 @ 375VDC
Current Programmability	Hardware		Hardware	Hardware	Software 1:25	Software 1:10	Software 1:25
Measurements	-		-	-	Current Line Voltage	Current Line Voltage Output Voltage Temperature	Current Line Voltage Output Voltage Temperature
Interface	Discrete		Discrete	Discrete	RS232 CAN*	CAN	CAN RS232, 422, 485 Ethernet
Temp Range	-55°C to 100°C		-55°C to 125°C	-40°C to 85°C	-55°C to 100°C	-55°C to 100°C	-55°C to 105°C
Mounting	Board Chassis		Board Chassis	Board	3U, VME Style	6U, VME Style	Hermetic Enclosure 3U / 6U

*Contact factory

Applications/Markets

- ✓ Manned Ground Vehicles
- ✓ Unmanned Aerial Vehicles
- ✓ Commercial Vessels
- ✓ Test & Industrial Equipment
- ✓ Communication and Command Centers
- ✓ Energy Exploration Equipment
- ✓ Off Highway and Heavy Duty Vehicles
- ✓ Medical Emergency Vehicles

Compliant Documents and standards

- ✓ MIL-STD-1275B, Notice1
- ✓ MIL-STD-704F
- ✓ MIL-STD-217F, Notice 2
- ✓ MIL-STD-461

Solid State Power Controllers-Boards

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Diamondback Series (SPDM) Multi-Channel Solid State Power Controllers

The Diamondback Programmable Multi-Channel Solid State Power Controllers are multi-channel, microcontroller based, COTS embedded boards designed for 28VDC applications. Each channel of the Diamondback has software-programmable current ratings and can operate grouped with other channels to support loads up to 125A. The board has integrated current, temperature and voltage sensing with no derating over temperature. Parameter measurements, system status information and control commands are issued over a serial communications interface.



Features/Benefits:

- 16 programmable channels
- Optional 28Vdc auxiliary power supply
- Total board current of 210A
- Up to 25A per channel
- High inrush current capability
- Paralleling up to 125A
- Parallel / Group Scheduling
- Measurements at better than 5% accuracy
- SAE J11939 compatible & isolated CAN

Features/Benefits:

- 16 electrically-protected channels
- Programmable ratings from 0.25A to 25A
- Parallel channel capability up to 150A
- Total current capability of up to 244A
- Max power dissipation less than 20W
- True I^2t and thermal memory protection
- Normal and SensWide™ instant trip
- Trip-free reset circuit
- Current, temperature, voltage readings

Solid State Power Controllers

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Cobra Series (SPDN) Multi-Channel Solid State Power Controllers



Features/Benefits:

- Up to 6 channels, use individually or in parallel combinations
- 28Vdc input
- Programmable from 1A-25A rated current
- Parallel channel capability up to 150 amps
- RS-232, RS-422, RS-485 or CAN serial interface bus
- Battleshort setting to prevent tripping in extreme circumstances
- Maintenance mode for safe maintenance
- Soft turn-on to reduce EMC issues
- EMI tolerant, ESD tolerant inputs
- Trip reset circuit is trip-free
- Optically isolated, input and outputs
- -55°C to 100°C operating temperature range
- No heat sinking required

28Vdc Line: Up to 150A



Features/Benefits:

- Extremely low power
- No derating over temperature
- Battle short to override trip protection
- Low power dissipation, low weight
- True I²t protection, thermal memory

Part Number	Current	Voltage	Max Voltage Drop@ Amps
SRPC10D28	10 A	28 Vdc	130 mV
SRPC35D28	35 A	28 Vdc	140 mV
SRPC80D28	80 A	28 Vdc	175 mV
SPDC130D28	130 A	28 Vdc	230 mV
SPDC150D28	150 A	28 Vdc	260 mV

Standard Solid State Power Controllers

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www.sensitron.com/sspc.htm

28Vdc Line: Up to 40A

Features/Benefits:

- 28V DC input with very low voltage drop
- Low Weight: 20 gm max
- True I²t protection
- Instant trip protection (50 μsec typ) for loads > 10X Rating
- Repetitive fault handling capability
- Thermal memory
- Built-in R-C filters to avoid latch up during a radiation event
- Programmable over a 5:1 current range
- No derating or heat sinking required
- No external cooling required
- Optional Mil Screening Available
- Board -Mount package



Part Number	Current (Amps) (Program Range)	Voltage	Max Voltage Drop@ Full Load
SPDP05D28*	1 A - 5 A	28 Vdc	73 mV
SPDP10D28*	2 A - 10 A	28 Vdc	95 mV
SPDP15D28*	3 A - 15 A	28 Vdc	113 mV
SPDP20D28*	4 A - 20 A	28 Vdc	105 mV
SPDP25D28*	5 A - 25 A	28 Vdc	107 mV
SPDP30D28*	6 A - 30 A	28 Vdc	123 mV
SPDP40D28	8 A - 40 A	28 Vdc	40 mV

High Voltage: Up to 50A

Features/Benefits:

- 375Vdc input with very low voltage drop
- Low weight: 40 gm max
- True I²t protection upto 8X rating with nuisance trip suppression
- Soft turn-on to reduce EMC issues
- No heatsink required
- Available as 2 families; programmable from 30% to 100% rating
- Flange-mount package



Part Number	Current	Voltage	Max Voltage Drop@ Amps
SPDP03D270	3A	270 Vdc	260 mV
SPDP10D270	10A	270 Vdc	270 mV
SPDP03D375	3A	375Vdc	260 mV
SPDP10D375	10A	375Vdc	270 mV
SPDP50D375	50A	375Vdc	440 mV

Solid State Relays/Contactors

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www.sensitron.com/ssr.htm

High Voltage / High Current DC Solid State Relays



Features/Benefits:

- Up to 1200V blocking, 50A continuous current
- -55 °C to 100°C operation, three point mounting plate
- Fast turn on/turn off
- Low power control
- Low "on" state resistance
- Package Size: 1.4" x 2.6" x 0.5"

*Part Number	Voltage	Current (@100°C)	Typ Voltage Drop
SSR100D005	55 V	100 A	0.35 V
SSR100D010	100 V	100 A	0.93 V
SSR100D020	200 V	100 A	1.53 V
SSR015D060	600 V	15 A	1.83 V
SSR025D080	800 V	25 A	4.83 V
SSR050D120	1200 V	50 A	2.50 V

*Other currents available for specified voltage. Contact us at sales@sensitron.com for more information.

AC Solid State Relay



Features/Benefits:

- Back-to-back SCR output for high reliability
- 75A rating upto 85°C base plate temperature
- 1600V surge voltage withstand capability
- Zero voltage turn-ON switching to reduce EMC issues
- Flexible design configuration
- Customizable terminal & device options
- Similar to Teledyne SSR1600660D75

Part Number	Output Current	Voltage	Max Voltage Drop
SCP-5285	75 A	48V - 660 Vac	1.7 V

Solid State Power Controllers

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www.sensitron.com/sspc.htm

115Vac/150Vdc Solid State Circuit Breaker

Features/Benefits:

- Drop-in equivalent to a DPST relay with a common single side isolated control
- DSP controlled w/software reconfiguration for easy addition of new features
- 115V AC Input: Current rating of 8A with very low drop
- Very high control circuit isolation: 1500V DC to either pole
- True 2-Pole operation: 500V DC isolation between poles
- Internally generated isolated supply to drive the switch
- AC and DC operation; Two channel with simultaneous control
- High Overload Capability up to 250A

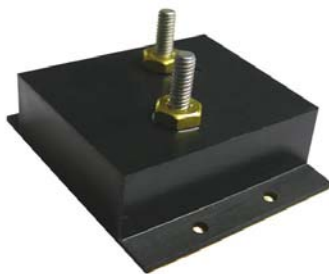


Part Number	Current (Amps)	Voltage	Max Voltage Drop@Amps
SPD8A115	8 A	150Vdc	180 mV

MIL-STD-1275 Module (SCP-5282-3)

Features/Benefits:

- Suitable for +28V DC systems
- Allows the use of 55V high efficiency FET
- Increased system reliability through eliminating avalanche FET operation
- Clamping below 55Vdc for both 100V and 250V pulse
- High pulse power capability
- Small size and light weight
- MIL-STD-1275 Compliant



Part Number	Reverse Stand-Off Voltage V_{WM} (Volts)	Max Reverse Leakage @ V_{WM} I_D (μ A)	Min Breakdown Voltage @ 10 mA $V_{(BR)}$ (Volts)	Max Clamping Voltage @ I_{PP} V_c (Volts)	Max Peak Pulse Current I_{PP} (Amps)
SCP-5282-3	33	40	36.7	49	110

Sensitron Advantage
 True I²t and instant trip protection
 Software and hardware current rating programmability
 Accurate current, temperature and voltage measurements
 Isolated discrete or serial interface controls & load monitoring
 False trip and EMC reduction
 Built in test feature

Please visit our website:

<http://www.sensitron.com>

SENSITRON SEMICONDUCTOR

Part Number: GO
 Product Type: Select a Product Group GO

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PRODUCT HIGHLIGHT:
Solid State Power Management MULTI-CHANNEL

Sensitron now offers Multi-Channel Solid State Power Controllers that provide current, temperature, and output voltage measurements at better than 5% accuracy! [more...](#)

YOUR POWER SOLUTIONS PROVIDER

Sensitron is a leading manufacturer of high reliability power electronic solutions. Markets served include the complete spectrum of high reliability markets including space, aerospace, and defense.

Discrete Diodes and Die Products

Zener Diodes
 TVS Diodes
 Rectifier Diodes
 Wafers Chips
 Chips with Moly
[more...](#)

Motor Controllers and Drivers

Speed/Velocity, Sensorless, and Torque Fully Integrated Motor Controllers, MOSFET and IGBT Drivers, MIL-STD-740 and MIL-STD-461 Compliant 3-Phase Brushless [more...](#)

In The News:

October 2009- Sensitron offers a Digital Vector Motor Drive that is a DSP based motor controller designed for high reliability and industrial motor control applications [more...](#)

September 2009- Sensitron is please to announce that a franchise agreement has been signed with USI Electronics for the distribution of space level products. For a list of [more...](#)

Power Rectification

Schottky Rectifiers
 Bridge Rectifiers Discrete IGBT and MOSFETS SIC Schottky Rectifiers and Bridges Voltage Regulators [more...](#)

Solid State Power Management

Cobra Series of Programmable Multi-Channel Solid State Power Controllers, line of programmable Solid State Power Controller Modules, Solid State Relays [more...](#)

New Product:

HIGH VOLTAGE ULTRAFAST RECTIFIERS

Sensitron offers high voltage ultrafast rectifiers, from 1200V to 1500V and up to 3A, which are suitable for high efficiency applications. The SRS Series of ultrafast rectifiers uses single chip construction technology, and [more...](#)

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