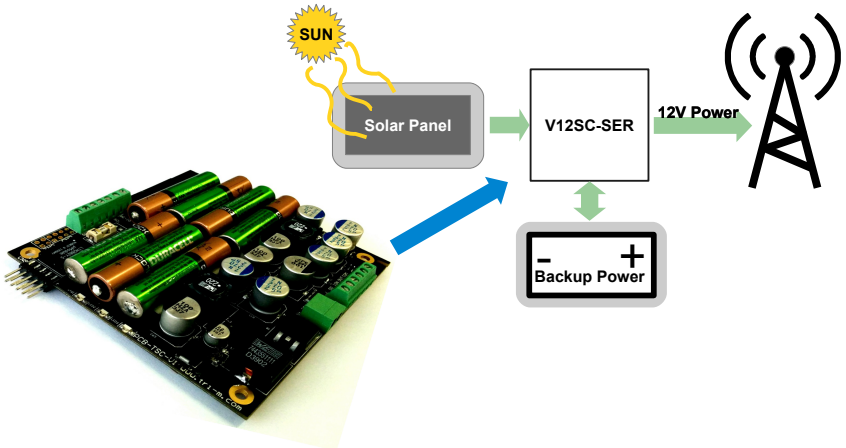
V12SC-SER[-UPS]

PC/104 Uninterruptable Power Solution (UPS)

Rugged Power, 12V @ 5A



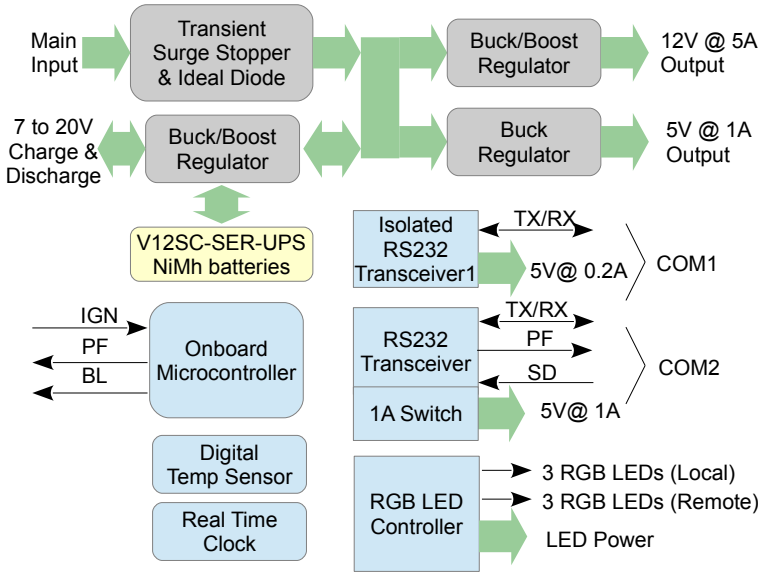
The V12SC-SER when integrated with a backup power source is a rugged uninterruptable power system (UPS) supplying up to 12V@ 5A and 5V@ 1A for use in remote and hostile environments. The V12SC-SER can be powered from a solar panel or from a vehicle power source. The input power protection is designed to MIL-STD-1275 requirements and can handle transients and load dumps found on heavy vehicles such as large mining trucks.

The PC/104 footprint is easily integrated with other modules such as CPU, communication and I/O modules . The universal charger can handle NiCd, NiMh, SLA, Li-Ion, ultra capacitors and SMBus backup power sources. The V12SC-SER-UPS includes on-board NiMh batteries providing 6.3 watt-hr of backup energy.

The V12SC-SER has two RS232 ports for data monitoring and control. One port has 2500Vrms isolation and includes 5V@ 200mA making it ideal for remote sensors for sunlight intensity and solar pnel temperature. The second port includes 5V@ 1A of power for devices such as a low power CPU. The 5V power on the serial ports are independently switchable to the 12V output.

Three full color RGB LED indicators on the V12SC-SER provide operational status and an additional three off board RGB LED indicators can be used for remote status indication. The LEDs can be remotely controlled over the RS232 ports permitting indication of other functions.

V12SC Block Diagram



Features

- Solar panel input compatible. When the energy from the solar panel is insufficient the V12SC suppliments by drawing power from the backup power source.
- PC/104 footprint and height compatible
- Output power
  12V @ 5A
  5V @ 1A (On serial port 2)
  5V @ 0.2A (isolated 5V on serial port 1)
  (Note: V12SC-SER-UPS is limited a maximum of 35 watts by the on-board NiMh batteries)
- Wide input range, 7V to 40V DC
- Transient suppression designed to MIL-STD-1275 levels
- Mechanical shock & vibration designed to MIL-STD-810 levels
- V12SC-SER: Smart charger for NiCd, NiMh, SLA, Li-Ion, ultra capacitors and SMBus.
  V12SC-SER-UPS: Integrated NiMh backup batteries 6.3 watt-hr (nominal)
- Operating temperature range
  V12SC-SER: -40°C to 85°C
  V12SC-SER-UPS: -10°C to 50°C
  (limited by on-board NiMh batteries)
- Isolated RS232 port for remote sensors and data monitoring complete with isolated 5V to power remote sensors.
- RS232 port for local embedded CPU data monitoring and control complete a switched 5V @ 1A power to power the embedded CPU (such as a VDX104).

Related Products

- VDX104-1E: sub 2 watt X86 PC/104 embedded processor with onboard DDR2 RAM, RS232, USB and ethernet.
- TCB1522: Communication module with isolate RS232, RS485, CANbus and MultiTech universal sockets.
- IR104: I/O module with 20 optoisolate digital inputs, 20 relay outputs.
- TBP4xxx: Ultra capacitor 500 to 4,000 joules backup energy modules.

Toll Free 800.665.5600 (North America)
Direct 604.814.5069
sales@tri-m.com
www.tri-m.com

Specifications

Electrical

Input Voltage Range and Protection

- 7 to 40V input range
- Transient surge stopper designed to MIL-STD-1275 levels.
- 12A high current fuse on input.

Output Power

- 12V @ 5A
- 5V @ 1A (On serial port 2, CN10)
- 5V @ 0.2A (Isolated 5V on serial port 1, CN9)

(Note: V12SC-SER-UPS is limited a maximum of 35 watts by the capabilities of the on-board NiMh batteries)

Backup Power Charging and Protection

- 9 to 20V @ 7A charging
- 8.4V @ 6.3 watt-hr [22,600 joules] (nominal V12SC-SER-UPS)
- High current fuse 10A rated, socketed and field replaceable
- High temperature thermal cutout 84C rated (V12SC-SER-UPS)

Mechanical

Dimensions

- Footprint: 3.55 x 3.775" [90 x 90mm]
- Height: 0.6" [15.24mm]

Weight

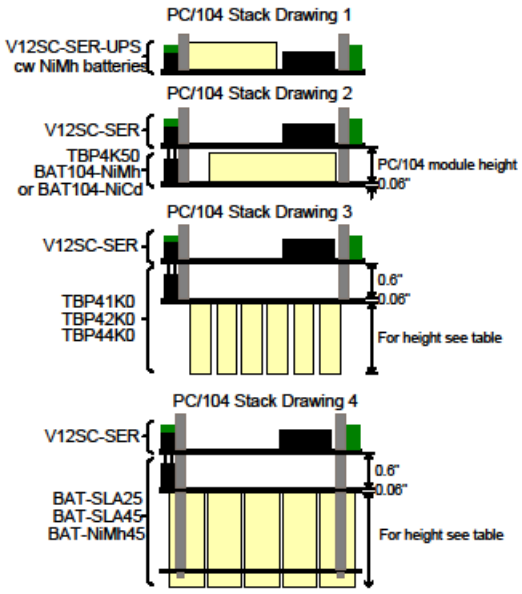
- 2.9 oz [82 grams] (V12SC-SER)
- 6.1 oz [173 grams] (V12SC-SER-UPS)

Environment

Operating Temperature

- -40 to 185degF [-40 to 85degC] (V12SC-SER)
- -10 to 50degC [14 to 122degF] (V12SC-SER-UPS, limited by onboard batteries)

V12SC-SER[-UPS] Backup Options



					Inches	MM	Inches	MM	Inches	MM	Drawing
V12SC-SER-UPS		NiMh	6.3	22600	3.55	90	3.775	96	~	~	1
V12SC-SER mated with	TBP4K50	Ultra capacitor	0.14	500	3.55	90	3.775	96	0	0	2
	TBP41K0	Ultra capacitor	0.27	1000	3.55	90	3.775	96	1.83	46.5	3
	TBP42K0	Ultra capacitor	0.55	2000	3.55	90	3.775	96	1.83	46.5	3
	TBP44K0	Ultra capacitor	1.11	4000	3.55	90	3.775	96	2.41	61.5	3
	BAT104-NiCd	NiCd	5.04	18100	3.55	90	3.775	96	0	0	2
	BAT104-NiMh	NiMh	22.7	81600	3.55	90	3.775	96	0	0	2
	BAT-SLA25	SLA	25	90000	3.55	90	3.775	96	2.42	61.5	4
	BAT-NiMh45	NiMh	37.8	136000	3.55	90	3.775	96	1.5	38	4
	BAT-SLA45	SLA	45	162000	3.55	90	3.775	96	3.78	96	4

Ordering Information

Models

V12SC-SER[-Cy]-PBF

PC/104 size, 12V main output, 5V low power output, smart charging output for external backup power source, solar panel input compatible.

V12SC-SER-UPS[-Cy]-PBF

Same as V12SC-SER but includes onboard NiMh batteries. External backup power sources not supported. NOTE: Power and temperature limitations due to onboard NiMh capabilities.

Options

where [-Cy] is the optional conformal coating selection.
"-CS" is silicon conformal coating

"-CU" is urethane conformal coating

"-CH" is Humiseal #1B73 conformal coating.