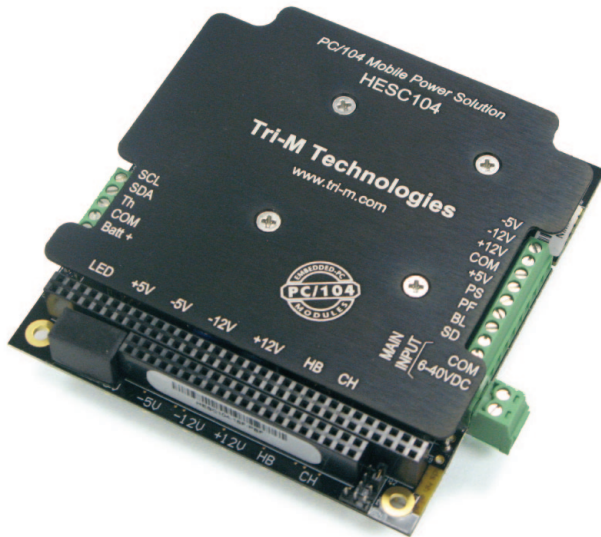


# ⚡ HESC104

60 Watt High Efficiency Power Converter  
with Smart Charging

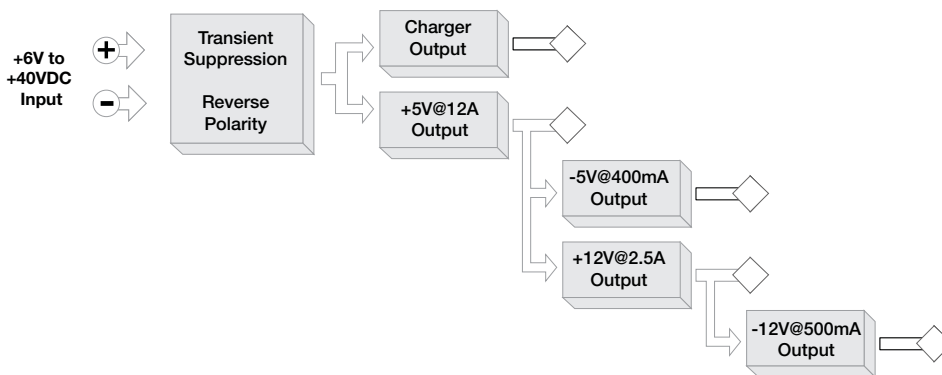
**POWER OS TRI-M**  
TECHNOLOGIES INC.

## PC/104 Power Solution



The HESC104 when mated with a Tri-M backup power module creates a complete uninterruptable power solution (UPS) in a PC/104 footprint. An on-board microcontroller provides advanced power management, smart backup power charging and command/monitoring over the PC/104 bus. The HESC104 has a 6 to 40V wide input range and is designed for hostile environments of extreme temperatures and vibration. The universal smart charger can handle any backup power chemistry including NiCd, NiMh, SLA, Li-Ion, SMBus batteries and ultra capacitors.

### Block Diagram



### Key Specifications

- **PC/104 Compliant**
- **Multi-stage Charging of:**
  - Ultra Capacitors,
  - SLA batteries
  - NiCd batteries
  - NiMh batteries
  - Li-Ion batteries
  - SMBus batteries
- **5000W Transient Suppression**
- **Wide Input Voltage Range**
  - 6V to 40V DC
- **Outputs Power:**
  - 5V @ 12A
  - 12V @ 2.5A
  - 5V @ 400mA
  - 12V @ 500mA
- **PC/104 I/O port permits command and monitoring of HESC104 functions including voltage, current & temperature**
- **Extended Temperature**
  - 40°C to +85°C

### Advantages

- **Rugged Design**
  - Designed to meet MIL standards
- **Complete UPS solution when mated with backup power module**
- **Smart charging supports any backup chemistry**
- **The power management is configurable for all systems**

### Our Capabilities

- **Application Engineering**
- **Rapid Development**
- **Engineered Systems**
- **Custom Software**
- **Industry Standards & Certification**
- **Exceptional Customer Experience**

# Specifications

## Electrical Specifications

<b>Main Outputs</b>	
5V Output1	12A
12V Output	2.5A
-5V Output	400mA
-12V Output	500mA
Input Voltage	6V to 40V DC

## Charger Rating

<b>Current</b>	0A to 4A
<b>Voltage</b>	9.5V to 19.5V

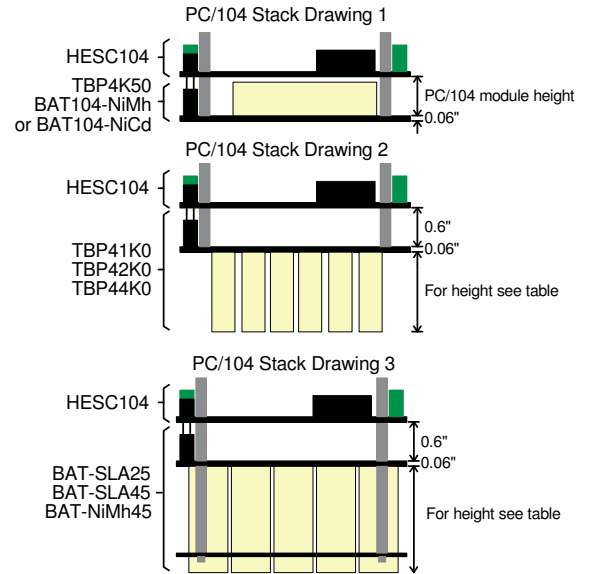
## Mechanical/Environmental

<b>Dimensions</b>	90 × 96 × 15mm (3.55 × 3.75 × 0.55")
<b>Weight</b>	185.92g / 6.56oz

## Environmental

<b>Temperature Range</b>	-40°C to +85°C (-40°F to +185°F)
<b>MTBF</b>	155,000 hours

## HESC104 Stack Arrangement



HESC104 mated with	Backup Energy			Size						
	Chemistry	Watt-hr	Joules	Width		Depth		Height (in addition to one PC/104 height when mated with HESC104)		PC/104 Stack Drawing
				Inches	MM	Inches	MM	Inches	MM	
TBP4K50	Ultra capacitor	0.14	500	3.55	90	3.775	96	0	0	1
TBP41K0	Ultra capacitor	0.27	1000	3.55	90	3.775	96	1.57	40	2
TBP42K0	Ultra capacitor	0.55	2000	3.55	90	3.775	96	2.36	60	2
TBP44K0	Ultra capacitor	1.11	4000	3.55	90	3.775	96	2.36	60	2
BAT104-NiCd	NiCd	5.04	18100	3.55	90	3.775	96	0	0	1
BAT104-NiMh	NiMh	22.7	81600	3.55	90	3.775	96	0	0	1
BAT-SLA25	SLA	25	90000	3.55	90	3.775	96	2.42	61.5	3
BAT-NiMh45	NiMh	37.8	136000	3.55	90	3.775	96	1.5	38	3
BAT-SLA45	SLA	45	162000	3.55	90	3.775	96	3.78	96	3

**Note:** For detailed dimension, connector, and pin spacing information, please see the User Guide.

## Ordering Information

### Models HESC104-18F[-x][-Cy]-PBF

where [-x] is the optional bus configuration

“-x” is blank, stack through PC/104 bus

ex: HESC104-18F-PBF, 60W Smart Charger PC/104 power supply, stack through PC/104 bus.

“-x” is “-N”, no PC/104 bus

ex: HESC104-18F-N-PBF, 60W Smart Charger PC/104 power supply, no PC/104 bus.

“-x” is “-NS”, non-stack through PC/104 bus

ex: HESC104-18F-NS-PBF, 60W Smart Charger PC/104 power supply, non-stack through PC/104 bus.

### Options

where [-Cy] is the optional conformal coating selection

“-CS” is silicon conformal coating

“-CU” is urethane conformal coating

“-CH” is HumiSeal conformal coating

ex: HESC104-18F-CH-PBF; 60W Smart Charger PC/104 power supply, stack through PC/104 bus HumiSeal conformal coating.