

## MajorVTC610 DC/DC Voltage Converter

Step up a 12 VDC battery to between 13.5 and 17.0 V or 24 and 27.5 VDC in 0.5 VDC increments (via 3 position DIP switch), or stabilize a 12 or 24 VDC power system.

Safety features include reverse input protection, low input voltage alarm, low output voltage alarm, over temperature shutdown and alarm, and output overvoltage crowbar. If the input voltage exceeds the regulated output voltage, the unit simply passes the voltage through with full LC filtering and a single schottky diode drop (0.5 VDC or less). Optional features include a dry contact alarm relay output, and remote panel monitoring with On/Off control.

Applications include temporarily brightening 12 Volt headlights or work lights, increasing voltage into an automotive or marine ignition system for hotter spark and/or prevention of failures due to voltage drop during engine start, stabilizing 12 and 24 VDC power systems in marine, automotive or aeronautical environments and more.



### Product Features

- **Adjustable Output Voltage**
- **Audible & Visual Indicators**
  - ▶ For constant current, low input voltage, low output voltage & over-temperature
- **Extremely Rugged**
  - ▶ Well suited for marine and other demanding environments
- **High Tolerance**
  - ▶ For shock and vibration
- **Ultra-Quiet**
  - ▶ Low EMI operation
- **Protection**
  - ▶ Current limiting protection
  - ▶ Output over-voltage crowbar
  - ▶ Reverse input protection
  - ▶ Dry contact output fail relay
- **Warranty**
  - ▶ 3 year parts and labour
- **Options**
  - ▶ Remote Control
  - ▶ Ruggedization against shock and vibration
  - ▶ Conformal coating
  - ▶ Parallel output diodes to allow connection between 2 or more identical units
  - ▶ Can be built to Class 1, Division 2 Standards for Hazardous Duty
  - ▶ 19" Panel Rackmount
  - ▶ Extra wide Temperature Range -40°C to +70 °C

## Product Specifications

Mechanical & Environmental	
Operating Temperature Range	0 to -40°C @ Maximum Output; Derate Linearly 2.5% per °C from 40°C
Humidity	0-95°C @ Relative Humidity (non-condensing) with optional conformal coating
Audible Noise	None Ødb @ 3 feet
Typical Service Life	>10 years (87,600 hours)
Isolation	Input Case & Input-Output 1500 VDC; Output Case 500 VDC
Dimensions (L x W x H)	14.5 x 9.9 x 3.0 in / 36.8 x 25.1 x 7.6 cm
Physical	1 inch (2.5 cm) clearance all around; Marine grade aluminum; Black powder epoxy coat, 18-8 Stainless steel fastenings
Weight	4.0 lbs / 1.8 kg
Connections	4 contact output terminals
Warranty	3 years
Safety	CSA/UL Pending

## Model Selection Guide

MajorVTC Model	610-48	610-72	610-110	610-250	610-300
Nominal Input Voltage	48	72	110	250	300
Input Voltage	40-65	65-100	100-140	230-280	280-360
Input Amps	20.0	13.3	8.0	3.5	2.9
Input Fuse	25	15	10	4	24
Noise on Input	< 50 mV	< 50 mV	< 50 mV	< 50 mV	< 50 mV

Nominal Output Voltage	12	24	32	48
Output Voltage	13.6 ± 0.05	27.2 ± 0.05	36.3 ± 0.05	54.4 ± 0.05
Output Adjustment	±0.5	±0.5	±0.5	±0.5
Output Amps Continuous	0-40	0-20	0-15	0-10
Output Amps Maximum	45	25	18	12.5
Output Crowbar	16.0 ± 0.05 V	32.0 ± 1.0 V	42.7 ± 1.3 V	63.9 ± 2.0 V
Output Ripple & Noise	< 50 mV	< 50 mV	< 50 mV	< 50 mV
Transient Response	< 2 V for 50% Surge	< 2 V for 50% Surge	< 2 V for 50% Surge	< 2 V for 50% Surge
Switching Frequency	60 ± 2 kHz	60 ± 2 kHz	60 ± 2 kHz	60 ± 2 kHz
Idle Power	< 10 Watts	< 10 Watts	< 10 Watts	< 10 Watts
Line & Load Regulation	< ±0.5%	< ±0.5%	< ±0.5%	< ±0.5%
Duty Cycle	Peak 20% for 10 min max; Continuous 100% for 24 hours/day	Peak 20% for 10 min max; Continuous 100% for 24 hours/day	Peak 20% for 10 min max; Continuous 100% for 24 hours/day	Peak 20% for 10 min max; Continuous 100% for 24 hours/day
Efficiency	> 85% @ Maximum Output	> 85% @ Maximum Output	> 85% @ Maximum Output	> 85% @ Maximum Output

