

Voltage Doubler

P/N: AX081600

The highly efficient Voltage Doubler offers a low cost solution for applications where 24V electronics are deployed on 12V systems. It doubles the input voltage over its operating range to enable 12V batteries to be used with electronics or other loads requiring 24V power.

Features:

- 6-28 Vdc input power (12Vdc nominal) from battery
- Enable Input from vehicle ignition switch
- Output Disable Input
- Reverse polarity, over voltage, under voltage and short circuit protections
- 2 outputs to a transmission
 - Vin x 2 (+/-5%) up to 32V max., 10A
 - Vin x 2 (+/-5%) up to 32V max., 1A switching
- Typical efficiency of 93%
- -40 to +85 °C (-40 to 185 °F) operating temperature
- Automotive transient protections, EMC compliant (CE mark)
- Fully sealed cast aluminum housing and connectors for mounting on the vehicle frame or chassis
- 2 Deutsch IPD connectors, DTP13-4P and DT13-06P
- Compact size



Applications:

- Heavy Trucks (On-highway)

Ordering Part Numbers:

Voltage Doubler P/N: **AX081600**

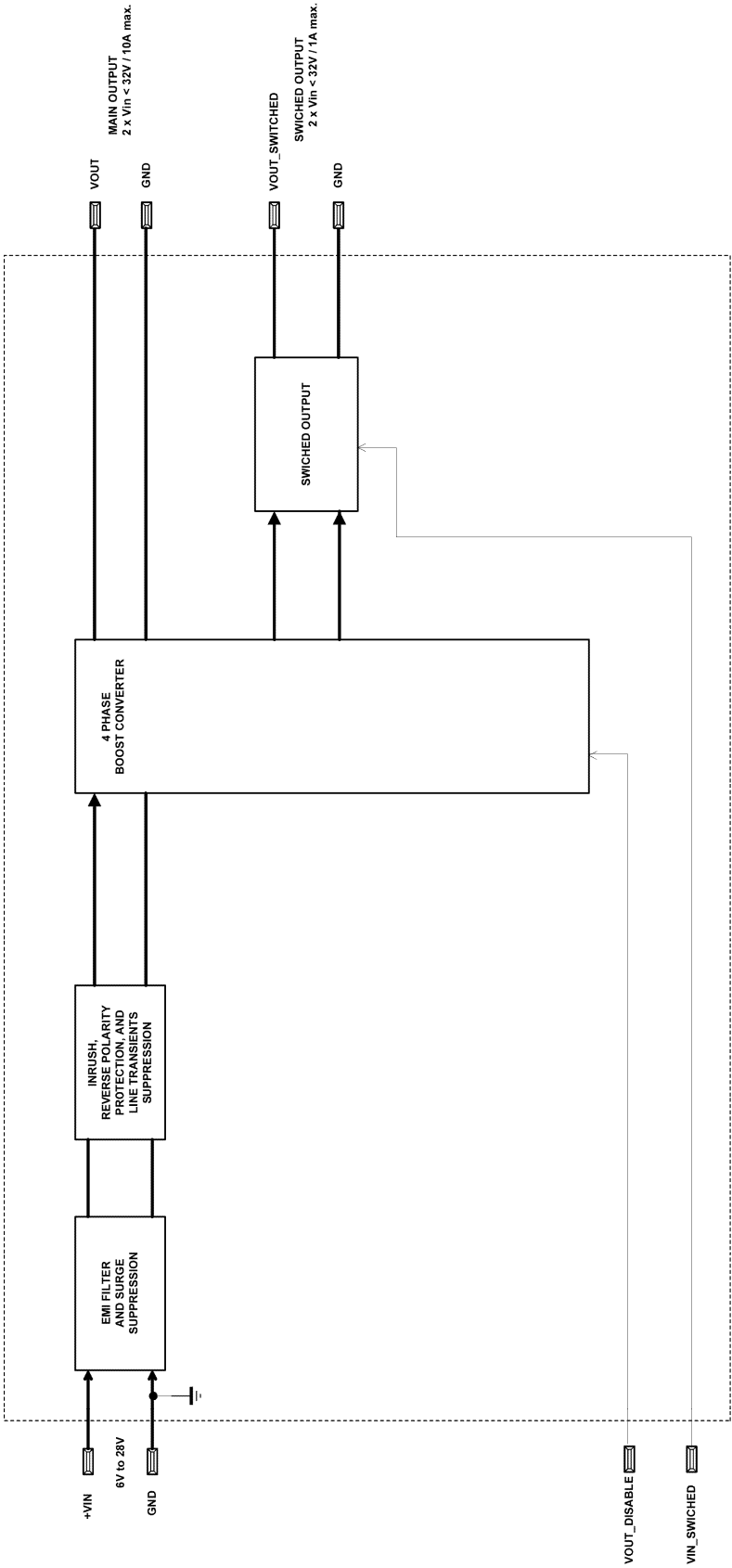
Accessories:

2m wire harness P/N: **AX070103**

2m wire harness P/N: **AX070124**

To purchase the Voltage Doubler as a KIT (AX081600 converter, AX070103, AX070124 wire harnesses), the ordering P/N is **AX081600K**.

BLOCK DIAGRAM



Technical Specifications:

All specifications are typical at nominal input voltage and 25°C unless otherwise specified.

Specifications are indicative and subject to change. Actual performance will vary depending on the application and operating conditions. Users should satisfy themselves that the product is suitable for use in the intended application. All our products carry a limited warranty against defects in material and workmanship. Please refer to our Warranty, Application Approvals/Limitations and Return Materials Process as described on www.axiomatic.com/service.html.

Inputs

Power Source - Battery	12 Vdc nominal
Operating Voltage Range	6 to 28 Vdc
Typical Input Current	25ADC @ 12Vdc
Enable Input (Vin_Switched)	Digital Input, Active High Refer to Table 1.0.
Voltage Output Disable (Vout_Disable)	Digital Input, Active "High" With a change to "low" state, this input turns off power to the Switched_Output load.

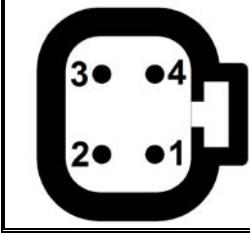
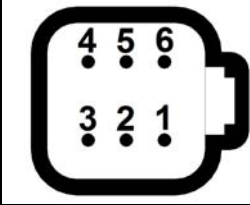
Table 1.0 - Input Signals		Outputs	
Input Signals		Switching Output 2	Output 1
Enable Input (Vin_Switched) 0 when =<3.2V to 3.7V 1 when=>4V to 4.5V	Voltage Output Disable (Vout_Disable) 0 when=<3.2V to 3.7V 1 when=>4V to 4.5V		
1	0	ON	ON
1	1	ON	ON
0	1	OFF	ON
0	0	OFF	OFF

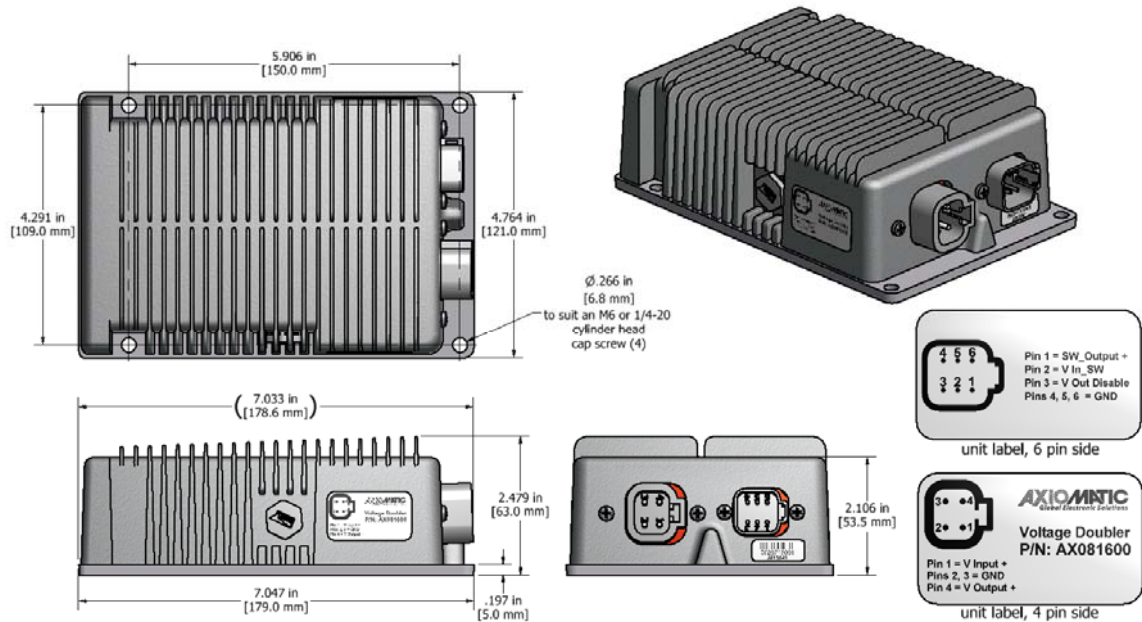
Outputs

Outputs	2 outputs
Output 1	10A, 2 x Vin ± 5% 32V maximum ≤3A at Vin = ≤ 8V at Vout1
Switching Output 2	1A, 2 x Vin ± 5% 32V maximum
Output Voltage Ripple	V _{O(RIPPLE)} ≤ 500 mVpp

General Specifications

Standby Current	1 mA
Typical Efficiency	93%
Packaging	Cast Aluminum housing, integral gasket and 2 Deutsch IPD connectors 6.890 x 4.764 x 2.479 inches (175.00 x 121.00 x 62.96 mm) L x W x H including integral connectors (Refer to dimensional drawing.)
Approvals	CE
Vibration	ISO 16750-3, Chapter 4 with specified deviations IEC 60068-2-47 Test F and Test G 9.66 Grms
Protection	IP67
Mounting	Mount on the vehicle frame or chassis.
Weight	3.45 lbs. (1.56 kg)
Temperature Rating	Operating: -40 to 85°C (-40 to 185°F) Storage: -55 to 125°C (-67 to 257°F)

Electrical Pinout	<p>Power Connector: 1 Deutsch IPD P/N: DTP13-4P</p>  <table border="1" data-bbox="917 216 1291 447"> <thead> <tr> <th>Pin #</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>V Input +</td> </tr> <tr> <td>2</td> <td>Ground</td> </tr> <tr> <td>3</td> <td>Ground</td> </tr> <tr> <td>4</td> <td>V Output + (10A)</td> </tr> </tbody> </table> <p>Connector 2 : 1 Deutsch IPD DT13-06P</p>  <table border="1" data-bbox="917 506 1291 709"> <thead> <tr> <th>Pin #</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Switched Output+ (1A)</td> </tr> <tr> <td>2</td> <td>Vin_switched</td> </tr> <tr> <td>3</td> <td>Vout_Disable</td> </tr> <tr> <td>4</td> <td>Ground</td> </tr> <tr> <td>5</td> <td>Ground</td> </tr> <tr> <td>6</td> <td>Ground</td> </tr> </tbody> </table>	Pin #	Description	1	V Input +	2	Ground	3	Ground	4	V Output + (10A)	Pin #	Description	1	Switched Output+ (1A)	2	Vin_switched	3	Vout_Disable	4	Ground	5	Ground	6	Ground
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Mating Wire Harnesses	<p>To connect with the Power Connector (Deutsch IPD DTP13-4P), a 2m wire harness is available, P/N: AX070103. It is comprised of Deutsch P/N: DTP06-4S, WP4S and four contact sockets 0462-203-12141 with 2m (6.5 ft.) of 12 AWG unterminated lead wires. It has the following wire colors and pin out.</p> <p>Pin# 1 Red (Batt+) Pin# 2 Black (Batt-) Pin# 3 White/Black (Output-) Pin# 4 White/Red (Output+)</p> <p>To connect with Connector 2 (Deutsch IPD DT13-06P) a 2m wire harness is available, P/N: AX070124. It is comprised of Deutsch P/N: DT06-6S, W6S and six contact sockets 0462-201-16141 with 2m (6.5 ft.) of unterminated lead wires.</p> <p>Pin# 1 Red (Switched Output+) Pin# 2 Green (Vin_switched) Pin# 3 Grey (Vout_Disable) Pin# 4 Black (Ground) Pin#5 Black (Ground) Pin#6 Black (Ground)</p>																								



Form: TDAX081600-07/16/14