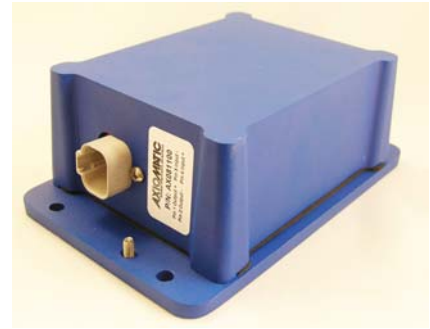


TECHNICAL DATASHEET #TDAX081100
(12V) 24VDC to 24VDC Converter
72W
P/N: AX081100K

Isolated 24Vdc power suitable for use with communications equipment or to protect sensitive battery-powered electronics...

- 12Vdc or 24Vdc to 24Vdc Converter, 72 Watts
- Input operating voltage range from 9 to 32Vdc
- Conditioned output of 24Vdc \pm 0.4%, 3A
- (Factory settings from 23.57-26.62VDC output are available on request.)
- No minimum load requirement
- Switch-mode operation delivers high efficiency
- Reverse polarity protection
- Input and output isolation
- Robust, rugged and highly reliable
- Compact size for ease of mounting in confined spaces
- Connects via a 4-pin plug with 2 meter lead wires
- Suitable for moist, high shock and vibration environments
- Operational from -40 to 85°C
- IP67 protection



Applications:

SCADA Systems
Remote Terminal Units (RTU)
Switchgear
Motor Control Centers

Charging/Cranking Battery Based Power Supply Systems
Power Conditioning for Controls & Instrumentation utilizing
DeviceNet or other industrial networks
Off-Highway Equipment Control Systems
Marine Auxiliary and Propulsion Systems

These applications are found in a variety of industries including process industries, general manufacturing, electric utilities, oil & gas, water/wastewater and mobile equipment.

Description: The DC-DC Converter provides clean 24Vdc power suitable for instrumentation and control networks or process equipment. For operation under the most harsh and demanding conditions, the unit is fully sealed and enclosed to protect against moisture, shock and vibration. Power from a battery or other source in the range of 9-32Vdc (12Vdc or 24Vdc nominal) is converted to a 24Vdc output regulated to 0.4%. Input and output isolation is provided. The unit is designed with extremely rugged surge and transient suppression in addition to sustained over/under voltage protection. The nominal nameplate rating is 72 Watts of output power. The DC-DC Converter has an efficiency rated at >88%.

Ordering Part Numbers:

Converter with Wire Harness KIT:

AX081100K (KIT AX081100 DC/DC Converter, WH-DT06-4S-S-16AWG-2M Wire Harness)

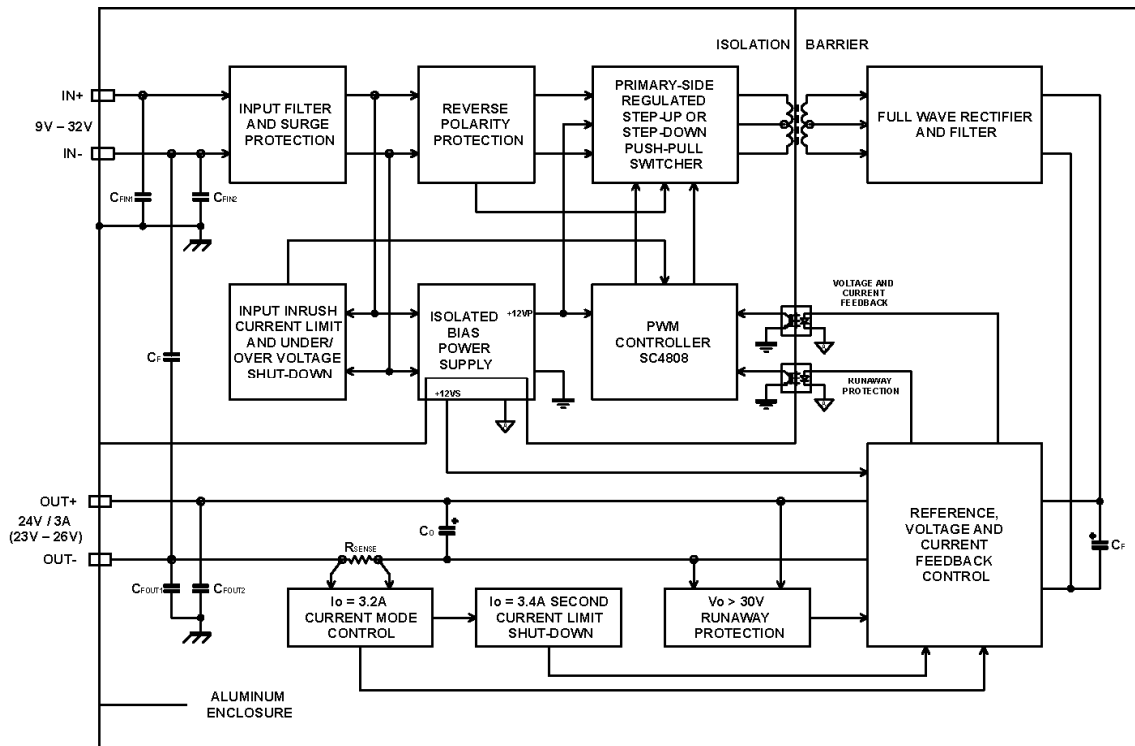
Items can also be ordered individually.

Converter: **AX081100**

Mating Wire Harness, 2 m: **WH-DT06-4S-S-16AWG-2M**

Mating Plug Kit: **PL-DT06-4S**

Block Diagram



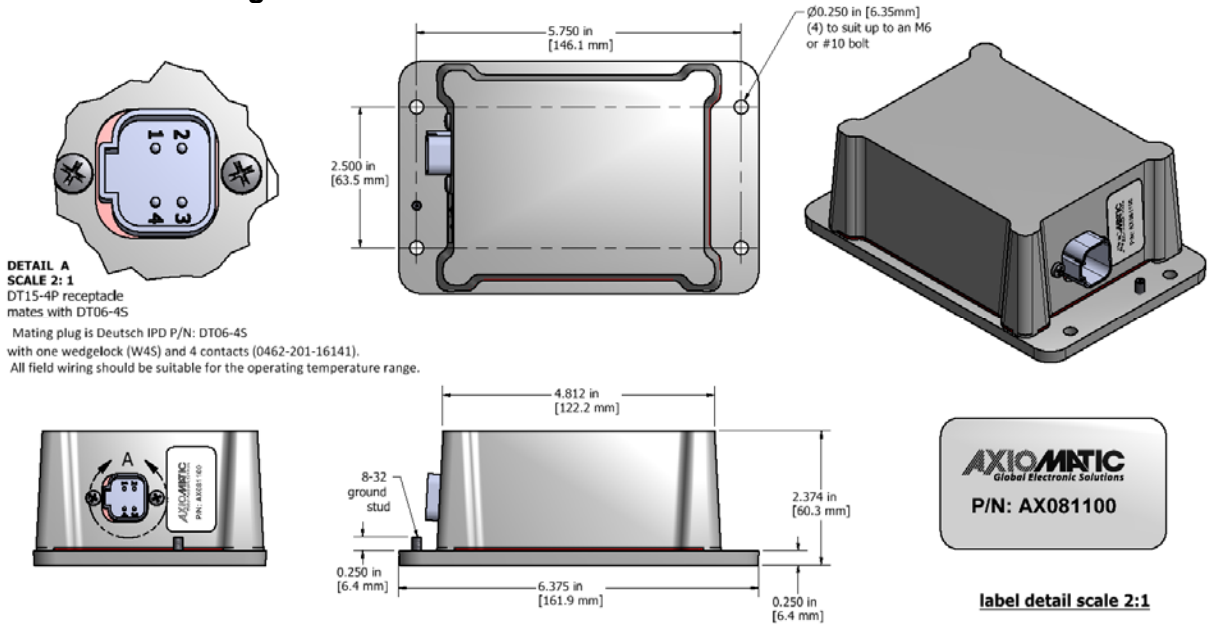
Technical Specifications:

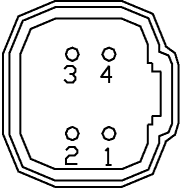
All specifications are typical at nominal input voltage and 25 degrees C unless otherwise specified.

Input Specifications		Output Specifications	
Power Source	12 Vdc or 24 Vdc nominal	Nameplate Rating (Output Power)	72 Watts nominal
Operating Voltage Range	9 - 32Vdc continuous	Output Current	3A continuous
Maximum Input Current	8.97 Adc @ 9Vdc	Output Voltage	24Vdc \pm 0.4% (Factory settings from 23.57V to 27.62V are available on request.)
Inrush Current	20.38A @ 9Vdc, 1.82 ms 22.00A @ 32Vdc, 3.22 ms	Line Regulation	0.02%
Reverse Voltage Protection	Provided	Output Voltage Ripple	0.5%
Over-voltage Shutdown	35.5Vdc	Turn-on Time (with full load)	120 ms @ 9Vdc input 208.5 ms @ 32Vdc input
Under-voltage Shutdown	Output shuts off @ 7.5Vdc Output turns on @ 8.2Vdc	Turn-off Time (with full load)	13.5 ms @ 9Vdc input 13 ms @ 32Vdc input
		Turn-on Overshoot	3.23% of V _{out} Nominal, unloaded 2.9% of V _{out} Nominal, fully loaded, ~10 ms
		Stability	Stable at all loads (no minimum load requirement)
		Transient Response	-493.75mV/41.2 μ s (No Load to Full Load) -312.5mV/32.6 μ s (50% - 100% Load)
		Short Circuit Current	Protection provided Self recovery 3.33A current limit

General Specifications	
Isolation	Isolated from input, output and chassis ground 700Vdc between primary and secondary
Efficiency	89.47% @ 12Vdc 88.41% @ 24Vdc
Operating Temperature	-40 to 85°C (-40 to 185°F)
Storage Temperature	-50 to 85°C (-58 to 185°F)
Humidity	0-99% relative humidity (non-condensing)
Protection rating	IP67
Electrical Connection	Deutsch IPD P/N: DT13-4P connector assembly mates to a wire harness comprised of a 4 pin plug (Deutsch IPD P/N:DT06-4S assembly) with 2 m (6.5 ft.) of 16 AWG unterminated lead wires P/N: WH-DT06-4S-S-16AWG-2M Pin out: Refer to page Installation section.
Weight	2.4 lbs. (1.08 kg)
Dimensions	Aluminum enclosure Encapsulated 4.12 x 6.37 x 2.37 inches 104.8 x 161.9 x 60.3 mm (W x L x H)

Dimensional Drawing



Installation	
<p>Set up</p> <ol style="list-style-type: none"> 1. A maximum 30A fuse is recommended in the primary circuit to provide protection for the primary wiring. 2. Use four ¼-20 1 inch screws to mount the converter. 3. Ground the unit to chassis ground by attaching a ground strap and locking washer to the ground stud found on the housing. (See <i>mechanical drawing</i>.) 4. Snap the plug connector into the mating receptacle mounted on the converter. 5. Connect the wiring to power and output terminal blocks (provided by customer). 6. Once the load is ready to receive power, turn on the power source to the converter. 	 <p>Connector Pin Out</p> <ul style="list-style-type: none"> 1 Output + (red/white) 2 Output - (black/white) 3 Power - (black) 4 Power + (red)
<p>Grounding</p>	<p>Protective Earth (PE) must be connected to the grounding stud to reduce the risk of electric shock. The conductor providing the connection should have a ring lug and wire larger than or equal to 4 mm² (12 AWG). The ring lug should be placed between the nut and a star washer. (To secure the ground strap, use an 8-32 “K-LOK” locknut, stainless steel, 3/8” O.D.)</p> <p>All chassis grounding should go to a single ground point designated for the machine and all related equipment.</p> <p>The ground strap that provides a low impedance path for EMI should be a ½ inch wide, flat, hollow braid, no more than 12 inches long with a suitable sized ring lug for the module’s grounding lug. It may be used in place of the PE grounding conductor and would then perform both PE and EMI grounding functions.</p>
<p>Mounting</p>	<p>Mounting ledges include holes sized for #10 or M5 bolts. The bolt length will be determined by the end-user’s mounting plate thickness. Typically ¾ inch (20 mm) is adequate.</p> <p>If the module is mounted without an enclosure, it should be mounted vertically with connectors facing left and right to reduce likelihood of moisture entry.</p> <p>All field wiring should be suitable for the operating temperature range of the module.</p> <p>Install the unit with appropriate space available for servicing and for adequate wire harness access (6 inches or 15 cm) and strain relief (12 inches or 30 cm).</p>
<p>Configuration</p>	<ul style="list-style-type: none"> • For standard operation follow the set up instructions above. • For an inversion of the output, connect the +ve output pin to the load’s –ve point and the –ve output pin to the load +ve point.

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. Form: TDAX081100-10/11/12

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