TECHNICAL DATASHEET #AX080210A

24Vdc / 24Vdc Isolated Power Supply with 150W (20 sec. back-up)

P/N: AX080210A

Features

- 24 Vdc input, 24 Vdc output, 150 W with 20 second back-up (supercapacitors)
- Programable timing parameters like IGN-IN, IGN-OUT, and back-up duration
- 500 V input to output isolation
- Operates from 10 to 36 Vdc (20 second back-up powered from internal caps)
- Typical efficiency of 91% (for 12 Vdc input) or 92% (for 24 Vdc input), with back-up converter disabled
- No minimum load requirement
- Switch mode operation delivers high efficiency
- Input inrush current limit
- Thermal protection for over temperature
- Reverse battery and overvoltage protection
- Short circuit and overcurrent protection
- -40 to 65 °C (-40 to 149 °F) operating temperature
- IP67
- 1 TE AMP 35-pin connector
- Anodized cast aluminum enclosure with gasket
- CE / UKCA Marking (EMI/EMC compliant to ISO 13766-1:2018)
- FCC, ICES-003, NZ/AS CISPR 32 and AMD
- CB Test Report & Certificate to UL/EN 62368-1
- Suitable for engine cranking and load dump

Applications

The power supply is suitable for application on charging/cranking battery-based systems used in Mining, Off-highway, or Oilfield Equipment. It provides isolation between the battery power and electronics downstream as well as graceful shutdown of HMI sophisticated automation systems.

Ordering Part Number

24Vdc / 24Vdc Isolated Power Supply with 150W (20 sec. back-up) - P/N: **AX080210A**

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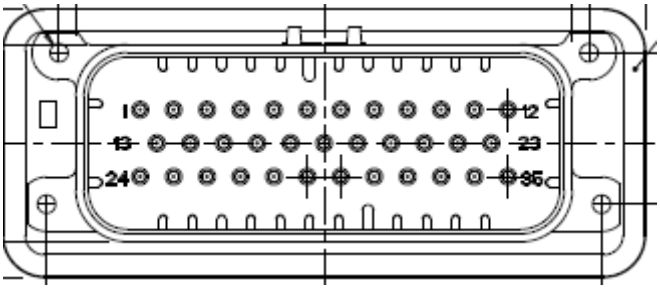
Technical Specifications

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 https://www.axiomatic.com/service/.

Input Specifications		**Output Specifications**	
Power Source	24 Vdc nominal	Nameplate Rating (Output Power)	150 VA nominal
Operating Voltage Range*	10 to 36 Vdc provides 24V output regulated to 2% @ 6.25 A load	Output Current (DC)	6.25A continuous
Maximum Input Current	14 ADC @ 12Vdc 24 ADC@12V with 150W load and charging back-up caps (65 second max)	Output Voltage	24 Vdc ± 2%
Engine Cranking & Load Dump	Designed to meet engine cranking and load dump conditions	Output Voltage Ripple	$V_{O(RIPPLE)} \leq$ 100 mVpp
Reverse Voltage Protection	Provided	IGN-OUT (Power Good)	HI 12V +/-0.5V, 50mA Minimum for all pins together LOW <0.1V
Turn-on Input voltage	11.5 Vdc typical	Stability	Stable at all loads (no minimum load requirement)
Over-voltage Shutdown	38 Vdc typical	Transient Response	300 mV/1 ms (1A – 4A Load)
IGN-IN (Enable signal)	HI 3.1 to 36V (unit ON) LOW < 2.6V (unit OFF) Acts as an enable	Short Circuit Current	Protection provided Self-recovery 7.5A current limit

General Specifications

Functionality	The power supply has various timing parameters like IGN-IN, IGN-OUT, and back-up duration can be set as needed for the application. There is a 20 second back-up (uses supercapacitors) for graceful shutdown of HMI in automation systems.
Approvals	CE marking EMC ISO 13766-1:2018 CB Test Report & Certificate to UL/EN 62368-1 RoHS UKCA FCC 47 CFR Part 15, Subpart B ICES-003 Issue 7 October 2020 AS/NZS CISPR 32:2015 AMD 1:2020
Protection	IP67 Ingress Protection
Vibration	MIL-STD-202H Sine: Method Test 204 Condition C (10g peak) Random: Method 214 Test Condition 1/B (7.86 Grms peak)
Shock	MIL-STD-202H, Method Test 213 Test Condition A (50g)
Efficiency	91% (for 12Vdc input) or 92% (for 24Vdc input)
Isolation	500 Vdc minimum
Quiescent Current	40mA max @ 24Vdc input and after IGN-IN LOW for 20 seconds
Weight	8 lb. +/- 1.5% (3.628 kg)
Temperature Rating	Operating: -40 to 65°C (-40 to 149°F) Storage: -40 to 85°C (-40 to 185°F)
Humidity	0-99% relative humidity (non-condensing)
Enclosure	Anodized Cast Aluminum housing, integral gasket and connector 8.14 x 11.12 x 3.11 inches (206.00 x 282.00 x 79.00 mm) L x W x H including integral connectors Refer to Figure 1.0.

Electrical Pinout	1 35-pin connector TE AMP P/N 1-7762231-1  Pin 1: Voltage Input – Pin 2: Voltage Input – Pin 3: Voltage Input – Pin 4: Voltage Output – Pin 5: Voltage Output – Pin 6: Voltage Output – Pin 7: Voltage Output – Pin 8: Voltage Output – Pin 9: Voltage Output – Pin 10: Voltage Output – Pin 11: Voltage Output – Pin 12: Voltage Output – Pin 13: IGN-IN Pin 14: IGN-IN Pin 15: IGN-OUT Pin 16: IGN-OUT Pin 17: IGN-OUT Pin 18: IGN-OUT Pin 19: IGN-OUT Pin 20: IGN-OUT Pin 21: IGN-OUT Pin 22: IGN-OUT Pin 23: IGN-OUT Pin 24: Voltage Input + Pin 25: Voltage Input + Pin 26: Voltage Input + Pin 27: Voltage Output + Pin 28: Voltage Output + Pin 29: Voltage Output + Pin 30: Voltage Output + Pin 31: Voltage Output + Pin 32: Voltage Output + Pin 33: Voltage Output + Pin 34: Voltage Output + Pin 35: Voltage Output +
Grounding	Protective Earth (PE) must be connected to the chassis to reduce the risk of electric shock. All chassis grounding should go to a single ground point designated for the machine and all related equipment.
Mounting	Mounting ledges include holes sized for ¼ inch or M6 bolts. The bolt length will be determined by the end-user's mounting plate thickness. Typically, 1 inch (25.4 mm) is adequate. 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. All field wiring should be suitable for the operating temperature range of the module. 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).
Installation	**Set up** 1. A 30 A fuse is recommended in the primary circuit to provide protection for the primary wiring. 2. Use four ¼- inch or M6 bolts (1-inch) to mount the converter. 3. Snap the mating plug connector with wiring harness into the receptacle mounted on the converter. 4. Once the load is ready to receive power, turn on the power source to the converter. SAFE USE: **WARNING**: 24V Outputs are live after power shutdown or unit disconnect for up to 20 Seconds.

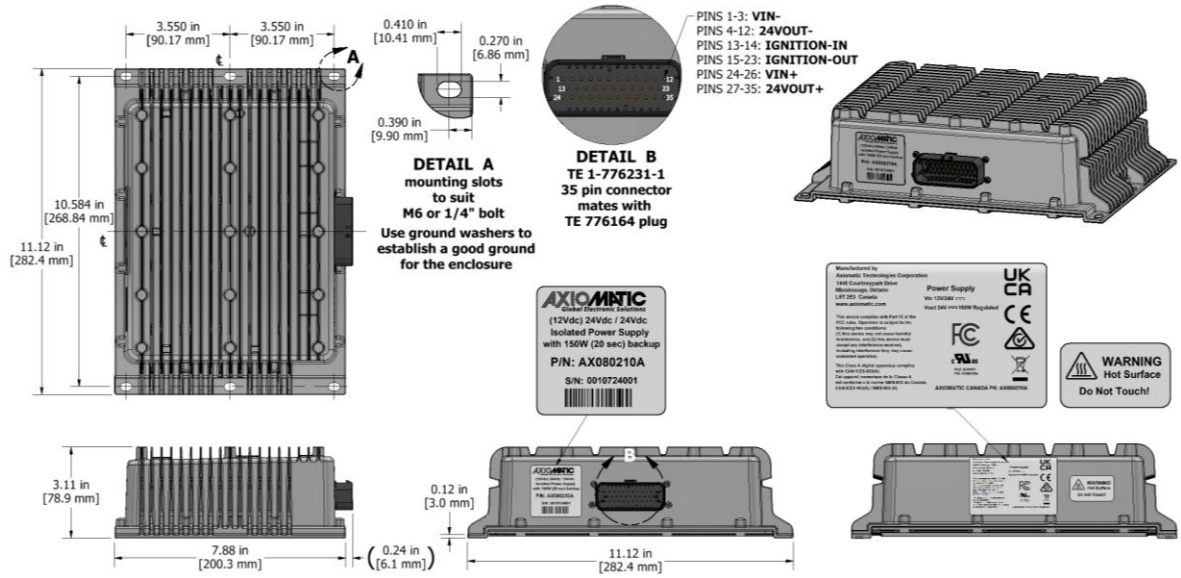


Figure 1.0 – Dimensional Drawing

Form: TDAX080210A-03/24/2025