

## Isolated, 3 Channel, PWM to Voltage Converter

P/N: AX130100

### Features:

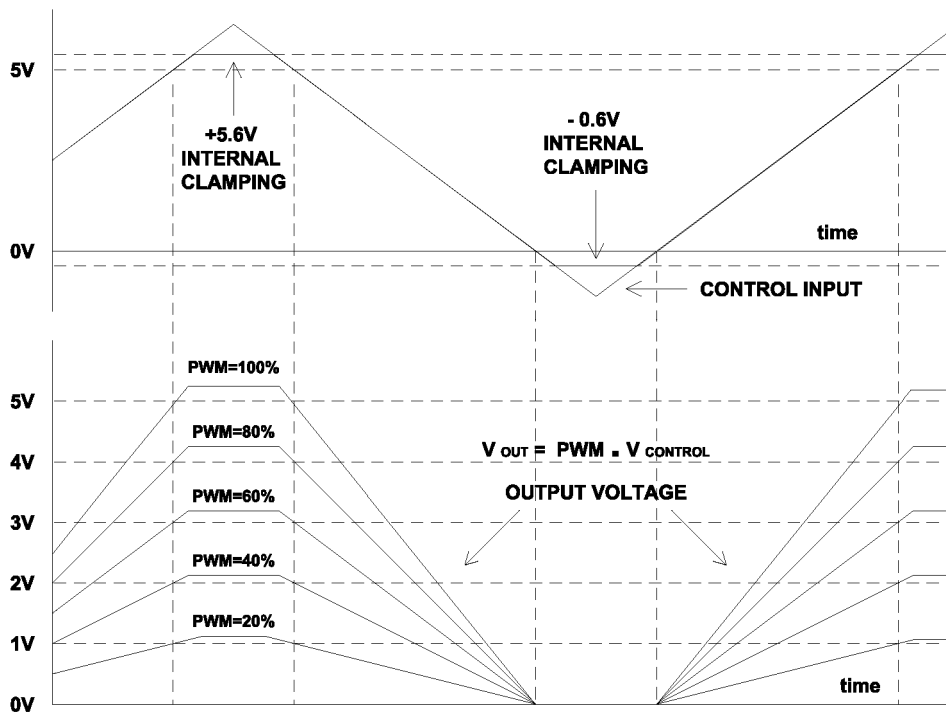
- 3 PWM inputs can be driven by totem pole or low/high side open collector
- 3 0-5V control inputs (Vcontrol)
- 3 0-5V multiplying outputs (Vout = Power x Vcontrol)
- 12, 24, 42 or 48V nominal input power
- Three-way isolation
- Rugged IP67 packaging and connectors
- -40 to +85°C operation



### Applications:

- Mobile equipment
- Industrial automation

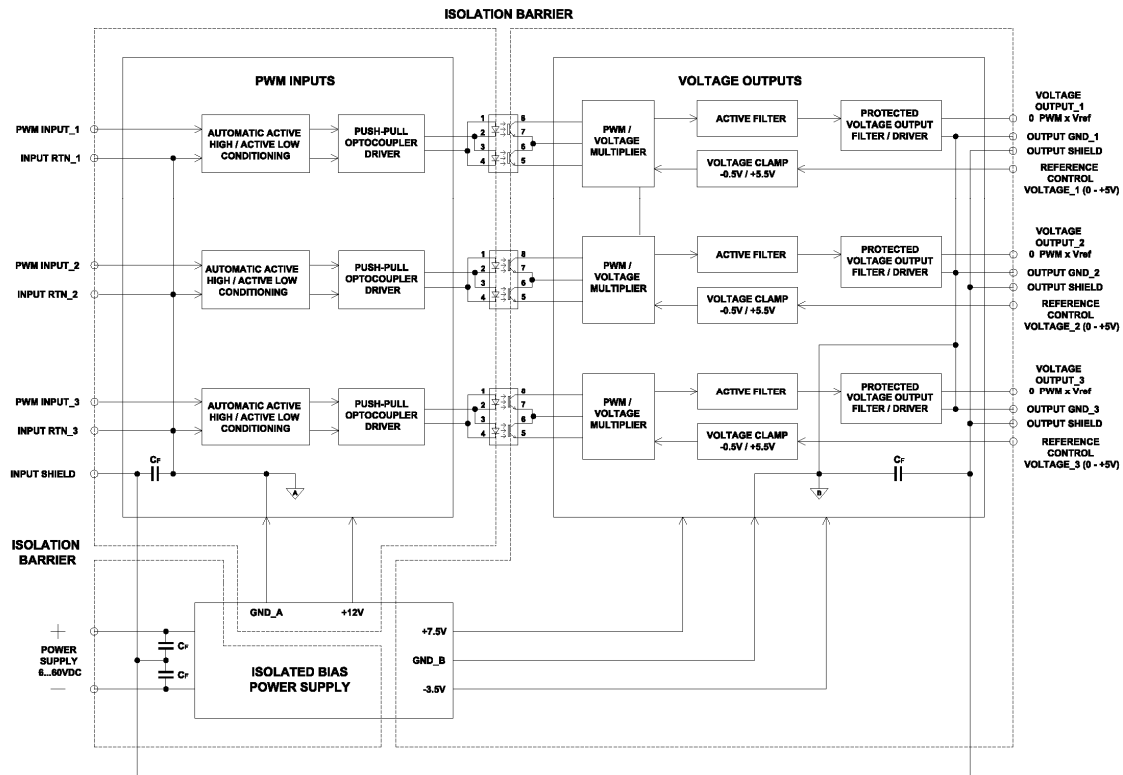
### OUTPUT VERSUS PWM AND VARIABLE CONTROL INPUT



### Ordering Part Numbers:

Description	Part Number
3 Channel PWM to Voltage Converter	<b>AX130100</b>
Mating Plug KIT	<b>PL-DTM06-12SA-12SB</b> Mating Plug Kit (The KIT is comprised of: DTM06-12S, DTM06-12SB, 2 W12S and 24 contacts 0462-201-20141.)

## Block Diagram



## Technical Specifications: Input Power

Power Supply Input - Nominal	12V, 24V, 42V or 48V DC nominal 6...60VDC power supply range Surge protection is provided.
Reverse Polarity	Provided
Isolation	Three-way

## PWM Inputs

PWM Signal	3 channels Input can be driven by a totem pole or low/high side open collector
PWM Frequency	350Hz to 4 kHz
Duty Cycle	0 to 100%
Input Level	Low < 4V High > 8V
Input Bias	6V Provided by two internal 2.5K resistors
Input Impedance	1.25 KOhms
Isolation	Isolated from outputs and power supply

## Control Inputs

Control Signal (Vcontrol)*	3 channels
Control Signal Range	0-5V
Input Impedance	50 KOhms
Isolation	Isolated from PWM inputs and power supply

## Output Signals

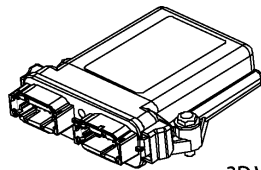
Analogue Outputs (Vout)*	3 channels
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Output Range	0-5V $V_{out} = PWM \times V_{control}$
Output Current	20 mA maximum sinking 20 mA maximum sourcing
Response Time	<10 mSec.
Ripple	<5 mV RMS @ 350Hz
Accuracy	< 1%
Resolution	<5 mV
Non-linearity	<1%
Output impedance	<1 Ohm
Isolation	Fully isolated from PWM inputs and power supply
Protection	Short circuit and transient protection is provided.

\*Note: Analog outputs and control inputs share a common ground.

### General Specifications

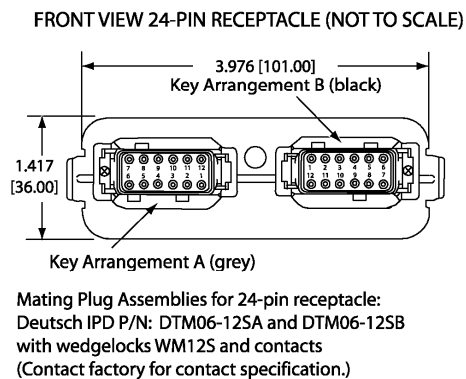
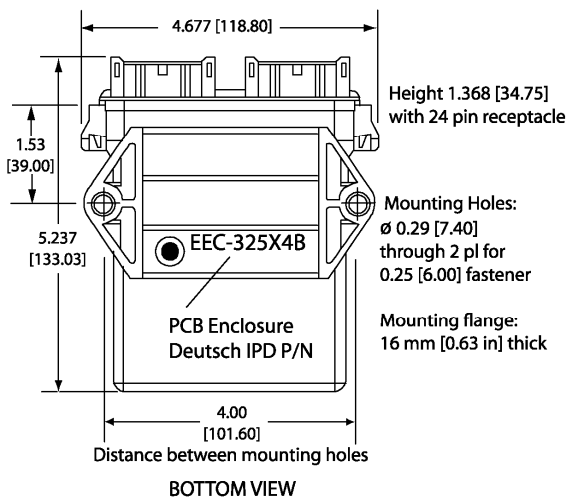
Electrical Connections	Deutsch DTM series 24 pin receptacle (DTM13-12PA-12PB-R008) Mating plug: Deutsch DTM06-12SA and DTM06-12SB with 2 wedgelocks (WM12S) and 24 contacts (0462-201-20141). 20 AWG wire is recommended for use with contacts 0462-201-20141.
Packaging and Dimensions	High Temperature Nylon housing - Deutsch IPD PCB Enclosure (EEC-325X4B) 4.62 x 5.24 x 1.43 inches 117.42 x 133.09 x 36.36 mm (W x L x H excluding mating plugs)
Operating Conditions	-40 to 85°C (-40 to 185°F)
Protection	IP67, Unit is conformally coated in the housing.
Weight	0.55 lbs. (0.25 kg)



3D VIEW  
Housing with 24 Pin Receptacle

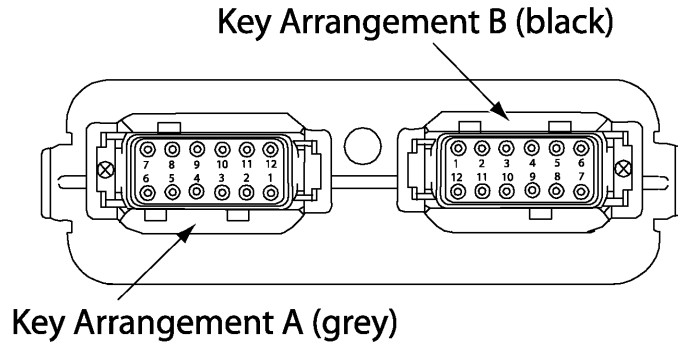
### HOUSING DIMENSIONS

Housing Material: High Temperature Nylon (Black)



Dimensions: inches [mm]  
excluding mating plug(s)

**Typical Connections:**



**FRONT VIEW 24 PIN RECEPTACLE**

Grey Connector		Black Connector	
Pin #	Function	Pin #	Function
1	PWM Input Ground 3	1	Voltage Output 1
2	PWM Input Ground 2	2	Voltage Output 2
3	PWM Input Ground 1	3	Voltage Output 3
4	Output Shield	4	Control Input 1
5	Output Shield	5	Control Input 2
6	Output Shield	6	Control Input 3
7	BATT -	7	Control Input Ground 3
8	BATT +	8	Control Input Ground 2
9	Input Shield	9	Control Input Ground 1
10	PWM Input 1	10	Output Ground 3
11	PWM Input 2	11	Output Ground 2
12	PWM Input 3	12	Output Ground 1

*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](http://www.axiomatic.com/service.html).*

Form: TDAX130100-10/30/14