

TECHNICAL DATASHEET #TDAX13020X
PWM to Current (or Voltage) Signal Converter
P/N: AX13020X

PWM to
Current (or Voltage)
Signal Converter

- DIN rail mount
- Single channel
- PWM input
- 0-20 mA, 4-20 mA,
0-5VDC or 0-10VDC
output (factory set)
- 12V/24VDC nominal

Description:

Isolated signal converters provide a compact solution for converting digital pulse width modulated (PWM) signal into a current or voltage signal. Current to PWM and Voltage to PWM signal converters are also available.

Applications:

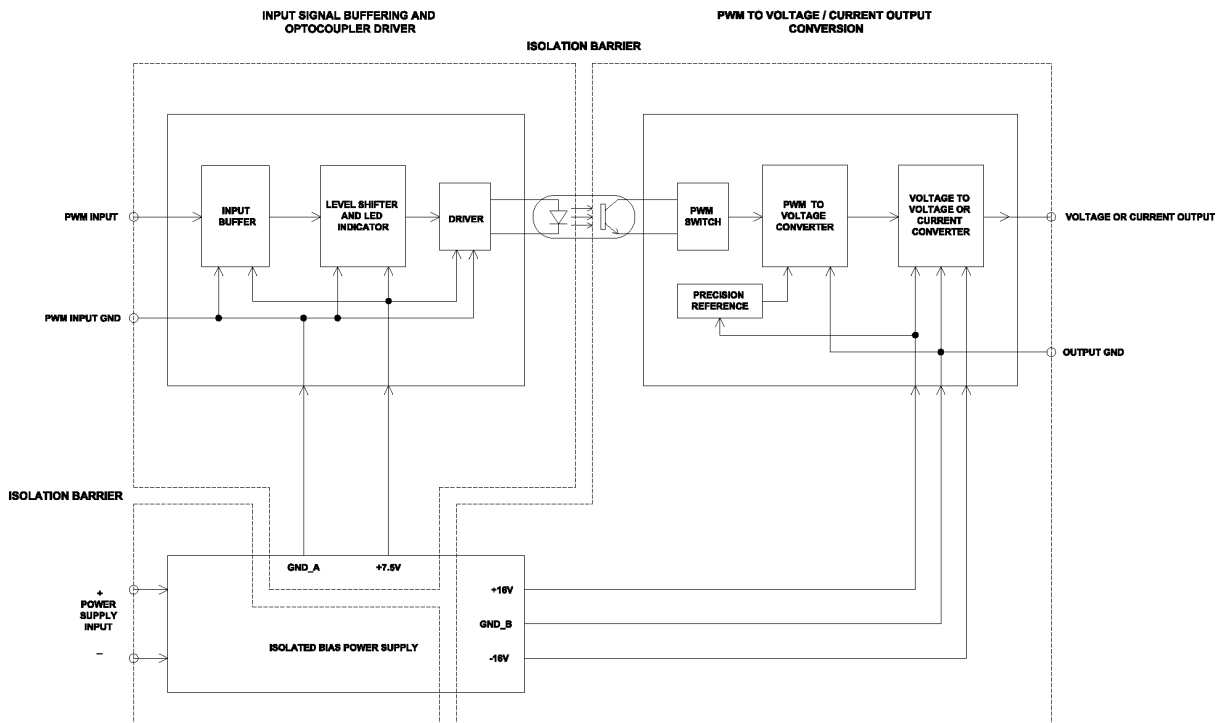
Industrial control panels
Engine control panels



Ordering Part Numbers:

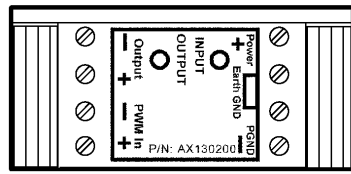
PWM to 0-20 mA output: **AX130200**
 PWM to 4-20 mA output: **AX130201**
 PWM to 0-5V output: **AX130202**
 PWM to 0-10V output: **AX130203**

Block Diagram



Technical Specifications:																
All specifications are typical at nominal input voltage and 25 degrees C unless otherwise specified.																
Input Specifications:																
<i>PWM Frequency and Range</i>	Fully isolated PWM 50 Hz to 50 kHz 0-100% Duty Cycle <i>Application-specific duty cycles are available on request. A 5 Hz to 50 kHz PWM input model is available on request. (This lower frequency input model has a 3 second response time.)</i>															
<i>Input Voltage</i>	Low <1.5V High >3.5V (50V max.) TTL and CMOS compatible															
<i>Input Impedance</i>	200kOhm															
Output Specifications:																
<i>Voltage Output</i>	Fully isolated Active output AX130202: 0-5 VDC AX130203: 0-10 VDC															
<i>Output Impedance</i>	1 Ohm Transient protection is provided. Short circuit protection is provided.															
<i>Current Output</i>	Fully isolated AX130200: 0-20 mA AX130201: 4-20 mA															
<i>Compliance Voltage</i>	8.8VDC															
<i>Maximum Load Resistance</i>	500 Ohms@ 20°C															
General Specifications:																
<i>Power Supply</i>	12VDC or 24VDC nominal (8-36VDC range) Transient protection is provided. Overvoltage protection is provided.															
<i>Reverse Polarity Protection</i>	Provided															
<i>Response Time</i>	100 mSec.															
<i>Power Consumption</i>	50 mA @ 12V 30 mA @ 24V															
<i>Operating Conditions</i>	-40 to 85 degrees C (-40 to 185 degrees F) 0-95% relative humidity															
<i>Adjustments</i>	Span and Offset (Zero) are factory set. Trim pots are accessible by opening the front cover. Turn CW to increase. ZERO: Apply 0% PWM signal to the input. Adjust the trim pot to desired min. output. SPAN: Apply 100% PWM signal to the input. Adjust the trim pot to desired max. output. <table border="1" data-bbox="548 1381 1416 1514"> <thead> <tr> <th><i>Model</i></th> <th><i>Range of Zero</i></th> <th><i>Range of Span</i></th> </tr> </thead> <tbody> <tr> <td>AX130200</td> <td>-0.65 to 1.17 mA</td> <td>17.92 to 20.17 mA</td> </tr> <tr> <td>AX130201</td> <td>2.95 to 4.81 mA</td> <td>18.63 to 20.46 mA</td> </tr> <tr> <td>AX130202</td> <td>-0.29 to 0.29 V</td> <td>4.66 to 5.25 V</td> </tr> <tr> <td>AX130203</td> <td>-0.58 to 0.59 V</td> <td>9.32 to 10.49 V</td> </tr> </tbody> </table>	<i>Model</i>	<i>Range of Zero</i>	<i>Range of Span</i>	AX130200	-0.65 to 1.17 mA	17.92 to 20.17 mA	AX130201	2.95 to 4.81 mA	18.63 to 20.46 mA	AX130202	-0.29 to 0.29 V	4.66 to 5.25 V	AX130203	-0.58 to 0.59 V	9.32 to 10.49 V
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<i>Electrical connection</i>	#12 to #22 AWG screw terminals															
<i>Packaging</i>	PCB is conformal coated Housing (Wieland WEG8), Polyamide 6.6 plastic, UL94V-0 DIN rail mount, 35 mm															
<i>Dimensions</i>	60.6 x 90.5 x 28.5 mm (W x H x D) 2.38 x 3.56 x 1.12 inches excluding DIN rail															
<i>Weight</i>	0.15 lbs. (0.07 kg)															
<i>Protection</i>	IP20															
<i>Grounding</i>	The converter provides full isolation between input, output and power. Therefore, grounding is not necessary. If grounding is desired, however, the input, output and power grounds can be tied together. An Earth GND connection is provided for use in electrically noisy environments.															

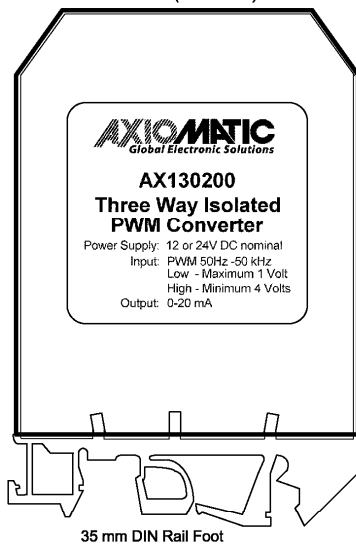
Dimensions, Connections and Adjustments



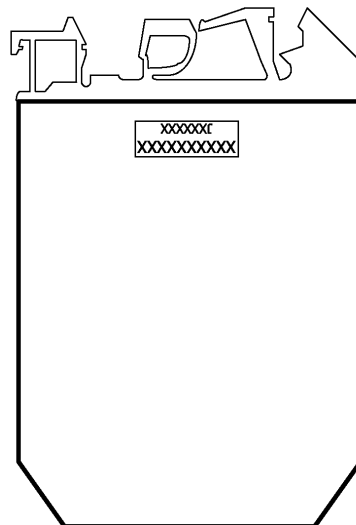
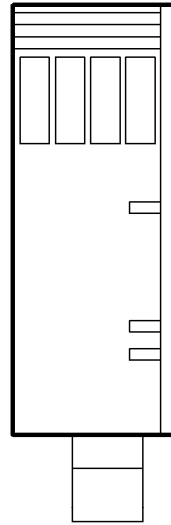
1.12 in
 (28.50 mm)

Signal Converter Models:
AX130200 PWM to 0-20 mA
AX130201 PWM to 4-20 mA
AX130202 PWM to 0-5V
AX130203 PWM to 0-10V

2.38 in (60.60 mm)
 2.28 in (58.00 mm)
 1.69 in (43.00 mm)



3.56 in (90.50 mm)
 2.87 in (73.02 mm)
 2.43 in (61.91 mm)
 0.59 in (15 mm)



Adjustments:
 To access trim pots, remove front cover. Trim pots are factory set. For calibration purposes, turn clockwise to increase.

ZERO
 SPAN

Model (Output Factory Setting)	Range of Zero (mA or V)	Range of Span (mA or V)
AX130200 (0-20 mA)	-0.65 to 1.17	17.92 to 20.17
AX130201 (4-20 mA)	2.95 to 4.81	18.63 to 20.46
AX130202 (0-5 V)	-0.29 to 0.29	4.66 to 5.25
AX130203 (0-10 V)	-0.58 to 0.59	9.32 to 10.49

DIM: inches [mm]
 AX130200, AX130201, AX130202, AX130203
 August 24, 2010 A. Wilkins
 Axiomatic Technologies Corporation

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: TDAX130200-12/02/11