TECHNICAL DATASHEET #TD2303AX

Analog Signal Converter

Voltage or Current Input
User Selectable +/- 10 to +/- 310 mA or Factory Set Output
P/N: IC-DR-13, IC-DR-16, IC-DR-18, IC-DR-19 or IC-DR-23

Description:

The Analog Signal Converter accepts a 24VDC power supply (nominal). A 4-20mA input signal (0-10VDC, -10 to +10VDC, -5 to +5 VDC input signals available) is converted to a user selectable current output from +/- 10 mA to +/-310 mA (in 10 mA steps) or a factory set output. Span and zero is user adjustable. Diagnostic LEDs indicate operational status. The load should be floating, isolated from ground. The unit is conformal coated and packaged in a DIN rail mount housing.

Technical Specifications:

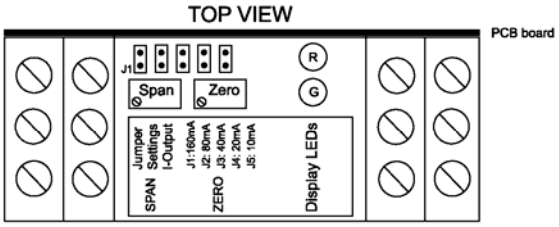
Typical at nominal input voltage and 25 degrees C unless otherwise specified

Ordering Part Numbers:	**IC-DR-18** 4-20mA converted to +40 to +160mA	**IC-DR-13** 4-20mA converted to +/-10 mA to +/-310 mA	**IC-DR-16** +/-10VDC converted to +/-10 mA to +/-310 mA	**IC-DR-19** +/-5VDC converted to +/-10 mA to +/-310 mA	**IC-DR-23** 0-10VDC converted to +/-200 mA
Input Specifications:					
Input	4-20 mA		-10 to +10 VDC	+5 to –5VDC	0-10VDC
Input Current Limit	Approx. 25 mA		Not applicable		
Compliance Voltage	3.5 V maximum		Not applicable		
Open Loop Detection	Provided		Not applicable		
Input Resistance	Contact manufacturer.		125 KOhms		55 KOhms
Output Specifications:					
Bipolar Output	Provided				
Current Output Settings	*Factory setting:* +40 mA to +160 mA	+/-10 mA up to +/-310 mA (in 10 mA steps) User selectable by jumper Factory setting: +/- 60 mA (Refer to the jumper settings in the connection diagram.)			*Factory setting:* -200 mA to +200 mA
Load Connection	Ungrounded, Floating (WARNING: Do not operate the converter without the load connected.)				
Compliance Voltage	12V max.				
Output Shut-down	@I-IN < 3.2 mA or @ I-IN > 22 mA		@V-IN < -11V or @V-IN >+11V	@V-IN < -5.5V or @V-IN >+5.5V	@V-IN < -0.5V or @V-IN >+11V
Short Circuit Protection	All ways (input, output and power supply)				
Response Time	<5 mSec.				
Non-linearity	<0.1% without adjustments performed				
Power Supply:					
Power Supply	24VDC nominal (16-32VDC operating range) Transient protection is provided up to 36V.				
Reverse Polarity Protection	Provided				
Internal Output Voltages	+12.5V/0.5A max. -12.5V/10ma max.				

Axiomatic Technologies Corporation
5915 Wallace Street, Mississauga, Ontario Canada L4Z 1Z8
TEL: (905) 602-9270 x225 FAX: (905) 602-9279 E-mail: sales@axiomatic.com
www.axiomatic.com

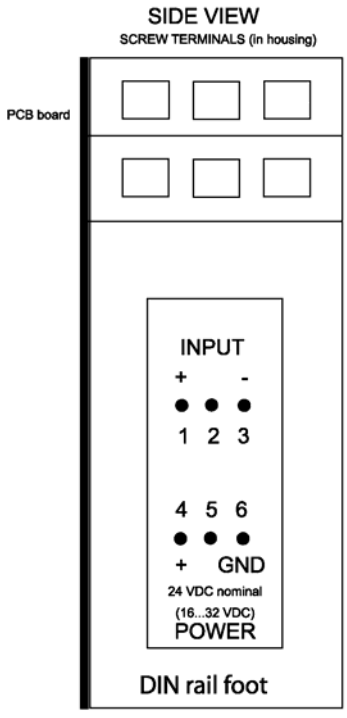
General Specifications:			
Power Consumption	<7 Watts @ 24VDC, 310 mA		*IC-DR-23* 20 mA @24VDC, no load
Operating Temperature	-40 to 85 degrees C (-40 to 185 degrees F)		
Electrical connection	Screw terminals accept 14-24 AWG wire		
Packaging and Dimensions (W x H x D)	DR12, 16 Amp max. current rating, Polycarbonate (75 x 98.5 x 22.5 mm or 2.95 x 3.87 x 0.88 inches) DIN rail mount for high profile DIN rail (35 mm)		
Protection	PCB conformal coated IP40 rated housing, Terminals rated at IP20		
Weight	0.20 lbs (0.09 kg)		
LED Indication	*Axiomatic P/N:* *IC-DR-18, IC-DR-13*	*Axiomatic P/N:* *IC-DR-16, IC-DR-19, IC-DR-23*	
	Red and green LED indication of: Normal operation, Power OK – Both LEDs ON 5% below 4 mA – Green LED slow flash, Red LED ON 5% above 20 mA – Green LED ON, Red LED slow flash 10% below 4 mA – Both Green and Red LEDs slow flash 10% above 20 mA – Both Green and Red LEDs fast flash NB. When both Green and Red LEDs are flashing the output is shutdown to 0 mA.	Red and green LED indication of: Normal operation, Power OK – Both LEDs ON 5% below – max. VDC – Green LED slow flash, Red LED ON 5% above +max. VDC – Green LED ON, Red LED slow flash 10% below – max. VDC – Both Green and Red LEDs slow flash 10% above +max. VDC – Both Green and Red LEDs fast flash NB. When both Green and Red LEDs are flashing the output is shutdown to 0 mA.	
Zero and Span Adjustment	+/-10% of full scale Multi-turn trim pots (10 turns)		
	Axiomatic P/N: *IC-DR-18, IC-DR-13*	*Axiomatic P/N:* *IC-DR-16, IC-DR-19, IC-DR-23*	
Zero	Apply 12mA input current. Use the ZERO trimpot to adjust current output to 0 mA for IC-DR-13 or 100 mA for IC-DR-18.	Apply 0V input (IC-DR-16, IC-DR-19) or +5VDC input (IC-DR-23). Use the ZERO trimpot to adjust current output to 0 mA.	
Span	STEP 1 - Apply 20mA input current and use the SPAN trimpot to adjust current output to match the positive full scale value selected by the jumpers. STEP 2 - Apply 4mA input current and use the ZERO trimpot to adjust current output to match the negative full scale value selected by the jumpers. (In case of IC-DR-18 that is +40 mA.) STEP 3 - Repeat steps 1 and 2 if necessary. STEP 4 - Apply 12 mA input current and confirm the output current is 0 mA for IC-DR-13 or 100 mA for IC-DR-18.	STEP 1 - Apply +maximum VDC input voltage and use the SPAN trimpot to adjust current output to match the positive full scale value selected by the jumpers. STEP 2 - Apply –maximum VDC input voltage and use the ZERO trimpot to adjust current output to match the negative full scale value selected by the jumpers. STEP 3 - Repeat steps 1 and 2 if necessary. STEP 4 - Apply 0V input (IC-DR-16, IC-DR-19) or +5VDC input (IC-DR-23) and confirm the output current is 0 mA.	

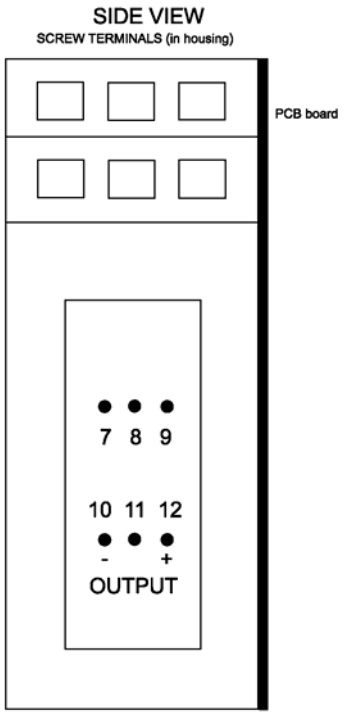
CONNECTIONS, SETTINGS AND ADJUSTMENTS



JUMPER SETTINGS FOR CURRENT OUTPUT

I (mA)	160 J1	80 J2	40 J3	20 J4	10 mA J5
0	–	–	–	–	–
10	–	–	–	–	ON
20	–	–	–	ON	–
30	–	–	–	ON	ON
40	–	–	ON	–	–
50	–	–	ON	–	ON
60	–	–	ON	ON	–
70	–	–	ON	ON	ON
80	–	ON	–	–	–
90	–	ON	–	–	ON
100	–	ON	–	ON	–
110	–	ON	–	ON	ON
120	–	ON	ON	–	–
130	–	ON	ON	–	ON
140	–	ON	ON	ON	–
150	–	ON	ON	ON	ON
160	ON	–	–	–	–
170	ON	–	–	–	ON
180	ON	–	–	ON	–
190	ON	–	–	ON	ON
200	ON	–	ON	–	–
210	ON	–	ON	–	ON
220	ON	–	ON	ON	–
230	ON	–	ON	ON	ON
240	ON	ON	–	–	–
250	ON	ON	–	–	ON
260	ON	ON	–	ON	–
270	ON	ON	–	ON	ON
280	ON	ON	ON	–	–
290	ON	ON	ON	–	ON
300	ON	ON	ON	ON	–
310	ON	ON	ON	ON	ON





NB.: Jumpers are factory set for the outputs +/- 60 mA for p/n IC-DR-13, IC-DR-16 or IC-DR-19.
The user can select the desired output setting using the jumper settings on the chart shown above.
The factory setting for the output for IC-DR-23 is +/- 200 mA.
The factory setting for the output for IC-DR-18 is +40 to +160 mA.

Specifications are subject to update without notice.
Form: TD2303AX-11/18/08