



FEATURES

- THE INPUT CAN BE CONFIGURED ON THE FIELD FOR ACTIVE / PASSIVE 2 WIRE 0-20 mA, 4-20 mA, 0-5V, 0-10V, 1-5V, 2-10V
- THE INPUT CAN ALSO POWER THE SENSOR – 3 WIRE CONNECTION
- EACH OUTPUT CAN BE INDEPENDENTLY CONFIGURED ON THE FIELD FOR ACTIVE / PASSIVE 2 WIRE 0-20 mA, 4-20 mA, 0-5V, 0-10V, 1-5V, 2-10V
- THE POWER IS ISOLATED FROM THE INPUT AND FROM BOTH OUTPUTS
- HIGH ACCURACY AND RESOLUTION
- NO PROGRAMMING REQUIRED. ALL CONFIGURATIONS ARE DONE BY JUST CHANGING A FEW DIP SWITCHES AND WIRING
- HIGH PROTECTION ON THE INPUT AND BOTH OUTPUTS
- ISOLATION VOLTAGE > 1000 VDC
- ISOLATION RESISTANCE > 100 Mohm @ 500 VDC
- NEEDS 21.6 – 26.4V DC POWER
- QUICK AND SIMPLE WIRING
- LxWxH = 90x17.5x56 mm (3.55"x0.69"x2.21")
- WEIGHT = 53g (1.9 oz)

APPLICATIONS

- INDUSTRIAL SIGNALS ISOLATION
- INDUSTRIAL CONTROL
- MEASUREMENT APPLICATIONS
- SCADA



1. DESCRIPTION

GAI34 is a universal analog signal isolated splitter. The input can be configured for active / passive, 0-20 mA, 4-20 mA, 0-5V, 0-10V, 1-5V and 2-10V. The input can also power the sensor with isolated, regulated, filtered and protected 24V DC.

Either output can be configured independently from the input for active / passive, 0-20 mA, 4-20 mA, 0-5V, 0-10V, 1-5V and 2-10V. When active each output provides isolated, regulated, filtered and protected 24V DC to the current loop.

All configurations are done by changing a few DIP switches and the wiring. It can be done at any time on the field without the need of any special tools or calibrators.

The power is isolated from the input and from both outputs. It has to be 21.6 – 26.4V DC.

With its high accuracy, DIN rail mounting, very small size, slim design, high isolation and functionality GAI34 is an excellent choice for isolating standard analog signals.



2. ABSOLUTE MAXIMUM RATINGS *

Power	26.4V DC
Operating temperature	0 to 50 °C
Output voltage, when passive, either output	40 V DC

* **NOTE: Stresses above those ratings may cause permanent damage to the device.**

3. CHARACTERISTICS

Parameter	Conditions	Min	Typical	Max	Units
Power					
Voltage	24V DC regulated and filtered is strongly recommended	21.6	24	26.4	V DC
Consumption					VA
Input					
Input voltage drop	0 to 50 °C, 20 mA		5.1	5.3	V DC
Either Output, 4-20 mA					
Loop power, passive, 2 wire					
Power supply, if passive	0 to 50 °C, Note 1	4.5		36	V DC
Maximum load, passive	36V external power to the loop, Note 1	1575			ohm
Maximum load, active	no external power to the loop, Note 1	925			ohm
Resolution	0 to 50 °C, 4.5 – 36 V		5		uA
Error	250 ohm load, 24 V, 25 °C		0.05		% FS
Temperature coefficient	0 to 50 °C, 24 V		35		ppm/°C
Either Output, 0–5/10 V					
No external power required, 2 wire					
Resolution			1.25 / 2.5		mV
Minimum load for 0-5V		500			kohm
Minimum load for 0-10V		1			Mohm
Isolation voltage	Input to output, input to power, output to power, output to output	1000			VDC
Isolation resistance	Input to output, input to power, output to power, output to output, @500 VDC	100			Mohm

Note 1: The minimum voltage for the 4-20 mA passive output to operate is $V = 4.5 + R \text{ load [ohm]} * 0.020$ [V DC]
 For a GAI34 with a load of 250 ohm, the minimum voltage would be 9.5 V DC.
 When active the output can work with a load up to 925 ohm

4. APPLICATION

4.1. MECHANICAL

Mounting GAI34 on the DIN rail requires an area of 98 x 17.5 mm (3.86" x 0.69").

4.2. ELECTRICAL

Here are the terminals of GAI34

Power:
 4 is NC (no connect)
 5 is 24V DC "+"
 6 is 24V DC "-"

Use regulated 24V DC power. The voltage must be between 21.6 and 26.4V DC.

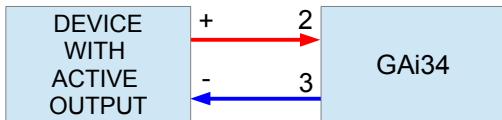
Input:
 1 is Sensor power "+", if GAI34 powers the sensor
 2 is Input Signal
 3 is Input ground (common)

Output 1: 10 is Output power "+", when active
 11 is Out "+"
 12 is Output ground (common)

Output 2: 7 is Output power "+", when active
 8 is Out "+"
 9 is Output ground (common)

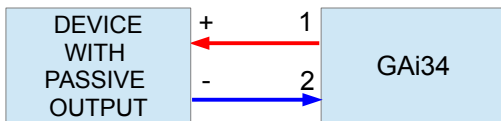
4.2.1. WIRING AND CONFIGURING THE INPUT

4.2.1.1. WIRING THE INPUT TO A DEVICE WITH AN ACTIVE OUPUT



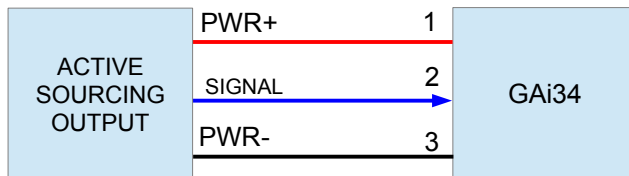
active 0-20 mA, 4-20 mA
 or
 0-5V, 0-10V, 1-5V, 2-10V

4.2.1.2. WIRING THE INPUT TO A DEVICE WITH AN PASSIVE OUPUT



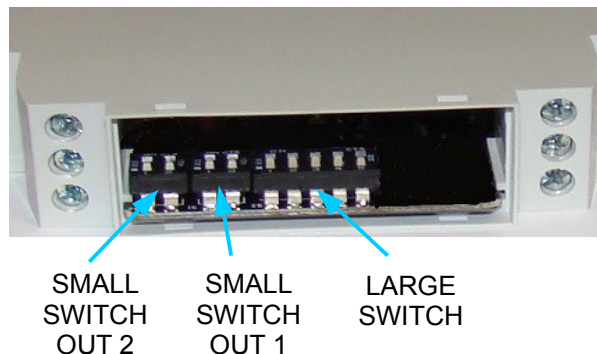
passive 0-20 mA, 4-20 mA only

4.2.1.3. GAI34 INPUT CAN POWER AN ACTIVE SOURCING OUTPUT OF A SENSOR



active 0-20 mA, 4-20 mA
 or
 0-5V, 0-10V, 1-5V, 2-10V

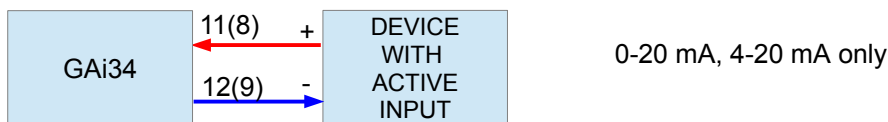
4.2.1.4. DIP SWITCHES RELATED TO THE INPUT



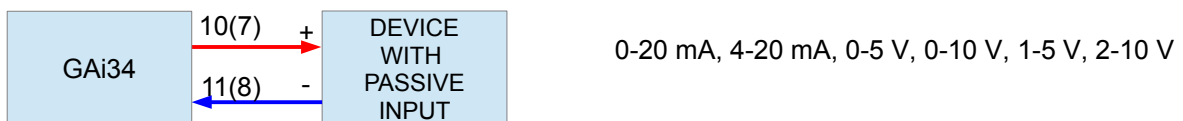
INPUT SIGNAL	LARGE DIP SWITCH
0-20 mA	
4-20 mA	
0-5 V	
0-10 V	
1-5 V	
2-10 V	

4.2.2. WIRING AND CONFIGURING THE OUTPUT

4.2.2.1. WIRING EITHER OUTPUT TO A DEVICE WITH AN ACTIVE INPUT



4.2.2.2. WIRING EITHER OUTPUT TO A DEVICE WITH AN PASSIVE INPUT



4.2.2.3. DIP SWITCHES RELATED TO OUTPUT 1

OUTPUT SIGNAL	LARGE DIP SWITCH	SMALL DIP SWITCH IN THE MIDDLE
0-20 mA		
4-20 mA		
0-5 V		
0-10 V		

1-5 V		
2-10 V		

4.2.2.3. DIP SWITCHES RELATED TO OUTPUT 2

<i>OUTPUT SIGNAL</i>	<i>LARGE DIP SWITCH</i>	<i>SMALL DIP SWITCH ON THE LEFT</i>
0-20 mA		
4-20 mA		
0-5 V		
0-10 V		
1-5 V		
2-10 V		

5. ORDERING

For ordering please use the G Instruments part number 30123.



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