FEATURES

- **TWO WIRE LOOP POWER INPUT, TWO WIRE LOOP POWER OUTPUT**
- **INPUT IS OVERCURRENT AND REVERSE POLARITY PROTECTED**
- **OUTPUT IS REVERSE POLARITY PROTECTED TO 90 VDC**
- **OUTPUT CURRENT IS LIMITED TO 20.5 mA**
- **IF THE INPUT IS DISCONNECTED THE OUTPUT WILL STAY AT ABOUT 3.85 mA**
- **ISOLATION VOLTAGE > 1000 VDC**
- **ISOLATION RESISTANCE > 100 Mohm @ 500 VDC**
- **QUICK AND SIMPLE WIRING**
- **LxWxH = 90x17.5x56 mm (3.55”x0.69”x2.21”)**
- **WEIGHT = 35 g (1.2 oz.)**

APPLICATIONS

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

1. DESCRIPTION

GAi31 is a loop power 4-20 mA isolator. The input does not provide power. It has to be provided by the device sourcing the 4-20 mA signal or by an external power supply.

The output does not provide power to the output loop either, so it has to be provided by the device receiving the 4-20 mA signal or by an external power supply.

With its DIN rail mounting, very small size, slim design, high isolation and functionality GAi31 is an excellent choice for isolating 4-20 mA signals.

2. ABSOLUTE MAXIMUM RATINGS *

Operating temperature	0 to 50 °C
Reverse input voltage	90 V DC
Output voltage	40 V DC

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

3. CHARACTERISTICS

Parameter	Conditions	Min	Typical	Max	Units
Input					
Input voltage drop	0 to 50 °C			6.8	V DC
Output					
Power supply	0 to 50 °C, Note 1	7.2		36	V DC
Resolution	0 to 50 °C, 7.2 – 36 V		4		uA
Error	250 ohm load, 24 V, 25 °C, Note 2			0.05	% FS
Power supply error	7.2 - 36V, output at 3.85 mA, 25 °C			0.5	uA/V
Temperature coefficient	0 to 50 °C, 24 V		35		ppm/°C
Isolation voltage	Input to output	1000			VDC
Isolation resistance	Input to output, @ 500 VDC	100			Mohm

Note 1: The minimum voltage for the 4-20 mA output to operate is V = 7.2 + R load [ohm] * 0.020 [V DC]
For a GAi31 with a load of 250 ohm, the minimum voltage would be 12.2 V DC.

Note 2: The parameter includes all errors, non-linearity and noise at constant voltage and temperature.

4. APPLICATION

4.1. MECHANICAL

Mounting GAi31 on the DIN rail requires an area of 98 x 17.5 mm (3.86” x 0.69”).

4.2. ELECTRICAL

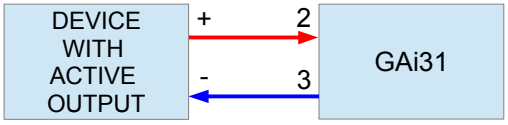
Here are the terminals numbers:

1 – NC (no connect)
2 – Input “+” , current enters the input at this terminal
3 – Input “-”, input current exits the device at this terminal

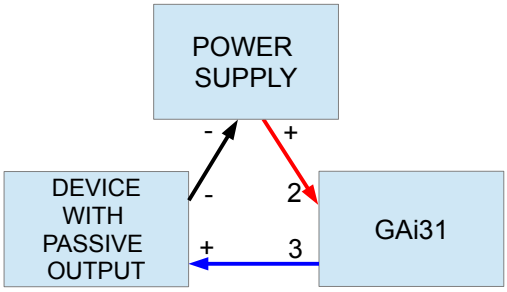
10 – NC (no connect)
11 – Output “+”, output current enters here
12 – Output “-”, output current exits GAi31 here

4.2.1. WIRING

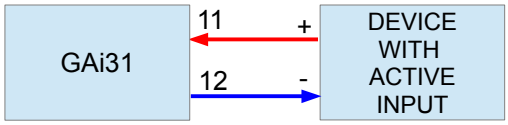
4.2.1.1. WIRING THE INPUT TO AN ACTIVE 4-20 mA DEVICE



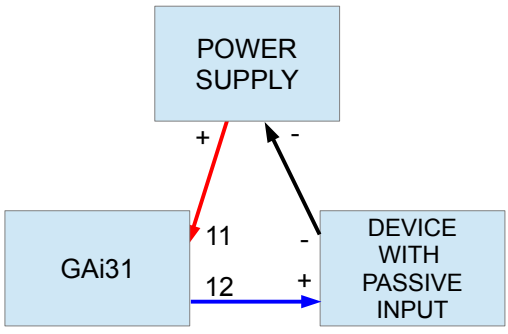
4.2.1.2. WIRING THE INPUT TO A PASSIVE 4-20 mA DEVICE



4.2.1.3. WIRING THE OUTPUT TO AN ACTIVE DEVICE



4.2.1.4. WIRING THE OUTPUT TO A PASSIVE DEVICE



5. ORDERING

For ordering please use the G Instruments part number 30117.

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