PWM controlled 4-20 mA current loop simulator

Features

The A2127 PWM to current loop converter is a PWM controlled 4-20 mA simulator. The A2127 is connected to a PWM output from a micro-controller (Rasberry PI, Arduino, Beaglebone, STM32 Nucleo, etc) The PWM output will set the 4-20 mA current in the loop.
In this way the 4-20 mA current is programmable by the micro-controller. This allows a very fast and easy setup of automated testing.

The A2127 current range is 3,3 to 21,5 mA this allows testing of over and under current situations as specified by Namur NE43.

The 4-20 mA loop is connected with industrial standard terminal block. The Raspberry pi is connected with jumper wires (No part of delivery) fitted to the 2,54 mm header connector. The header connector is not soldered to the board, this allows to solder wires to the board if required.

Usage:
- Automated software testing, PLC, DCS and various process control systems.
- Automated hardware testing, PLC DCS, displays.
- Automated alarm testing, PLC, DCS and various process control systems.
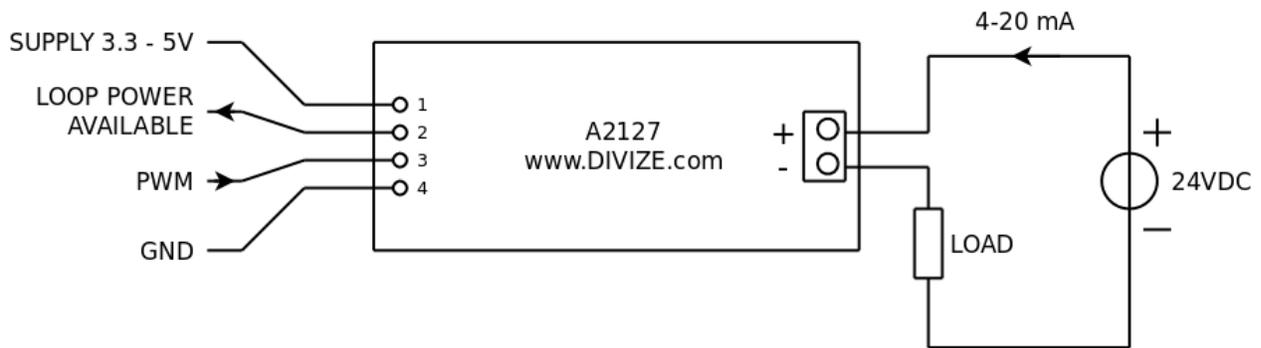- Control of valves, VFD, EHSV and other 4-20 mA controlled equipment.

Block Diagram
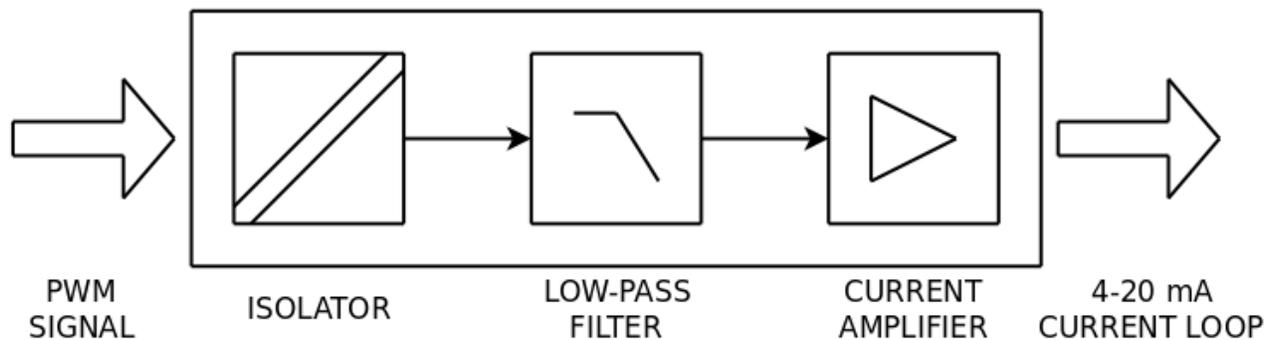
Specification

Item	Value	Unit	Comment
PWM 0%	3.3	mA	+/- 2%
PWM 100%	21.5	mA	+/- 2%
Non linearity	<0.1	%	
Max Voltage	32	V	
Min Voltage	8	V	

Connection Diagram

Connections

PIN	Description	Value	Comment	
1	Supply	3.3 - 5VDC	2.3 mA max (depending on PWM freq)	
2	Output	0 Supply V	Loop power is not available or voltage to low. Loop power is available.	
3	Input	PWM	Input for the PWM signal. The duty cycle is equivalent to the current in the 4-20 mA loop.	
4	GND	Common		
+	Loop Pos		4-20 mA loop positive	
-	Loop Neg		4-20 mA loop negative	

The A2127 is a passive current loop device, this means the A2127 does not power the loop, an external power supply is necessary to power the loop. This allows usage of the A2127 in both passive and active current loop systems. For active usage an external power supply is necessary. Connection examples are listed on the divize website.

Image

Dimensions


```
23 —
19 —                                                    ◯
                                                     ø 3,2


              www.DIVIZE.com
                 A2127


        ø 3,2
 4 —     ◯
 0 —
        |  |                All dimensions in mm      |    |
        0  4                                          35   39
```
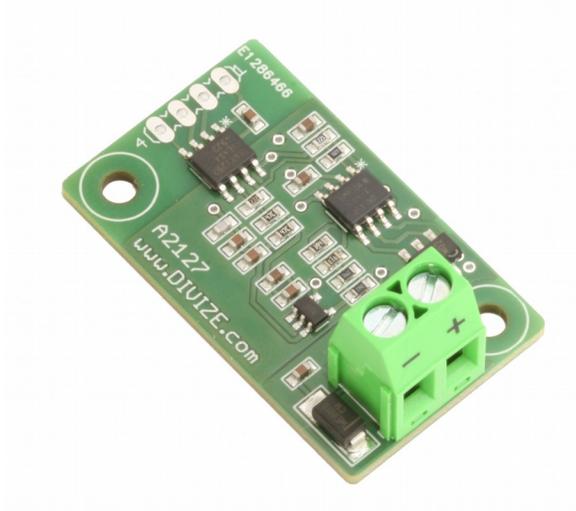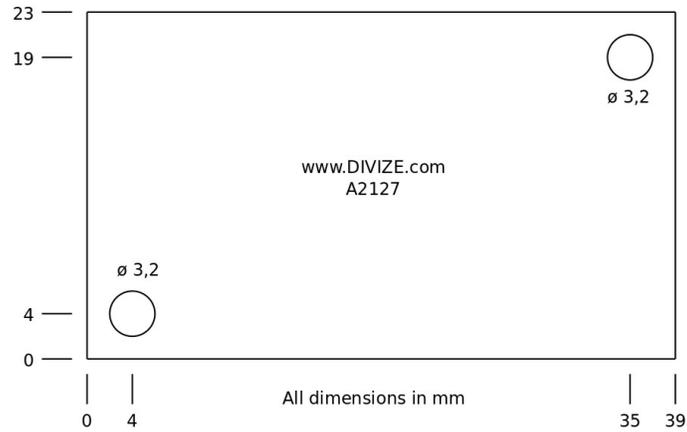
DIVIZE b.v.
Industrieweg 26
2254 AE VOORSCHOTEN
The Netherlands

T: +31 88 7733733
E: info@divize.com
W: divize.com