

SG-3081 Isolated Current Input / Output Module User's Manual

Introduction

The SG-3081 is a current input to voltage or current output signal conditioning module. It has 3000Vdc three-way isolation for input, output and power. And it also can change the input/output range via internal configuration switches.

The SG-3081 has an LED display to show whether the SG-3081 is functioning correctly and has two VRs (Zero, Span) to calibrate the input/output range accuracy.

The bandwidth of the SG-3081 is typically 3KHz. It's easy to mount the SG-3081 on a standard DIN rail and can operate in environments with wide temperature range.

Specifications

Current input:

- Unipolar: 0~20mA, 4~20mA
- Input impedance: 250Ω

Voltage output:

- Unipolar: 0~5V, 0~10V
- Output impedance: <50Ω
- Drive: 10mA (max.)

Current Output:

- Current: 0 ~ 20mA, 4 ~ 20mA
- Current load resistor: 0~500 Ω (Source)

General

- Isolation (three-way): 3000Vdc
- Accuracy: ±0.1% of full range (typical)
- Operation temperature range: -25°C ~ 75°C
- Storage temperature range: -30°C ~ 85°C
- Operation bandwidth: 3KHz
- Weight: 95.5 gram

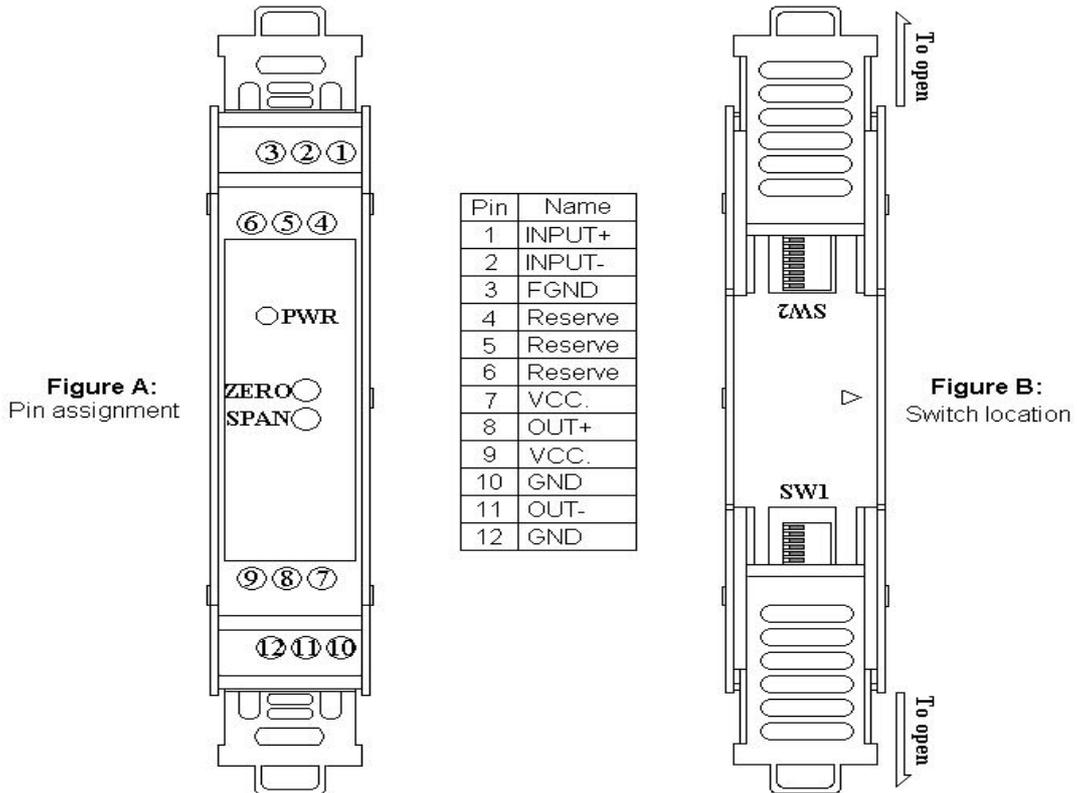
Supply Voltage

- Input Range: 10~30Vdc
 @24Vdc (Typical)
- Consumption: 1.61W (voltage output)
 2.10W (current output)

Configuration

The terminal wiring for the SG-3081 is shown in Figure A. Positive power terminals pins 7 and 9 are internally connected, as are negative pins 10 and 12. Power can be connected through the adjacent modules, making wiring much easier. The SG-3081 uses a power input range of 10~30Vdc.

Table 1 shows the switch positions used to configure the input and output range. The I/O configuration switches are located inside the module. And can be accessed by removing the DIN-rail bracket covers by sliding them in the direction shown in Figure B.



SG3081 Input To Output Range	Range (SW1)						Range (SW2)								Jumper	
	1	2	3	4	5	6	1	2	3	4	5	6	7	8	1	2
4~20mA / 4~20mA		◆		◆		◆	◆									
4~20mA / 0~20mA		◆		◆		◆		◆		◆		◆		◆		
4~20mA / 0~10V	◆		◆		◆		◆	◆				◆		◆		
4~20mA / 0~5V	◆		◆		◆		◆		◆		◆		◆			
0~20mA / 0~20mA		◆		◆		◆	◆									
0~20mA / 4~20mA		◆		◆		◆		◆			◆		◆	◆	◆	◆
0~20mA / 0~10V	◆		◆		◆		◆						◆			
* 0~20mA / 0~5V	◆		◆		◆		◆									

◆ : ON

Table 1: Input to output range (SW1, 2, Jumper1, 2)

* **Factory default setting**

Calibration Procedure

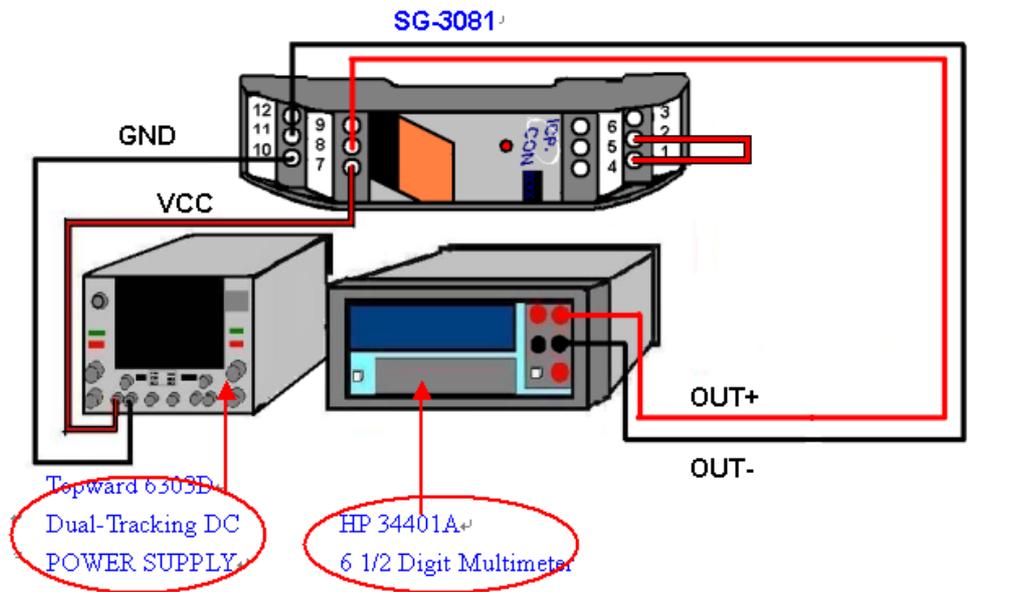


Figure C :
Offset Regulate

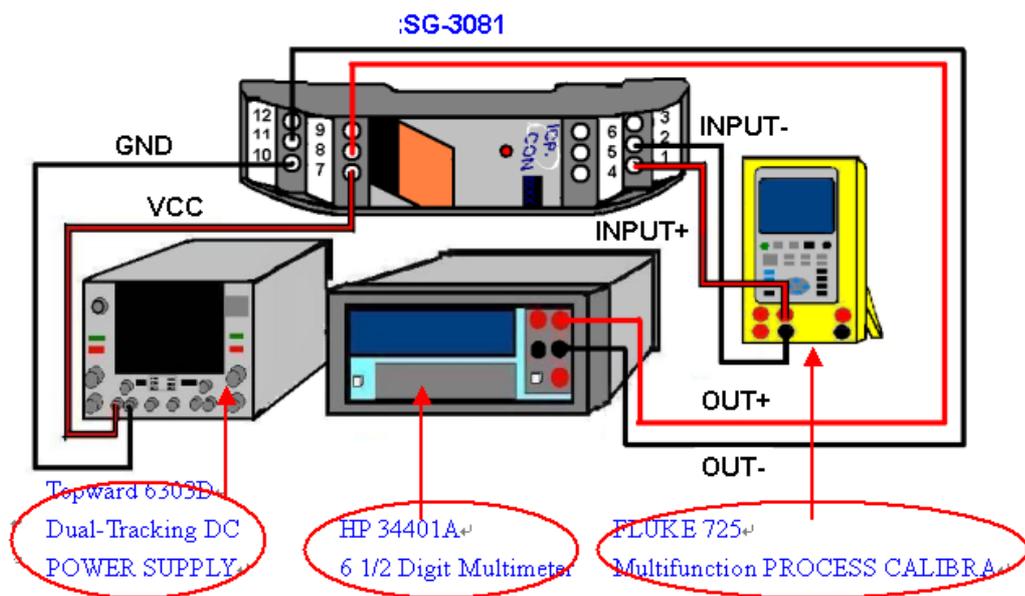


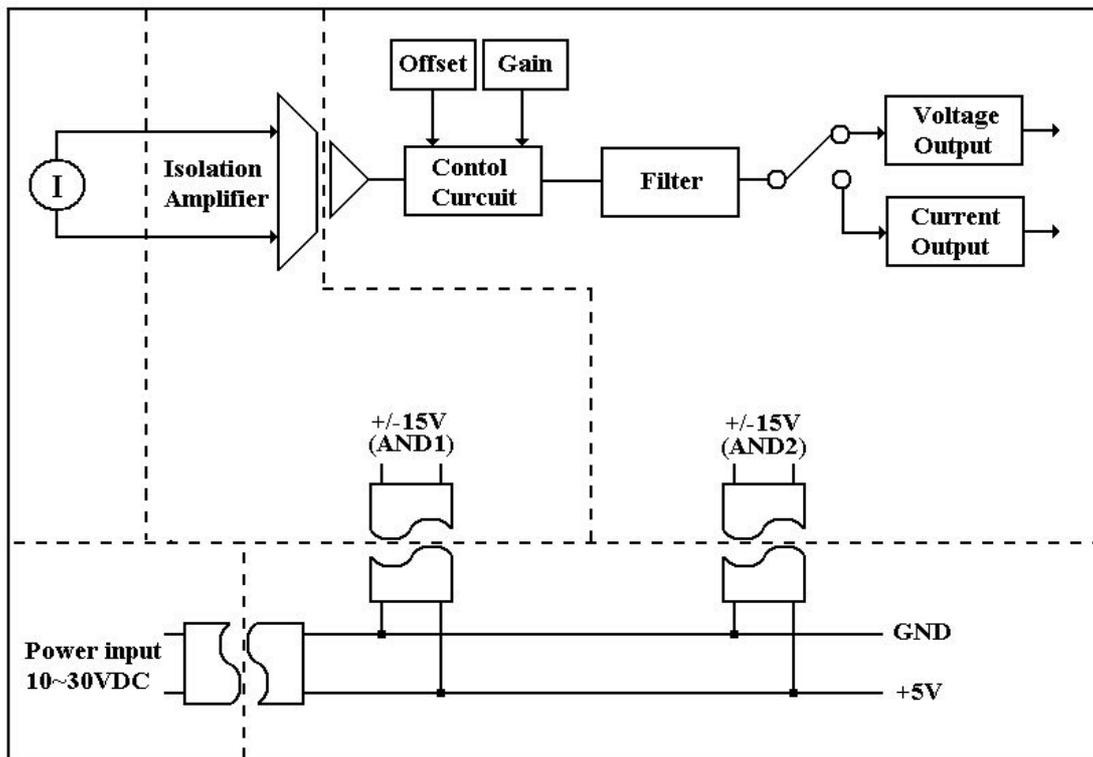
Figure D :
Gain Regulate

1. Refer to figure C to adjust the offset value.
 - (1) Connect pin7 to the +24Vdc connection and pin 10 to GND.
 - (2) Connect pin8 and pin 11 to the meter.
 - (3) Use wire to connect pins 1 and 2.
 - (4) Changing the SW1 and SW2 depends on your Input/Output range. Watch the value of the meter and adjust the VR1 (ZERO) value to the minimum value of this range.

2. Refer to figure D to adjust the gain value.

- (1) Connect pin7 to the +24Vdc connection and pin 10 to GND.
- (2) Connect pin8 and pin 11 to the meter.
- (3) Connect pins 1 and 2 to input source.
- (4) Changing the SW1 and SW2 depends on your input/output range. Watch the value of the meter and adjust the VR2 (SPAN) value to the maximum value of this range.

Block Diagram



Dimensions

Units:mm

