

SG-3016 Isolated Strain Gauge Input Module User's Manual

Introduction

The SG-3016 is a voltage input to voltage or current output signal conditioning module. It has 1000 Vdc three-way isolation for input, output and power. And can change the input/output range via internal configuration switches.

The SG-3016 has an LED display to show whether the SG-3016 is functioning correctly and has three VRs (Zero, Span, Exci) to calibrate the input/output range accuracy.

The bandwidth of the SG-3016 is typically 600 Hz. It's easy to mount the SG-3016 on a standard DIN rail and can operate in environments with wide temperature range.

Specifications

Voltage Specifications:

- Electrical input: ± 10 mV, ± 20 mV, ± 30 mV, ± 50 mV, ± 100 mV
- Excitation voltage: 1 ~ 10 Vdc (20 mA max.)

Voltage output:

- Bipolar: ± 5 VDC, ± 10 VDC
- Unipolar: 0 ~ 5 VDC, 0 ~ 10 VDC
- Output impedance: $< 50\Omega$

Current output:

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

General

- Three-way isolation: 1000 Vdc
- Accuracy: ± 0.1 % of full range
- Bandwidth: 600 Hz (typical)@-3 dB
- Operation temperature range: $-25^{\circ}\text{C} \sim 75^{\circ}\text{C}$
- Storage temperature range: $-30^{\circ}\text{C} \sim 85^{\circ}\text{C}$

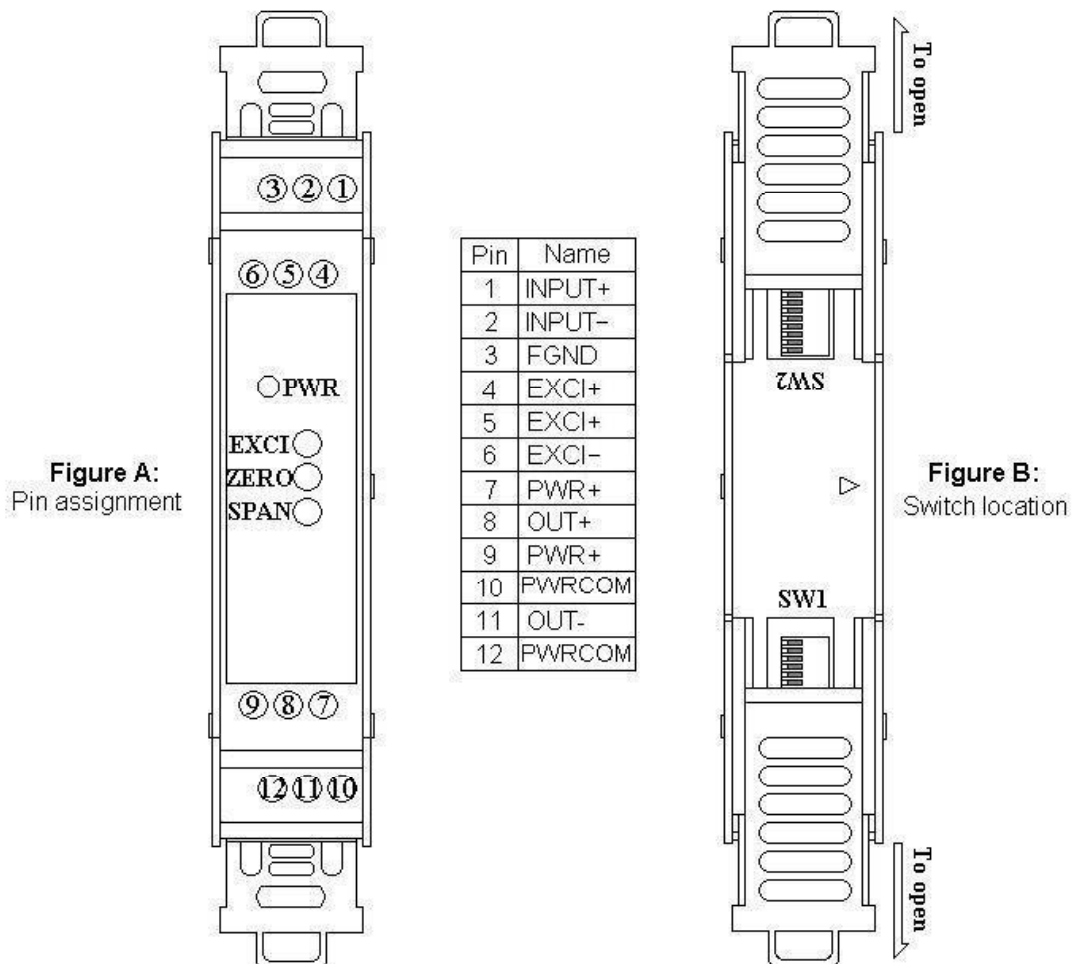
Supply Voltage

- Input Range: 10 ~ 30 Vdc
- Consumption: 1.44 W (voltage output)
1.74 W (current output)

Configure

The terminal wiring for the SG-3016 is shown in Figure A. Positive power terminals pin's 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-3016 uses a power input range of 10 ~ 30 V_{DC}.

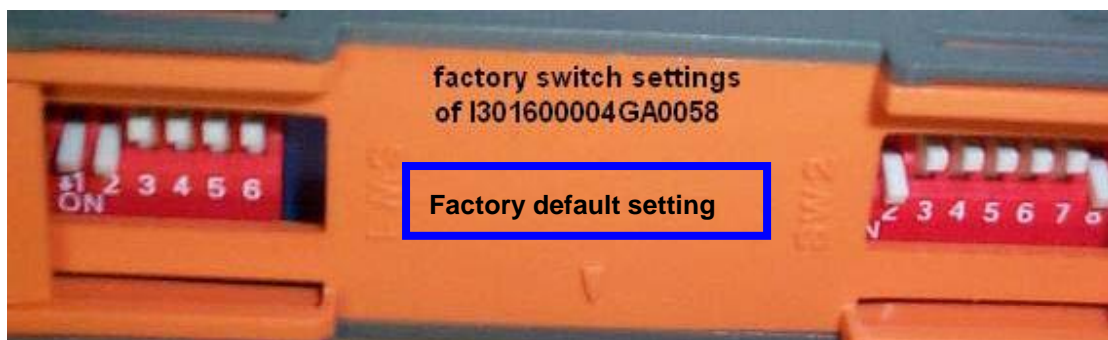
Table 1 and table 2 show the switch positions used to configure the input and output range. The I/O configuration switches are located inside the module. And can be accessed by removing the DIN-rail bracket covers by sliding them in the direction shown in Figure B.



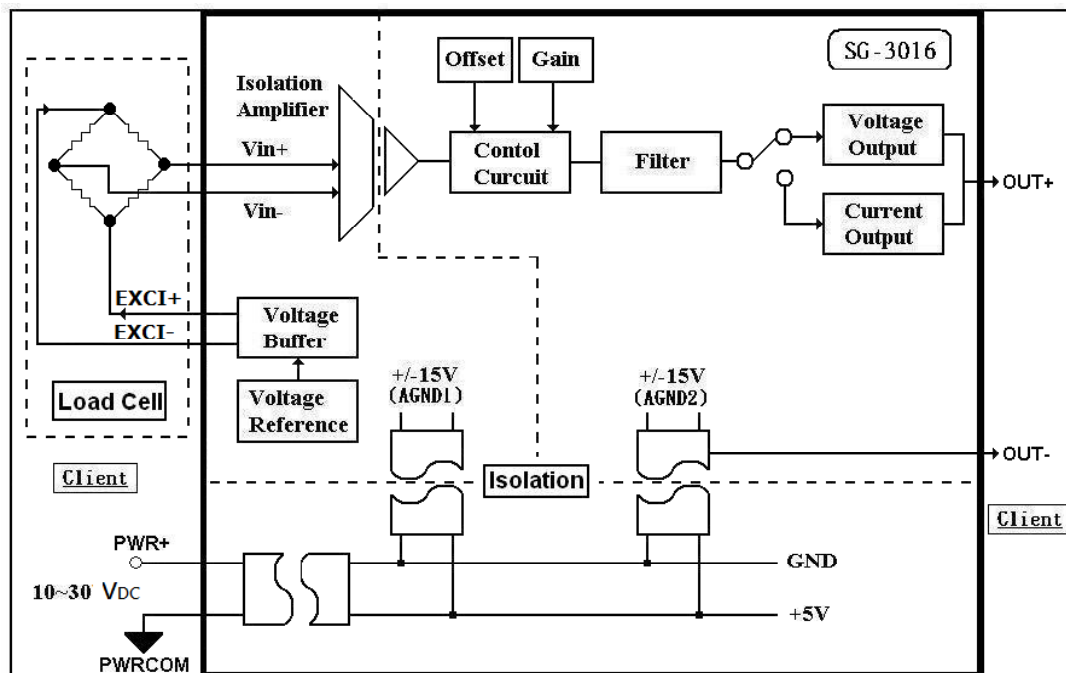
Factory default setting and label

Switch setting : <input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF														
SG3016	(SW1)						(SW2)							
Configuration	1	2	3	4	5	6	1	2	3	4	5	6	7	8
(INPUT)														
±10mV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* ±20mV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
±30mV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
±50mV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
±100mV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(OUTPUT)														
* ±0~10V	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
±0~5V	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
0~10V	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0~5V	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0~20mA	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

* Factory default setting



Block Diagram



Dimensions

Units:mm

