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 V_{DC} 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 V_{DC} (20 mA max.)

Voltage output:
- Bipolar: ±5 V_{DC}, ±10 V_{DC}
- Unipolar: 0 ~ 5 V_{DC}, 0 ~ 10 V_{DC}
- Output impedance: < 5 0Ω

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

General
- Three-way isolation: 1000 V_{DC}
- Accuracy: ±0.1 % of full range
- Bandwidth: 600 Hz (typical)@-3 dB
- Operation temperature range:-25 °C ～ 75 °C
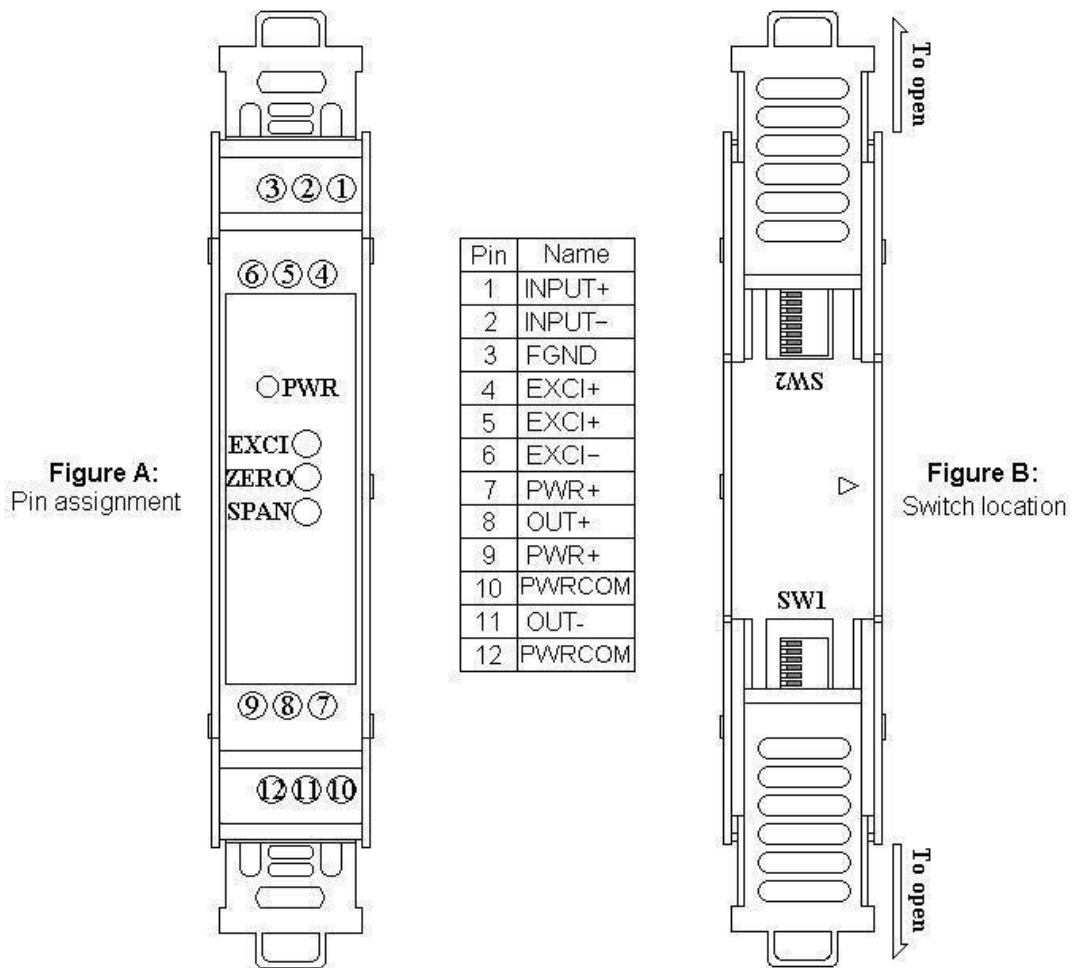- Storage temperature range:-30 °C ～ 85 °C

Supply Voltage
- Input Range: 10 ~ 30 V_{DC}
- 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 VDC.
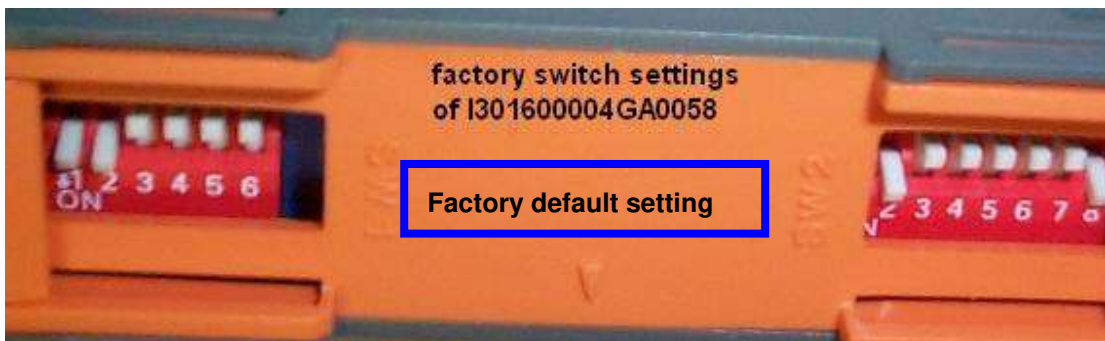
Table 1 and table 2 show the switch positions used to configure the input and output range. The I/O configuration switches are located inside the module. And can be accessed by removing the DIN-rail bracket covers by sliding them in the direction shown in Figure B.

Figure A:
Pin assignment

Pin	Name
1	INPUT+
2	INPUT−
3	FGND
4	EXCI+
5	EXCI+
6	EXCI−
7	PWR+
8	OUT+
9	PWR+
10	PWRCOM
11	OUT−
12	PWRCOM

Figure B:
Switch location

Factory default setting and label

Switch setting : ■ ON □ OFF														
SG3016 Configuration	(SW1)						(SW2)							
	1	2	3	4	5	6	1	2	3	4	5	6	7	8
(INPUT) ±10mV	□	□	□	□	□	□	■	□	□	□	□	□	□	□
* ±20mV	□	□	□	□	□	□	□	■	□	□	□	□	□	□
±30mV	□	□	□	□	□	□	□	□	■	□	□	□	□	□
±50mV	□	□	□	□	□	□	□	□	□	■	□	□	□	□
±100mV	□	□	□	□	□	□	□	□	□	□	■	□	□	□
(OUTPUT) * ±0~10V	■	■	□	□	□	□	□	□	□	□	□	□	□	■
±0~5V	■	■	□	□	□	□	□	□	□	□	□	□	■	□
0~10V	■	■	□	□	■	■	□	□	□	□	□	■	□	□
0~5V	■	■	□	□	■	□	□	□	□	□	□	■	□	□
0~20mA	□	□	■	■	■	□	□	□	□	□	□	■	□	□

＊Factory default setting

factory switch settings of I301600004GA0058

Factory default setting
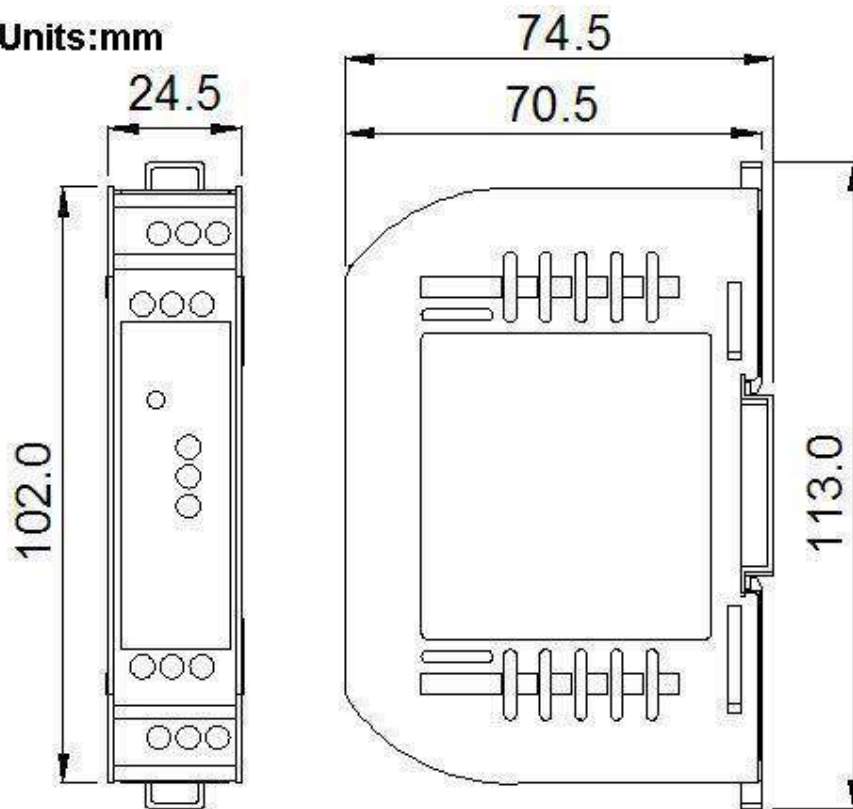
Block Diagram
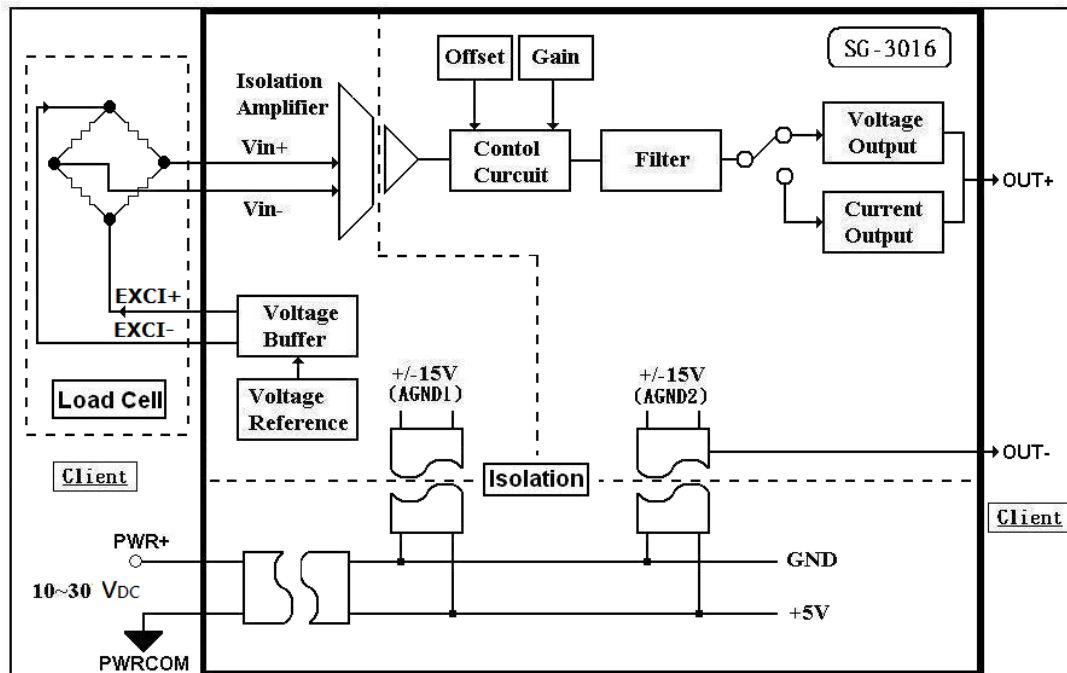
Dimensions

Technical Service:

Please E-mail your problem description to service@icpdas.com if you have any questions.

More detail information: www.icpdas.com