SG-3383
User's Manual

3-channel DC Current Signal Splitter Module Rev1.30

Introduction

The SG-3383 DC current signal splitters accept one 4 to 20 mA current input and provide three optically isolated 4 to 20 mA current outputs that are linearly related to the 4 to 20 mA current input. This provides an economical solution when one signal must be sent to three different devices. Typical applications include isolation, output splitting, output device separation and redundancy (i.e. to prevent failure of the entire loop if one device fails), or a combination of these. The input signal is filtered, amplified, split, and then passed through an opto-coupler to the output stages. Full 3-way isolation (input, output, power), 4 kV EFT Protection for Power Line and 8 kV ESD Protection make this module useful for ground loop elimination, common mode signal rejection, and noise pickup reduction. The SG-3383 includes an LED display that can be used to indicate whether the module is functioning correctly, and also includes VRs (Zero, Span) that can be used to calibrate the output range accuracy. The input bandwidth of the SG-3383 is typically 2.5 kHz.

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Specifications

Current Input:

Unipolar: +4~+20mA
Input Impedance: 125Ω
Input Bandwidth: 2.5 kHz (typical)

Current Output:

Current: +4 ~ +20mA
Current Output Wring: Source
Accuracy: ±0.1% of FSR (typical)
Current Load Resistor: 0～500 Ω

General:

3-way Isolation: 3000 V_{DC}
Operation Temperature Range: -25℃ to +75℃
Storage Temperature Range: -30℃ to +85℃
Operation Bandwidth: 2.5 kHz

Supply Voltage:

Input Range: +10 ~ +30V_{DC}
Typical Voltage: @24V_{DC}
Power Consumption: 2.5 W

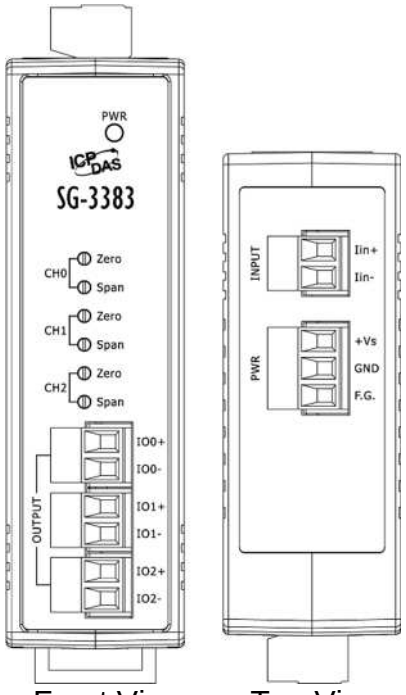
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Pin Assignments/Wiring

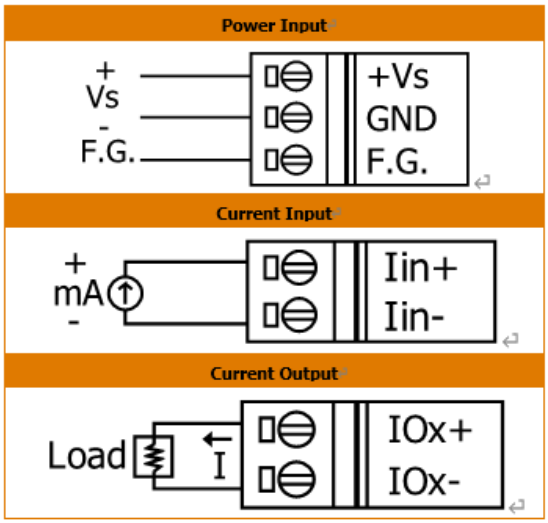
The terminal wiring for the SG-3383is shown below.

Power input, current input and current output terminals are compatible with direct connections.

The module supports a wide power input range of +10 ~ +30V_{DC}

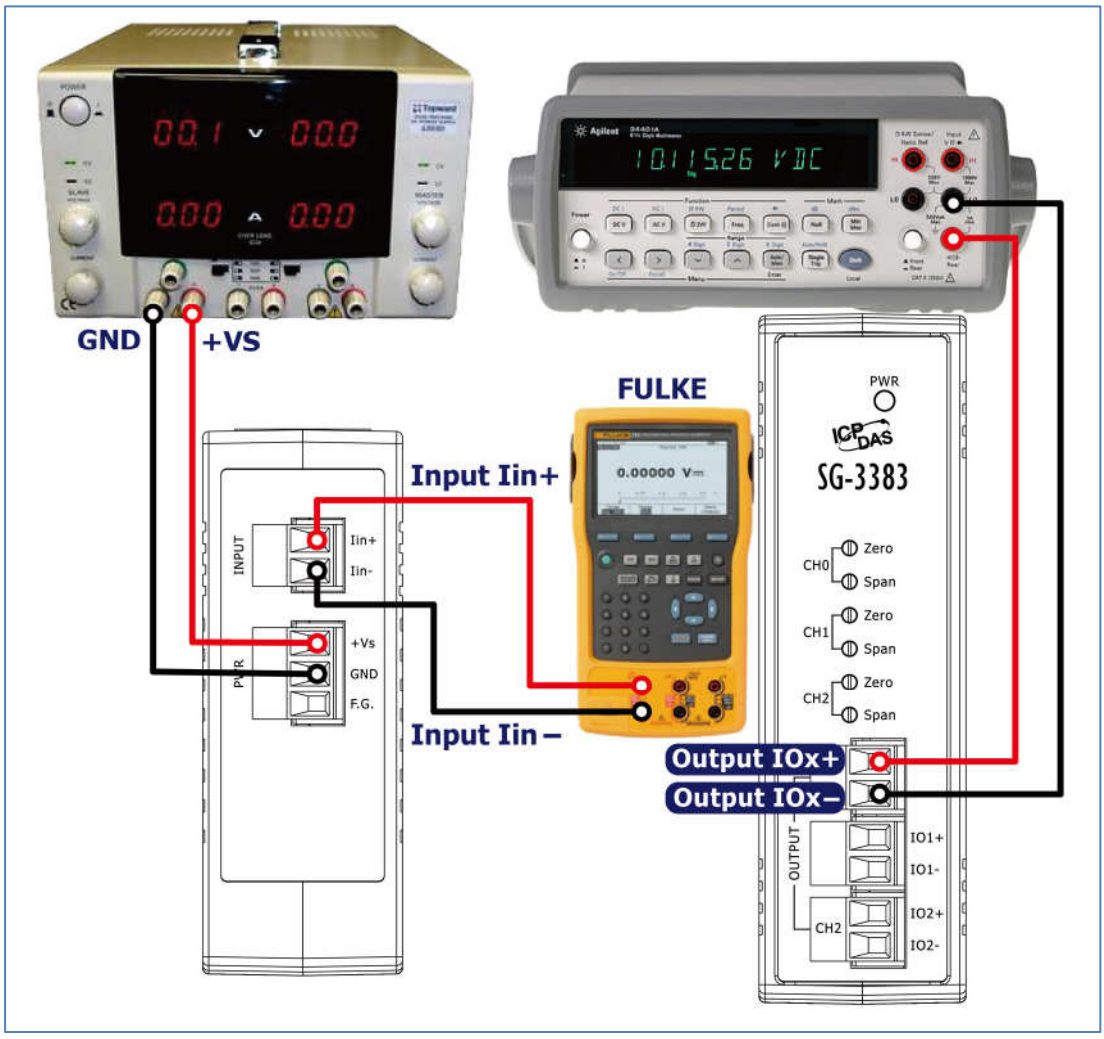


Front View Top View



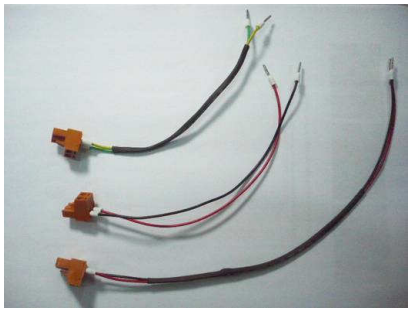
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Configuration Steps



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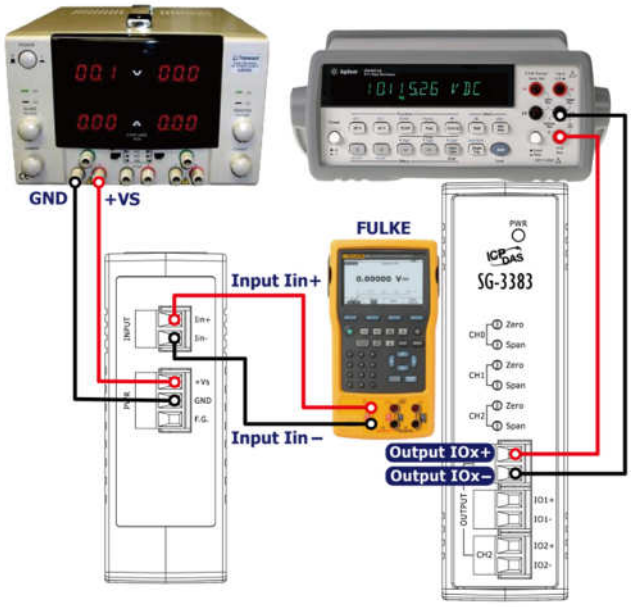
1.Test equipment:

Device	Description
1.1 SG-3383Terminal blocks 	For power, input, and output wiring
1.2 FLUKE-725 Calibration 	Current output and calibration
1.3 Agilent 34401A Meter 	Precision current measurement
1.4 Power Supply 	+10 ~ 30 VDC input voltage source

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1.2 Calibration Test Procedure:

1. Wiring



1.1 Adjust the power supply voltage to the test voltage 24VDC.
Insert the red wire into the red terminal and the black wire into the black terminal.

1.2 FLUKE 725 Calibrator:
Connect the red wire to the yellow terminal and the black wire to the green terminal using alligator clips.

1.3 Electricity meter:
Insert the red wire into the red terminal and the black wire into the black terminal

1.4 Power on the system.

2. Configure the Meter for Current Measurement

2.1 Set the meter to current measurement mode

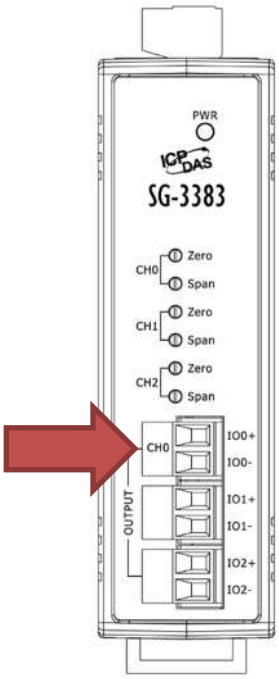


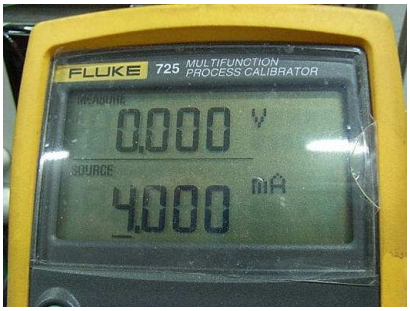
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3. Channel 0 Zero Calibration

3.1 Insert the test terminal into the Channel 0 dedicated port.

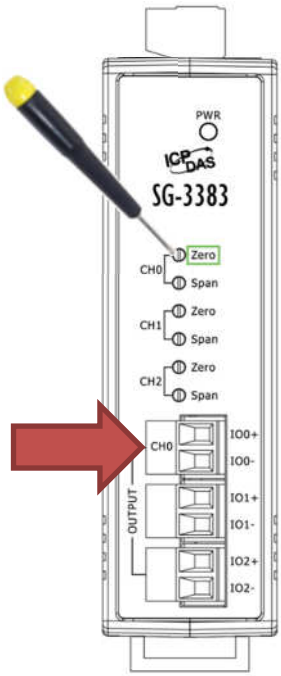
3.2 Set the FLUKE 725 to 4 mA





3.3 Adjust CH0 (Zero) until the meter reads 4 mA.

3.4 Verify the value is within 3.98 ~ 4.02 mA.

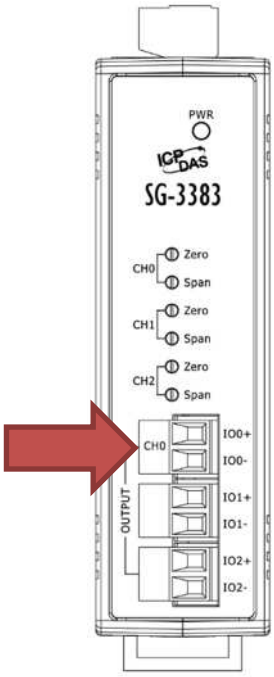


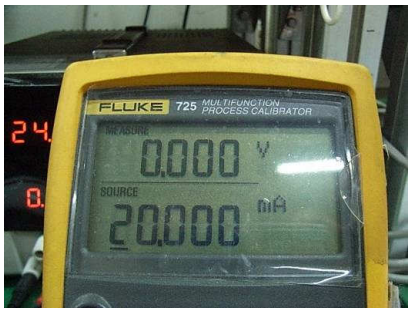


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4. Channel 0 Span Calibration

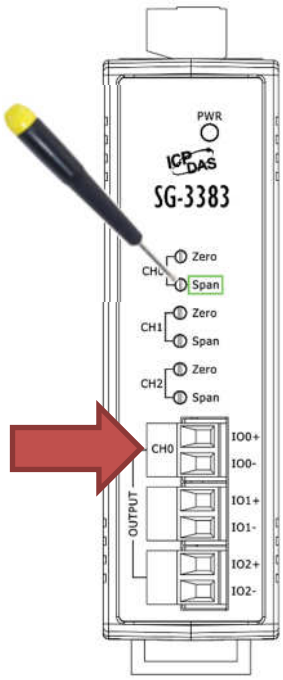
4.1 FLUKE 725 set to 20 mA





4.2 Adjust CH0 (Span) until the meter reads 20 mA.

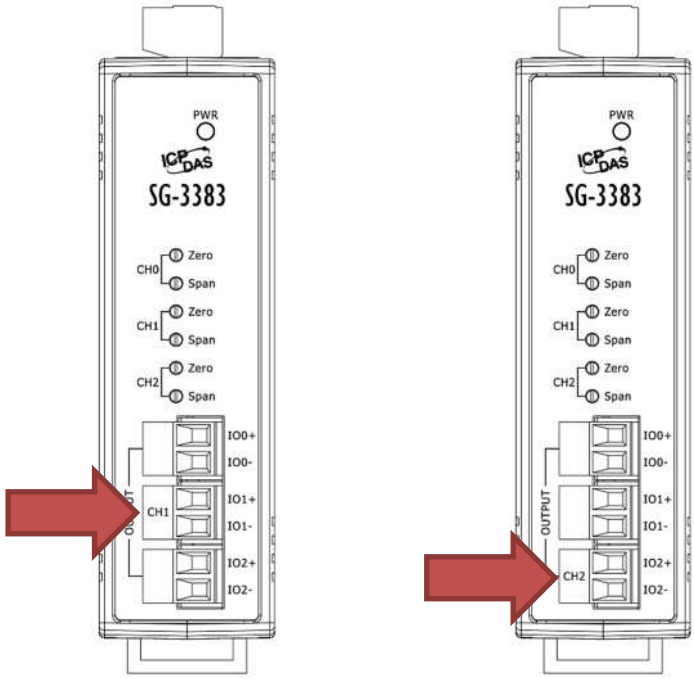
4.3 Verify the value is within 19.98 ~ 20.02 mA.



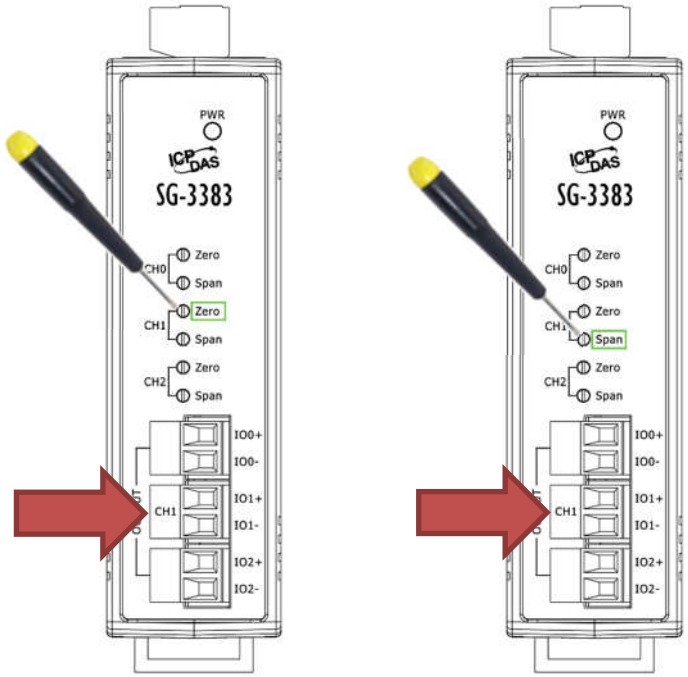


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5. Repeat the Calibration Process for Channels 1 and 2

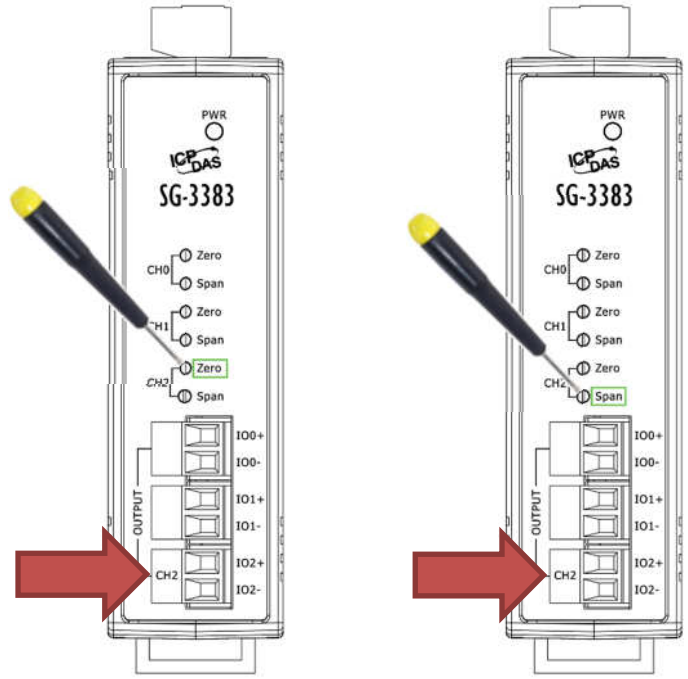


5.1 Channel 1: Use Zero and Span.

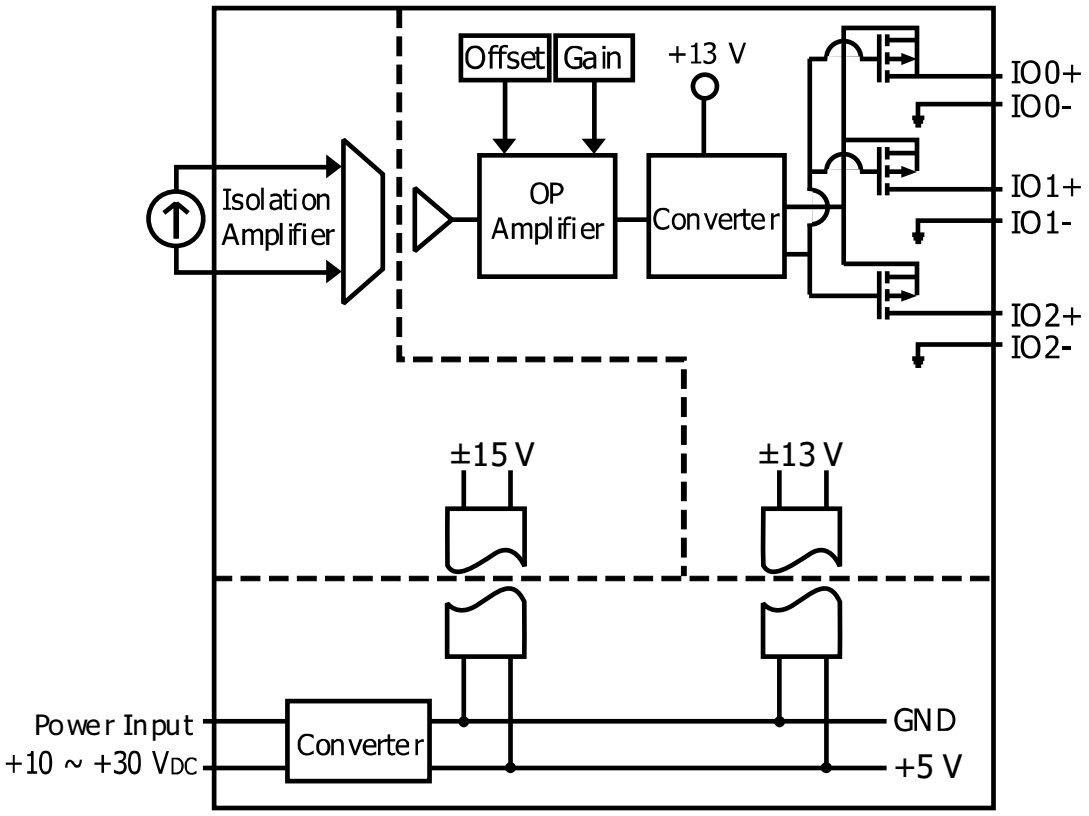


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5.2 Channel 2: Use Zero and Span.

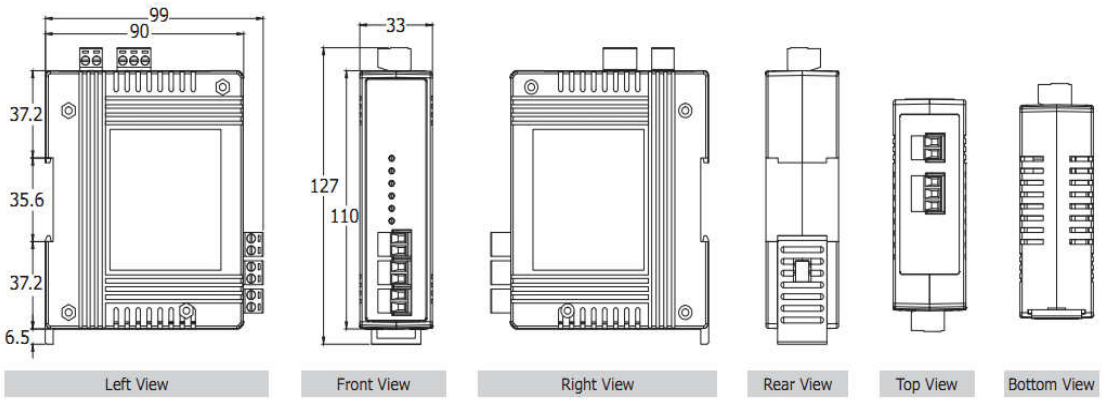


Block Diagram



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Dimensions (Units: mm)



Technical Service

Please E-mail your problem description to service@icpdas.com

when you have any questions.
More detail information http://www.icpdas.com/index.php

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