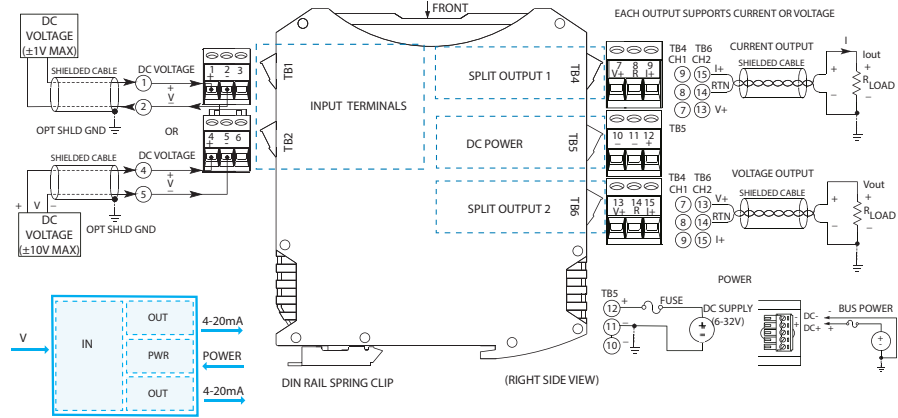


Signal Splitter: SP330 Series

SP337 Process voltage input signal splitter, four-wire



USB Configured



Multi-range $\pm 1V$, $\pm 5V$, or $\pm 10V$ input ◆ 0-20mA, $\pm 10V$ or 0-10V outputs ◆ 6-32V DC external power

Description

The SP337 is a high-performance signal splitter that converts one process-level DC voltage input into two isolated proportional control signals. A variety of current and voltage output ranges are supported. Power connects on a terminal block, a rail bus, or both for redundancy.

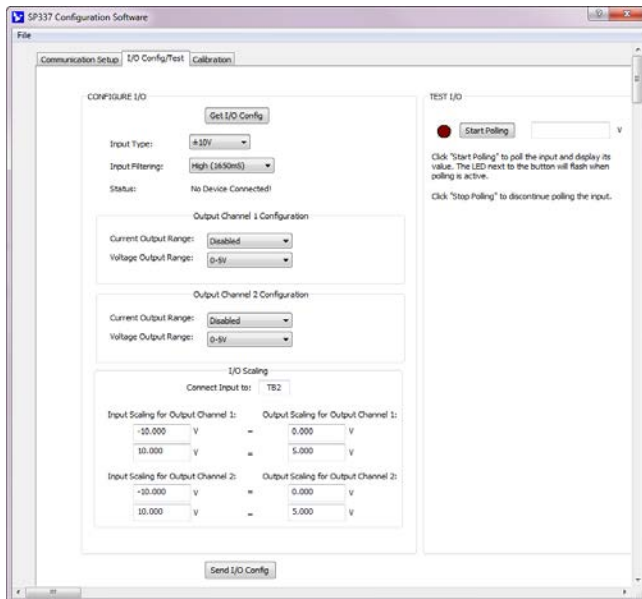
High-voltage isolation separates the input from power and each output circuit. The isolation protects from surges, reduces noise, and eliminates ground loop errors.

Setup is fast and easy with a USB connection to your PC and our Windows software. Acromag's Agility™ mobile app enables configuration on an Android smart phone or tablet. Software simplifies I/O range scaling, calibration, and advanced signal processing capabilities.

These rugged instruments withstand harsh industrial environments to operate reliably across a wide temperature range with very low drift. They feature high immunity to RFI, EMI, ESD, and EFT, plus low radiated emissions.

Key Features & Benefits

- Easy configuration via USB with Windows software or Agility app for Android
- Single unit accepts $\pm 1V$, $\pm 5V$, and $\pm 10V$ DC input ranges
- Input can scale differently for each output
- User-selectable filtering (none, low, med, high)
- Scalable current or voltage output ranges: 0-20mA, 4-20mA, $\pm 5V$, $\pm 10V$, 0-5V, 0-10V
- Normal or reverse-acting output
- Wide-range DC power input from 6-32V with support for rail power bus and redundancy
- High accuracy, linearity, stability, and reliability
- 1500V isolation
- Space-saving 17.5mm (0.69 inch) design with pluggable terminals for easier wiring
- Shock (25g) and vibration (4g) resistant
- Wide ambient operation (-40 to 75°C)
- CE compliant. UL/cUL Class I Div 2, ATEX / IECEx Zone 2 approvals.



Windows configuration software (FREE) at www.acromag.com

Android Agility™ app (FREE) at [Google Play Store](https://play.google.com/store/apps/details?id=com.acromag.agility)

Save configuration files for convenient copy/restore capability.

Tel 877-214-6267 ■ sales@acromag.com ■ www.acromag.com ■ 30765 Wixom Rd, Wixom, MI 48393 USA

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Performance Specifications

IMPORTANT: To prevent ground loop error between a grounded PC and a grounded input signal, Acromag strongly recommends use of a USB isolator like Acromag's USB-Isolator when configuring a SP330 Series splitter.

■ USB Interface

USB Connector

USB Mini-B type socket, 5-pin

USB Data Rate

12Mbps. USB v1.1 and 2.0 compatible

USB Transient Protection

Transient voltage suppression on power and data lines

USB Cable Length

5.0 meters maximum

Driver

Not required. Uses built-in Human Interface Device (HID) USB drivers of the Windows operating system.

■ Input (Passive)

Default Configuration/Calibration

Input: $\pm 10V$, medium filter

Output: 4 to 20mA

Input Ranges and Accuracy

Range	Accuracy (typical)
$\pm 1V$ DC	$\pm 0.05\%$ of span
$\pm 5V$ DC	$\pm 0.05\%$ of span
$\pm 10V$ DC	$\pm 0.05\%$ of span

Error includes the effects of repeatability, terminal point conformity, and linearization.

Ambient Temperature Effect

Better than $\pm 80\text{ppm}/^\circ\text{C}$ ($\pm 0.008\%/^\circ\text{C}$)

Zero Scaling Adjust

0 to 95% of range, typical

Full Scale Adjust

5 to 100% of full scale range, typical

Input Over-Voltage Protection

Bipolar Transient Voltage Suppressors (TVS), 14V working and 18V clamp level typical

Input Resolution

Bipolar input: 1 part in 50000 (± 25000)

Unipolar input: 1 part in 25000

Input Impedance

$\pm 1V$ input: 15M ohms (TB1)

$\pm 5V$ / $\pm 10V$ input: $>1M$ ohms (TB2)

Input Filter

Selectable digital filtering (none, low, med., and high)

Noise Rejection (with high filter)

Normal mode @ 60Hz: $>80\text{dB}$

Common mode @ 60Hz: $>133\text{dB}$

■ Output (Two Signals, Active)

Output Range

Range	Over-Range	Resolution
$\pm 10V$	$\pm 10.5V$	1 part in 62415
$\pm 5V$	$\pm 5V$	1 part in 31208
0 to 10V	-0.5527 to +10.5V	1 part in 59293
0 to 5V	-0.27634 to +5.25V	1 part in 59293
0 to 20mA	-1.1054 to 21mA	1 part in 59293
4 to 20mA	-1.1054 to 21mA	1 part in 47434

Output Load

Voltage output: 1K ohms minimum

Current output: 0-525 ohms for 21mA

Output Response Time (for step input change)

Time to reach 98% of final output value (typical)	
No filter	11 milliseconds
Low filter	38 milliseconds
Medium filter	121 milliseconds
High filter	1050 milliseconds

Output Ripple

Less than $\pm 0.1\%$ of output span

■ Environmental

Operating Temperature

-40 to 75°C (-40° to 167°F)

Storage Temperature

-40 to 85°C (-40 to 185°F)

Relative Humidity

5 to 95% non-condensing

Power Requirement

6-32V DC external supply, 1.5W max

Isolation

1500V AC peak. 250V AC (354V DC) continuous between input, output, and power circuits

Shock and Vibration Immunity

Vibration: 4g, per IEC 60068-2-64

Shock: 25g, per IEC 60068-2-27

Approvals

CE compliant. Designed for UL/cUL Class I Division 2 Groups ABCD, ATEX / IECEx Zone 2.

Electromagnetic Compatibility (EMC) Compliance

Radiated Emissions: BS EN 61000-6-4, CISPR 16

RFI: BS EN 61000-6-2, IEC 61000-4-3

Conducted RFI: BS EN 61000-6-2, IEC 61000-4-6

ESD: BS EN 61000-6-2, IEC 61000-4-2

EFT: BS EN 61000-6-2, IEC 61000-4-4

Surge Immunity: BS EN 61000-6-2, IEC 61000-4-5

■ Physical

General

General-purpose enclosure designed for mounting on 35mm "T-type" DIN rail

Case Material

Self-extinguishing polyamide, UL94 V-0 rated, color light gray. General-purpose NEMA Type 1 enclosure

I/O Connectors

Removable plug-in terminal blocks rated for 12A/250V; AWG #26-12, stranded or solid copper wire

Dimensions

17.5 x 114.5 x 99.0 mm (0.7 x 4.51 x 3.90 inches)

Shipping Weight

0.22 kg (0.5 pounds) packed

Ordering Information

Models

SP337-0700

Four-wire splitter, process voltage input

Services

SP330-Config/Cal

Factory custom configuration/calibration service.

Specify input type, input/output zero and full-scale values, filtering, and sensor fault settings on order.

Software

TTC-SIP (recommend one kit per customer)

Windows Software Interface Package for Acromag SP Series signal splitters. Includes configuration software CD-ROM (5040-944), isolator (USB-ISOLATOR) and two USB cables (4001-112, 4001-113).

Agility Mobile Application

Software configuration software for an Android smart device. Download for free from the Google Play Store. Requires 5028-565 and 4001-113 cables

Accessories

TTBUS-KIT

DIN rail bus power connector, left/right terminal blocks & two end stops #1027-222. One kit supports multiple splitters.

USB-ISOLATOR

USB-to-USB isolator, includes USB cable (4001-112)

4001-112

USB cable, 1 meter, with Type A to Type B plugs

4001-113

USB cable, 1 meter, with Type A to Mini-B plugs

4001-252

DIN rail end stop for hazloc approvals

5028-565

USB-OTG 6 inch cable



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