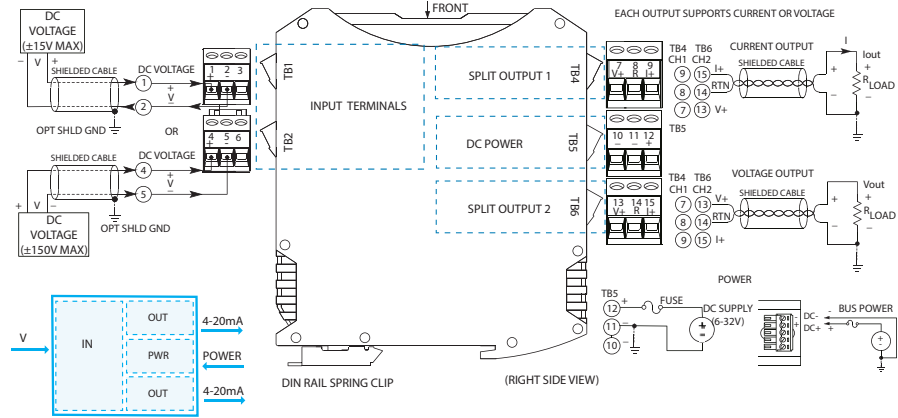


# Signal Splitter: SP330 Series

**SP338** High voltage input signal splitter, four-wire



**USB Configured**



Multi-range  $\pm 15$ ,  $\pm 75$ , or  $\pm 150$ V input ◆ 0-20mA,  $\pm 10$ V or 0-10V outputs ◆ 6-32V DC external power

## Description

The SP338 is a high-performance signal splitter that converts one high-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.

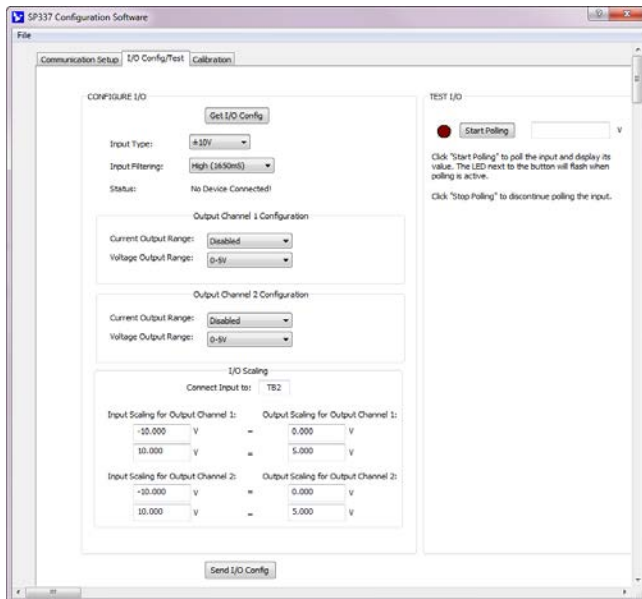
High-voltage isolation separates the input from power and each output circuit. The isolation protects from surges, reduces noise, and eliminates ground loop errors.

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  $\pm 15$ V,  $\pm 75$ V, and  $\pm 150$ V 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,  $\pm 5$ V,  $\pm 10$ V, 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](http://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

# Signal Splitter: SP330 Series

## SP338 High voltage input signal splitter, four-wire

### 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:  $\pm 15V$ , medium filter

Output: 4 to 20mA

##### Input Ranges and Accuracy

Range	Accuracy (typical)
$\pm 15V$ DC	$\pm 0.05\%$ of span
$\pm 75V$ DC	$\pm 0.05\%$ of span
$\pm 150V$ 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), 220V working typical.

##### Input Resolution

Bipolar input: 1 part in 50000 ( $\pm 25000$ )

Unipolar input: 1 part in 25000

##### Input Impedance

Greater than 1M ohms

##### Input Filter

Selectable digital filtering settings (none, low, medium, and high)

##### Noise Rejection (with high filter)

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

Common mode @ 60Hz:  $>91\text{dB}$

#### ■ Output (Two Signals, Active)

##### Output Range

Range	Over-Range	Resolution
$\pm 10V$	$\pm 10.5V$	1 part in 62415
$\pm 5$	$\pm 5V$	1 part in 31208
0 to 10V	$-0.5527$ to $+10.5V$	1 part in 59240
0 to 5V	$-0.27634$ to $+5.25V$	1 part in 60262
0 to 20mA	$-1.1054$ to $21\text{mA}$	1 part in 58596
4 to 20mA	$-1.1054$ to $21\text{mA}$	1 part in 46877

##### 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	39 milliseconds
Low filter	59 milliseconds
Medium filter	158 milliseconds
High filter	1168 milliseconds

##### Output Ripple

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

#### ■ Environmental

##### Operating Temperature

$-40$  to  $75^\circ\text{C}$  ( $-40^\circ$  to  $167^\circ\text{F}$ )

##### Storage Temperature

$-40$  to  $85^\circ\text{C}$  ( $-40$  to  $185^\circ\text{F}$ )

##### 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

##### SP338-0700

Four-wire splitter, high 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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