

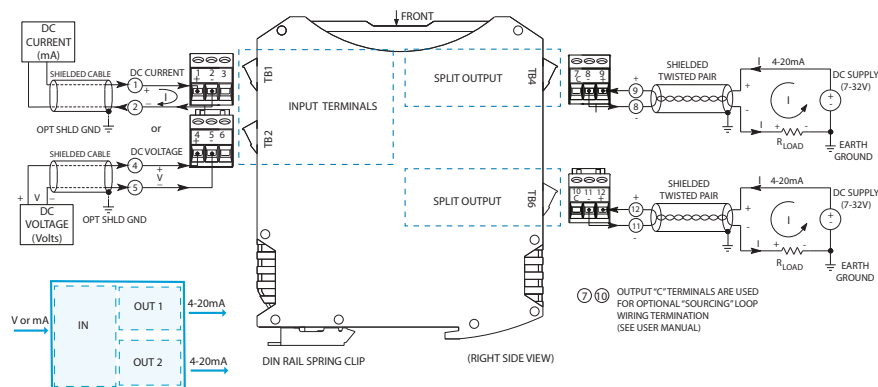


Process Loop Splitter: SP230 Series

SP236 Current/millivolt input signal splitter, two-wire



**USB
Configured**



DC current and low voltage input ♦ 4-20mA outputs (sink/source) ♦ 7-32V DC loop power

Description

The SP236 model is a high-performance signal splitter that converts one DC current or millivolt input into two isolated proportional 4-20mA control signals. Power is received from one or both output loop currents.

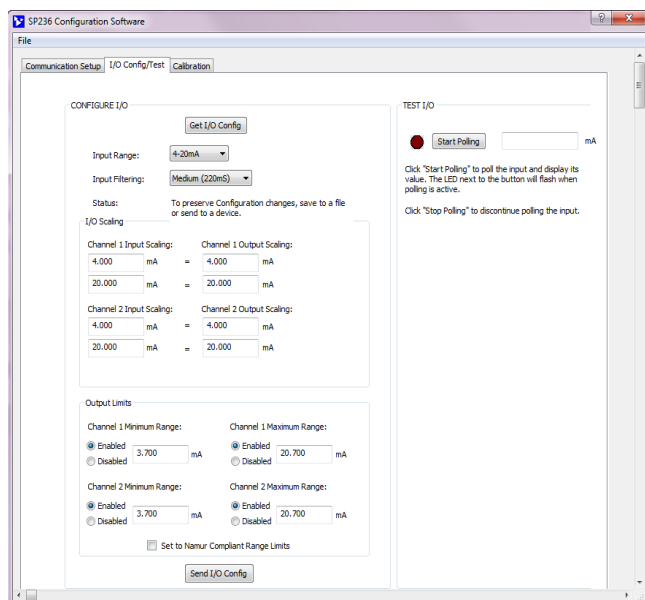
Setup is fast and easy with a USB connection to your PC and our Windows software. Acromag's Agility™ mobile app enables configuration on an Android smart phone or tablet. Software simplifies I/O range scaling, calibration, and advanced signal processing capabilities.

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

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 input ranges up to $\pm 500\text{mV}$, $\pm 20\text{mA}$ DC, or 0-20A AC (with external sensor)
- Input scales independently at each output
- User-selectable filtering (none, low, med, high)
- User-configurable output range clamp levels support NAMUR-compliant operation
- Supports reverse-acting (inverse) output
- Supports sink or source output wiring
- Very low 7V two-wire loop burden
- 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 80°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.

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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 SP230 Series transmitter.

■ 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: 4 to 20mA, medium filter

Output: 4 to 20mA

Input Ranges and Accuracy

Range	Accuracy (typical)
±20mA	±0.05% of span
0 to 20mA	±0.05% of span
4 to 20mA	±0.05% of span
0 to 11.17mA (for AC sensor)	±0.05% of span
±1mA	±0.05% of span
±0.5V	±0.05% of span
0 to 500mV	±0.05% of span

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

Ambient Temperature Effect

Better than ±80ppm/°C (±0.008%/°C)

Zero Scaling Adjust

0 to 95% of range, typical

Full Scale Adjust

5 to 100% of full scale range, typical

Input Impedance

Current input: 24.9 ohms

Voltage input: 15M ohms

Input Over-Voltage Protection

Bipolar Transient Voltage Suppressors (TVS),

5.6V clamp level typical.

Input Resolution

Bipolar input: 1 part in 50000 (±25000).

Unipolar input: 1 part in 25000.

Input Filter

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

Input Filter Bandwidth

Normal mode plus digital filtering within the ADC. Bandwidth (-3dB) varies with digital filter setting from 4Hz without filtering to 0.33Hz with high filtering.

Noise Rejection (Common Mode, High Filter)

138dB @ 60Hz, typical with 100 ohm input unbalance.

■ Output (Two Signals, Passive)

Output Range

Dual isolated 4 to 20mA DC.

Output Compliance

$R_{LOAD} = (V_{SUPPLY} - 7V) / 0.020A$.

$R_{LOAD} = 0$ to 850 ohms @ 24V DC.

Output Response Time (for step input change)

Time to reach 98% of final output value (typical)	
No filter	17 milliseconds
Low filter	41 milliseconds
Medium filter	138 milliseconds
High filter	1142 milliseconds

■ Environmental

Operating temperature

-40 to 80°C (-40° to 176°F)

Storage temperature

-40 to 85°C (-40 to 185°F)

Relative humidity

5 to 95% non-condensing

Power Requirement

Loop powered, 7-32V DC SELV (Safety Extra Low Voltage), 24mA max

Isolation

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

Shock and Vibration Immunity

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

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

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

Approvals

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

■ 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 (0.69 x 4.51 x 3.90 inches).

Shipping Weight

0.22 kg (0.5 pounds) packed.

Ordering Information

Models

SP236-0600

Two-wire splitter, current/millivolt input.

Services

SP230-Config/Cal

Factory custom configuration/calibration service.

Specify input type, input/output zero and full-scale values, and filtering, 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

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

5020-350

AC current sensor (toroidal transformer); converts 0-20A AC to 0-11.17mA DC

5028-565

USB-OTG 6 inch cable

ISO9001
AS9100 
MADE IN USA

Acromag 
THE LEADER IN INDUSTRIAL I/O

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