Signal Splitter: SP330 Series

SP338 High voltage input signal splitter, four-wire

USB Configured

Multi-range ±15, ±75, or ±150V input ◆ **0-20mA, ±10V 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 ±15V, ±75V, and ±150V 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, ±5V, ±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.
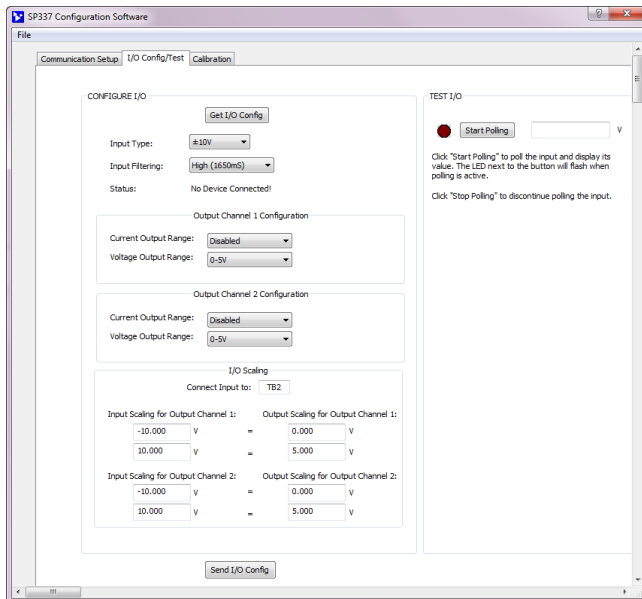
Windows configuration software (FREE) at www.acromag.com

Android Agility™ app (FREE) at Google Play Store

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 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: ±15V, medium filter
Output: 4 to 20mA

Input Ranges and Accuracy

Range	Accuracy (typical)
±15V DC	±0.05% of span
±75V DC	±0.05% of span
±150V DC	±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 Over-Voltage Protection
Bipolar Transient Voltage Suppressers (TVS), 220V working typical.

Input Resolution
Bipolar input: 1 part in 50000 (±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: >80dB
Common mode @ 60Hz: >91dB

■ Output (Two Signals, Active)

Output Range

Range	Over-Range	Resolution
±10V	±10.5V	1 part in 62415
±5	±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 21mA	1 part in 58596
4 to 20mA	–1.1054 to 21mA	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 ±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.
⟨Ex⟩ II 3 G Ex nA IIC T4 Gc -40°C ≤ Ta ≤ +80°C.

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

ISO9001
AS9100
MADE IN USA

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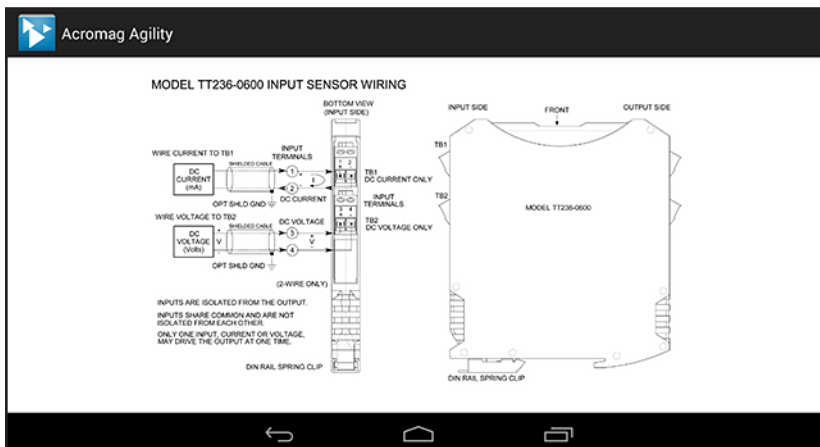## Acromag Agility™ Config Tool   Mobile Application

The Agility™ Config Tool is a mobile application that allows easy setup and configuration of Acromag DT and TT Series transmitters and SP Series signal splitters via a tethered mobile device.

This free app is available for Android devices at the Google Play store at Acromag Agility™ Config Tool.

Demo the software, no need for a module. To enter demo mode simply tap the ▶ icon in the upper left corner 8 times.
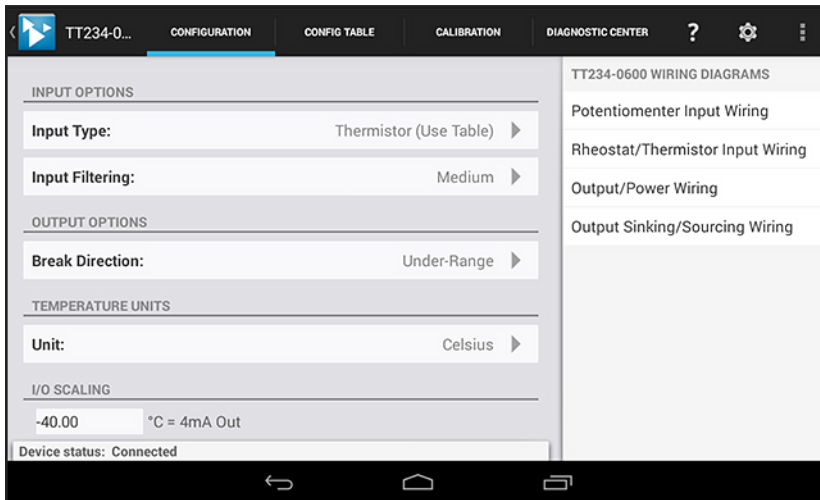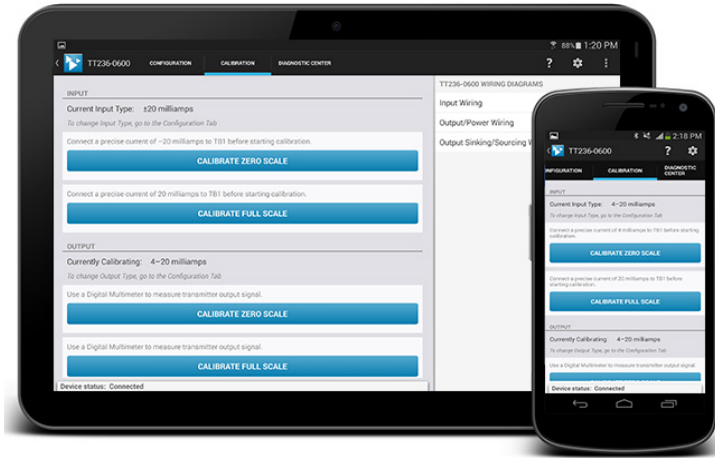
With a couple of taps, quickly configure input, output, unit and scaling options.

Key Features & Benefits

■ Connects to Acromag DT and TT Series transmitters (except model TT231), and SP Series signal splitters.

■ Requires the use of USB OTG Cable (Acromag part # 5028-565) and USB A to Mini B Cable (Acromag part # 4001-113)

■ Configures and calibrates DT, TT, and SP Series products via phone or tablet running Android 4.3 ICS (Ice Cream Sandwich) or later.

■ View wiring diagrams, even without an internet connection.

■ Perform quick and easy field diagnostics and troubleshooting.

■ Ideal for field technicians.

Quick and easy access to the wiring diagram, even offline without internet access.

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