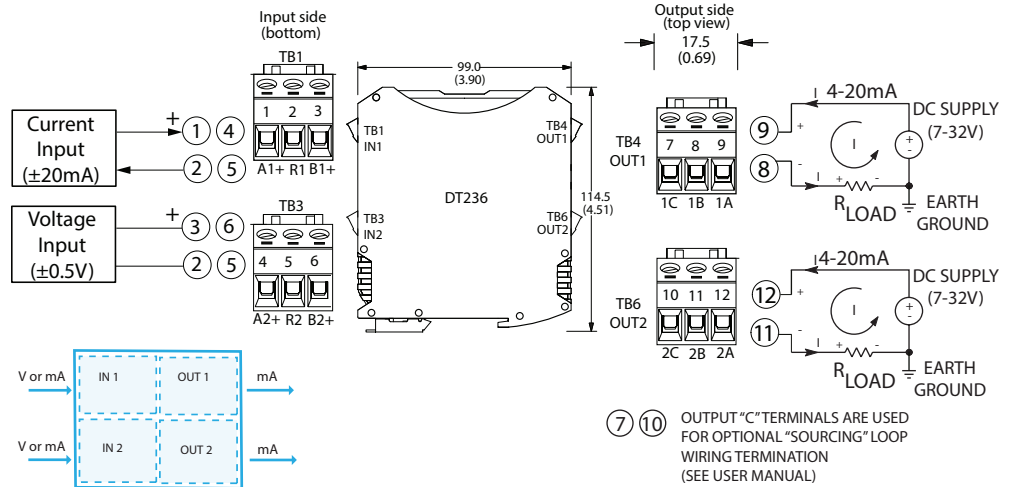


# Transmitters: DT230 Series

## DT236 Current/millivolt input two-wire dual transmitters



Dual channels ♦  $\pm 20\text{mA}$ ,  $\pm 500\text{mV}$  inputs ♦ 4-20mA outputs (sink/source) ♦ 7-32V DC loop power

### Description

DT230 series signal conditioners provide two independent I/O channels in a single, space-saving unit. The DT236 model is a dual two-wire transmitter that isolates and converts DC current or low voltage inputs to proportional 4-20mA control signals. Power is received from the output loop current or a DC supply when using a three-wire connection.

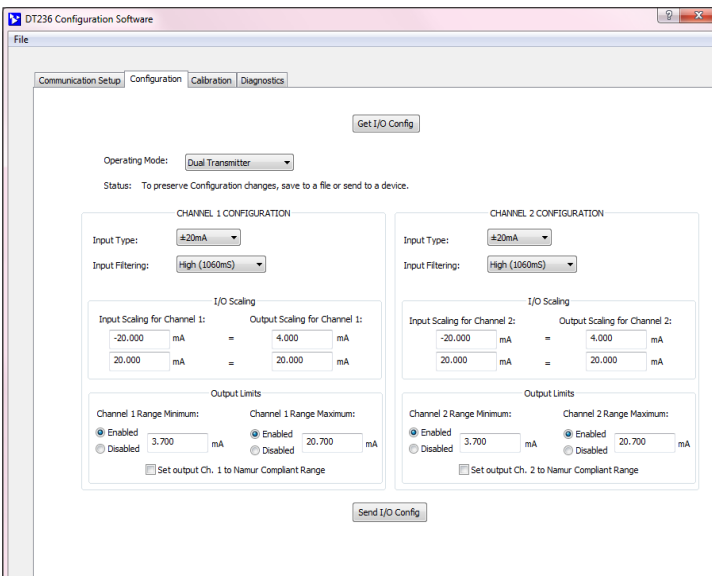
High-voltage isolation separates all input and output circuits from each other. Isolation protects from surges, reduces noise, and helps eliminate ground loop errors.

Setup and calibration are fast and easy with a convenient USB connection to your PC and Acromag's Windows configuration software. The Android app enables setup with mobile devices.

Advanced signal processing capabilities, variable range input/output, and convenient USB programming make this instrument very versatile. These transmitters can withstand harsh industrial environments and operate reliably across a wide temperature range with very low drift. They feature RF, EMI, ESD, EFT, and surge protection plus low radiated emissions.

### Key Features & Benefits

- Operate as a dual transmitter, a single transmitter, or a signal splitter
- Easy configuration via USB with Windows software or Agility™ app for Android
- Independently adjustable and scalable input and output ranges
- Selectable current and voltage input ranges: 0/4-20mA,  $\pm 1\text{mA}$ ,  $\pm 20\text{mA}$ ,  $\pm 0.5\text{V}$ , 0-500mV DC
- Compatible with Acromag 0-20A AC sensor input
- 4-20mA current loop outputs support sinking or sourcing circuit configurations
- User-configurable output range clamp levels support NAMUR-compliant operation
- Very low 7V two-wire loop burden
- High accuracy, linearity, stability, and reliability
- User-selectable filtering (none, low, med, high)
- Space-saving 17.5mm (0.7 inch) unit with pluggable terminals for convenient wiring
- 1500V isolation, 4-way (inputs/outputs)
- Wide ambient operation (-40 to 80°C)
- CE compliant. UL/cUL Class I Div 2, ATEX/IECEx Zone 2



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](mailto:sales@acromag.com) ■ [www.acromag.com](http://www.acromag.com) ■ 30765 Wixom Rd, Wixom, MI 48393 USA

# Transmitters: DT230 Series

## DT236 Current/millivolt input two-wire dual transmitters

### 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 DT230 Series transmitter.

#### ■ USB Interface

##### USB Connection

Type: USB Mini-B type socket, 5-pin.  
Data Rate: 12Mbps. USB v1.1 and 2.0 compatible.  
Maximum cable length: 5.0 meters.  
Transient voltage suppression on power and data lines.

#### ■ Input (two channels)

##### Default Configuration/Calibration

Input: 4 to 20mA, medium filter.  
Output: 4 to 20mA.

##### A/D Converters (ADC)

Two 24-bit Sigma Delta ADCs (only 16-bits used).

##### Input Ranges

Path A:  $\pm 1$ mA,  $\pm 20$ mA, 0 to 11.17mA, 0-20mA, 4-20mA DC.

Path B:  $\pm 0.5$ V, 0-500mV DC.

##### Ambient Temperature Effect

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

##### Scaling Adjust

Full range.

##### Input Impedance

Current input: 24.9 ohms.  
Voltage input: 15M ohms.

##### Input Over-Voltage Protection

Bipolar Transient Voltage Suppression (TVS) and diode clamping.

##### Input Filter

RC filter plus variable digital filter (none, low, medium, high).

##### Input Bandwidth

-3dB @ 16Hz (no filtering).

##### Noise Rejection (@ 60Hz, no filter)

Common Mode: 93dB no filter (139dB high filter).  
Normal Mode: 6dB no filter (>80dB high filter).

#### ■ Output (two channels)

##### D/A Converters (DAC)

Two 16-bit D/A converters.

##### Output Ranges

4-20mA DC. 3.5-24mA under/over-range capability.

##### Output Accuracy

$\pm 0.05\%$ , typical.  $\pm 0.1\%$ , maximum.

##### 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 output value (typical)	
No filter	31 milliseconds
Low filter	51 milliseconds
Medium filter	152 milliseconds
High filter	1100 milliseconds

##### Output Ripple

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

#### ■ Environmental

##### Operating temperature

Operation: -40 to 80 $^{\circ}$ C (-40 to 176 $^{\circ}$ F).  
Storage: -40 to 85 $^{\circ}$ C (-40 to 185 $^{\circ}$ F).

##### Relative humidity

5 to 95% non-condensing.

##### Power Requirement

Loop-powered, 7-32V DC SELV, 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 60068-2-6.  
Shock: 25g, per IEC 60068-2-27.

##### Approvals

CE compliant. UL/cUL listed Class I Division 2 Groups ABCD. ATEX, IECEx certified Zone 2.  
 II 3 G Ex nA IIC T4 Gc -40 $^{\circ}$ C  $\leq$  Ta  $\leq$  +80 $^{\circ}$ 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.

##### 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).  
Unit weight: 0.16 kg (0.35 pounds).  
Shipping Weight: 0.22 kg (0.5 pounds) packed.

### Ordering Information

#### Models

##### DT236-0600

Two-wire dual transmitter, current/millivolt inputs, isolated current or voltage outputs.

#### Services

##### DT230-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 DT Series transmitters. 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.




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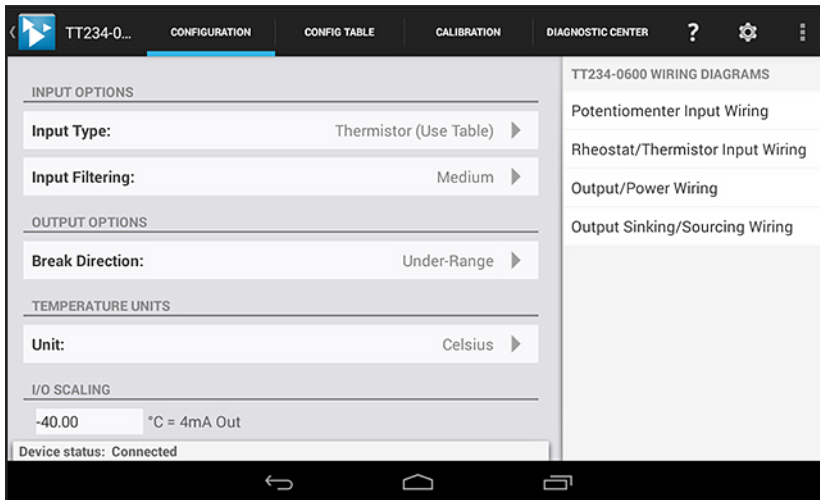
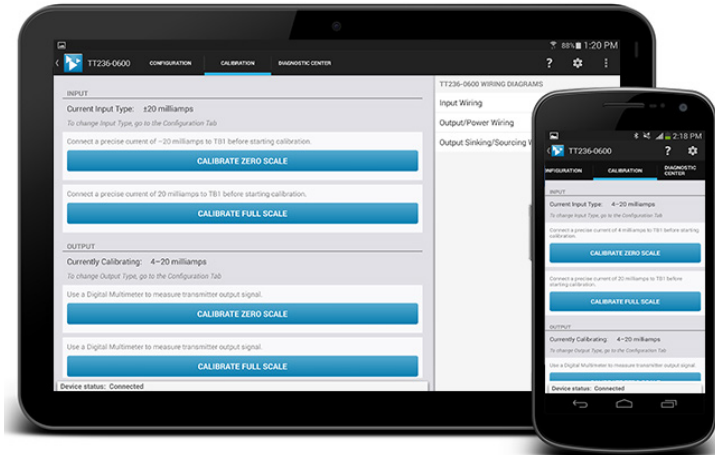
# Software Support: Agility Config

## Acromag Agility™ Config Tool Mobile Application

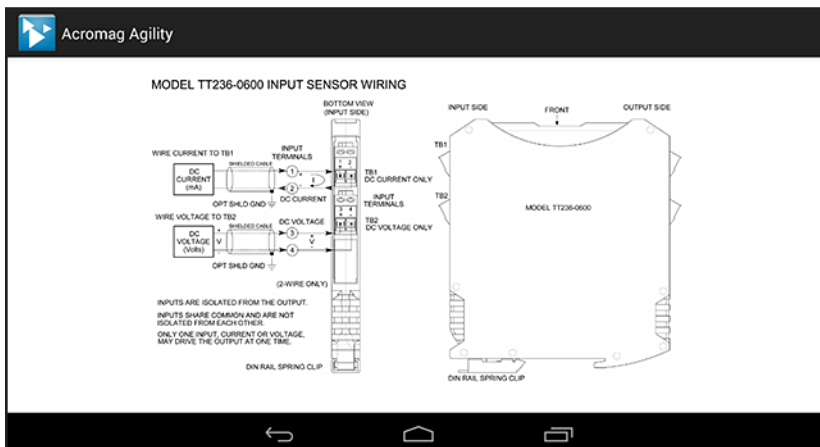
The Agility™ Config Tool is a mobile application that allows easy setup and configuration of Acromag DT and TT Series transmitters and SP Series signal splitters via a tethered mobile device.

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.



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

### 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.



Metromatics

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