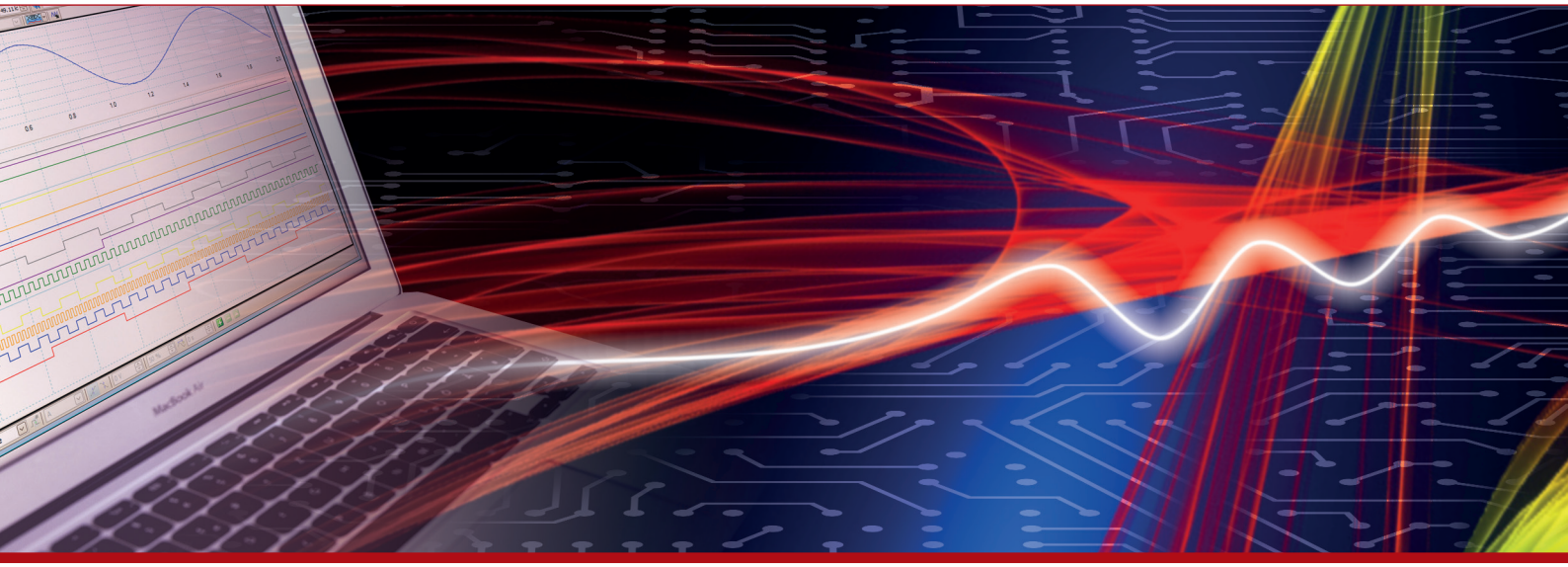
Product Datasheet - Technical Specifications



More information in our Web-Shop at ▸ **www.meilhaus.com** and in our download section.

Your contact

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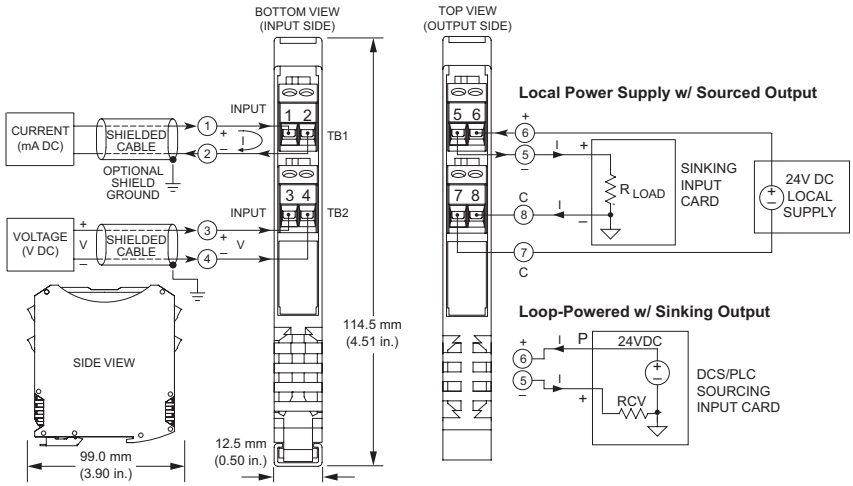
Transmitters: TT230 Series

TT236 Current/millivolt input two-wire/three-wire transmitter



Multi-range ±20mA or ±500mV input ◆ 4-20mA output (sink/source) ◆ 12-32V DC loop/local power

Description

The TT236 model is a space-saving two-wire transmitter that isolates and converts a DC current or low voltage input to a proportional 4-20mA control signal. A single unit supports both voltage and current input for extra flexibility. Power is received from the output loop current or a DC supply when using a three-wire connection.

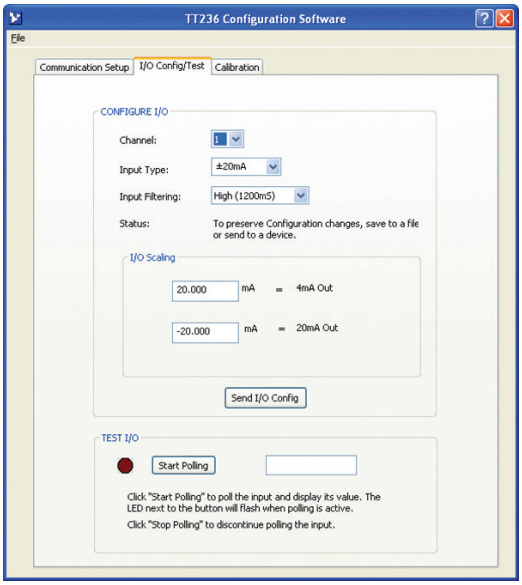
High-voltage isolation separates the input from the output circuit. Isolation protects from surges, reduces noise, and eliminates ground loop errors.

Setup and calibration are fast and easy with a convenient USB connection to your PC and Acromag's Windows configuration software.

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

Key Features & Benefits

- Easy setup and digital calibration via USB with Windows configuration software
- Single unit supports unipolar and bipolar input ranges up to ±20mA or ±500mV DC
- Accepts 0-20A AC input (with external sensor)
- Space-saving 12.5mm (0.5 inch) unit with pluggable terminals for convenient wiring
- High accuracy, linearity, stability, and reliability
- User-selectable filtering (low, medium, high)
- Supports sink or source output wiring
- Supports reverse-acting (inverse) output
- 1500V input isolation
- NAMUR-compliant output loop current
- Shock (25g) and vibration (4g) resistant
- Mounts on Type T DIN-rail
- Wide ambient operation (-40 to 80°C)
- CE compliant. UL/cUL Class I Div 2, ATEX / IECEx Zone 2 approvals



TT236 Model software allows you to configure transmitters offline, save the file, and download into units later, at your convenience.

TT230 Series Transmitter Configuration Software is downloadable (FREE) from www.acromag.com. Windows XP, Vista, 7, & 8

The Agility™ Config Tool is downloadable (FREE) at the Google Play Store For Android Devices only

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Transmitters: TT230 Series

TT236 Current/millivolt input two-wire/three-wire transmitter

Performance Specifications

IMPORTANT: To prevent damage or errors from grounded PCs and surges, Acromag strongly recommends use of their USB-ISOLATOR when configuring a TT230 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

Default Configuration/Calibration
Input: 4 to 20mA, medium filter.
Output: 4 to 20mA.

Input Ranges and Accuracy

Range	Accuracy
±500mV	±0.05% of span
0 to 500mV	±0.05% of span
±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

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 Suppressers (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 (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)
130dB @ 60Hz, typical with 100 ohm input unbalance.

Output

Output Range
4 to 20mA DC

Output Compliance
$R_{LOAD} = (V_{SUPPLY} - 11V) / 0.020A$
R_{LOAD} = 0 to 650 ohms @ 24V DC

Output Response Time (for step input change)

Time to reach 98% of final output value (typical)	
Low filter	50 milliseconds
Medium filter	150 milliseconds
High filter	1200 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
12-32V 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 60068-2-6
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.

Ⓔx II 3 G Ex nA IIC T4 Gc -40°C ≤ Ta ≤ +80°C

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
12.5 x 114.5 x 99.0 mm (0.5 x 4.51 x 3.90 inches)

Shipping Weight
0.22 kg (0.5 pounds) packed

Ordering Information

Models

TT236-0600
Two-wire transmitter, current/millivolt input

Services

TT230-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)
Software Interface Package for Acromag TT Series transmitters. Includes configuration software CD-ROM (5040-944), isolator (USB-ISOLATOR) and two USB cables (4001-112, 4001-113).

Accessories

See www.acromag.com for more information.

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

5020-350
AC current sensor (toroidal transformer); converts 0-20A AC to 0-11.17mA DC

ISO9001
AS9100
MADE IN USA

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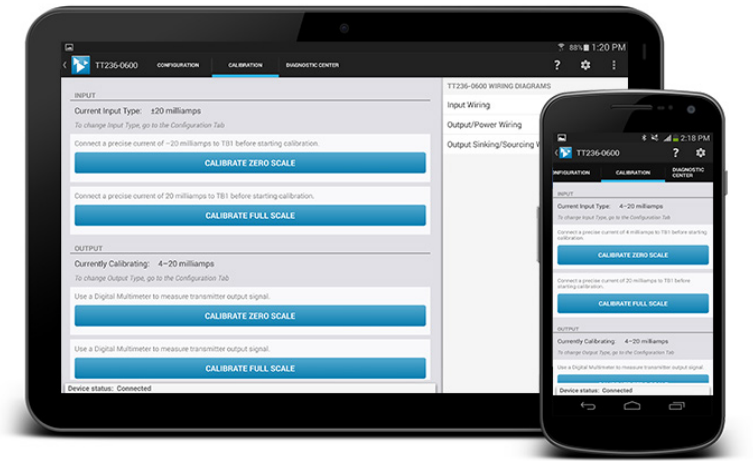
Transmitters: TT Series

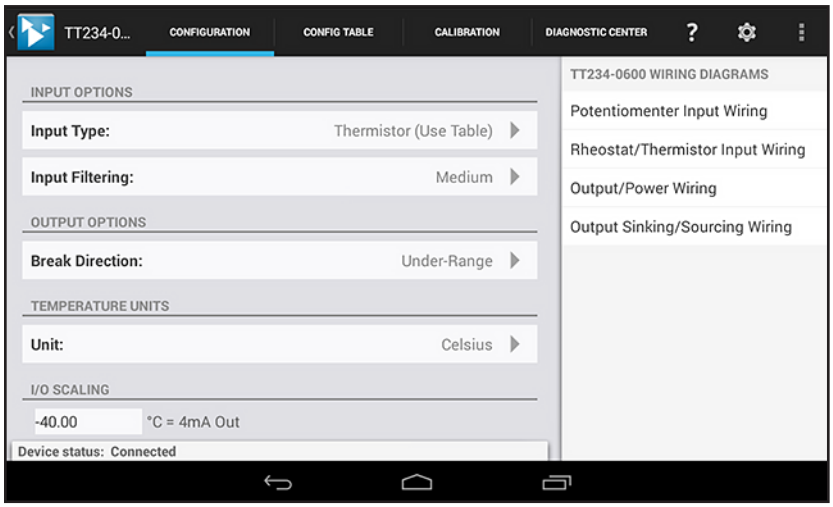
Acromag Agility™ Config Tool Mobile Application

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

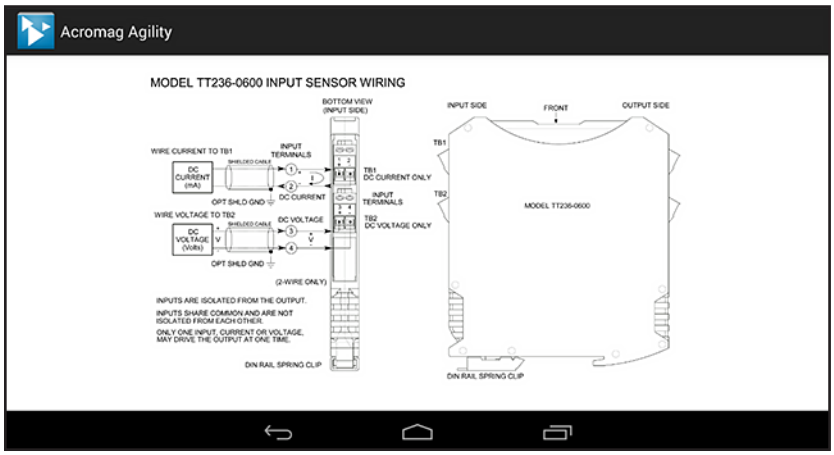
This free app is available for Android devices at the Google Play store at Acromag Agility™ Config Tool.

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 TT Series transmitters (except models TT231)
- 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 TT 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

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