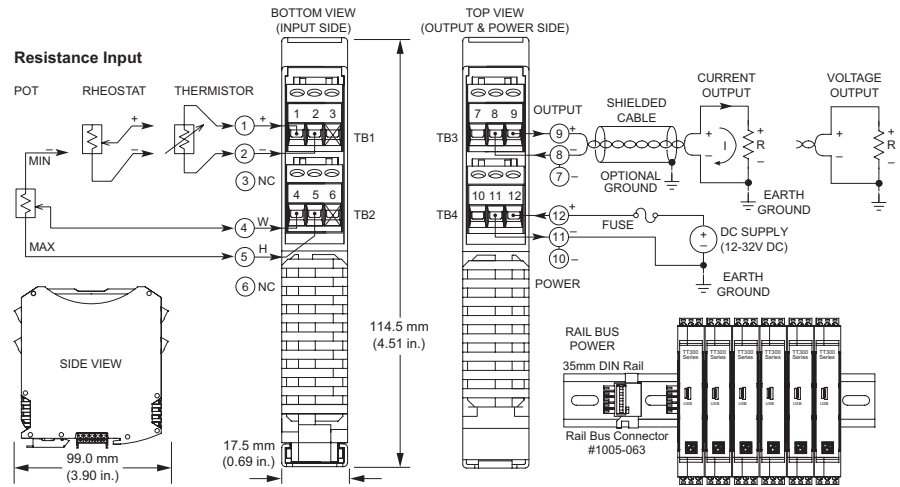


# Transmitters: TT330 Series

## TT334 Potentiometer / thermistor input four-wire transmitter



Pot/slidewire, thermistor input ♦ Universal current/voltage output ♦ 12-32V DC local/bus power

### Description

The TT334 model is a space-saving four-wire transmitter that isolates and converts a resistive sensor input to a proportional control signal. DC current and voltage output are both supported on a single model. An optional DIN rail bus can deliver primary or redundant power to multiple units without wiring.

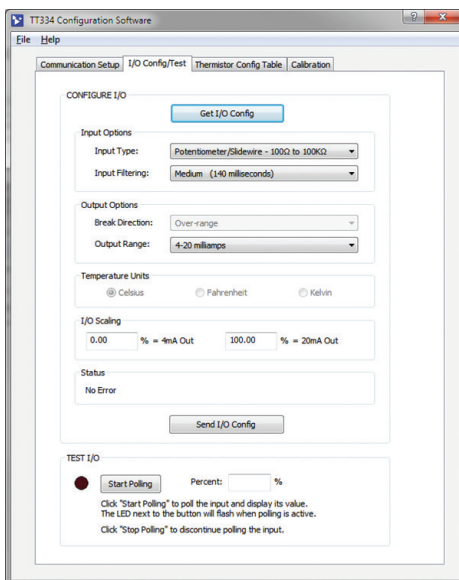
High-voltage isolation separates the input from the output circuit. Isolation protects from surges, reduces noise, and eliminates ground loop errors.

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
- Interfaces 100-100kΩ potentiometer/slidewire and 100-1MΩ NTC thermistor/rheostat inputs
- Customizable thermistor linearization table with preset curves for popular resistances
- Universal output connections support ranges up to ±21mA or ±10.5V DC without rewiring
- Pluggable terminals for convenient wiring
- High accuracy, linearity, stability, and reliability
- User-selectable filtering (none, low, med., high)
- Fast response (as low as 21ms)
- Supports normal or reverse-acting output
- Selectable upscale or downscale operation for sensor faults and lead-break detection
- Bus power, local power, or both for redundant power supplies
- 1500V isolation, 3-way (power, input, output)
- 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



TT330 Series Transmitter Configuration Software is downloadable (FREE) from [www.acromag.com](http://www.acromag.com). Windows® XP, Vista, 7, and 8

The Agility™ Config Tool is downloadable (FREE) at the [Google Play Store](https://play.google.com/store/apps/details?id=com.acromag.agility) For Android Devices only

TT334 Model software allows you to configure transmitters offline, save the file, and download into units later, at your convenience.



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### Performance Specifications

**IMPORTANT:** To prevent damage or errors from grounded PCs and surges, Acromag strongly recommends use of their USB-ISOLATOR when configuring a TT330 Series transmitter.

#### ■ USB Interface

##### USB Connector

Type: USB Mini-B type socket, 5-pin.  
Data rate: 12Mbps. USB v1.1 and 2.0 compatible.  
Maximum cable length: 5.0 meters.

##### USB Transient Protection

Transient voltage suppression on power and data lines.

##### Driver

Not required. Uses Windows HID drivers.

#### ■ Input

##### Default Configuration

Pot/slidewire, 0% to 100% input, 4-20mA output, downscale break detect, medium filter.

##### Input Configuration

Two- or three-wire sensor input connections.

User-configurable thermistor linearization table has preset curves for resistances below at 25°C.

Programs in °C, °F, °K, or ohmic integer values only.

##### Input Ranges

Input Type	Input Range	Accuracy
Potentiometer	0 to 100% (100 to 100KΩ)	< ±0.01% of span
Rheostat	100 to 1MΩ	< ±0.5% of input
Thermistor 2252Ω	-40 to 100°C (-40 to 212°F)	< ±0.05°C (±0.09°F)
Thermistor 2752Ω	-40 to 100°C	< ±0.05°C (±0.09°F)
Thermistor 2795Ω	-40 to 100°C	< ±0.05°C (±0.09°F)
Thermistor 3kΩ	-40 to 100°C	< ±0.05°C (±0.09°F)
Thermistor 5kΩ	-40 to 100°C	< ±0.05°C (±0.09°F)
Thermistor 10kΩ	-40 to 100°C	< ±0.05°C (±0.09°F)
Thermistor 30kΩ	-40 to 100°C	< ±0.05°C (±0.09°F)
Custom thermistor	100 to 1MΩ	< ±0.5% of input

##### Input Scaling Adjust

Zero: 0 to 95% of range, typical.

Full scale: 5 to 100% of full scale range, typical.

##### Lead Break (Sensor Burnout) Detection

Configurable for either upscale or downscale on thermistor or rheostat inputs. Downscale only on potentiometer/slidewire inputs.

##### Excitation Voltage

Thermistor/rheostat: 1.25V DC, typical.

Potentiometer: 0.3V DC, limited to 3.35mA, typical.

#### ■ Output

##### Output Range

Range	Over-Range	Resolution
±10V	±10.5V	1 part in 62558
±5V	±5.25V	1 part in 31278
0 to 10V	-0.5527 to +10.5V	1 part in 59293
0 to 5V	-0.27634 to +5.25V	1 part in 60414
±20mA	±21mA	1 part in 62400
0 to 20mA	-1.1054 to 21mA	1 part in 58732
4 to 20mA	-1.1054 to 21mA	1 part in 46984

##### Output Accuracy

Better than ±0.05% of span, typical (±0.1% max.) for nominal input spans. Includes the effects of repeatability, terminal point conformity, and linearization, but does not include sensor error.

##### Output Load

Voltage output: 1K ohms minimum.

Current output: 0-525 ohms.

##### Output Response Time (for step input change)

No filter: 21ms. Medium filter: 150ms.

Low filter: 40ms. High filter: 1200ms.

##### Output Ambient Temperature Drift

Better than ±80ppm/°C (±0.0080%/°C).

#### ■ 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), 1.3W max.

##### Isolation

1500V AC peak. 250V AC (354V DC) continuous isolation between input, output, and power (3-way).

##### 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°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

##### TT334-0700

Four-wire transmitter, potentiometer/thermistor input

#### Services

##### TT330-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](http://www.acromag.com) for more information.

##### USB-ISOLATOR

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

##### TT BUS-KIT

DIN rail bus power connector and left/right terminal blocks. One kit supports multiple transmitters.

ISO9001  
AS9100  MADE IN USA

 THE LEADER IN INDUSTRIAL I/O


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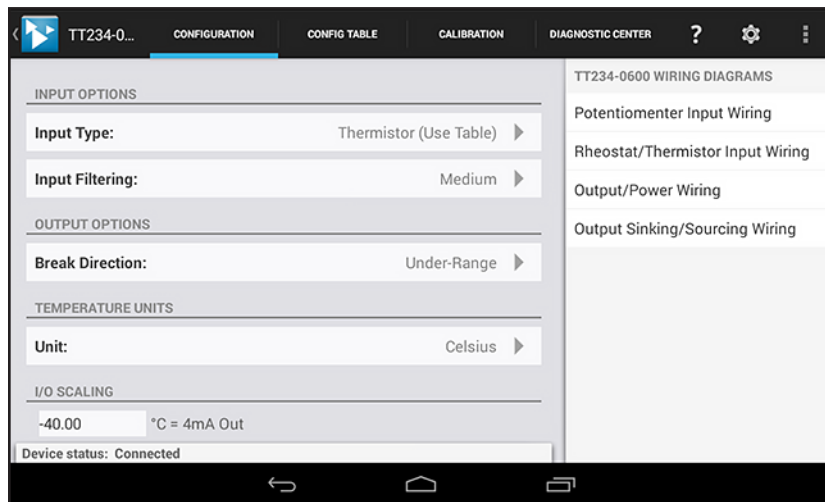
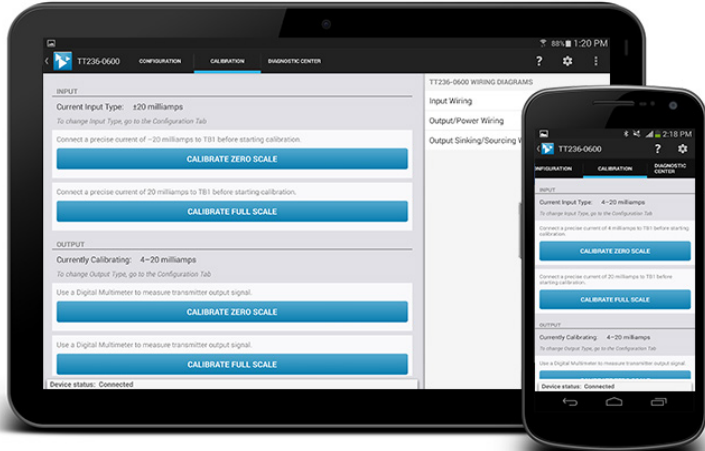
# Transmitters: TT Series

## Acromag Agility™ Config Tool Mobile Application

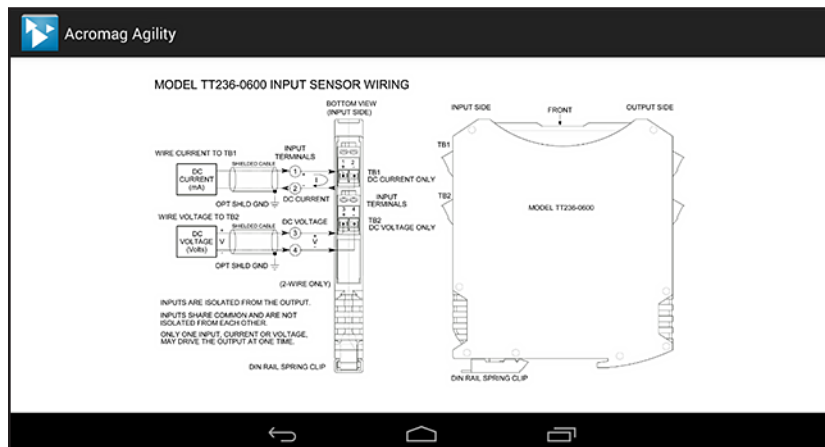
The Agility™ Config Tool is a mobile application that allows easy setup and configuration of Acromag TT Series transmitters via a tethered mobile device.

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

