Product Datasheet - Technical Specifications

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

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TT334 Potentiometer / thermistor input four-wire transmitter
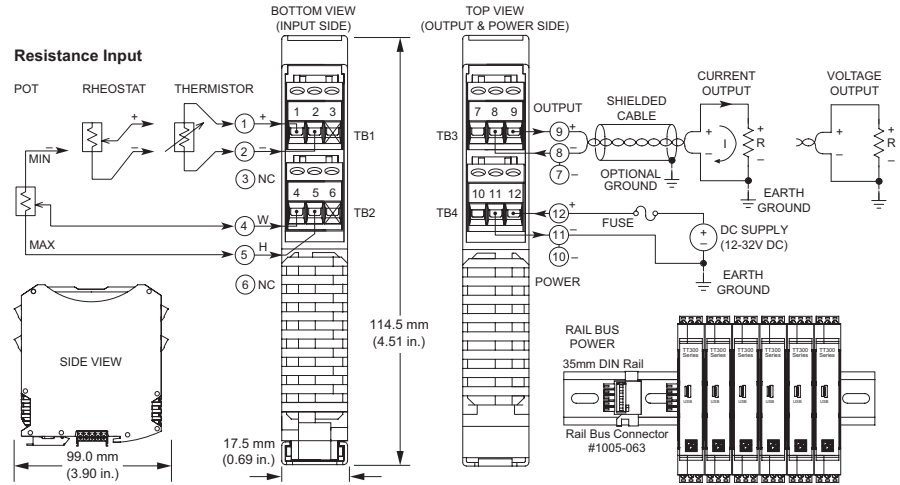
Pot/slidewire, thermistor input ◆ **Universal current/voltage output** ◆ **12-32V DC local/bus power**

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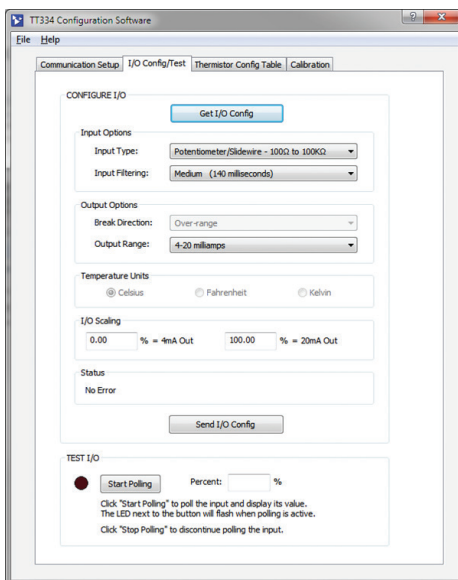
High-voltage isolation separates the input from the output circuit. Isolation protects from surges, reduces noise, and eliminates ground loop errors.

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.

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

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

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

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

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TT334 Potentiometer / thermistor input four-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 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 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.
⟨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

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 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

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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 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.
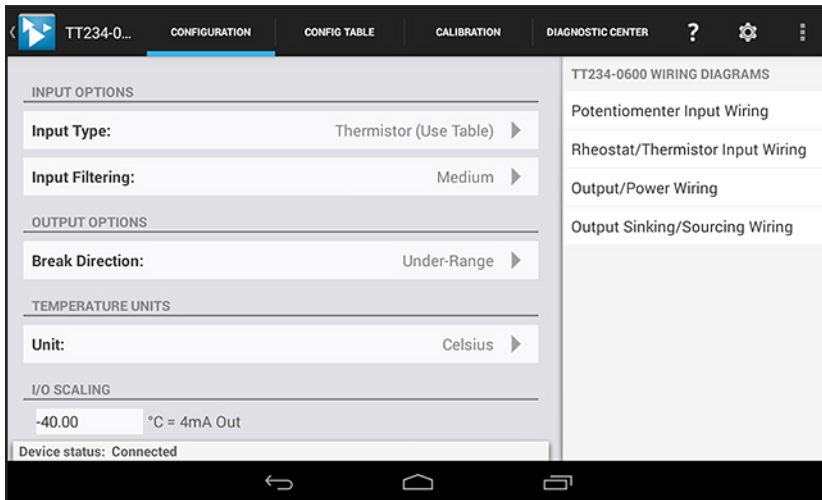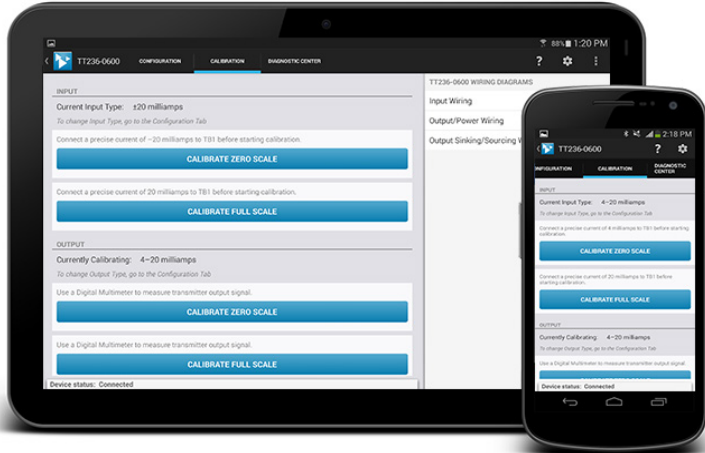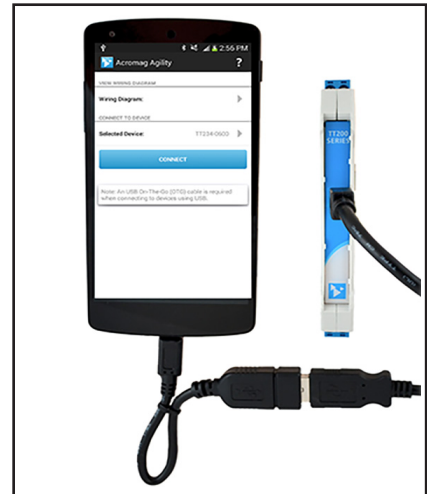
With a couple of taps, quickly configure input, output, unit and scaling options.
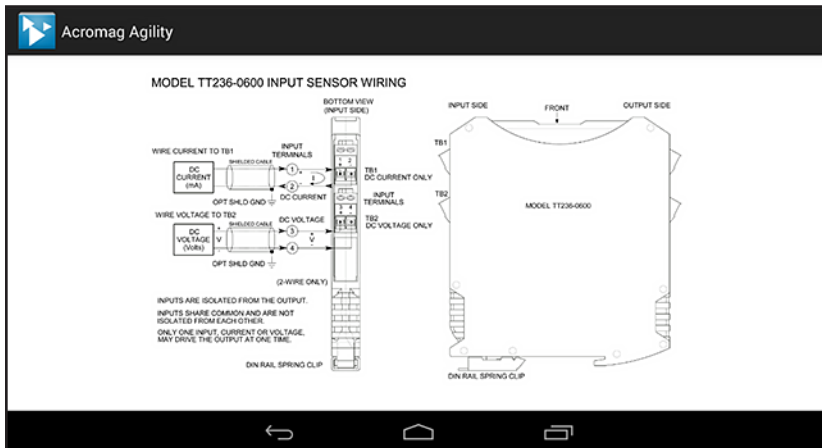
Quick and easy access to the wiring diagram, even offline without internet access.

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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