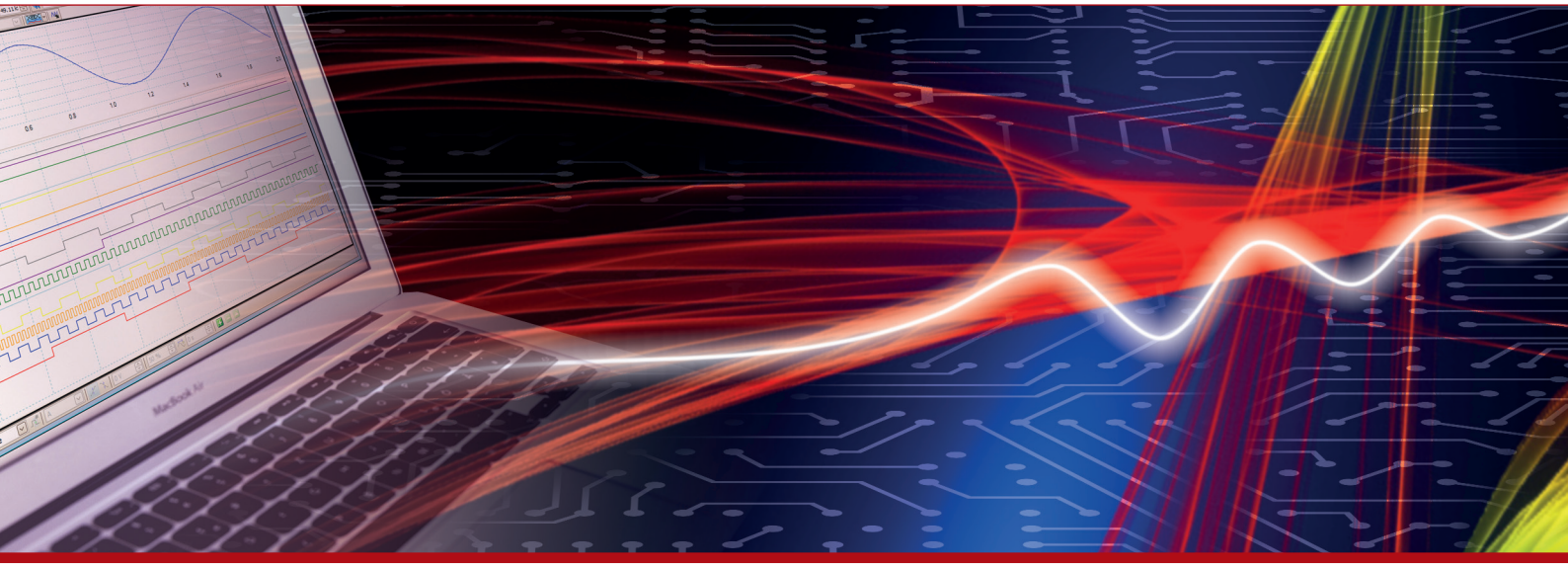
# Product Datasheet - Technical Specifications



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

**Your contact**

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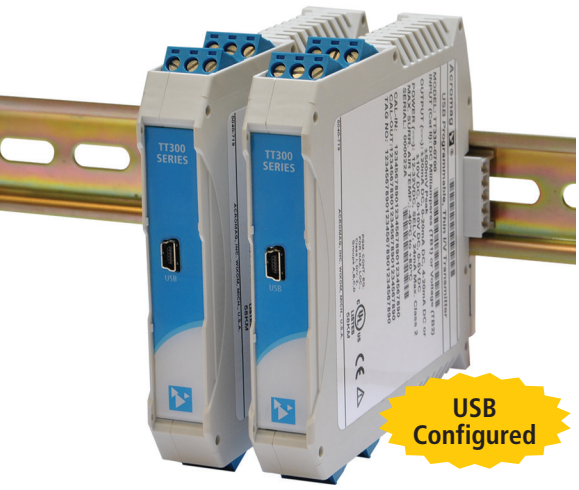
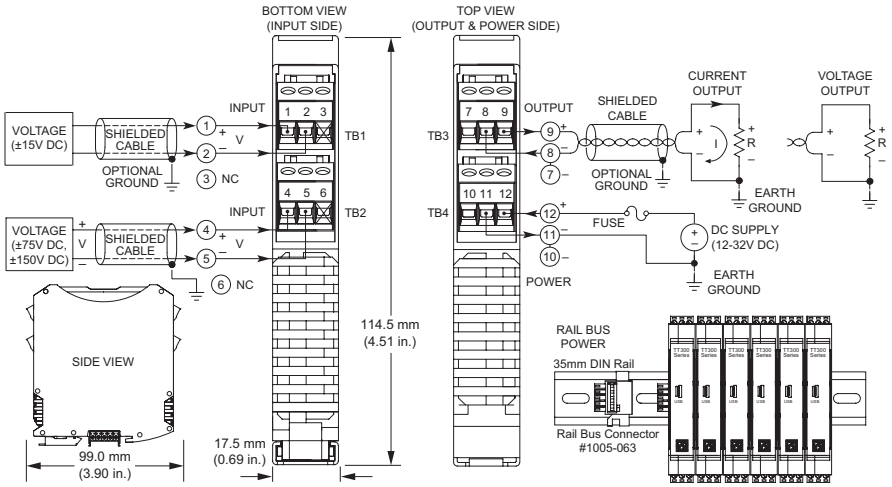
**www.meilhaus.de**

# Transmitters: TT330 Series

## TT338 High voltage input four-wire transmitter




Multi-range ±15, ±75, or ±150V input ◆ Universal current/voltage output ◆ 12-32V DC local/bus power

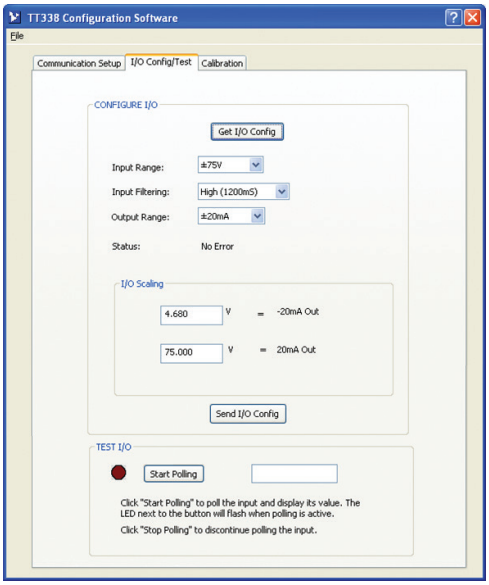
## Description

The TT338 model is a space-saving four-wire transmitter that isolates and converts a high level DC voltage 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.




*TT338 Model software allows you to configure transmitters offline, save the file, and download into units later, at your convenience.*

*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*

## Key Features & Benefits

- Easy setup and digital calibration via USB with Windows configuration software
- Single unit supports ±15V, ±75V, and ±150V DC input ranges
- Universal output connections support ranges up to ±21mA or ±10.5V DC without rewiring
- Space-saving 17.5mm (0.7 inch) unit with pluggable terminals for convenient wiring
- High accuracy, linearity, stability, and reliability
- User-selectable filtering (none, low, med., high)
- Adjustable response times (50ms to 1200ms)
- Supports reverse-acting (inverse) output
- Bus power, local power, or both
- Redundant ready power
- 1500V input isolation
- 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

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# Transmitters: TT330 Series

## TT338 High voltage 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**
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: ±15V, medium filter
Output: 4 to 20mA

**Input Ranges and Accuracy**

| Range | Accuracy |
|---|---|
| ±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**
Normal mode @ 60Hz:
>15dB (no filter), >80dB (high filter)
Common mode @ 60Hz:
>70B (no filter), >120dB (high filter)

### Output

**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 59293 |
| 0 to 5V | –0.27634 to +5.25V | 1 part in 59293 |
| ±20mA | ±21mA | 1 part in 62415 |
| 0 to 20mA | –1.1054 to 21mA | 1 part in 59293 |
| 4 to 20mA | –1.1054 to 21mA | 1 part in 47434 |

**Output Load**
Voltage output: 1K ohms minimum
Current output: 0-525 ohms

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

| Time to reach 98% of final output value (typical) | | |
|---|---|---|
| | TB1 (±15V) | TB2 (±75V,±150V) |
| No filter | 49 milliseconds | 49 milliseconds |
| Low filter | 69 milliseconds | 68 milliseconds |
| Medium filter | 175 milliseconds | 152 milliseconds |
| High filter | 1164 milliseconds | 944 milliseconds |

**Output Ripple**
Less than ±0.1% of output span

**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), 24mA 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.
Ⓔx 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

TT338-0700
Four-wire transmitter, high voltage 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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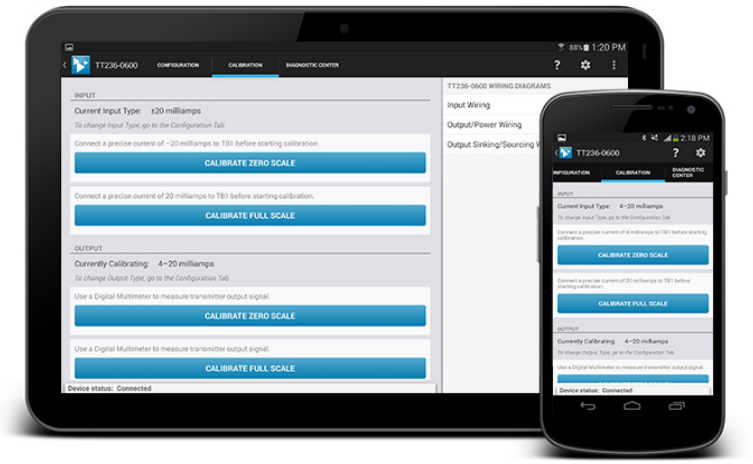
# Transmitters: TT Series

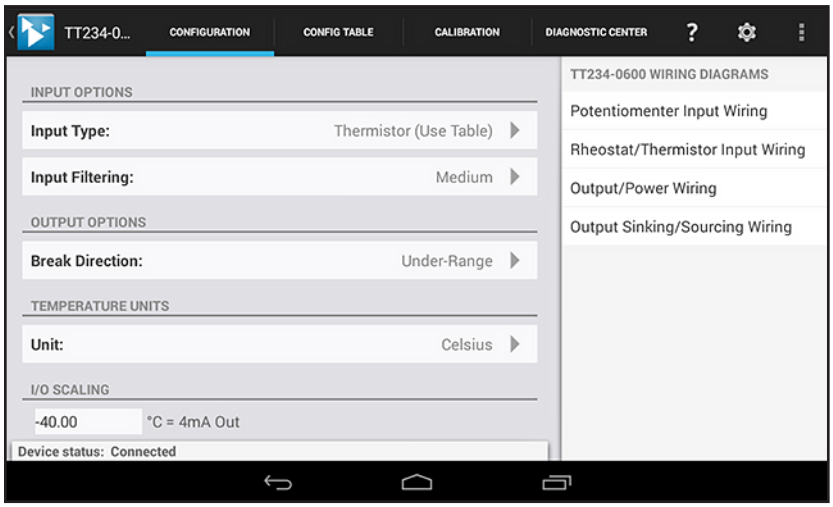
## Acromag Agility™ Config Tool Mobile Application

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

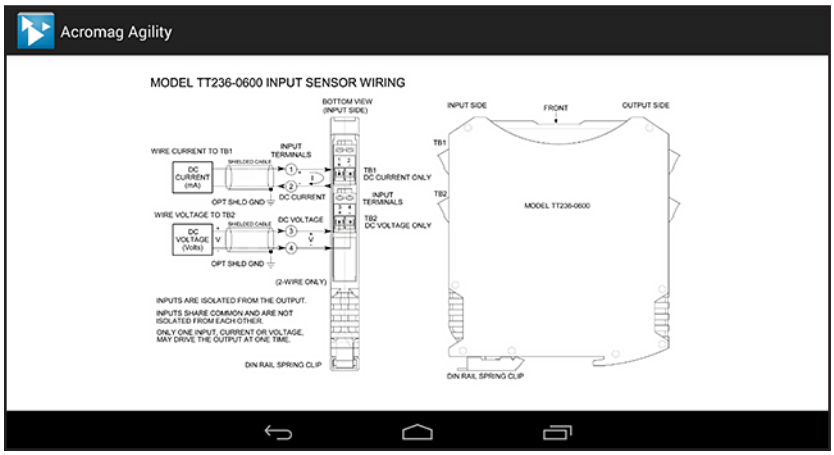
This free app is available for Android devices at the Google Play store at Acromag Agility™ Config Tool.

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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