

Product Datasheet - Technical Specifications



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Monitoring and Control Solutions

TT230 Series Brochure

DIN-Rail Mount

USB Configured

Slim Design

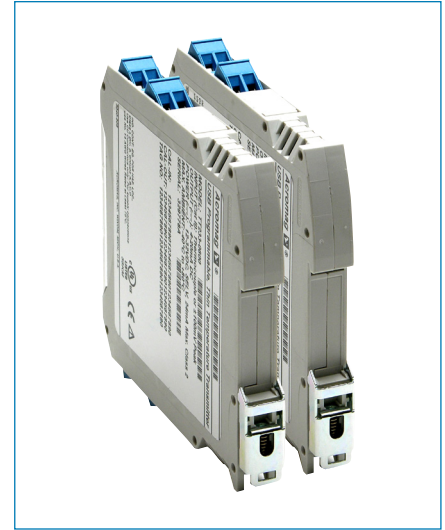


**Space-Saving 2/3-Wire
Isolated Transmitters**

Transmitters: TT230 Series



TT230 Series Thin 2/3-Wire Transmitters



Introduction

The TT230 series features space-saving thin transmitters and isolators that combine flexibility with rugged housing to withstand harsh industrial environments. Advanced signal processing capabilities, variable range input, and convenient USB programming make these instruments versatile for many applications.

Input

Various sensor signals (by model)

Output

4-20mA current (sink or source)

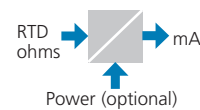
Power

- Loop-power (2-wire connection)
- Local DC power source (3-wire connection)

Key Features and Benefits

- Space saving 12.5mm housing
- Easy setup via USB with Windows® configuration software
- Supports sink and source output in a single model
- Better than 0.1% accuracy
- 1500V AC isolation
- Wide operation temperature of -40 to 80°C
- Fast response times
- Adjustable filtering levels
- Normal/reverse acting operation (except TT231)
- Shock and vibration resistant
- CE Compliant. UL/cUL Class 1 Div 2 Zone 2 approvals. ATEX and IECEx Certified.

TT231 RTD Input

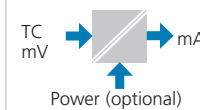


Input

- 100 ohm Pt RTD; alpha = 379-393
- 0-900 ohms linear resistance

[See data sheet](#)

TT233 Thermocouple, Millivolt Input

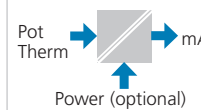


Input

- Type J,K,T,R,S,E,B,N thermocouple
- ±100mV

[See data sheet](#)

TT234 Potentiometer/ Thermistor Input

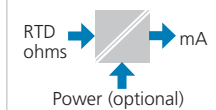


Input

- 100-100K ohms from potentiometer/slidewire
- 2K - 30K ohms thermistor
- Custom 100 - 1M ohms

[See data sheet](#)

TT235 Isolated RTD Input

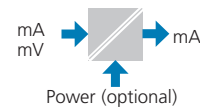


Input

- 100, 200, 500, or 1000 ohm Pt RTD; 120 ohm Ni RTD; 10 ohm Cu RTD
- 0-450 ohms linear resistance

[See data sheet](#)

TT236 Current, Millivolt Input

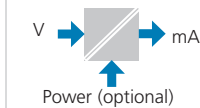


Input

- 0-20mA, 4-20mA DC
- ±1mA, ±20mA DC
- 0-500mV DC
- ±500mV DC
- 0-20A AC

[See data sheet](#)

TT237 Low-Voltage Input

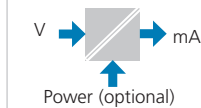


Input

- ±1V DC
- ±5V DC
- ±10V DC

[See data sheet](#)

TT238 High-Voltage Input

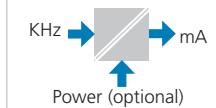


Input

- ±15V DC
- ±75V DC
- ±150V DC

[See data sheet](#)

TT239 Frequency, Pulse Input



Input

- 0 - 100KHz
- Up to 12V rms amplitude
- Unipolar or bipolar signals

[See data sheet](#)



Transmitters: TT230 Series

Key Features

Sink or Source Output

Extra output connections support sourced output (3-wire) with local power supply.

Loop-powered 4-20mA

Power is received from the output loop (2-wire) to provide sinking current output.

Simple Configuration

Digital setup and calibration with straightforward Windows (XP, Vista, 7, 8) software via USB.



Space Saving

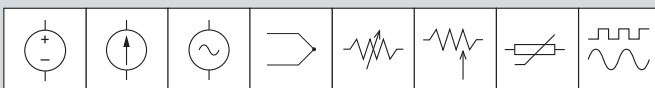
A strikingly thin enclosure, at only 12.5mm wide, to easily achieve high-density DIN-rail mounting.

Rugged Design

Wide ambient temperature operation, shock and vibration-resistant, as well as CE and UL/cUL Class 1, Division 2, Zone 2 approved and ATEX and IECEx certified.



Input Options



ACROMAG
 USB Programmable, Thin Temperature Transmitter

MODEL: TT231-0600
 INPUT (Cat II): RTD / RESISTANCE
 OUTPUT (Cat II): 4-20mA DC
 POWER (Cat II): 12-32VDC, SELV, 24mA Max. Class 2
 MAX. AMBIENT: -40°C to +80°C
 SERIAL: 341621A

CAL-IN: 123456789012345678901234567890
 CAL-OUT: 123456789012345678901234567890
 TAG NO: 123456789012345678901234567890

IND. CONT. EQ. FOR HAZ. LOC.
 Class I, Div. 2, Groups A, B, C, D supply connections
 Use 0-2 Conductor Wires
 Use No. 14 AWG Wires Rated at Least 75°C.
 5040-791

ACROMAG, INC. WIXOM, MICH., U.S.A.

UL LISTED
 58KXIM

CE

Transmitters: TT230 Series



General Operation and Performance Specifications

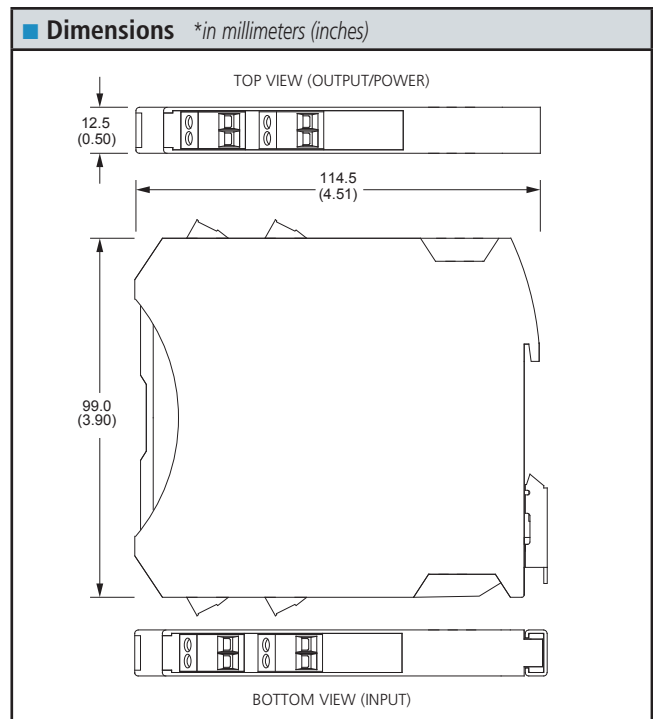
The following specifications are common to all TT230 Series transmitter modules.

■ USB Interface	
USB Connector	USB Mini-B type socket, 5-pin
USB Data Rate	12Mbps. USB v1.1 and 2.0 compatible

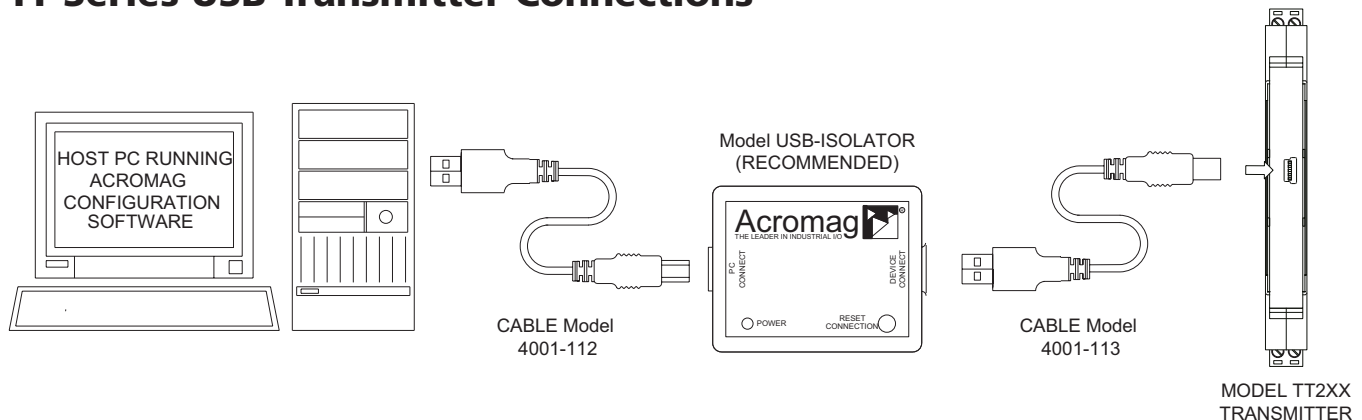
■ Output	
Output Range	4 to 20mA DC
Accuracy	±0.05% of span typical

■ 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 DC SELV (Safety Extra Low Voltage); 24mA max.
Isolation (except model TT231)	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. UL/cUL listing. ATEX and IECEx Certified. Designed for Class I; Division 2; Groups ABCD; Zone 2. Ⓜ 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.
Shipping Weight	0.22 kg (0.5 pounds) packed

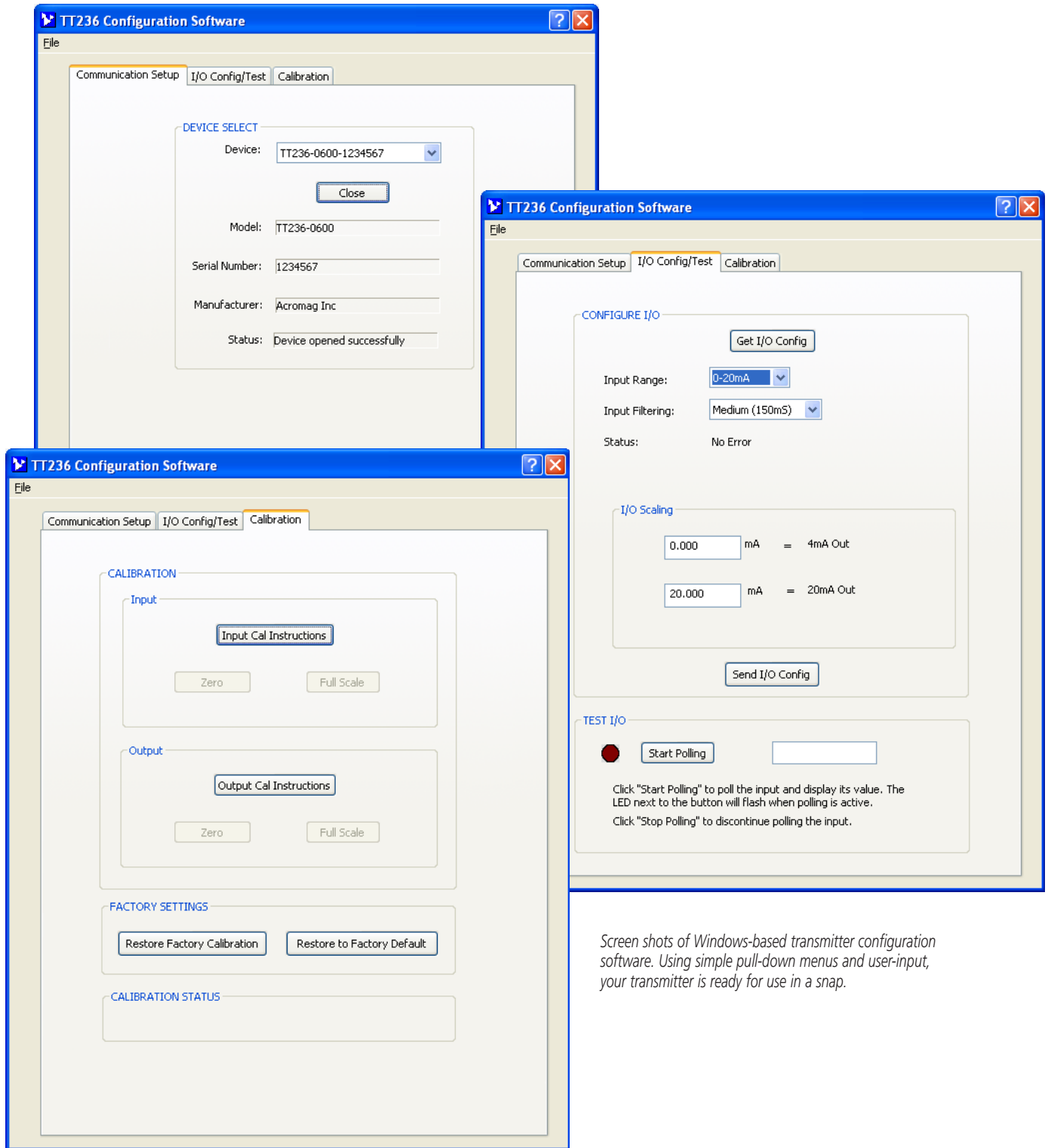


TT Series USB Transmitter Connections



Transmitters: TT230 Series

Module Configuration



The image displays three overlapping screenshots of the TT236 Configuration Software interface, illustrating the configuration process for a transmitter module.

Top-Left Screenshot: DEVICE SELECT

- Device: TT236-0600-1234567
- Model: TT236-0600
- Serial Number: 1234567
- Manufacturer: Acromag Inc
- Status: Device opened successfully

Top-Right Screenshot: CONFIGURE I/O

- Input Range: 0-20mA
- Input Filtering: Medium (150mS)
- Status: No Error
- I/O Scaling:
 - 0.000 mA = 4mA Out
 - 20.000 mA = 20mA Out

Bottom Screenshot: CALIBRATION

- Input Calibration:** Input Cal Instructions, Zero, Full Scale
- Output Calibration:** Output Cal Instructions, Zero, Full Scale
- FACTORY SETTINGS:** Restore Factory Calibration, Restore to Factory Default
- CALIBRATION STATUS:** (Empty field)

TEST I/O

- Start Polling (LED indicator)
- Click "Start Polling" to poll the input and display its value. The LED next to the button will flash when polling is active.
- Click "Stop Polling" to discontinue polling the input.

Screen shots of Windows-based transmitter configuration software. Using simple pull-down menus and user-input, your transmitter is ready for use in a snap.



Accessories

◆ Configuration Software



TT230 Series Configuration

Simple to use, whether you need the full software interface package (includes USB isolator and cables) or just the configuration software itself. Acromag makes it easy to get started.

Acromag Agility™ Config Tool

Easy to download, configuration tool mobile app for free download at the [Google Play Store](#).

Ordering Information

TTC-SIP

Software Interface Package, includes: configuration software CD-ROM, USB-Isolator, and two USB cables (4001-112, 4001-113).

TT230-Config/Cal

Factory custom configuration/calibration service for all TT230 models.

TT230-CONFIG

Free download of TT230 Transmitter Configuration Software.

◆ Mounting Hardware



Din-Rail Mounting

For your convenience, Acromag offers several mounting accessories to simplify your system installation. Our 19" rack-mount kit provides a clean solution for mounting your I/O modules and a power supply. Or you can buy pre-cut DIN rail strips for mounting on any flat surface.

Ordering Information

20RM-16-DIN

19" rack-mount kit with DIN rail.

DIN RAIL 3.0

DIN RAIL 16.7

DIN rail strip, Type T, 3 inches (75mm) or 16.7 inches (425mm)

◆ Power Supplies



Universal Slimline Power Supplies

Input Power Requirement
Universal Input (85-264V AC / 100-370V DC)
Output
10W, 15W, 30W, 60W, 90W, 120W, 240W

Ordering Information

PSSR-VB24

Power supply, 15W, 0.65A at 24V DC

PSSR-VD24

Power supply, 60W, 2.5A at 24V DC

Visit www.acromag.com for additional models and more information.

◆ USB Isolator



USB-to-USB Isolator

This compact, industrial-grade isolator provides a high-voltage isolation barrier between a computer and a connected USB device; protecting equipment from electrical surges, transient voltage spikes, and ground loop currents.

Ordering Information

USB-Isolator

USB isolator, includes USB cable (Part # 4001-112) for isolator-to-PC connection

◆ USB Cables



Cables for PC-to-USB isolator, USB isolator-to-transmitter connections, and mobile device-to-USB isolator-to-transmitter connections.

Ordering Information

4001-112

USB Cable, Type A to Type B, 1 meter

4001-113

USB Cable, Type A to Mini-B, 1 meter

5028-565

USB Cable, USB OTG Cable, 6 inches