Monitoring and Control Solutions

TT230 Series Brochure

DIN-Rail Mount

USB Configured

Slim Design

Space-Saving 2/3-Wire Isolated Transmitters
Experience counts: especially when you are selecting an I/O partner. And with 60+ years of I/O experience, Acromag can help you to improve reliability, increase productivity and reduce your costs.

Acromag: The I/O Leader
Acromag is a customer-driven manufacturer focused on developing process automation I/O products that provide the best long term value in the industry. Compare and you’ll find that Acromag products offer an unmatched balance of price, performance, and features.

60+ Years of I/O Experience
Acromag has more than 60 years of measurement and control experience. Since 1957, we have delivered nearly a million units to thousands of customers around the globe for manufacturing, power, environmental, transportation, and military applications.

Top Quality and a 2-Year Warranty
We take every measure to guarantee you dependable operation and products that perform at or beyond their specifications. Our state-of-the-art manufacturing and military-grade components add an extra degree of ruggedness. Most products qualify for an extended 2-year warranty. And with ISO9000/AS9100 certified quality control, you get full confidence.

Online Ordering
For your convenience, Acromag provides full product documentation and pricing information on our website. You can obtain quotes or even place your order directly on our website.

Fast Delivery from Stock
Most products can be shipped within 24 hours of receiving your order.

Special Services
We are happy to accommodate your special requirements and offer the following services:

- custom product development
- custom calibration
- source inspections, quality audits
- special shipping, documentation
- protective humiseal coating
- plastic and stainless steel tagging

Certification and Approvals
Many Acromag products carry globally recognized agency approvals and safety certifications.

- CE
- UL, cUL
- ATEX
- CSA
- Ethernet conformance
- Modbus conformance
- Profibus certification
- IECex

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Transmitters: TT230 Series

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
RTD ohms → mA
Power (optional)

TT233 Thermocouple, Millivolt Input
TC mV → mA
Power (optional)

TT234 Potentiometer/Thermistor Input
Pot Therm → mA
Power (optional)

TT235 Isolated RTD Input
RTD ohms → mA
Power (optional)

TT236 Current, Millivolt Input
mA → mV
Power (optional)

TT237 Low-Voltage Input
mV → mA
Power (optional)

TT238 High-Voltage Input
V → mA
Power (optional)

TT239 Frequency, Pulse Input
kHz → mA
Power (optional)
Transmitters: TT230 Series

Key Features

**Input Options**

- 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.

**Sink or Source Output**

Extra output connections support sourced output (3-wire) with local power supply.
Transmitters: TT230 Series

General Operation and Performance Specifications

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

<table>
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<th>USB Interface</th>
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<th>Output</th>
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<td>Output Range</td>
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<th>Environmental</th>
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<td>Operating Temperature</td>
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<td>Storage Temperature</td>
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<tr>
<td>Relative Humidity</td>
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<tr>
<td>Power Requirement</td>
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<tr>
<td>Isolation (except model TT231)</td>
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</tbody>
</table>
| 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 |

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<tr>
<th>Physical</th>
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Dimensions * in millimeters (inches)

**TT Series USB Transmitter Connections**

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
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Contact Information:
- Tel: 248-295-0880  ■  sales@acromag.com  ■  www.acromag.com  ■  30765 S Wixom Rd, Wixom, MI 48393 USA
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.
Transmitters: TT230 Series

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 too mobile app for free download at the Google Play Store.

◆ 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 precut DIN rail strips for mounting on any flat surface.

◆ 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

◆ 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.

◆ USB Cables

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

Ordering Information

TT230-Config/Cal
Factory custom configuration/calibration service for all TT230 models.

TT230-CONFIG
Free download of TT230 Transmitter Configuration Software.

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)

Ordering Information

PS5R-VB24
Power supply, 15W, 0.65A at 24V DC

PS5R-VD24
Power supply, 60W, 2.5A at 24V DC
Visit www.acromag.com for additional models and more information.

Ordering Information

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

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