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TT236



Transmitter, Current/Millivolt Input, DC or Loop-Powered

- Multi-range $\pm 20\text{mA}$ or $\pm 500\text{mV}$ input
- 4-20mA output (sink/source)
- 12-32 V DC loop/local power



The TT236 model is a space-saving two-wire transmitter that **isolates and converts a DC current or low voltage input to a proportional 4-20mA control signal**. A single unit supports both voltage and current input for extra flexibility. Power is received from the output loop current or a DC supply when using a three-wire connection.

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.

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Description

Agility™ Config Tool is available for free. TT236 Model software allows you to configure transmitters offline, save the file, and download into units later, at your convenience.



Performance Specifications

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.

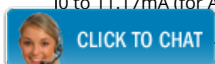
Driver: Not required. Uses built-in Human Interface Device (HID) USB drivers of the Windows operating system.

Input

Default Configuration/Calibration: Input: 4 to 20mA, medium filter. Output: 4 to 20mA.

Input Ranges and Accuracy

Range	Accuracy
$\pm 500\text{mV}$	$\pm 0.05\%$ of span
0 to 500mV	$\pm 0.05\%$ of span
$\pm 20\text{mA}$	$\pm 0.05\%$ of span
0 to 20mA	$\pm 0.05\%$ of span
4 to 20mA	$\pm 0.05\%$ of span
0 to 11.17mA (for AC sensor)	$\pm 0.05\%$ of span
	$\pm 0.05\%$ of span



Error includes the effects of repeatability, terminal point conformity, and linearization.

Ambient Temperature Effect: Better than $\pm 80\text{ppm}/^\circ\text{C}$ ($\pm 0.008\%/^\circ\text{C}$).

Zero Scaling Adjust: 0 to 95% of range, typical.

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

Input Impedance: Current input: 24.9 ohms. Voltage input: 15M ohms

Input Over-Voltage Protection: Bipolar Transient Voltage Suppressers (TVS), 5.6V clamp level typical.

Input Resolution: Bipolar input: 1 part in 50000 (± 25000). Unipolar input: 1 part in 25000.

Input Filter: Selectable digital filtering settings (low, medium, high).

Input Filter Bandwidth: Normal mode plus digital filtering within the ADC. Bandwidth (-3dB) varies with digital filter setting from 4Hz without filtering to 0.33Hz with high filtering.

Noise Rejection (Common Mode, High Filter): 130dB @ 60Hz, typical with 100 ohm input unbalance.

Output

Output Range: 4 to 20mA DC.

Output Compliance: $\text{Rload} = (\text{Vsupply} - 11\text{V}) / 0.020\text{A}$. Rload = 0 to 650 ohms @ 24V DC.

Output Response Time (for step input change)

Time to reach 98% of final output value (typical)	
Low filter	50 milliseconds
Medium filter	150 milliseconds
High filter	1200 milliseconds

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 and output circuits.

Shock and Vibration Immunity: Vibration: 4g, per IEC 60068-2-64. 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 Certified. Designed for Class I; Division 2; Groups ABCD; Zone 2. II 3 G Ex nA IIC T4 Gc $-40^\circ\text{C} < \text{Ta} < +80^\circ\text{C}$

Physical

General

General-purpose enclosure designed for mounting on 35mm "T-type" DIN rail.

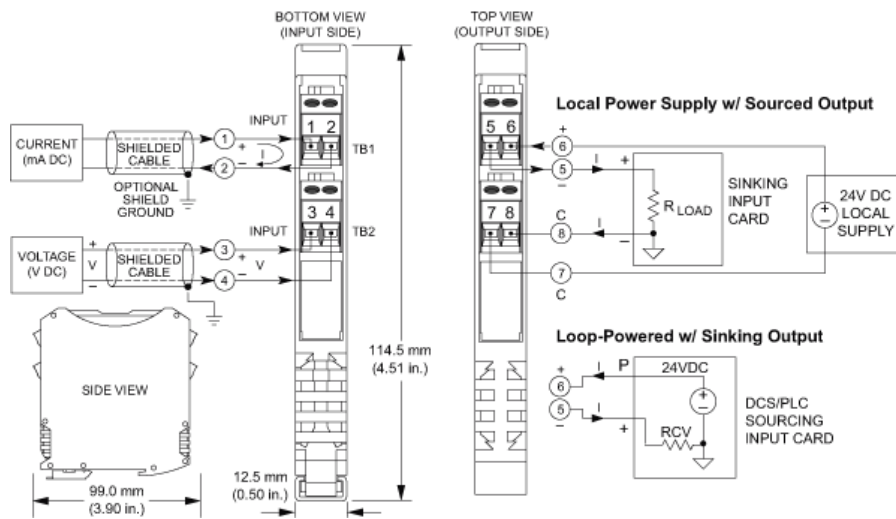
Case Material: Self-extinguishing polyamide, UL94 V-0 rated, color light gray. General-purpose NEMA Type 1 enclosure.

I/O Connectors: Removable plug-in terminal blocks rated for 12A/250V; AWG #26-12, stranded or solid copper wire.

Dimensions: 12.5 x 114.5 x 99.0 mm (0.5 x 4.51 x 3.90 inches).

Shipping Weight: 0.22 kg (0.5 pounds) packed.






Features & Benefits

- Easy setup and digital calibration via USB with Windows configuration software
- Single unit supports unipolar and bipolar input ranges up to ±20mA or ±500mV DC
- Accepts 0-20A AC input (with external sensor)
- Space-saving 12.5mm (0.5 inch) unit with pluggable terminals for convenient wiring
- High accuracy, linearity, stability, and reliability
- User-selectable filtering (low, medium, high)
- Supports sink or source output wiring
- Supports reverse-acting (inverse) output
- Selectable upscale or downscale operation for sensor errors and lead-break detection
- 1500V input isolation
- NAMUR-compliant output loop current
- Shock (50g) and vibration (5g) resistant
- Mounts on Type T DIN-rail
- Wide ambient operation (-40 to 80°C)
- CE compliant. UL/cUL Class 1 Div 2 Zone 2 approvals
- ATEX Certified.

Pricing and Order Information

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Part No.	Description	Price (in \$USD)	
TT236-0600	Transmitter, current/millivolt input.	\$185.00	Add to cart
Accessories			
TTC-SIP.	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). (recommend one kit per customer)	\$160.00	Add to cart
TT230-Config/Cal.	Factory custom Configuration/calibration service for all TT230 models. Specify input type, input/output zero and full-scale values, filtering, and sensor fault settings on order.	\$40.00	Add to cart
DIN Rail 3.0.	DIN Rail Strip, Type T, 3 inches	\$10.00	Add to cart
DIN Rail 16.7.	DIN Rail Strip, Type T, 16.7 inches	\$20.00	Add to cart
 CLICK TO CHAT	19" rack-mount kit with DIN rail	\$175.00	Add to cart

5020-350.	Toroidal AC current sensor, 0-20A AC.	\$45.00	Add to cart
5028-565.	USB OTG Cable, Micro USB to USB OTG Cable, 6 in. (for use with Agility mobile app)	\$15.00	Add to cart
USB-Isolator.	USB isolator, includes USB cable (Part # 4001-112) for isolator-to-PC connection	\$99.00	Add to cart
4001-113.	USB Cable for use with free Agility™ config software and no USB Isolator, Type A to Mini-B, 1 meter	\$10.00	Add to cart

Related Items



AC Current Sensor
Toroidal AC current sensor, 0 to 20A AC



Mounting accessories



Configuration Software
Software interface package and configuration pr...



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DIN rail bus power connector



Power Supplies
Slim Line power supplies with universal input a...



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