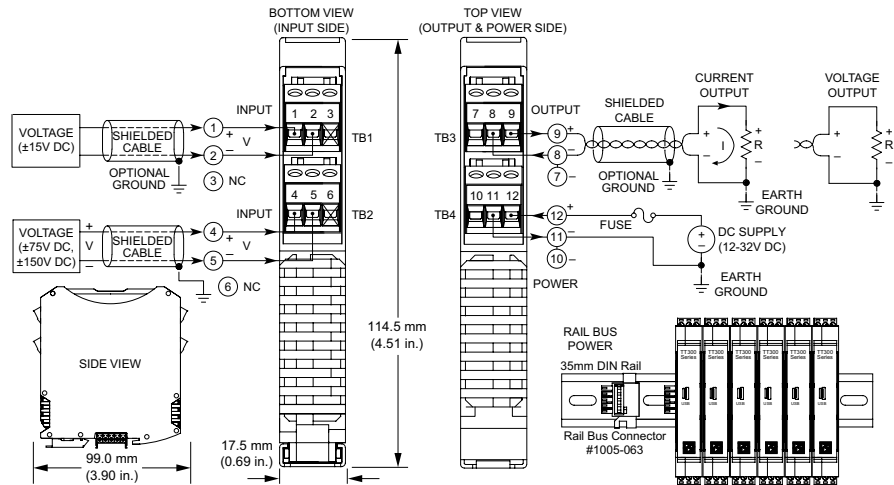


Transmitters: TT330 Series

TT338 High voltage input four-wire transmitter



Multi-range ± 15 , ± 75 , or ± 150 V 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.

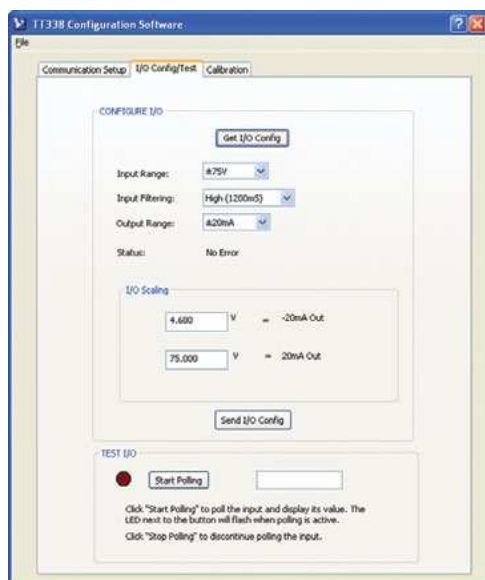
High-voltage isolation separates the input from the output circuit. Isolation protects from surges, reduces noise, and eliminates ground loop errors.

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.

Key Features & Benefits

- Easy setup and digital calibration via USB with Windows configuration software
- Single unit supports ± 15 V, ± 75 V, and ± 150 V DC input ranges
- Universal output connections support ranges up to ± 21 mA or ± 10.5 V 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 (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



TT330 Series Transmitter Configuration Software is downloadable (FREE) from www.acromag.com.

Windows® XP, Vista, 7, and 8

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

Acromag 
THE LEADER IN INDUSTRIAL I/O

Tel 248-295-0880 ■ Fax 248-624-9234 ■ sales@acromag.com ■ www.acromag.com ■ 30765 Wixom Rd, Wixom, MI 48393 USA



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: $\pm 15V$, medium filter.

Output: 4 to 20mA.

Input Ranges and Accuracy

Range	Accuracy
$\pm 15V$ DC	$\pm 0.05\%$ of span
$\pm 75V$ DC	$\pm 0.05\%$ of span
$\pm 150V$ DC	$\pm 0.05\%$ 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 Over-Voltage Protection

Bipolar Transient Voltage Suppressors (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
$\pm 10V$	$\pm 10.5V$	1 part in 62415
± 5	$\pm 5V$	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
$\pm 20mA$	$\pm 21mA$	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 ($\pm 15V$)	TB2 ($\pm 75V, \pm 150V$)
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 $\pm 0.1\%$ of output span.

Output Ambient Temperature Drift

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

■ 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: 5g, per IEC 60068-2-64.

Shock: 50g, per IEC 60068-2-27

Approvals

CE compliant. UL/CUL listing.

Designed for Class I; Division 2; Groups ABCD; Zone 2.

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).

TTBUS-KIT

DIN rail bus power connector and left/right terminal blocks. One kit supports multiple transmitters.

ISO9001
AS9100



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