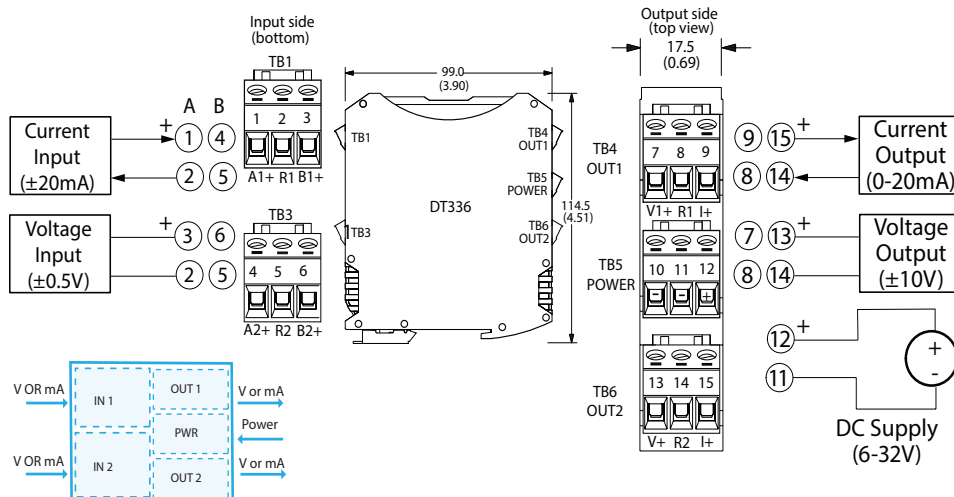


# Transmitters: DT330 Series

## DT336 Current/millivolt input four-wire dual transmitter



**USB Configured**



Dual channels ♦  $\pm 20\text{mA}$ ,  $\pm 500\text{mV}$  inputs ♦  $0\text{--}20\text{mA}$ ,  $\pm 10\text{V}$  outputs ♦  $6\text{--}32\text{V}$  DC local/bus power

### Description

DT330 series signal conditioners provide two independent I/O channels in a single, space-saving unit. The DT336 model is a four-wire dual transmitter that isolates and converts DC current or low voltage inputs to proportional control signals. Each channel supports DC current or voltage output. An optional DIN rail bus can deliver primary or redundant power to multiple units.

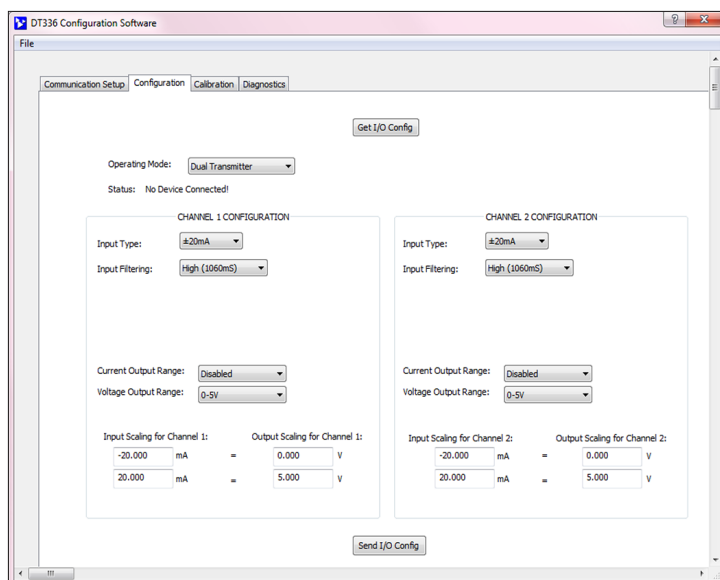
High-voltage isolation separates inputs, outputs, and power from each other. Isolation protects from surges, reduces noise, and eliminates ground loop errors.

Setup and calibration are fast and easy with a convenient USB connection to your PC and Acromag's Windows configuration software. The Android app enables setup with mobile devices.

Advanced signal processing capabilities, variable range input/output, and convenient USB programming make this instrument very versatile. 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

- Operate as a dual transmitter, a single transmitter, or a signal splitter
- Easy configuration via USB with Windows software or Agility™ app for Android
- Independently adjustable and scalable input and output ranges
- Selectable current and voltage input ranges:  $0/4\text{--}20\text{mA}$ ,  $\pm 1\text{mA}$ ,  $\pm 20\text{mA}$ ,  $\pm 0.5\text{V}$ ,  $0\text{--}500\text{mV}$  DC
- Compatible with  $0\text{--}20\text{A}$  AC sensor input
- Selectable current and voltage output ranges:  $0\text{--}20\text{mA}$ ,  $4\text{--}20\text{mA}$ ,  $\pm 5\text{V}$ ,  $\pm 10\text{V}$ ,  $0\text{--}5\text{V}$ ,  $0\text{--}10\text{V}$  DC
- Supports reverse-acting (inverse) output
- High accuracy, linearity, stability, and reliability
- User-selectable filtering (none, low, med., high)
- Space-saving  $17.5\text{mm}$  ( $0.7$  inch) unit with pluggable terminals for convenient wiring
- Bus power, local power, or both (redundancy)
- $1500\text{V}$  input isolation, 5-way, (power/input/output)
- Wide ambient operation ( $-40$  to  $70^\circ\text{C}$ )
- CE compliant. UL/cUL Class I Div 2, ATEX/IECEx Zone 2



Windows configuration software (FREE) at [www.acromag.com](http://www.acromag.com)

Android Agility™ app (FREE) at [Google Play Store](https://play.google.com/store/apps/details?id=com.acromag.agility)

Save configuration files for convenient copy/restore capability.

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# Transmitters: DT330 Series

## DT336 Current/millivolt input four-wire dual 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 DT330 Series transmitter.

#### ■ USB Interface

##### USB Connection

Type: USB Mini-B type socket, 5-pin.  
Data rate: 12Mbps. USB v1.1 and 2.0 compatible.  
Maximum cable length: 5.0 meters.  
Transient voltage suppression on power and data lines.

##### USB Driver

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

#### ■ Input (two channels)

##### Default Configuration/Calibration

Input: 4 to 20mA, medium filter.  
Output: 4 to 20mA.

##### A/D Converters (ADC)

Two 24-bit Sigma Delta ADCs (only 16-bits used).

##### Input Ranges

Path A:  $\pm 1\text{mA}$ ,  $\pm 20\text{mA}$ , 0 to 11.17mA, 0-20mA, 4-20mA DC.  
Path B:  $\pm 0.5\text{V}$ , 0-500mV DC.

##### Ambient Temperature Effect

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

##### Scaling Adjust

Full-range.

##### Input Impedance

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

##### Input Over-Voltage Protection

Bipolar Transient Voltage Suppression (TVS) and diode clamping.

##### Input Filter

RC filter plus variable digital filter (none, low, med., high).

##### Input Bandwidth

-3dB @ 34Hz (no filtering).

##### Noise Rejection

Common Mode: 100dB, no filter (120dB, high filter).  
Normal Mode: 7dB 60Hz, no filter (>80dB med./high filter).

#### ■ Output (two channels)

##### D/A Converters (DAC)

Two 16-bit D/A converters.

##### Output Ranges

$\pm 10\text{V}$  ( $\pm 11\text{V}$  maximum).  
 $\pm 5\text{V}$  ( $\pm 5.5\text{V}$  maximum).  
0 to 10V (11V maximum).  
0 to 5V (5.5V maximum).  
0 to 20mA (24mA maximum).  
4 to 20mA (24mA maximum).

##### Output Accuracy

$\pm 0.05\%$  typical,  $\pm 0.1\%$  maximum.

##### Output Load

Voltage output: 1K ohms minimum.  
Current output: 0-550 ohms.

##### Output Compliance

11V, typical.

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

Time to reach 98% of final output value (typical)  
No filter: 25 milliseconds  
Low filter: 41 milliseconds  
Medium filter: 140 milliseconds  
High filter: 1140 milliseconds

##### Output Ripple

Less than  $\pm 0.1\%$  of output span.

#### ■ Environmental

##### Operating Temperature Range

Operation:  $-40$  to  $70^\circ\text{C}$  ( $-40^\circ$  to  $158^\circ\text{F}$ ).  
Storage:  $-40$  to  $85^\circ\text{C}$  ( $-40$  to  $185^\circ\text{F}$ ).

##### Relative humidity

5 to 95% non-condensing.

##### Power Requirement

6-32V DC SELV, 1.6W max.

##### Isolation

1500V AC peak. 250V AC (354V DC) continuous isolation between inputs, outputs, and power (5-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 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.

##### 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).  
Unit weight: 0.16 kg (0.35 pounds).  
Shipping Weight: 0.22 kg (0.5 pounds) packed.

### Ordering Information

#### Models

##### DT336-0700

Four-wire dual transmitter, current/millivolt inputs, isolated current or voltage outputs.

#### Services

##### DT330-Config/Cal

Factory custom configuration/calibration service.  
Specify input type, input/output, zero and full-scale values, and filtering, on order.

#### Software

##### TTC-SIP (recommend one kit per customer)

Windows Software Interface Package for Acromag DT Series transmitters. Includes configuration software CD-ROM (5040-944), isolator (USB-ISOLATOR) and two USB cables (4001-112, 4001-113).

##### Agility Mobile Application

Software configuration software for an Android smart device. Download for free from the Google Play Store. Requires 5028-565 and 4001-113 cables.

#### Accessories

##### TT BUS-KIT

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

##### USB-ISOLATOR

USB-to-USB isolator, includes USB cable (4001-112).

##### 4001-112

USB cable, 1 meter, with Type A to Type B plugs.

##### 4001-113

USB cable, 1 meter, with Type A to Mini-B plugs.

##### 4001-252

DIN rail end stop for hazloc approvals.

##### 5028-565

USB-OTG 6 inch cable.

##### 5020-350

AC current sensor (toroidal transformer); converts 0-20A AC to 0-11.17mA DC.

ISO9001  
AS9100  MADE IN USA

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