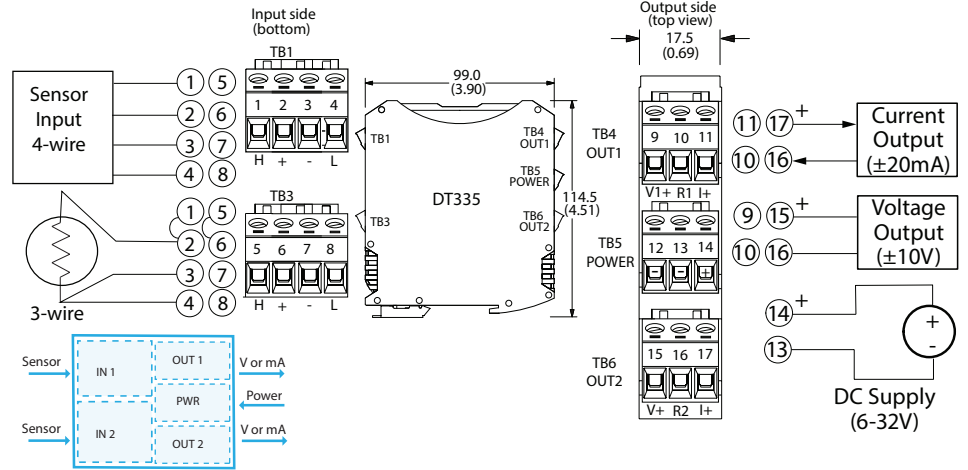


# Transmitters: DT330 Series

## DT335 RTD/Resistance input four-wire dual transmitter



Dual channels ♦ RTD (Pt, Ni, Cu) or 0-4500 ohm input ♦ 0-20mA,  $\pm 10\text{V}$  outputs ♦ 6-32V DC local/bus power

### Description

DT330 series signal conditioners provide two independent I/O channels in a single, space-saving unit. The DT335 model is a four-wire dual transmitter that isolates and converts RTD or linear resistance sensor 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.

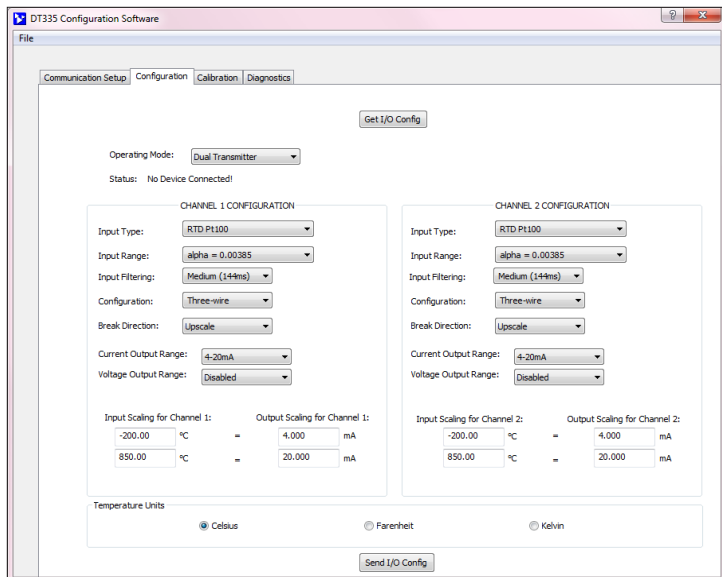
High-voltage isolation separates inputs, outputs, and power from each other. Isolation protects from surges, reduces noise, and eliminates ground loop errors.

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 RTD and linear resistance input types: Pt 100/200/500 $\Omega$ , Ni 120 $\Omega$ , Cu 10 $\Omega$ , 0-4500 $\Omega$
- Supports 2, 3, and 4-wire sensor connections
- Selectable current and voltage output ranges: 0-20mA, 4-20mA,  $\pm 5\text{V}$ ,  $\pm 10\text{V}$ , 0-5V, 0-10V DC
- High accuracy, linearity, stability, and reliability
- User-selectable filtering (none, low, med., high)
- Selectable up/downscale break detection
- Bus power, local power, or both (redundancy)
- Space-saving 17.5mm (0.7 inch) unit with pluggable terminals for convenient wiring
- 1500V input isolation, 5-way, (power/input/output)
- Wide ambient operation (-40 to 70°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.



Tel 877-214-6267 ■ sales@acromag.com ■ www.acromag.com ■ 30765 Wixom Rd, Wixom, MI 48393 USA

# Transmitters: DT330 Series

## DT335 RTD/Resistance 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

Input: 100Ω Pt RTD, 3-wire, =0.00385, -200 to 850°C, medium filter.

Output: 4 to 20mA, upscale break detect.

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

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

##### Input Ranges

Input Type	Input Range	Accuracy
Pt 100Ω	-200 to 850°C	±0.25°C
Pt 200Ω	-200 to 850°C	±0.30°C
Pt 500Ω	-200 to 850°C	±0.50°C
Pt 1000Ω	-200 to 850°C	±1.00°C
Ni 120Ω (Minco 7-120)	-80 to 320°C	±0.08°C
Cu 10Ω (Minco 16-9)	-200 to +270°C	±1.00°C
Linear Resistance	0 to 250Ω	±0.05Ω
Linear Resistance	0 to 450Ω	±0.10Ω
Linear Resistance	0 to 900Ω	±0.90Ω
Linear Resistance	0 to 2250Ω	±2.25Ω
Linear Resistance	0 to 4500Ω	±4.50Ω

##### Ambient Temperature Effect

Better than ±80ppm/°C (±0.008%/°C).

##### Scaling Adjust

full-range.

##### Lead Break (Sensor Burnout) Detection

Upscale/downscale full-range.

##### 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 @ 16Hz (no filtering).

##### Noise Rejection

Common Mode: 106dB no filter.

Normal Mode: 1dB no filter, 60Hz (>80dB med./high filter).

#### ■ Output (two channels)

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

Two 16-bit D/A converters.

##### Output Ranges

±10V (±11V maximum).

±5V (±5.5V maximum).

0 to 10V (11V maximum).

0 to 5V (5.5V maximum).

0 to 20mA (24mA maximum).

4 to 20mA (24mA maximum).

##### Output Accuracy

±0.05% typical, ±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: 44 milliseconds

Medium filter: 146 milliseconds

High filter: 1068 milliseconds

##### Output Ripple

Less than ±0.1% of output span.

#### ■ Environmental

##### Operating Temperature Range

Operation: -40 to 70°C (-40° to 158°F).

Storage: -40 to 85°C (-40 to 185°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

##### [DT335-0700](#)

Four-wire dual transmitter, isolated RTD/resistance input, isolated current or voltage outputs.

#### Services

##### [DT330-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)

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.

ISO9001  
AS9100



**Acromag**   
THE LEADER IN INDUSTRIAL I/O

Tel 877-214-6267 ■ sales@acromag.com ■ www.acromag.com ■ 30765 Wixom Rd, Wixom, MI 48393 USA