

Product Datasheet - Technical Specifications



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Monitoring and Control Solutions

DT Series Brochure

Dual Channel Transmitters

Easy Configuration

Slim Design



USB-Programmable
Saves Space and Cost

Transmitters: DT Series



DT Series Programmable Dual-Channel Transmitters



Introduction

The new DT Series transmitters are designed to offer a cost-effective space-saving solution to interface a variety of process and sensor signals to your control systems. Each model supports several input ranges and can output proportional 0/4-20mA, 0-10V, or $\pm 10V$ DC signals.

Input

Thermocouple/Millivolt, RTD/Resistance, Process Voltage, High Voltage, Current/Millivolt

Output

Proportional 0/4-20mA, 0-10V, or $\pm 10V$ DC

Power

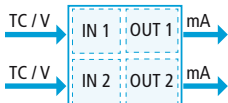
- DT230 Series: 7-32V DC loop/local power
- DT330 Series: 6-32V DC local/bus power

Key Features and Benefits

- USB-programmable (allows easy selection of options that is not possible with pots or jumpers)
- Dual unit saves space and reduces costs
- Signal splitter capability
- Selectable filtering levels
- Configurable output clamp levels (NAMUR)
- Removable, front-facing terminal blocks (simplify your wiring tasks)
- Rail power bus and redundancy
- Supports sink/source wiring
- -40 to 80° C operation (DT230 Series)
- -40 to 70° C operation (DT330 Series)
- Hazloc approvals UL C1D2, ATEX/IECEx Zone 2



DT233 Thermocouple, Millivolt Input

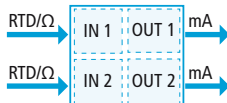


Input

- Type J, K, T, R, S, E, B, N thermocouple
- $\pm 100mV$

[See data sheet](#)

DT235 RTD/resistance Input

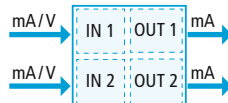


Input

- RTD
 - Pt (100/200/500Ω)
 - Ni (120Ω)
 - Cu (10Ω)
- Resistance 0-4500 Ω

[See data sheet](#)

DT236 Current/millivolt Input

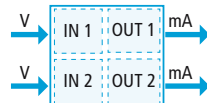


Input

- $\pm 20mA$
- $\pm 500mV$

[See data sheet](#)

DT237 Medium DC Voltage Input

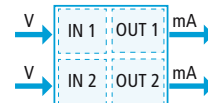


Input

- 0-10V
- $\pm 10V$

[See data sheet](#)

DT238 High Voltage Input

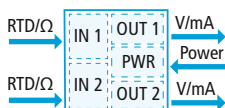


Input

- $\pm 150V$
- 0 $\pm 150V$ input

[See data sheet](#)

DT335 RTD/resistance Input

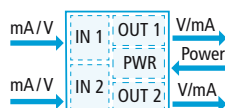


Input

- RTD
 - Pt (100/200/500Ω)
 - Ni (120Ω)
 - Cu (10Ω)
- Resistance 0-4500 Ω

[See data sheet](#)

DT336 Current/millivolt Input

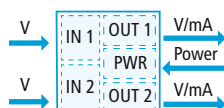


Input

- $\pm 20mA$
- $\pm 500mV$

[See data sheet](#)

DT337 Medium DC Voltage Input

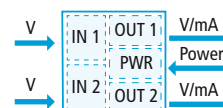


Input

- $\pm 1V$
- $\pm 10V$

[See data sheet](#)

DT338 High Voltage Input



Input

- $\pm 15V$
- $\pm 150V$

[See data sheet](#)

Transmitters: DT Series

Key Features



Removable Terminal Blocks

Pluggable terminal blocks simplify wiring for easy installation and removal of modules.

2-wire, Loop-powered 4-wire, External-powered

DT230 Series: 7-32V DC Power is received from the output loop (2-wire).

DT330 Series: 6-32V DC power connects (4-wire) on a terminal block, a rail bus, or both for redundancy.

Scalable Current or Voltage Output

DT230 Series: Supports sink or source 4-20mA output

DT330 Series: Supports scalable current or voltage output ranges: 0-20mA, 4-20mA, $\pm 5V$, $\pm 10V$, 0-5V, 0-10V DC

Simple Configuration

A USB connection to a Windows® PC or Android™ device enables simple, precise configuration of I/O ranges and a variety of operational settings with free software.



Space Saving

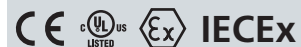
A strikingly thin enclosure, at only 17.5mm wide, to easily achieve high-density DIN-rail mounting.

Input Options



Rugged Design

Wide ambient temperature operation, shock and vibration-resistant, as well as CE Compliant, UL/cUL Class I Div 2, ATEX/IECEx Zone 2 approvals.



Transmitters: DT Series



General Operation and Performance Specifications



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

■ USB Interface

USB Connector	USB Mini-B type socket, 5-pin.
USB Data Rate	12Mbps. USB v1.1 and 2.0 compatible.

■ Output

Output Ranges	0-20mA, 4-20mA, $\pm 5V$, $\pm 10V$, 0-5V, 0-10V DC
Accuracy	$\pm 0.05\%$, typical. $\pm 0.1\%$, maximum.

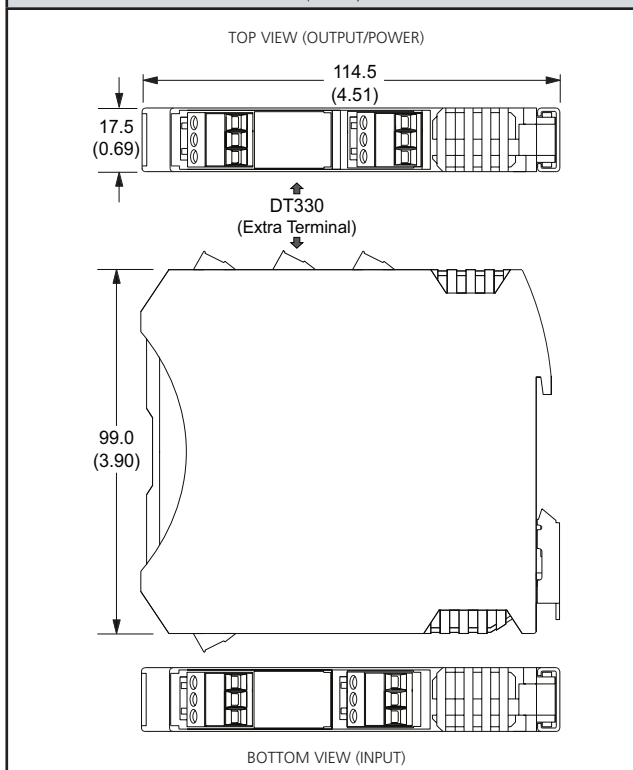
■ Environmental

Operating Temperature	DT230 Series: -40 to 80°C (-40° to 176°F). DT330 Series: -40 to 70°C (-40° to 158°F).
Storage Temperature	-40 to 85°C (-40 to 185°F).
Relative Humidity	5 to 95% non-condensing.
Power Requirement	DT230 Series: 7-32V DC SELV, 24mA max, loop power. DT330 Series: 6-32V DC SELV, 1.5W max.
Isolation	1500V AC peak. 250V AC (354V DC) continuous isolation between input, output, and power (5-way).
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 61000-6-1, IEC 61000-4-5
Approvals	CE compliant. UL/cUL listed Class I Div. 2. Groups ABCD. ATEX/IECEx Zone 2.

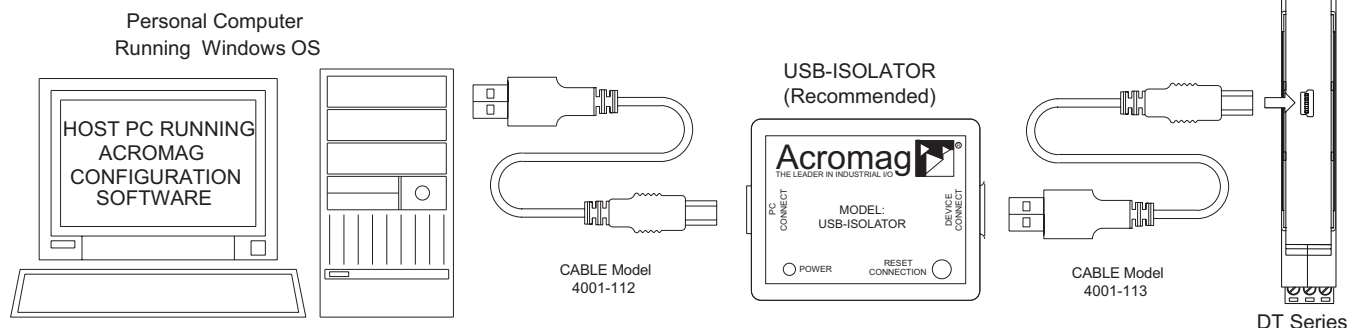
■ Physical

General	General-purpose plastic 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.
Shipping Weight	0.5 pounds (0.22 Kg) packed.

■ Dimensions *in millimeters (inches)



DT Series USB Transmitter Connections



Transmitters: DT Series

Module Configuration



DT236 Configuration Software

File

Communication Setup Configuration Calibration Diagnostics

DEVICE SELECT

Device: DT236-0600-1234567

Open

Model: DT236-0600-1234567

Serial Number: 1234567

Manufacturer: Acromag Inc

Status: Device opened successfully

Reset Device

DT236 Configuration Software

File

Communication Setup Configuration Calibration Diagnostics

Get I/O Config

Operating Mode: Signal Splitter

Status: No Device Connected!

CHANNEL 1 CONFIGURATION

Input Type: $\pm 20\text{mA}$

Input Filtering: High (1060mS)

I/O Scaling

Input Scaling for Channel 1: -20.000 mA = 4.000 mA

Output Scaling for Channel 1: 20.000 mA = 20.000 mA

Output Limits

Channel 1 Range Minimum: ☒ Enabled 3.700 mA ☐ Disabled

Channel 1 Range Maximum: ☒ Enabled 20.700 mA ☐ Disabled

☐ Set output Ch. 1 to Namur Compliant Range

CHANNEL 2 CONFIGURATION

Input Type: $\pm 20\text{mA}$

Input Filtering: High (1060mS)

I/O Scaling

Input Scaling for Channel 2: -20.000 mA = 4.000 mA

Output Scaling for Channel 2: 20.000 mA = 20.000 mA

Output Limits

Channel 2 Range Minimum: ☒ Enabled 3.700 mA ☐ Disabled

Channel 2 Range Maximum: ☒ Enabled 20.700 mA ☐ Disabled

☐ Set output Ch. 2 to Namur Compliant Range

Send I/O Config

DT236 Configuration Software

File

Communication Setup Configuration Calibration Diagnostics

CALIBRATION

Input

Input Cal Instructions

Input Channel: 1

Currently Calibrating: $\pm 20\text{mA}$

Zero Full Scale

Output

Output Cal Instructions

Output Channel: 1

Currently Calibrating: $4\text{-}20\text{mA}$

Coarse Adjustment

Fine Adjustment

Zero Full Scale

FACTORY SETTINGS

Restore Factory Calibration Restore to Factory Default

COMMUNICATION STATUS

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.

DT236 Configuration Software

File

Communication Setup Configuration Calibration Diagnostics

TEST I/O

☒ Start Polling

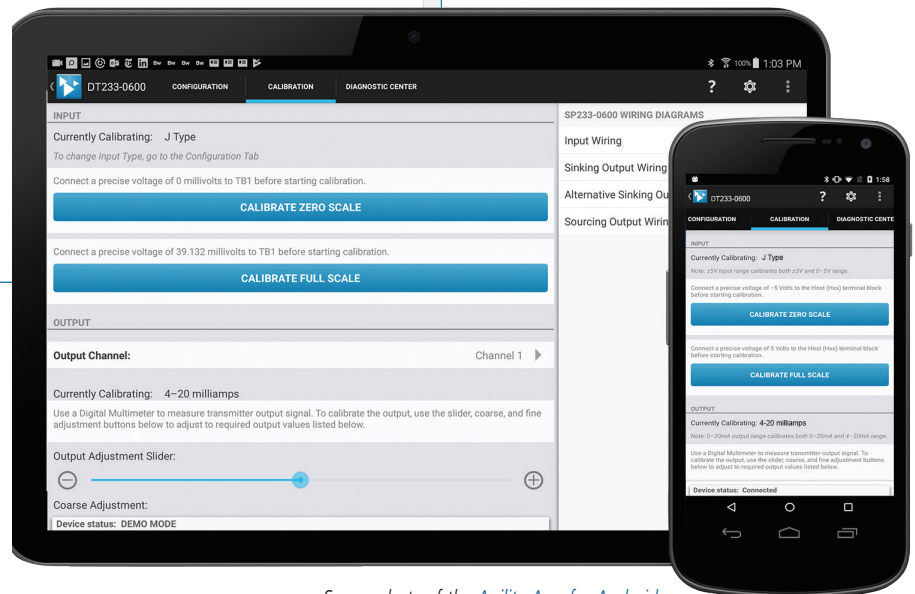
Channel 1 Input: mA

Channel 2 Input: mA

Click "Start Polling" to poll the input and display its value. The LED next to the button will flash when polling is active.

Click "Stop Polling" to discontinue polling the input.

COMMUNICATION STATUS



Screen shots of the [Agility App for Android](#), allowing for mobile configuration in the field.

Transmitters: DT Series



Accessories



◆ Configuration Software



DT 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 tool mobile app for free download at the [Google Play Store](https://play.google.com/store/apps/details?id=com.acromag.agility).

Ordering Information

TTC-SIP

Software Interface Package for Acromag DT/SP/TT Series. Includes configuration software CD-ROM, USB isolator and two USB cables (4001-112, 4001-113)

DT230-Config/Cal, 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.

◆ Bus-Kit



TT Bus-Kit

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

Ordering Information

TT BUS-Kit

DIN rail bus power connector and left/right terminal blocks for DT, SP, or TT Series.

◆ 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.

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)

◆ 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

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.

◆ 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.

Ordering Information

USB-Isolator

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

◆ USB Cables



USB Cables

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

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