



Smart DIN Rail Mount Signal Conditioner

For RTD, Thermocouple, Resistance, mV and Slidewire Inputs

TXDIN1600T



- ✓ **3-Way Isolation**
- ✓ **4 to 20 mA, 0 to 20 mA, 0 to 10 V or -10 to 10 Vdc Outputs**
- ✓ **Powered by 10 to 48 Vdc or 10 to 32 Vac**
- ✓ **Adjustable Input Filter 0 to 100 s**
- ✓ **USB Set-Up, with Free Configuration Software Download**

The TXDIN1600T DIN rail transmitter is designed for all common thermocouples (13 types) and resistive temperature detectors in the range of 10 to 10k 5Ω. The 3-way galvanic isolation allows for a

number of transmitters to be powered from the same power supply and eliminates ground loop problems.

The flexible output stage has voltage, bipolar voltage or mA signals, allowing simple, direct wiring to controllers, indicators, PLCs or PC-measuring systems. The galvanic isolation between input and output enables the use of non-isolated thermocouples for fast temperature response, or thermocouples which are at a high voltage potential.

Twenty-two point user linearisation is available for slide-wire, mV or linear resistance inputs and the output signal is fully scalable. A 00 to -100s digital filter is also available, making the TXDIN1600T suitable for many different measurement applications.

The mini Type-B USB socket allows direct connection to a suitable PC for quick and easy configuration using the free software.



TXDIN1600T shown actual size.

Specifications

Thermocouple/mV

Type	Range	Standard	Accuracy at 20°C (68°F)	
			Basic Accuracy	Thermal Drift
J (Fe-CuNi)	-100 to 1200°C (-148 to 2192°F)	IEC 584: 1998-06	<±0.5°C, ±0.1% FS	Offset: 0.1°C/°C, Span: 0.05°C/°C
K (NiCr-Ni)	-200 to 1370°C (-328 to 2498°F)			
L (Fe-CuNi)	-100 to 600°C (-148 to 1112°F)	DIN 43760: 1985-12		
E (NiC-Cu)	-200 to 1000°C (-328 to 1832°F)	IEC 584: 1998-06	<±0.5°C, ±0.2% FS	
T (Cu-CuNi)	-200 to 400°C (-328 to 752°F)			
N (NiCrSi-NiSi)	-180 to 1300°C (-292 to 2372°F)	DIN 43760: 1985-12	<±0.5°C, ±0.1% FS	
U (Cu-CuNi)	0 to 600°C (32 to 1112°F)			
R (PtRh-Pt)	0 to 1760°C (32 to 3200°F)			
S (PtRh-Pt)	0 to 1760°C (32 to 3200°F)			
B (PtRh-Pt)	0 to 1800°C (32 to 3272°F)			
C	0 to 2300°C (32 to 4172°F)			
D				
G				
mV	-100 to 200 mV	—	±0.02% of full scale	—

Cold Junction Range: -40 to 85°C; Accuracy: ±0.2°C; Drift: ±0.05°C/°C



RTD and Resistance

Type	Range	Standard	Curve	Accuracy at 20°C (68°F)
Pt100	-200 to 850°C	DIN EN 60751: 1996	α = 0.00385	< ±0.2°C, ±0.05% Reading
Pt500	-200 to 750°C			
Pt1000	-200 to 600°C			
JPt100	-200 to 630°C	JIS C 1606: 1989	α = 0.003916	
Cu100	-80 to 260°C	—	α = 0.00427	
Cu1000	-80 to 260°C	—	—	
Ni100	-60 to 180°C	DIN 43760: 1987	α = 0.00618	
Ni120	-80 to 260°C		α = 0.00672	
Ni1000	-50 to 150°C	—	Tk5000	
Ni507.5	-80 to 360°C	—	—	
Ni604	-200 to 200°C	—	—	
Cu53	-50 to 180°C	—	—	
Silicon sensor	-55 to 175°C (-67 to 347°F)	KTY81-110 -120-121-122-150-210-220-221-222-250		
		KTY82-110 -120-121-122-150-210-220-221-222-250		
		KTY81-151		
		KTY82-151		
		KTY83-210-220-250-121-122		
	-40 to 300°C (-40 to 572°F)	KTY84-130-150		

Potentiometer and Slide-wire

Sensor	Range	Accuracy	Thermal Drift
Potentiometer	1 to 100 k Ω	0.1%	—
Slide-wire	10 to 500 Ω	$\pm 0.055 \Omega$	0.013 $\Omega/^{\circ}\text{C}$
	500 to 2500 Ω	$\pm 0.5 \Omega$	0.063 $\Omega/^{\circ}\text{C}$
	2500 to 10,500 Ω	$\pm 10 \Omega$	0.27 $\Omega/^{\circ}\text{C}$

Specifications

Measuring Current: <200 μA

Maximum Lead Resistance:
20 Ω per leg; effect: 0.002 $^{\circ}\text{C}/\Omega$

OUTPUT CURRENT

Current Source:

Range: 0 to 21.5 mA

Maximum Load: 750 Ω

Current Sink:

Range: 0 to 21.5 mA

Supply: 10 to 30 Vdc

Voltage Effect: 0.2 $\mu\text{A}/\text{V}$

Accuracy: mA out/2000 or 5 μA
whichever is the greater, drift 1 $\mu\text{A}/^{\circ}\text{C}$

OUTPUT VOLTAGE

Range: 0 to 10.1V or -10.1 to 10.1V,

Accuracy: $\pm 5 \text{ mV}$

Current Drive: $\pm 2 \text{ mA}$, minimum load
5000 Ω @ 10V

Power Supply:

Range: 10 to 48 Vdc, 10 to 32 Vac

Protection: Internal 500 mA
resettable fuse

Power: <1W full power

General Specifications

Response Time:

Start Up: 5 seconds

Update: 300 ms

Response: 400 ms

Warm Up: 2 minutes

Galvanic Isolation: Supply to input to
output 500 Vdc

LED Indication (STATE): LED, green
when output -0.1 to 100.1%, else red
when input/output error

User Interface:

Type: USB 2.0

Baud Rate: 19,200 baud

Equipment: PC running Windows® XP
or later, USB cable

USER INTERFACE FUNCTIONS

Scaling: User signal to process value
scaling, for simplified setup

Filter: Adjustable time constant 0 to
100 seconds

User Linearisation (Profile): 2 to 22
segments Ω (slide wire) and mV to
process

Process Units: 4 characters (signal
input only)

Temperature Units: $^{\circ}\text{C}$ or $^{\circ}\text{F}$ (TC,
RTD inputs only)



Tag Number: 20 characters

Process Output: Range in process units

Signal Output: Select type, signal range and (temperature only) error signal

User Offset: Enter sensor offset (temperature mode only)

Active Scaling: Set output process range against active sensor input

ENVIRONMENT

Operating Ambient: -30 to 70°C (-22 to 158°F); 10 to 90% RH (non-condensing)

Storage Ambient: -30 to 70°C (-22 to 158°F); 10 to 90% RH (non-condensing)

Configuration Ambient: 10 to 30°C (50 to 86°F)

Installation Enclosure: DIN Rail enclosure offering Protection $\geq$ IP65

Approvals: CE: BS EN 61326

MECHANICAL

Style: DIN 43880

Colour: Grey

Material: Polymide 6.6

Dimensions:
17.5 W x 90 H x 56.4 mm D
(0.69 x 3.5 x 2.2")

Weight: <70 g (2.5 oz)

Terminals: 2.5 mm (0.09") maximum

To Order	
Model No.	Description
TXDIN1600T	DIN rail mount transmitter
TXDIN1600T-UKFS	DIN rail mount transmitter, factory scaled
OM-62-USB-CABLE	USB interface cable (required for user scaling)

Note: To order with factory scaling use model number **TXDIN1600T-UKFS** and advise input, output and scaling required.

Ordering Example: **TXDIN1600T**, DIN rail mount transmitter, **OM-62-USB-CABLE**, USB interface cable.