Signal Conditioner for RTDs, Thermocouples, Resistance, Voltage and Current

With mA, V and Relay Outputs

TXDIN1700

- **Direct USB Connection, with Free Configuration Software Download**
- **3-Way Galvanic Isolation**
- **Dual Form C Relay Outputs**
- **4 to 20 mA, 0 to 20 mA, or 0 to 10 Vdc Outputs**
- **Powered by 20 to 240 Vac or Vdc**
- **1, 4 or 10 Readings/ Second Update Rate**

The TXDIN1700 is a universal DIN rail mounted signal conditioner. It has been designed to accept most common process and temperature sensor inputs and provide the user with either a current or voltage output signal plus dual relays with a 0 to 250 sec delay function. Isolation is provided between input, outputs and supply. All temperature ranges are linear to temperature. Both input and output loop excitation is provided as well as a fully universal power supply.

Designed for ease of use, just connect a standard USB cable between the TXDIN1700 and your PC. Using our free configuration software, your PC will automatically upload the existing configuration data and guide you through any changes you wish to make. To further help save time, the TXDIN1700 is powered via the USB interface during configuration so does not need to be wired to a power supply during the set-up process.

TXDIN1700 shown smaller than actual size.

The following parameters are available and configurable through software:

Input Type		Scale/ Rate	Analogue Output	Relay Outputs	User Trim Options
RTD	Pt100 0.00385 (IEC) Pt100 0.00391 (IPTS-68) Pt100 0.00392 (IPTS-68) Pt100 0.00393 (ITS-90) Ni100 0.00618 (DIN) Ni120 0.00672 (Nickel A) Cu100 0.00427 Cu53	°C/°F/°K Update Rate	Current (4 to 20) mA Preset (0 to 20) mA Preset User Programmable Range Voltage (0 to 10) V Preset User Programmable Range Fault Condition Up Scale Down Scale User Programmable Setting Output damping rise Output damping fall	RELAY 1/ RELAY 2 Set-point Hysteresis High Al Low Al High Con Low Con Off On Delay Off Delay	1. Off 2. Trim 3. Pushbutton Configuration
T/C	K, J, E, N, T, R, S, L, U, B, C(W5), D(W3), G(W)				
Slide Wire	> 1K	Process Variable Scaling Update Rate			
Current (mA) (4 to 20) mA Capability	±30 mA				
Voltage	± 50 mV ± 200 mV ± 1V ± 10V				
Tag ID		Up to 15 characters can be used			

Specifications

Impedance (Thermocouple): 1 MΩ
Open Circuit Sensor Bias: 0.2 uA
Cold Junction Range: -20 to 70°C (-4 to 158°F)
Cold Junction Accuracy: ±0.5°C
Cold Junction Tracking: ±0.05°C
RTD Connection: 2- or 3-wire
RTD Lead Resistance: 20Ω max
RTD Lead Effect: 0.015°C/Ω
RTD Excitation Current: <1 mA
Update Rate (Resolution): 1readings/second (16-bits); 4 readings/second (14-bits); 10 readings/Second (12-bits)
Galvanic Isolation: 500V to output: 3750V to supply and relays
Indication (State LED): Green flashing = OK, green solid = input/output error configuration indication refer to manual

Temperature Inputs

Input	Range	Accuracy	Stability with Temperature
Thermocouples			
K	-200 to 1370°C (-320 to 2498°F)	1 Reading/ Second ±0.5°C + (0.1% of FSR)	±0.05% FSR/°C
J	-200 to 1200°C (-320 to 2190°F)		
E	-200 to 1000°C (-320 to 1832°F)		
N	-180 to 1300°C (-292 to 2372°F)	4 Readings/ Second ±1.°C + (0.1% of FSR)	±0.08% FSR/°C
T	-200 to 400°C (-320 to 750°F)		±0.15% FSR/°C
R *1 *2	-10 to 1760°C (-148 to 3200°F)	10 Readings/ Second ±2.0°C + (0.1% of FSR)	±0.10% FSR/°C
S *1 *2			
L	-100 to 600°C (-148 to 1100°F)		±0.08% FSR/°C
B *1 *2	0 to 1600°C (32 to 3000°F)		±0.10% FSR/°C
U	0 to 600°C (32 to 1100°F)		±0.08% FSR/°C
C(W5) *2	0 to 2300°C (32 to 4200°F)		±0.05% FSR/°C
D(W3) *2			
G(W) *2			
RTD			
Pt100 0.00385 (IEC)	-200 to 850°C (-320 to 1560°F)	1 Reading/ Second ±0.15°C + (0.05% of FSR)	±0.015% FSR/°C*3
Pt100 0.00391 (IPTS-68)	-200 to 630°C (-320 to 1160°F)	4 Readings/ Second ±0.5°C + (0.1% of FSR)	
Pt100 0.00392 (IPTS-68)			
Pt100 0.00393 (ITS-90)	-200 to 960°C (-320 to 1760°F)		
Ni100 0.00618 (DIN)	-60 to 180°C (-76 to 320°F)		
Ni120 0.00672 (Nickel A)	-80 to 260°C (-112 to 460°F)	10 Readings/ Second ±1.0°C + (0.1% of FSR)	
Cu100 0.00427			
Cu 53 (GOST)	-50 to 180°C (-58 to 320°F)		

Key: FSR = Full Scale range
**1: Only over the range 800 to 1600°C, *2: Cold junction tracking range 0 to 70°C, *3: Ambient -10 to 50°C.*

Process Inputs

Input	Range	Accuracy @ 20°C (68°F)	Stability with Temperature
50 mV	±50 mV (Max ±75 mV)	1 Reading/ Second ±0.04% + (0.1% of FSR)	±0.04% FSR/°C
200 mV	±200 mV (Max ±230 mV)		
1V	±1V (Max ±1.3V)	4 Readings/ Second ± 0.1% + (0.1% of FSR)	
10V	±10 V (Max ±11V)		
mA	±25 mA (Max ±30 mA)		
Slide Wire	0 to 100% 1 to 1000 KΩ pot	10 Readings/ Second ±0.2% + (0.1 % of FSR)	±0.05%/°C
Ohms	20 to 400Ω Max 0 to 480Ω		±0.025% FSR/°C

Specifications

Voltage Input Impedance: 1 MΩ

Current Input Impedance: 20 Ω

Slide Wire Input Range:
1 to 1000 KΩ pot

Resistance Connection: 2- or 3-wire

Galvanic Isolation: 500V to output: 3750V to supply and relays

Update Rate (Resolution): 1 reading/second (16-bits); 4 readings/second (14-bits); 10 readings/second (12-bits)

CURRENT OUTPUT

Ranges: 4 to 20 mA; 0 to 20 mA; user (between 0 and 24 mA; min span 0.5)

Fault Signal:
- **Up:** 22.5 mA
- **Down:** 3.8 mA
- **User:** 0 to 25 mA

Type: 2-wire current sink; or 2-wire current source

Supply in Sink Mode: 11 to 30 Vdc, 24V nominal

Max Loop Load: Sink mode loop load of 600Ω @ 24V; source mode 550Ω

Response Time: <500 ms to reach 95% of final value; start up time <3 s

Calibration Accuracy: ±5 uA

Loop Effects: Loop ripple 0.03% of FSR

Supply Sensitivity: Supply ripple rejection <±5 uA error @ 1V rms 50 Hz ripple

Protection: Reverse connection and over-voltage protection, max over voltage current 100 mA

User Adjust Options:
1. Off (locked)
2. Pushbutton user adjust at both ±10% of zero and ±10% of span
3. Manual Pushbutton range configuration

Current Output Damping:
Programmable rise and fall, 0 to 250 seconds, for a 0 to 20 mA swing

Stability: ±5 uA/°C

VOLTAGE OUTPUT

Ranges: 0 to 10V, user (0 to 12V, span 0.5V)

Fault Signal:
- **Up:** 11.5V
- **Down:** 0V
- **User:** 0 to 13V

Type: Voltage generated across 500Ω resistor

Min Load: 10 KΩ user configurable correction for load

Response Time: <500 ms to reach 95% of final value; start up time <3 s

Calibration Accuracy: ±5 mV

Galvanic Isolation: 500V (48 Vdc working I/P to O/P), 3750V to supply and relays

User Trim: Pushbutton user adjust at both zero and span

Voltage Output Damping:
Programmable rise and fall 0 to 250 seconds, for a 0 to 10V swing

Stability: ±1mV/°C

RELAY OUTPUTS

Type: Dual Form C relay contacts

Contact Rating: 240 Vac rms @ 1A; 30 Vdc @ 1 A) resistive load

Relay Type: Individual relays 1 & 2 high or low level, full range set-point plus adjustable hysteresis

Ranges: Set-point programmed on units, covering full range of input; hysteresis set in units

Isolation: To any other port 3750V

Delay: Programmable on/off delay 0 to 250 seconds for each relay

POWER SUPPLY

Range: 20 to 240 Vdc, 20 to 240 Vac 50/60 Hz

Power: 3 W max

Protection: Internal fuse, over voltage

Galvanic Isolation: Supply to any port 3750V

TXDIN1700 shown smaller than actual size.

GENERAL

Ambient Operating: -20 to 70°C (-4 to 158°F), 10 to 95% RH non-condensing

Storage Temperature: -40 to 85°C (-40 to 185°F)

Approvals: CE tested to BS EN 61326; BS EN 61010-1

Dimensions:
120 D x 106 H x 22.5 mm W (4.72 x 4.17 x 0.88")

To Order

Model No.	Description
TXDIN1700	DIN rail mount signal conditioner
TXDIN1700-UKFS	DIN rail mount signal conditioner, factory scaled
OM-62-USB-CABLE	USB interface cable (required for user scaling)

*To order with factory scaling use model number **TXDIN1700-UKFS** and advise input, output and scaling required.*
***Ordering Example: TXDIN1700,** DIN rail mount signal conditioner, **OM-62-USB-CABLE,** USB interface cable.*