# UNIVERSAL TEMPERATURE TRANSMITTER

# TEX – U1


## USER'S MANUAL

www.stinnovators.com

**CONTENTS**

## 1. INTRODUCTION

The universal temperature transmitter TEX - U1 is used for thermocouple and RTD input signals transformation into standard current analog output signal 4÷20 mA.

The transmitter can be configure by means of:

- PC's IrDA port
- Communicator's IrDA port

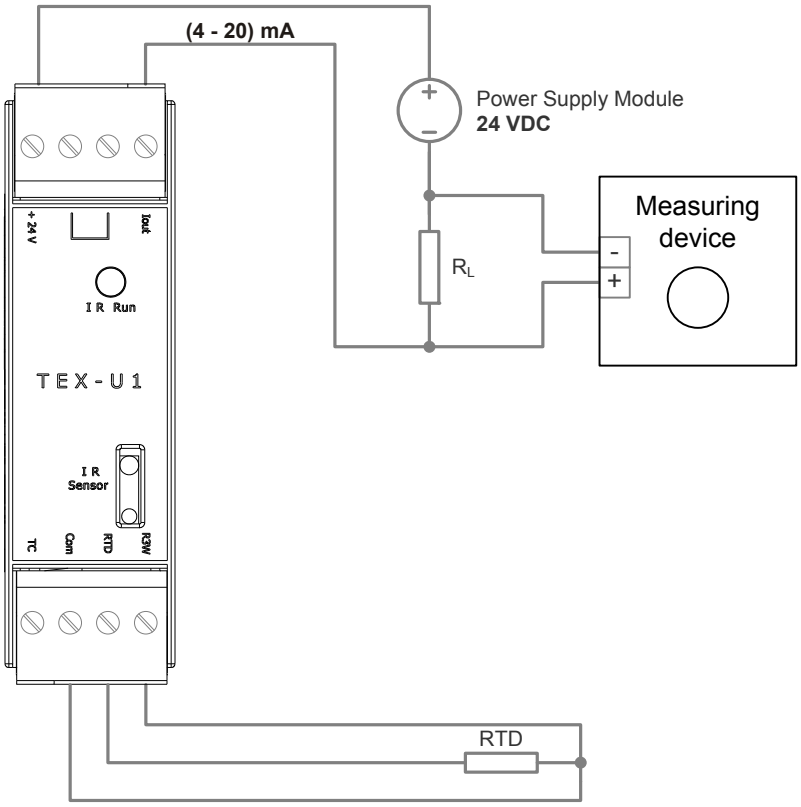
## 2. DEVICE SETTINGS

The TEX-U1's settings are:

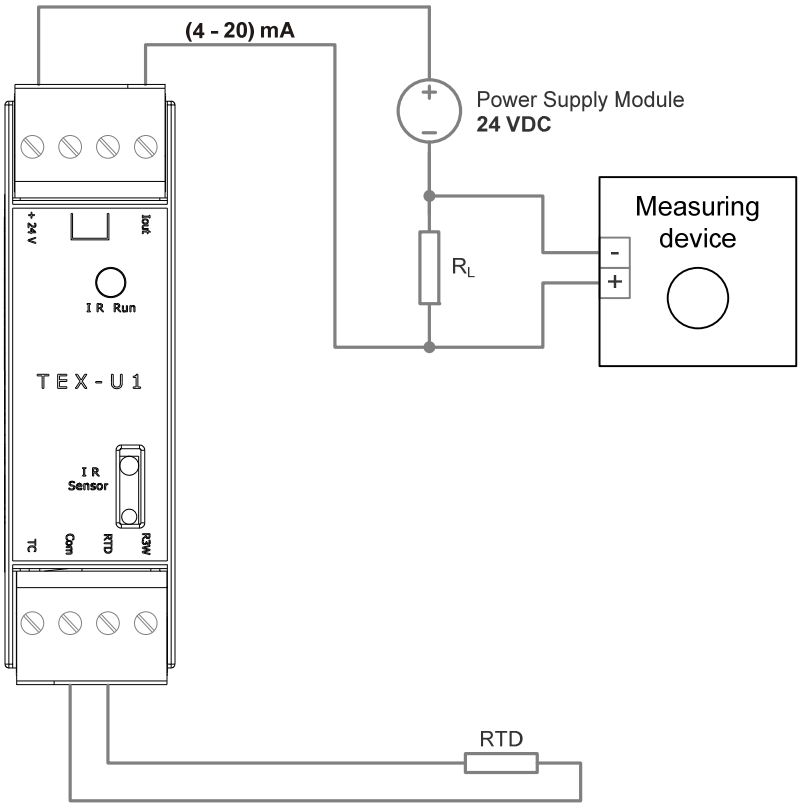
- Sensor type
  - Thermocouple **type ХК** (Chromel – Copel) (ГОСТ 3044-61 & ГОСТ 6071-51);
  - Thermocouple **type ХА** (Chromel – Alumel) (ГОСТ 3044-61 & ГОСТ 6071-51);
  - Thermocouple **type ПП1** (Pt10Rh – Pt) (ГОСТ 3044-61 & ГОСТ 6071-51);
  - Thermocouple **type T** (Cu (copper) – Constantan) (IEC 584);
  - Thermocouple **type J** (Fe (iron) – Constantan) (IEC 584);
  - Thermocouple **type E** (Chromel – Constantan) (IEC 584);
  - Thermocouple **type S** (Pt10Rh – Pt) (IEC 584);
  - Thermocouple **type R** (Pt13Rh – Pt) (IEC 584);
  - RTD **Pt 100 (1.385)** (IEC 751);
  - RTD **Pt 100 1.391** (ГОСТ 6651-59);
  - RTD **Pt 50;**
  - RTD **Pt 46** (ГОСТ 6651-59);
  - RTD **Cu 53** (ГОСТ 6651-59);
  - RTD **Cu 100** (ГОСТ 6651-59);
  - RTD **Cu 50;**
  - RTD **Ni 100** (DIN 43760);
- Temperature compensation type (during measurement with thermocouples)
  - With RDT sensor built in the transmitter
  - With external RDT sensor
- Connection diagram type (during measurement with RTD)
  - Two-wire
  - Three-wire
- Line resistance compensation (during measurement with RTD)
  - Automatic up to 140 Ω line
  - Manual
- Free temperature range programming, according to the output current (4-20 mA) and reverse scale available (20-4 mA)
- Pre-set safety output current states at sensor damage

## 3. CONNECTION DIAGRAMS

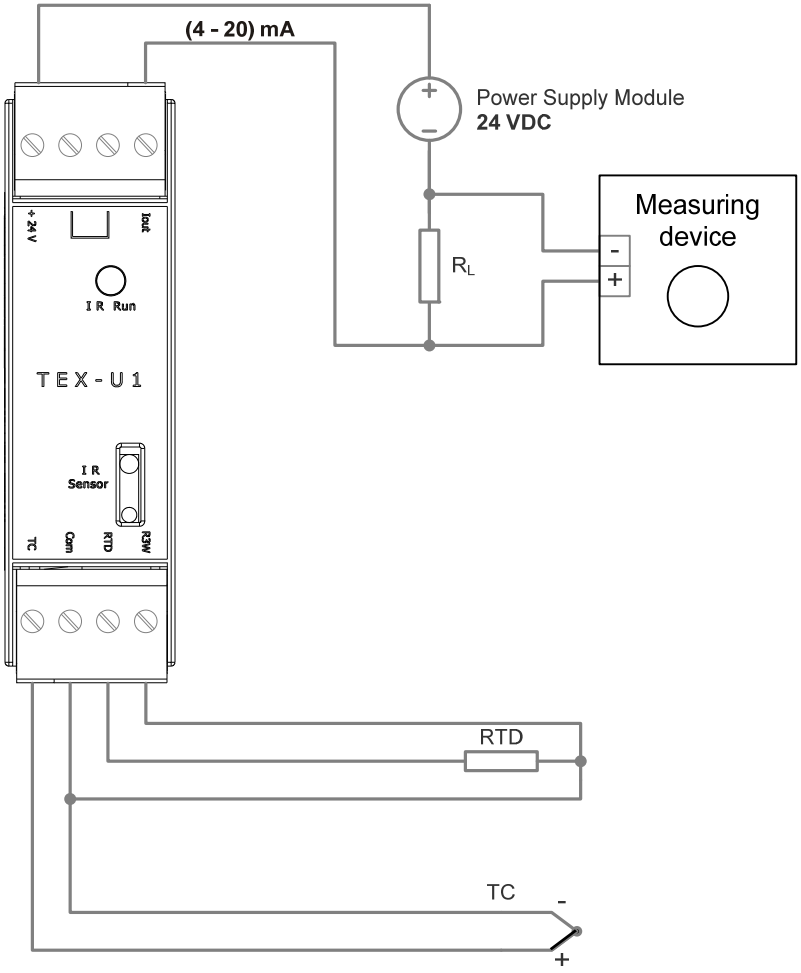
3.1. RTD Three-wire:




3.2. RTD Two-wire:



3.3. Thermocouple with automatic cold junction compensation with external RTD



## 4. TECHNICAL DATA

4.1. Transmitter connection type: two-wire

4.2. Input:

- Range: adjustable according to customer choice from the whole sensor type table
- RTD connection diagram:
  - o three-wire with auto line resistance compensation
  - o two-wire with manual set of line resistance
- Thermocouple:
  - o automatic cold junction compensation with external RTD or built in thermo sensor
  - o manual set the temperature for cold junction compensation

4.3. Accuracy:

- For temperature sensors **Cu53, Cu50, Cu100,** type **E** and type **T** in whole range and thermocouples **ПП1**, type **R**, and type **S,** at temperatures below 200 °C - < 0.5%
- For the rest temperature sensors: 0.2% ± 1LSB.

4.4. Output current: 4÷20 mA.

4.5. Line resistance: 700Ω at 24 VDC.

4.6. Power supply: 18÷36 VDC.

4.7. Dimensions: (W x H x D): 22,5 x 75 x 105 mm.

4.8. Montage: DIN-rail - 35 x 7,5 mm

**Contacts:**

1505, Sofia, BULGARIA
1, Tzarichina str.
Phone: +359 2 870 21 56, +359 888 45 99 53
Fax: +359 2 973 37 27
e-mail: office@stinnovators.com
www.stinnovators.com