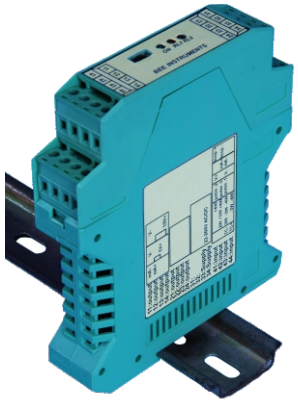
UT4623

Universal Transmitter



Features

- Input for RTD,TC,Ohms,Potentiometer,mA and V
- 2-wire supply >16V
- Output for current,voltage and 2 Potential free 1C/O relays
- Universal AC or DC supply
- ±0.1% Accuracy
- ±0.03%NonLinearity
- Standard DIN Rail Mountable
- CSA , FM , CE and ATEX Compliant
- True Universal Transmitter

Description

Advanced features

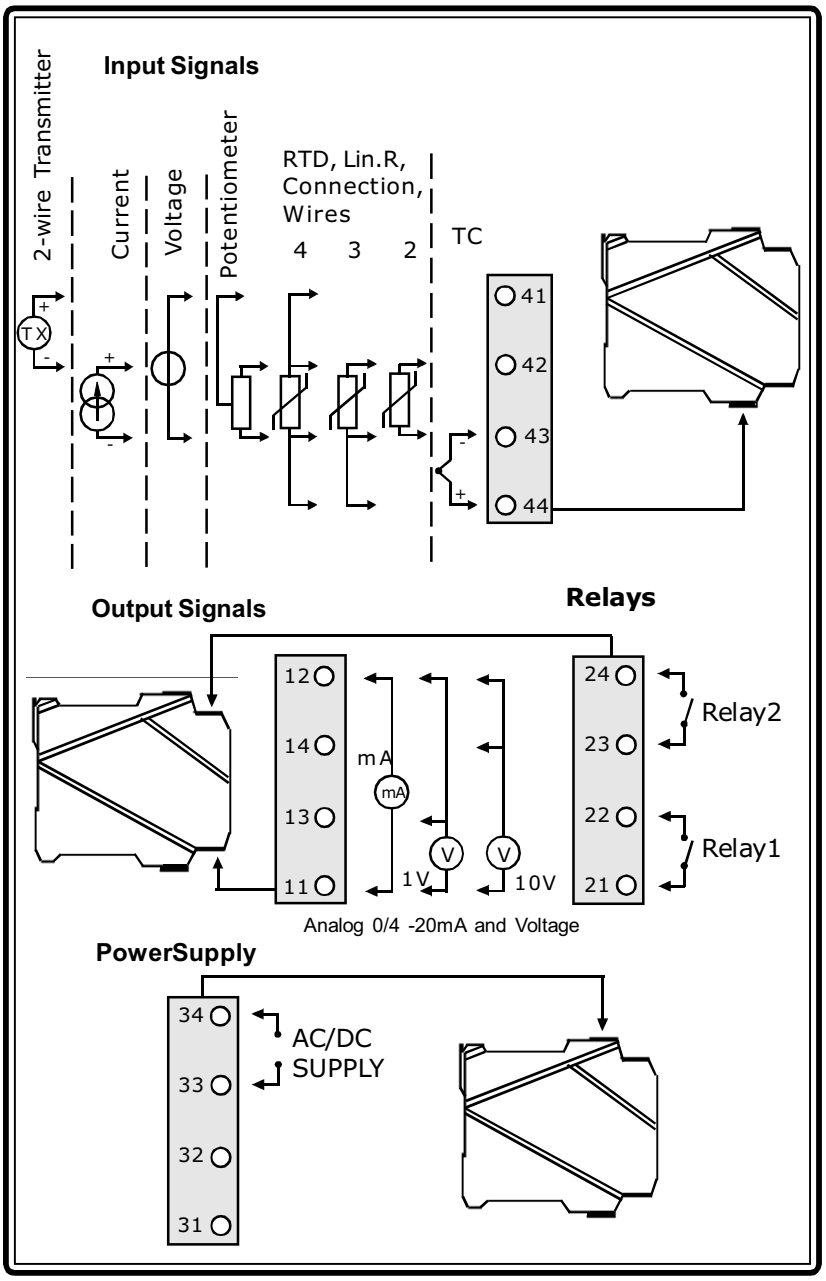
Programmable via detachable Programming Unit (UT4624), process calibration, signal and relay simulation, password protection, error diagnostics and selection of help text

Application:

- Linearised,Output electronic temperature measurement with RTD or TC sensor.
- Conversion of resistance variation to a standard analog current / voltage signal,i.e.from solenoids and butterfly valves or linear displacement type movements with attached potentiometer.
- Power supply and Signal isolator for 2-wire transmitters.
- Process control with 2 pairs of potential-free relay contacts and analog output for alarm.
- Galvanic isolation of analog signals and measurement of floating signals.
- The UT4623 is designed according to strict safety requirements and is thus suitable for application in process installations.

Technical characteristics:

- When UT4623 is used in combination with the HHT4624 display / programming unit, all functional parameters can be modified to suit any requirement. As the UT4623 is de-signedwith electronic hardware switches,which can be set by programming software. No DIP-switches inside the unit.
- On front of the unit a green LED blinking indicates normal operation and malfunction is indicated by slow blinking.During Advanced setting green LED is ON.Red LED is ON for each active output relay.
- A special algorithem for continuous check of important stored data for safety reasons.
- 4-port 2 kVAC galvanic isolation



Order codes:

UT4623 = Universal transmitter
HHT4624 = Programming Unit/HHT
CJ4625 = CJC connector

UT4624 Programming Unit/HHT

Application:

- Communications interface for modification of functional parameters in 4623.
- Can be moved from one 4623 device to another and download the configuration of the first transmitter to subsequent transmitters.
- Display for visualisation of processdataandstatus, programming aid

Technical characteristics:

- LCD display with 2 lines; Line 1 shows input signal and units, line 2 shows analog output or TAG no. and communication or relay status.
- Unauthorised Programming access is avoided by password Protection.The password is saved in the unit in order to ensure a high degree of protection against unauthorised modifications to the configuration.

Communications:

- This unit can be connected to UT4623 by cable for easy programming

Electrical specifications:

Specifications range:

-20°C to +60°C

Common specifications:

Supply voltage, universal..... 21.6...253 VAC, 50...60 Hz or 19.2...300 VDC
Max. consumption..... 2.5 W
Fuse..... 400 mA SB / 250 VAC
Isolation voltage, test / operation..... 2 kVAC / 250 VAC
Communications interface..... Programming unit HHT4624
Signal / noise ratio..... Min. 60 dB (0...100 kHz)
Response time (0...90%, 100...10%):
Temperature input..... ≤ 1 s
mA / V input..... ≤ 400 ms
Calibration temperature..... 20...28°C
Accuracy, the greater of the general and basic values:

General values		
Input type	Absolute accuracy	Temperature coefficient
All	≤ ±0.1% of span	≤ ±0.01% of span /°C

Basic values		
Input type	Basic accuracy	Temperature coefficient
mA	≤ ±4µ A	≤ ±0.4µ A/°C
Volt	≤ ±20µ V	≤ ±2µ V/°C
PT100	≤ ±0.2°C	≤ ±0.01°C/°C
Linear resistance	≤ ±0.1Ω	≤ ±0.01Ω/°C
Potentiometer	≤ ±0.1Ω	≤ ±0.01Ω/°C
TC type: E,J,K,L,N,T,U	≤ ±1°C	≤ ±05°C/ °C
TC type: R,S,W3,W5,LR	≤ ±2°C	≤ ±0.2°C/ °C
TC type: B 160.....400°C	≤ ±4.5°C	≤ ±0.45°C/ °C
TC type: B 400.....1820°C	≤ ±2°C	≤ ±0.2°C/ °C

EMC immunity influence..... ≤ ±0.5% of span
Extended EMC immunity:
NAMUR NE 21, A criterion, burst..... ≤ ±1% of span

Auxiliary supplies:

2-wire supply (terminal 44...43)..... 25...16 VDC / 0...20 mA
Max. wire size..... 1 x 2.5 mm2 stranded wire
Screw terminal torque..... 0.5 Nm
Relative humidity..... < 95% RH (non-cond.)
Dimensions, (HxBxD)..... 99 x 22.5 x 114.5 mm
Protection degree..... IP20
Weight..... 160 g

RTD, linear resistance and potentiometer input:

Input type	Min.value	Max.value	Standard
Pt10...Pt100	-200°C	+850°C	IEC 60751
Ni50...Ni1000	-60°C	+250°C	DIN 43760
Cu10..Cu100	-200°C	+260°C	a = 0.00427
Lin.R	0Ω	10000Ω	
Potentiometer	10Ω	100kΩ	

Input for RTD types:

Pt10, Pt20, Pt50, Pt100, Pt200, Pt250, Pt300, Pt400, Pt500, Pt1000, .Ni50, Ni100, Ni120, Ni1000, Cu10, Cu20, Cu50, Cu100
Cable resistance per wire (max.), RTD... 50Ω
Sensor current, RTD..... Nom. 0.2 mA
Effect of sensor cable resistance (3- / 4-wire), RTD..... < 0.002Ω /Ω
Sensor error detection, RTD..... Yes
Short circuit detection, RTD..... < 15Ω

TC input:

Thermocouple type..... B, E, J, K, L, N, R, S, T, U, W3, W5
Cold junction compensation (CJC):
via external sensor
in connector CJ4625..... 20...28°C ≤ ±0.1°C
-20...20°C
28...70°C ≤ ±2°C
via internal CJC sensor..... ±(2.0°C + 0.4°C * Δt)
Δt = internal temperature - ambient temperature
Sensor error detection, all TC types.. provided

Current input:

Measurement range..... 0...20 mA
Programmable measurement ranges.. 0...20 and 4...20 mA
Input resistance..... Nom. 50Ω

Voltage input:

Measurement range..... 0...10 VDC
Programmable measurement ranges.. 0/0.2...1; 0/1...5; 0/2...10 V
Input resistance..... Nom. 10 MΩ

Current output:

Signal range (span)..... 0...20 mA
Programmable signal ranges..... 0/4...20 and 20...4/0 mA
Load (max.)..... 20 mA / 800Ω / 16 VDC
Load stability..... . 0.01% of span / 100Ω
Sensor error detection..... 0 / 3.5 / 23 mA / none
NAMUR NE43 Upscale / Downscale.. 23 mA / 3.5 mA
Current limit..... . 28 mA

Voltage output:

Signal range..... 0...10 VDC
Programmable signal ranges..... 0/0.2...1; 0/1...5 ; 0/2...10; 1...0.2/0; 5...1/0; 10...2/0 V
Load (min.)..... 500 kΩ

Relay outputs:

Relay functions..... Setpoint, Window, Sensor error, Latch, Power and Off
Hysteresis..... 0...100%
On and Off delay..... 0...3600 s
Max. voltage..... 250 VRMS
Max. current..... 2 A / AC or 1 A / DC
Max. AC power..... 500 VA
Sensor error detection..... Break / Make / Hold
Ex / I.S : ..... Compliant
EMI/EMC :
EMC 2004/108/EC..... EN 61326-1
LVD 2006/95/EC..... EN 61010-1
FM..... Compliant
UL, Standard for Safety..... UL Compliant