

## E-KC-102 SERIES HEAD MOUNTED TYPE TEMPERATURE CONVERTER USER MANUAL

**Elimko**

KY-KC102-0524-1

The E-KC-102 converter is designed for use in an industrial environment.

- The package of the E-KC-102 converter contains; the Converter, user manual and guarantee certificate.
- After opening the package, please visually check whether the type of the transmitter is suitable for the order, whether the above-mentioned parts are missing and whether the transmitter has been damaged during shipment.
- Before installing and operating the controller, please read the user manual thoroughly.
- The installation and configuration of the controller must only be performed by a person qualified in instrumentation.
- Keep the unit away from flammable gases, that could cause explosions.
- Do not use alcohol or other solvents to clean the transmitter. Use a clean cloth soaked in water tightly squeezed to gently wipe the outer surface of the transmitter.
- It is not used in medical applications.



### 1. DESCRIPTION

E-KC-102 series two wire transmitters are microprocessor based industrial instruments in plastic case. E-KC-102 transmitters are used to convert the thermocouple and resistance thermometer signals into standard 4-20 mA. The configuration of the transmitter is done by PC, using a software programme supplied by Elimko. The RS 232 connection hardware is also available from Elimko.



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### 2.2. General Specifications

Electrical:	
Supply Voltage	10.0 - 30 V DC
Voltage Drop	10.0 V
Environmental Conditions:	
Operating Temperature	-10°C to +55°C
Protection Class	IP 00, IP 66 (DIN 43729 mounted on type B head)
Calibration Temp.	25°C ±3°C
Mechanical:	
Dimensions	Ø 44.0 mm x 21.5 mm
Weight (approx.)	40 g
Connection Cables	Max. 1.5 mm² (AWG 16)
Resistance Thermometer (RTD) / Resistance Input:	
Sensor Connection	3-wire or 4-wire (Configurable)
Maximum Wire Resistance	100 Ω
Error Signaling	Wire Break (Output current can be configured Up / Down.)
Thermocouple (TC) / mV Input:	
Input Impedance	> 10 MΩ
Maximum Wire Resistance	100 Ω
Cold Junction Compensation (CJC)	Constant, Internal NTC, External Pt-100 (Configurable)
Error Signaling	Wire Break (Output current can be configured Up / Down.)
Output:	
Output Signal	4 - 20 mA or 20 - 4 mA
Load Resistance	[V <sub>supply</sub> - 10] × 50 Ω (600 Ω at 22 V DC)
Operating Influences:	
Ambient Temperature	< ± 0.01% / °C
CJC Error (For TC Inputs)	< ± 1.0 °C
EMC Immunity	< ± 0.5% Span

### 2. TECHNICAL SPECIFICATIONS

#### 2.1. OPERATING RANGE and MEASURING ACCURACY (at 24 V supply voltage and 25°C ± 3°C ambient temperature)

SENSOR		STANDARD	LOWER LIMIT	UPPER LIMIT	MINIMUM SPAN	ACCURACY	
RTD	Pt-100	IEC 60751	-200°C	850°C	50°C	±0.25°C	±0.1% Span
			100°C	1800°C	100°C	±2.00°C	
			-200°C	840°C	50°C	±0.50°C	
			-200°C	1120°C	50°C	±0.50°C	
			-200°C	1360°C	50°C	±0.50°C	
			-200°C	1300°C	50°C	±0.50°C	
		IEC 60584	-40°C	1760°C	100°C	±1.00°C	
			-40°C	1760°C	100°C	±1.00°C	
			-200°C	400°C	50°C	±0.50°C	
		DIN 43710	-200°C	900°C	50°C	±0.50°C	
			-200°C	600°C	50°C	±0.50°C	
			-2000mV	500mV	25mV	±0.075mV	
			-2000mV	500mV	25mV	±0.075mV	
T/C	B	IEC 60751	-200°C	850°C	50°C	±0.25°C	±0.1% Span
			100°C	1800°C	100°C	±2.00°C	
			-200°C	840°C	50°C	±0.50°C	
			-200°C	1120°C	50°C	±0.50°C	
			-200°C	1360°C	50°C	±0.50°C	
			-200°C	1300°C	50°C	±0.50°C	
		IEC 60584	-40°C	1760°C	100°C	±1.00°C	
			-40°C	1760°C	100°C	±1.00°C	
			-200°C	400°C	50°C	±0.50°C	
		DIN 43710	-200°C	900°C	50°C	±0.50°C	
			-200°C	600°C	50°C	±0.50°C	
			-2000mV	500mV	25mV	±0.075mV	
			-2000mV	500mV	25mV	±0.075mV	
mV	U	IEC 60751	-200°C	850°C	50°C	±0.25°C	±0.1% Span
			100°C	1800°C	100°C	±2.00°C	
			-200°C	840°C	50°C	±0.50°C	
			-200°C	1120°C	50°C	±0.50°C	
			-200°C	1360°C	50°C	±0.50°C	
			-200°C	1300°C	50°C	±0.50°C	
		IEC 60584	-40°C	1760°C	100°C	±1.00°C	
			-40°C	1760°C	100°C	±1.00°C	
			-200°C	400°C	50°C	±0.50°C	
		DIN 43710	-200°C	900°C	50°C	±0.50°C	
			-200°C	600°C	50°C	±0.50°C	
			-2000mV	500mV	25mV	±0.075mV	
			-2000mV	500mV	25mV	±0.075mV	

If the input type and scale is not specified while ordering, factory settings are;

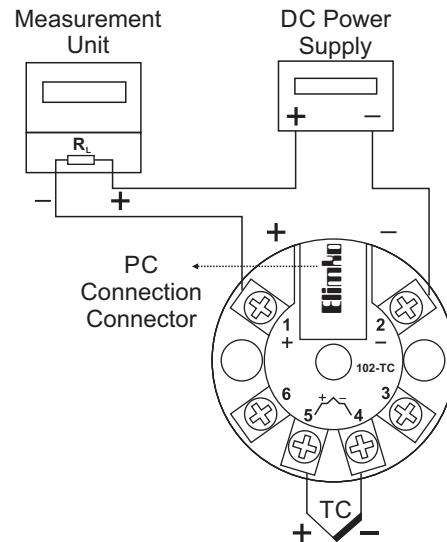
For KC-102-RT Input Type : Pt-100, and Scale : 0-200°C,

For KC-102-TC Input Type : Type K, and Scale : 0-400°C.

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#### Electromagnetic Compatibility:

The E-KC-102 meets the requirements of  
TS EN 61326-1.



### E-KC-102-TC Connection Diagram

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Technical drawing of the top view of a circular container lid. The lid features a central rectangular opening and six circular openings arranged in a ring. Each circular opening contains a cross-shaped symbol. The lid is labeled "Lid" with a downward arrow. Dimensions are given: outer diameter  $\varnothing = 44.0$  mm, inner diameter  $\varnothing = 33.0$  mm, and hole diameter  $\varnothing = 7.2$  mm. The holes are numbered 1 through 6.



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