Converter for KTY84 with Pt1000 output

Type: CONV DIN

KTY/Pt-Converter



Basic information

The converter evaluates a KTY sensor and provides the equivalent Pt1000 resistance.
A KTY sensor can therefore be operated on evaluation electronics for Pt1000 sensors.

Application

Operation of temperature monitored devices with KTY sensors on control units and controllers with Pt1000 input. When switching from KTY sensors to Pt1000 sensors, an existing device with KTY sensors can also be operated on a modern control unit.

Principle of operation

The converter evaluates the resistance of a KTY sensor and converts it into the equivalent resistance of a Pt1000 sensor. This eliminates the need for the user to replace the frequency converter or similar control devices that are tuned to the signal of a Pt1000 sensor.

At the output of the converter, the resistance of a potentiometer is set according to the measured temperature. The converter with connected KTY sensor can therefore replace a Pt1000 sensor.

Advantages

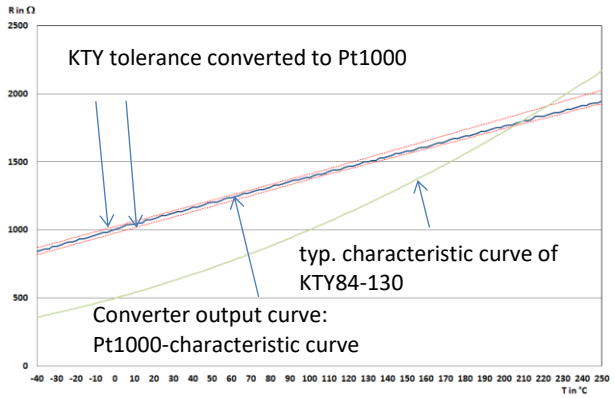
Simple conversion of single assemblies in a system, independent of the temperature sensors or sensor inputs. Different sensors can be combined cost-effectively in one system.

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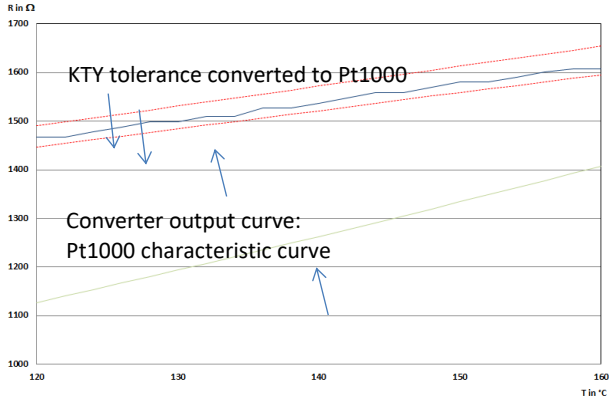
Comparison of KTY84-130 resistance curve with Pt1000 output resistance at the converter



Comparison of KTY84-130 resistance curve with Pt1000 output resistance at the converter

- Values (green) from the original NXP data sheet
- Pt1000 output of the converter (blue)
- Tolerance of the KTY84-130 sensor (red) converted to the Pt1000 characteristic curve

Comparison of KTY84-130 resistance curve with Pt1000 output resistance at the converter Enlarged section



Comparison of KTY84-130 and Pt1000 converter

- More detailed representation of the resistance values of KTY84-130 and converter output.
- The ripple of the converter output signal (blue) results from the resolution of the internal output module, which is 10 Ω.

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Type: CONV DIN

Electrical Data:

Input (IN)

Evaluable sensors:	*KTY84-130 or KTY83-110 (other types on request)*
Temperature measuring range:	*-40 °C ... +270 °C*
Number of inputs:	*1*
typ. sensor measuring current (source):	*< 1 mA*
Connection:	*Terminals KTY+ and KTY-*

Output (OUT)

Sensor characteristics	*Pt1000*
Setting range (R):	*840 Ω ... 2020 Ω*
Setting range (T):	*-40 °C ... +270 °C*
Tolerance (R):	*±10 Ω*
Max. sensor measuring current (sink):	*5 mA*
Connection:	*Pt+ and Pt- terminals*

Power supply

Operating voltage:	*22 ... 24 VDC*
Power consumption:	*< 1W*
Connection:	*DC+ and DC-terminals*
Galvanic isolation:	*between supply voltage and sensor connections*

Operating conditions

Ambient temperature:	*0 ... 60 °C*
Storage temperature:	*-40 °C ... +75 °C*
Protection class:	*IP20*

Pin assignment

Terminals DC+, DC-, KTY+, KTY-, Pt+ and Pt-.
Terminals NC are not assigned.

Additional functions

Sensor break and Short circuit detection:	*red LED*
Module ready for operation:	*green LED*

Mechanical Data:

Housing:	*Polyamide*
Colour:	*blue*
Device dimensions:	*Width x depth x height*
	22.5mm x 107mm x 99 mm
Installation:	*DIN rail TS35*



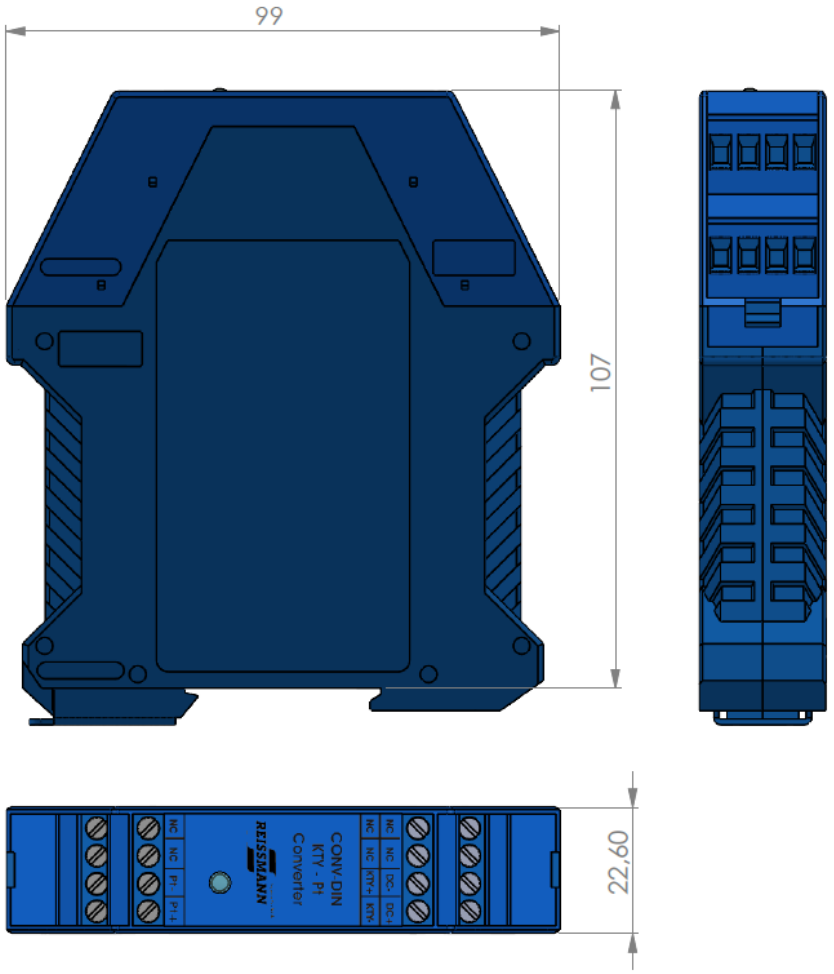
Connections:	*Screw terminals pitch 5 mm max. 2.5 mm²*

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Dimensions



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Type: CONV DIN

Designation	Supply	Sensor Input	Sensor Output	Dimensions	Part number
CONV-DIN-KTY84-Pt1000	24 VDC	KTY84-130	Pt1000	107 x 99 x 22,5 mm	005593
CONV-DIN-KTY83-Pt1000	24 VDC	KTY83-110	Pt1000	107 x 99 x 22,5 mm	006642

Other KTY sensors on request.

Conformity

The device complies with the following directives and standards:

- Machinery Directive 2006/42/EC
- Low Voltage Directive 2014/35/EU
- EMC standards for electrical equipment for measurement, control and laboratory use (industrial environment):
  Interference emission (class B): EN 61326-1:2013
  Interference immunity: EN 61326-2-3:2013

Responsibility:

The statements concerning our products are based upon our current technical knowledge and application technological experience. Liability shall be accepted in the context of the individual contract according to our delivery and sales conditions. The user is not released to check our information and recommendations before using the product. In the course of our product development, we reserve the right to make technical changes.

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