

T1E0A10A

Temperature Sensor

Properties

- Small housing
- Measurement range -20 up to +100 °C
- Low linearity error

Application

- General test and measurement
- Fatigue
- Vehicle crash

Measurement principles

- Semiconductor

Options

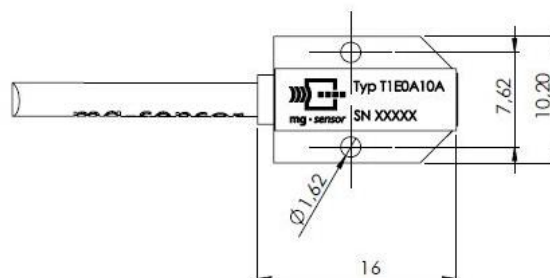
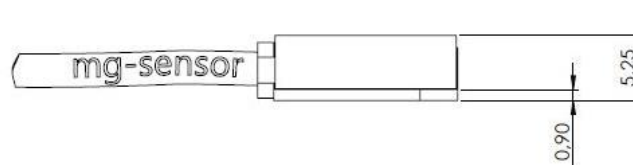
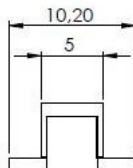
- ID-Module integrated in sensor



Technical description

Temperature measurement module completely constructed using semiconductor technology. Optimized for direct connection to the measuring systems used in the crash area. The sensor provides an output signal that is directly proportional to the temperature. The sensor element is located very close to the bottom side of the sensor base. Thanks to the very good thermal conductivity of the aluminum, the sensor element temperature adjusts itself almost ideally to the surface of the measuring point. The sensor is intended for simple measurements where there are no steep temperature gradients.

Dimensions



Technical Data Sheet



T1E0A10A



Technical specification

	Unit	Value	Comment
Measuring range	°C	-20 bis +100	
Sensitivity ¹⁾	mV/°C	10	
Output signal ^{1), 2)}	V	1.0	
Zero signal ¹⁾	mV	230 ±15	At 23°C
Amplitude non-linearity ³⁾	%	≤ 0.2	
Current consumption	mA	0.2	
Supply voltage	V	5–15	
Insulation resistance	MΩ	> 100	
Temperature range	°C	-40...+125	
Weight (approximate)	g	5.0	

All values measured at 10 V sensor supply voltage and at 23 °C.

¹⁾ Typical value

²⁾ At nominal load

³⁾ Relative nominal range

T1E0B10A

Temperature Measurement Module



Properties

- Module integrated in the cable
- For thermocouples type J or K
- Low linearity error

Application

- General test and measurement
- Fatigue
- Vehicle crash

Measurement principles

- For thermocouples

Options

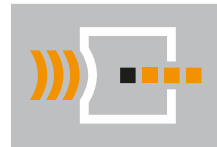
- ID-Module integrated in measurement module

Technical description

Temperature measurement module completely constructed using semiconductor technology. Optimized for direct connection to the measuring systems used in the crash area. The module provides an output signal that is directly proportional to the temperature. The necessary cold junction compensation for thermocouples is integrated in the measurement module. Available for type J or type K thermocouples. There is very fast responsiveness depending on the thermocouple used. Ideal for use with self-adhesive surface thermocouples type T1E0C10A or other sheathed thermocouples.

Dimensions

Module: W x H x D: 52 x 18 x 18 mm



T1E0B10A



Technical specification

	Unit	Value	Comment
Measuring range	°C	-25 to +400	Depending on the thermocouple
Sensitivity ¹⁾	mV/°C	5	
Thermocouple type	–	J or K	Specify when ordering
Zero signal ¹⁾	mV	230 ±15	At 23 °C
Amplitude non-linearity ²⁾	%	≤ 0.6	
Current consumption	mA	< 2.0	
Supply voltage	V	6–15	
Insulation resistance	MΩ	> 100	
Temperature range	°C	0...+50	Temperature of the module
Weight (approximate)	g	5.0	

All values measured at 10 V sensor supply voltage and at 23 °C.

¹⁾ Typical value

²⁾ At nominal load

Standard calibration range: 0 °C to 100 °C in 10 °C steps.

The thermocouple is not supplied.

T1E0B10B

Temperature Measurement Module

Properties

- Module integrated in the cable
- For thermocouples type J or K
- Low linearity error

Application

- General test and measurement
- Fatigue
- Vehicle crash

Measurement principles

- For thermocouples

Options

- ID-Module integrated in measurement module

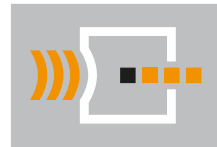


Technical description

Temperature measurement module completely constructed using semiconductor technology. Optimized for direct connection to the measuring systems used in the crash area. The module provides an output signal that is directly proportional to the temperature. The necessary cold junction compensation for thermocouples is integrated in the measurement module. Available for type J or type K thermocouples. There is very fast responsiveness depending on the thermocouple used. Ideal for use with self-adhesive surface thermocouples type T1E0C10A or other sheathed thermocouples.

Dimensions

Module: W x H x D: 52 x 18 x 18 mm



T1E0B10B



Technical specification

	Unit	Value	Comment
Measuring range	°C	-25 to +400	Depending on the thermocouple
Sensitivity ¹⁾	mV/°C	10	
Thermocouple type	–	J or K	Specify when ordering
Zero signal ¹⁾	mV	230 ±15	At 23 °C
Amplitude non-linearity ²⁾	%	≤ 0.6	
Current consumption	mA	< 2.0	
Supply voltage	V	6–15	5 V: max. 300 °C
Insulation resistance	MΩ	> 100	
Temperature range	°C	0...+50	Temperature of the module
Weight (approximate)	g	5.0	

All values measured at 10 V sensor supply voltage and at 23 °C.

¹⁾ Typical value, Type K

²⁾ At nominal load

Standard calibration range: 0 °C to 100 °C in 10 °C steps.

The thermocouple is not supplied.

T1E0C10A

Temperature Measurement Module

Properties

- Module integrated in the cable
- For PT100 sensors
- Low linearity error

Application

- General test and measurement
- Fatigue
- Vehicle crash

Measurement principles

- For resistance temperature sensors

Options

- ID-Module integrated in measurement module
- Sensor is fixed or plugged in with module

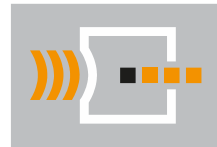


Technical description

Temperature measurement module completely constructed using semiconductor technology. Optimized for direct connection to the measuring systems used in the crash area. The module provides an output signal that is directly proportional to the temperature. The power supply required for resistance thermometers is integrated in the measuring module. Available for PT100 sensors. Depending on the sensor element used, a very fast response is given. Can be used with any PT100 measuring probe.

Dimensions

Module: W x H x D: 52 x 18 x 18 mm



T1E0C10A



Technical specification

	Unit	Vale	Comment
Measuring range	°C	-50 to +500	Depending on the thermocouple
Sensitivity ¹⁾	mV/°C	10	
Thermocouple type	–	PT100	Specify when ordering
Zero signal ¹⁾	mV	230 ±15	At 23°C
Amplitude non-linearity ²⁾	%	≤ 0.1	
Current consumption	mA	< 2.0	
Supply voltage	V	6–15	
Insulation resistance	MΩ	> 100	
Temperature range	°C	-20...+75	Temperature of the module
Weight (approximate)	g	5.0	

All values measured at 10 V sensor supply voltage and at 23 °C.

¹⁾ Typical value

²⁾ At nominal load

Standard calibration range: 10 °C to 30 °C in 10 °C steps.

The PT100 sensor element is not supplied.

T1E0110A-50

➤ Miniature Thermocouple

Properties

- Fast response
- Thermocouples type K
- Low linearity error

Application

- General test and measurement
- Fatigue
- Vehicle crash

Measurement principles

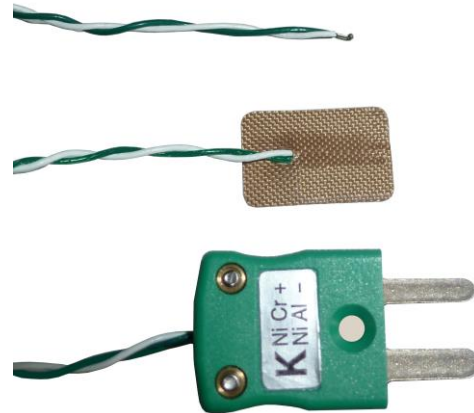
- Seebeck effect

Options

- Cable length

Technical description

If two different conductor materials contact each other, a potential difference arises related to a reference point that is directly proportional to the temperature difference of the measuring point and reference point. Different material pairings result in different thermal voltages (thermal EMFs) and linearity's. The nickel-chromium/nickel (type K, color code green according to IEC) and the iron-copper/nickel (type J, color code black according to IEC) are frequently used thereby. In order to prevent further thermo voltages, both the plug contacts of the connector as well as outgoing cables must consist of the same material pair or consist of materials with similar characteristics (compensating cable). The thermocouple module type T1E0B10A or other signal processing modules or display units with cold junction compensation are suitable for signal evaluation.



Technical Data Sheet



T1E0110A-50

Technical specification

	Unit	Value	Comment
Measuring range Type K	°C	-50 to +250	Restricted by the isolated material
Sensitivity ¹⁾ Type K	µV/°C	41	Depending on the applied temperature
Diameter Conductor Isolation	mm	0.2 1.0	Per core
Color coding Type K	–	Green	According to IEC
Isolated material	–	PFA	
Connection cable	m	5.0	Standard
Adhesive pad Length Width	mm	18 13	For surface mounting (loosely enclosed)
Weight (approximate)	g	< 10	Without connector

¹⁾ Typical value

➤ Miniature Thermocouple

Properties

- Fast response
- Thermocouples type K
- Low linearity error

Application

- General test and measurement
- Fatigue
- Vehicle crash

Measurement principles

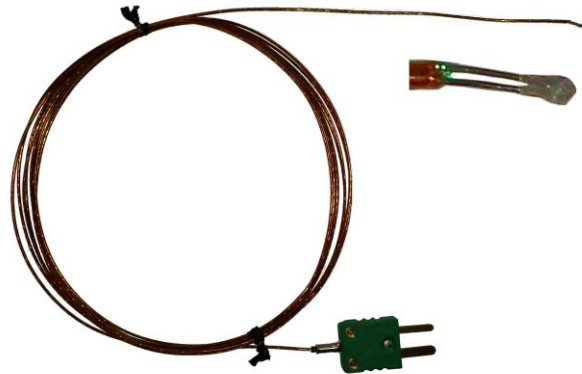
- Seebeck effect

Options

- Cable length

Technical description

If two different conductor materials contact each other, a potential difference arises related to a reference point that is directly proportional to the temperature difference of the measuring point and reference point. Different material pairings result in different thermal voltages (thermal EMFs) and linearity's. The nickel-chromium/nickel (type K, color code green according to IEC) and the iron-copper/nickel (type J, color code black according to IEC) are frequently used thereby. In order to prevent further thermo voltages, both the plug contacts of the connector as well as outgoing cables must consist of the same material pair or consist of materials with similar characteristics (compensating cable). The thermocouple module type T1E0B10A or other signal processing modules or display units with cold junction compensation are suitable for signal evaluation.



Technical Data Sheet



T1E0110B-30F

Technical specification

	Unit	Value	Comment
Measuring range Type K	°C	-50 to +250	Restricted by the isolated material
Sensitivity ¹⁾ Type K	µV/°C	41	Depending on the applied temperature
Diameter Conductor Isolation	mm	0.2 1.0	Per core
Color coding Type K	–	Green	According to IEC
Isolated material	–	PFA	
Connection cable	m	3.0	Standard
Adhesive pad Length Width	mm	18 13	For surface mounting (loosely enclosed)
Weight (approximate)	g	< 10	Without connector

¹⁾ Typical value

➤ Miniature Thermocouple

Properties

- Fast response
- Thermocouples type K
- Low linearity error

Application

- General test and measurement
- Fatigue
- Vehicle crash

Measurement principles

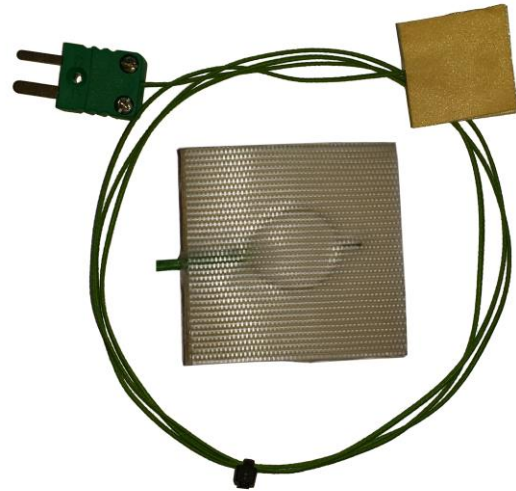
- Seebeck effect

Options

- Cable length

Technical description

If two different conductor materials contact each other, a potential difference arises related to a reference point that is directly proportional to the temperature difference of the measuring point and reference point. Different material pairings result in different thermal voltages (thermal EMFs) and linearity's. The nickel-chromium/nickel (type K, color code green according to IEC) and the iron-copper/nickel (type J, color code black according to IEC) are frequently used thereby. In order to prevent further thermo voltages, both the plug contacts of the connector as well as outgoing cables must consist of the same material pair or consist of materials with similar characteristics (compensating cable). The thermocouple module type T1E0B10A or other signal processing modules or display units with cold junction compensation are suitable for signal evaluation.



Technical Data Sheet



T1E0110C-50



Technical specification

	Unit	Value	Comment
Measuring range Type K	°C	-50 to +250	Restricted by the isolated material
Sensitivity ¹⁾ Type K	µV/°C	41	Depending on the applied temperature
Diameter Conductor Isolation	mm	0.2 1.0	Per core
Color coding Type K	–	Green	According to IEC
Isolated material	–	PFA	
Connection cable	m	5.0	Standard
Adhesive pad Length Width	mm	25 25	For surface mounting (loosely enclosed)
Weight (approximate)	g	< 10	Without connector

¹⁾ Typical value

T1E0210A-20

➤ Miniature Thermocouple

Properties

- Fast response
- Thermocouples type J
- Low linearity error
- Miniature thermocouple

Application

- General test and measurement
- Fatigue
- Vehicle crash

Measurement principles

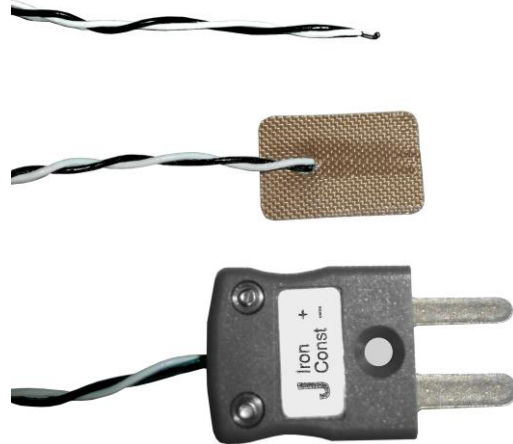
- Seebeck effect

Options

- Cable length

Technical description

If two different conductor materials contact each other, a potential difference arises related to a reference point that is directly proportional to the temperature difference of the measuring point and reference point. Different material pairings result in different thermal voltages (thermal EMFs) and linearity's. The nickel-chromium/nickel (type K, color code green according to IEC) and the iron-copper/nickel (type J, color code black according to IEC) are frequently used thereby. In order to prevent further thermo voltages, both the plug contacts of the connector as well as outgoing cables must consist of the same material pair or consist of materials with similar characteristics (compensating cable). The thermocouple module type T1E0B10A or other signal processing modules or display units with cold junction compensation are suitable for signal evaluation.



Technical Data Sheet



T1E0210A-20

Technical specification

	Unit	Value	Comment
Measuring range Type J	°C	-50 to +250	Restricted by the isolated material
Sensitivity ¹⁾ Type J	µV/°C	50	Depending on the applied temperature
Diameter Conductor Isolation	mm	0.2 1.0	Per core
Color coding Type J	–	Black	According to IEC
Isolated material	–	PFA	
Connection cable	m	2.0	Standard
Adhesive pad Length Width	mm	18 13	For surface mounting (loosely enclosed)
Weight (approximate)	g	< 10	Without connector

All values measured at 10 V sensor supply voltage and at 23 °C.

¹⁾ Typical value