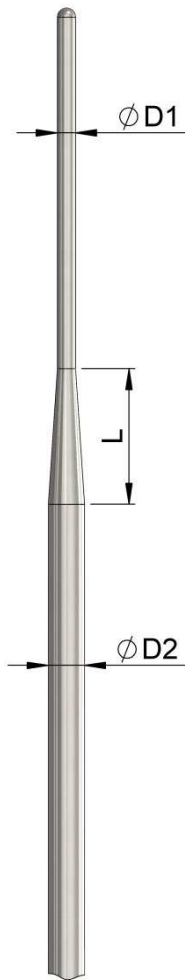


The following schedule gives an overview about the articles in this catalogue.

For simplification reasons, thermocouples are shown in type K. All available types can be found in the technical features.

Description	Datasheet	Revision
Mineral-Insulated Thermocouple in Swaged construction	T – 005	01 – 10/08
Mineral-Insulated Thermocouple with PVC-Insulated Lead Wire	T – 010	01 – 10/01
Mineral-Insulated Thermocouple with PVC-Insulated Lead Wire and Miniature Connector	T – 011	01 – 10/01
Mineral-Insulated Thermocouple with PVC-Insulated Lead Wire and Standard Connector	T – 013	01 – 10/01
Mineral-Insulated Thermocouple with PVC-Insulated Lead Wire with Copper Screen	T – 015	01 – 10/01
Mineral-Insulated Thermocouple with PVC-Insulated Lead Wire with Copper Screen and Miniature Connector	T – 016	01 – 10/01
Mineral-Insulated Thermocouple with PVC-Insulated Lead Wire with Copper Screen and Standard Connector	T – 018	01 – 10/01
Mineral-Insulated Thermocouple with Silicone-Insulated Lead Wire	T – 020	01 – 10/01
Mineral-Insulated Thermocouple with Silicone-Insulated Lead Wire and Miniature Connector	T – 021	01 – 10/01
Mineral-Insulated Thermocouple with Silicone-Insulated Lead Wire and Standard Connector	T – 023	01 – 10/01
Mineral-Insulated Thermocouple with Fiberglass/Silicone-Insulated Lead Wire	T – 028	01 – 10/01
Mineral-Insulated Thermocouple with Teflon-Insulated Lead Wire	T – 030	01 – 10/01
Mineral-Insulated Thermocouple with Teflon-Insulated Lead Wire and Miniature Connector	T – 031	01 – 10/01
Mineral-Insulated Thermocouple with Teflon-Insulated Lead Wire and Standard Connector	T – 033	01 – 10/01
Mineral-Insulated Thermocouple with Teflon-Insulated Lead Wire with Copper Screen	T – 035	01 – 10/01
Mineral-Insulated Thermocouple with Teflon-Insulated Lead Wire with Copper Screen and Miniature Connector	T – 036	01 – 10/01
Mineral-Insulated Thermocouple with Teflon-Insulated Lead Wire with Copper Screen and Standard Connector	T – 038	01 – 10/01
Mineral-Insulated Thermocouple with Fiberglass-Insulated Lead Wire	T – 050	01 – 04/02
Mineral-Insulated Thermocouple with Fiberglass-Insulated Stainless Steel-braided Lead Wire	T – 055	01 – 10/01
Mineral-Insulated Thermocouple with Teflon-Insulated Lead Wire with Stainless Steel Armour	T – 060	01 – 10/01
Mineral-Insulated Thermocouple with Teflon-Insulated Lead Wire with Stainless Steel Armour and Miniature Connector	T – 061	01 – 10/01
Mineral-Insulated Thermocouple with Teflon-Insulated Lead Wire with Stainless Steel Armour and Standard Connector	T – 063	01 – 10/01
Spring Loaded Thermocouple with adjustable Bayonet Cap	T – 070	01 – 10/01
Flexible Wire Thermocouple Kapton-Insulated Lead Wire with Miniature Connector	T – 080	01 – 10/01
Flexible Wire Thermocouple Fiberglass-Insulated Lead Wire with Miniature Connector	T – 085	01 – 10/01
Self-Adhesive Surface Mount Thermocouple	T – 090	01 – 10/08
Moulded Thermocouple Miniature Version	T – 100	01 – 04/02
Mineral-Insulated Thermocouple with Miniature Connector	T – 110	01 – 10/01
Mineral-Insulated Thermocouple with Standard Connector	T – 120	01 – 10/01
Mineral-Insulated Thermocouple with Lemo Connector	T – 130	01 – 10/01
Screw-In Thermocouple with Silicone-Insulated Lead Wire	T – 162	01 – 10/01
Screw-In Thermocouple with Teflon-Insulated Lead Wire with Copper Screen	T – 163	01 – 10/01
Brake Fluid Thermocouple with Air Vent Connection	T – 164	01 – 10/01
Thermocouple Wire Probe with Bayonet-Cap and Stud Bolt with Teflon-Insulated Lead Wire	T – 173	01 – 10/01
Thermocouple Wire Probe with Bayonet-Cap and Stud Bolt with Silicone-Insulated Lead Wire	T – 174	01 – 10/01
Brake – Thermocouple with Fiberglass-Insulated Lead Wire	T – 175	01 – 10/01
Compression Fitting	T – 190	01 – 10/01
Stud Bolt	T – 197	01 – 10/01
Mineral-Insulated Thermocouple with Connection Head	T – 220	01 – 10/01
Screw-In Mineral-Insulated Thermocouple with Connection Head	T – 222	01 – 10/01
Mineral-Insulated Thermocouple in Stainless Steel Tube with Connection Head	T – 225	01 – 10/01
Screw-In Mineral-Insulated Thermocouple in Stainless Steel Tube with Connection Head	T – 227	01 – 10/01
Mineral-Insulated Thermocouple with Connection Head	T – 230	01 – 10/01
Screw-In Mineral-Insulated Thermocouple with Connection Head	T – 232	01 – 10/01
Mineral-Insulated Thermocouple in Stainless Steel Tube with Connection Head	T – 235	01 – 10/01
Screw-In Mineral-Insulated Thermocouple in Stainless Steel Tube with Connection Head	T – 237	01 – 10/01
Mineral-Insulated Thermocouple with Thermocouple Insert	T – 240	01 – 10/01
Screw-In Mineral-Insulated Thermocouple with Thermocouple Insert	T – 242	01 – 10/01
Mineral-Insulated Thermocouple with Thermocouple-Insert in Stainless Steel Tube	T – 245	01 – 10/01
Screw-In Mineral-Insulated Thermocouple with Thermocouple Insert in Stainless Steel Tube	T – 247	01 – 10/01
Screw-In Mineral-Insulated Thermocouple with Thermocouple Insert and Supporting Tube	T – 252	01 – 07/08
Mineral-Insulated Thermocouple Insert	T – 280	01 – 10/01
Flange System	T – 293	01 – 10/01
Gas-tight threaded sleeve	T – 294	01 – 03/06
Connection Head	T – 295	01 – 10/01

Description	Datasheet	Revision
Thermowell Form 4 acc. DIN 43772	T – 400	01 – 07/08
Thermowell Form 4 acc. DIN 43772, fast responding	T – 410	01 – 06/08
Supporting Tube	T – 420	01 – 07/08
Straight Thermocouple with Ceramic Protection Tube and Connection Head	T – 510	01 – 03/06
Ceramic-Insulated Thermocouple with Stainless Steel Tube and Connection Head	T – 520	01 – 03/06
Multiplex Thermocouple Extension with Aluminium Housing	T – 800	01 – 06/09

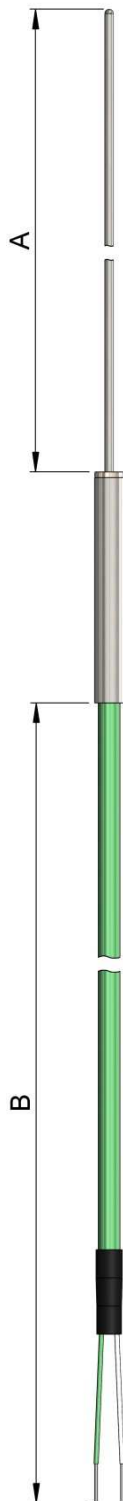


Most of our Mineral-Insulated Thermocouples can be manufactured in a swaged construction. This means, the diameter of the sensor will be reduced at its tip. This reduces the response time while the unswaged part of the sensor provides the required stability.

The feasible range of the reduction is significantly dependent on the base diameter D2 and the required end diameter D1. In general, a reduction up to a half of the base diameter is possible, higher steps require an inquiry.

The diminution is realised through a cone which has a length (L) of 20 to 25 mm.

If a swaged Mineral-Insulated Thermocouple is interesting for your application, please contact us.



Technical Features:

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4") Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Lead Wire:	PVC-Insulated flexible Thermocouple Wire (see Datasheet L-010)			
Wire Length „B“:	Please specify			
Termination:	Bare Ends			
Accessories:	Article		Datasheet	
	Compression Fitting		T – 190	

Ordering Code:

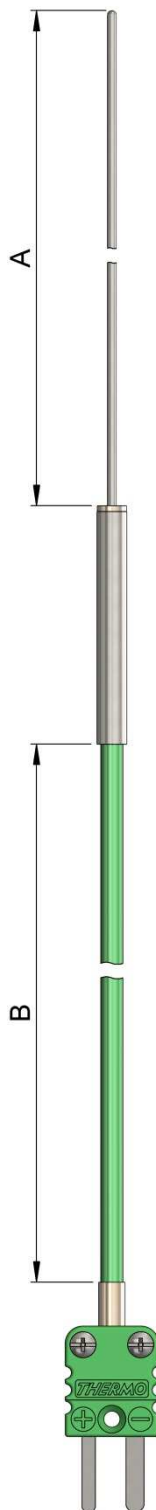
T – 010 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 010 – K – 1,5 – 100 – 1500



Technical Features:

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. DIN IEC 584			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4")			
	Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Lead Wire:	PVC-Insulated flexible Thermocouple Wire (see Datasheet L-010)			
Wire Length „B“:	Please specify			
Termination:	Miniature Thermocouple Connector (see Datasheet S-010)			
Accessories:	Article	Datasheet		
	Compression Fitting	T – 190		

Ordering Code:

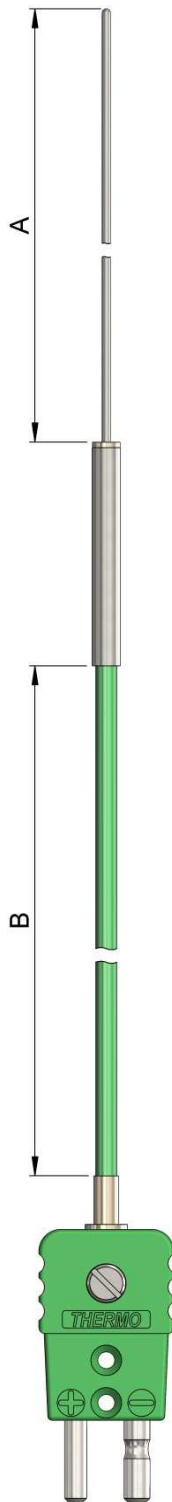
T – 011 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 011 – K – 1,5 – 100 – 1500



Technical Features:

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4")			
	Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Lead Wire:	PVC-Insulated flexible Thermocouple Wire (see datasheet L-010)			
Wire Length „B“:	Please specify			
Termination:	Standard Thermocouple Connector (see datasheet S-020)			
Accessories:	Article	Datasheet		
	Compression Fitting	T – 190		

Ordering Code:

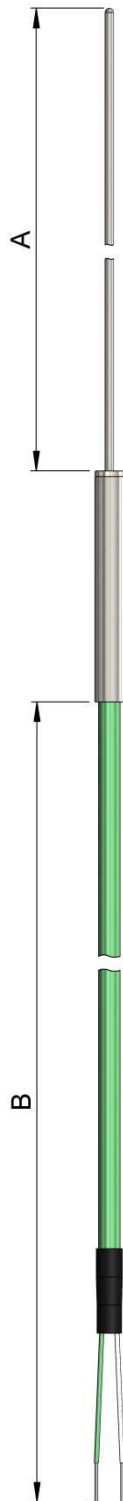
T – 013 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 013 – K – 1,5 – 100 – 1500



Technical Features:

Thermocouple (①):	<table><tr><th>Thermocouple</th><th>Plus</th><th>Minus</th><th>Norm</th></tr><tr><td>Type K</td><td>NiCr</td><td>NiAl</td><td>IEC 584</td></tr><tr><td>Type J</td><td>Fe</td><td>CuNi</td><td>IEC 584</td></tr><tr><td>Type L</td><td>Fe</td><td>CuNi</td><td>DIN 43710</td></tr><tr><td>Type T</td><td>Cu</td><td>CuNi</td><td>IEC 584</td></tr><tr><td>Type N</td><td>NiCrSi</td><td>NiSi</td><td>IEC 584</td></tr></table>	Thermocouple	Plus	Minus	Norm	Type K	NiCr	NiAl	IEC 584	Type J	Fe	CuNi	IEC 584	Type L	Fe	CuNi	DIN 43710	Type T	Cu	CuNi	IEC 584	Type N	NiCrSi	NiSi	IEC 584
Thermocouple	Plus	Minus	Norm																						
Type K	NiCr	NiAl	IEC 584																						
Type J	Fe	CuNi	IEC 584																						
Type L	Fe	CuNi	DIN 43710																						
Type T	Cu	CuNi	IEC 584																						
Type N	NiCrSi	NiSi	IEC 584																						
Tolerance:	Class 1 acc. to DIN IEC 584																								
Insulation Material:	Densely packed MgO																								
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816																								
Hot Junction:	Insulated																								
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC																								
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4") Additional versions or swaged constructions on request																								
Probe Length „A“:	Please specify																								
Lead Wire:	PVC-Insulated flexible Thermocouple Wire with Copper Screen (see Datasheet L-015)																								
Wire Length „B“:	Please specify																								
Termination:	Bare ends																								
Accessories:	<table><tr><th>Article</th><th>Datasheet</th></tr><tr><td>Compression Fitting</td><td>T – 190</td></tr></table>	Article	Datasheet	Compression Fitting	T – 190																				
Article	Datasheet																								
Compression Fitting	T – 190																								

Ordering Code:

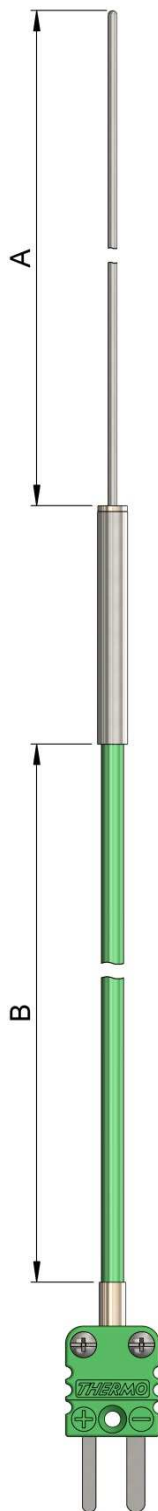
T – 015 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 015 – K – 1,5 – 100 – 1500



Technical Features:

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4")			
	Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Lead Wire:	PVC-Insulated flexible Thermocouple Wire with Copper Screen (see Datasheet L-015)			
Wire Length „B“:	Please specify			
Termination:	Miniature Thermocouple Connector (see Datasheet S-010)			
Accessories:	Article	Datasheet		
	Compression Fitting	T – 190		

Ordering Code:

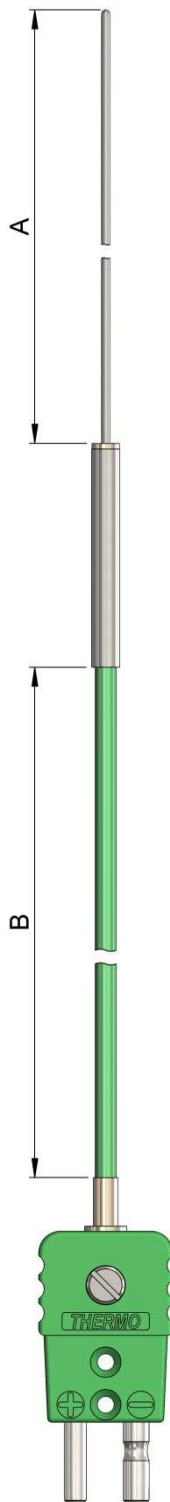
T – 016 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 016 – K – 1,5 – 100 – 1500



Technical Features:

Thermocouple (①):	<table><tr><th>Thermocouple</th><th>Plus</th><th>Minus</th><th>Norm</th></tr><tr><td>Type K</td><td>NiCr</td><td>NiAl</td><td>IEC 584</td></tr><tr><td>Type J</td><td>Fe</td><td>CuNi</td><td>IEC 584</td></tr><tr><td>Type L</td><td>Fe</td><td>CuNi</td><td>DIN 43710</td></tr><tr><td>Type T</td><td>Cu</td><td>CuNi</td><td>IEC 584</td></tr><tr><td>Type N</td><td>NiCrSi</td><td>NiSi</td><td>IEC 584</td></tr></table>	Thermocouple	Plus	Minus	Norm	Type K	NiCr	NiAl	IEC 584	Type J	Fe	CuNi	IEC 584	Type L	Fe	CuNi	DIN 43710	Type T	Cu	CuNi	IEC 584	Type N	NiCrSi	NiSi	IEC 584
Thermocouple	Plus	Minus	Norm																						
Type K	NiCr	NiAl	IEC 584																						
Type J	Fe	CuNi	IEC 584																						
Type L	Fe	CuNi	DIN 43710																						
Type T	Cu	CuNi	IEC 584																						
Type N	NiCrSi	NiSi	IEC 584																						
Tolerance:	Class 1 acc. to DIN IEC 584																								
Insulation Material:	Densely packed MgO																								
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816																								
Hot Junction:	Insulated																								
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC																								
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4") Additional versions or swaged constructions on request																								
Probe Length „A“:	Please specify																								
Lead Wire:	PVC-Insulated flexible Thermocouple Wire with Copper Screen (see Datasheet L-015)																								
Wire Length „B“:	Please specify																								
Termination:	Standard Thermocouple Connector (see Datasheet S-020)																								
Accessories:	<table><tr><th>Article</th><th>Datasheet</th></tr><tr><td>Compression Fitting</td><td>T – 190</td></tr></table>	Article	Datasheet	Compression Fitting	T – 190																				
Article	Datasheet																								
Compression Fitting	T – 190																								

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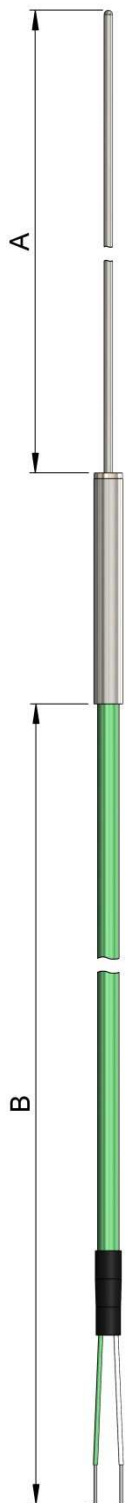
T – 018 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 018 – K – 1,5 – 100 – 1500



Technical Features:

Thermocouple (①):	<table><tr><th>Thermocouple</th><th>Plus</th><th>Minus</th><th>Norm</th></tr><tr><td>Type K</td><td>NiCr</td><td>NiAl</td><td>IEC 584</td></tr><tr><td>Type J</td><td>Fe</td><td>CuNi</td><td>IEC 584</td></tr><tr><td>Type L</td><td>Fe</td><td>CuNi</td><td>DIN 43710</td></tr><tr><td>Type T</td><td>Cu</td><td>CuNi</td><td>IEC 584</td></tr><tr><td>Type N</td><td>NiCrSi</td><td>NiSi</td><td>IEC 584</td></tr></table>	Thermocouple	Plus	Minus	Norm	Type K	NiCr	NiAl	IEC 584	Type J	Fe	CuNi	IEC 584	Type L	Fe	CuNi	DIN 43710	Type T	Cu	CuNi	IEC 584	Type N	NiCrSi	NiSi	IEC 584
Thermocouple	Plus	Minus	Norm																						
Type K	NiCr	NiAl	IEC 584																						
Type J	Fe	CuNi	IEC 584																						
Type L	Fe	CuNi	DIN 43710																						
Type T	Cu	CuNi	IEC 584																						
Type N	NiCrSi	NiSi	IEC 584																						
Tolerance:	Class 1 acc. to DIN IEC 584																								
Insulation Material:	Densely packed MgO																								
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816																								
Hot Junction:	Insulated																								
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC																								
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4") Additional versions or swaged constructions on request																								
Probe Length „A“:	Please specify																								
Lead Wire:	Silicone-Insulated flexible Thermocouple Wire (see Datasheet L-020)																								
Wire Length „B“:	Please specify																								
Termination:	Bare ends																								
Accessories:	<table><tr><th>Article</th><th>Datasheet</th></tr><tr><td>Compression Fitting</td><td>T – 190</td></tr></table>	Article	Datasheet	Compression Fitting	T – 190																				
Article	Datasheet																								
Compression Fitting	T – 190																								

Ordering Code:

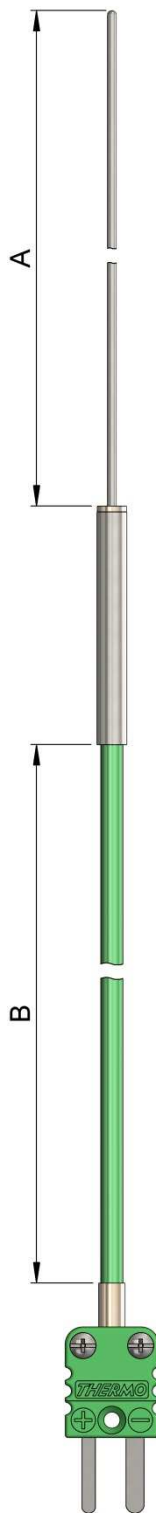
T – 020 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 020 – K – 1,5 – 100 – 1500



Technical Features:

Thermocouple (①):	<table><tr><th>Thermocouple</th><th>Plus</th><th>Minus</th><th>Norm</th></tr><tr><td>Type K</td><td>NiCr</td><td>NiAl</td><td>IEC 584</td></tr><tr><td>Type J</td><td>Fe</td><td>CuNi</td><td>IEC 584</td></tr><tr><td>Type L</td><td>Fe</td><td>CuNi</td><td>DIN 43710</td></tr><tr><td>Type T</td><td>Cu</td><td>CuNi</td><td>IEC 584</td></tr><tr><td>Type N</td><td>NiCrSi</td><td>NiSi</td><td>IEC 584</td></tr></table>	Thermocouple	Plus	Minus	Norm	Type K	NiCr	NiAl	IEC 584	Type J	Fe	CuNi	IEC 584	Type L	Fe	CuNi	DIN 43710	Type T	Cu	CuNi	IEC 584	Type N	NiCrSi	NiSi	IEC 584
Thermocouple	Plus	Minus	Norm																						
Type K	NiCr	NiAl	IEC 584																						
Type J	Fe	CuNi	IEC 584																						
Type L	Fe	CuNi	DIN 43710																						
Type T	Cu	CuNi	IEC 584																						
Type N	NiCrSi	NiSi	IEC 584																						
Tolerance:	Class 1 acc. to DIN IEC 584																								
Insulation Material:	Densely packed MgO																								
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816																								
Hot Junction:	Insulated																								
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC																								
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4") Additional versions or swaged constructions on request																								
Probe Length „A“:	Please specify																								
Lead Wire:	Silicone-Insulated flexible Thermocouple Wire (see Datasheet L-020)																								
Wire Length „B“:	Please specify																								
Termination:	Miniature Thermocouple Connector (see Datasheet S-010)																								
Accessories:	<table><tr><th>Article</th><th>Datasheet</th></tr><tr><td>Compression Fitting</td><td>T – 190</td></tr></table>	Article	Datasheet	Compression Fitting	T – 190																				
Article	Datasheet																								
Compression Fitting	T – 190																								

Ordering Code:

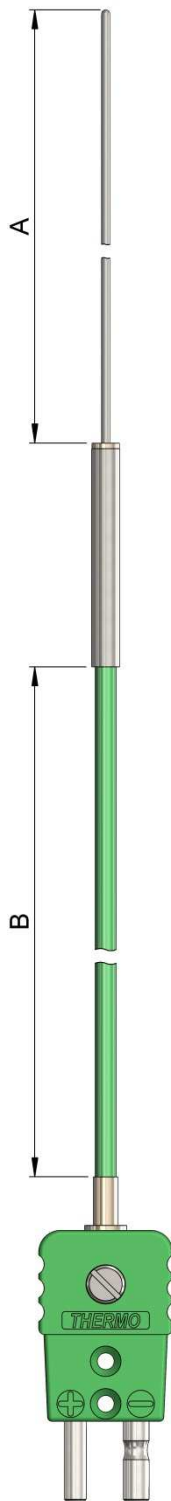
T – 021 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 021 – K – 1,5 – 100 – 1500



Technical Features:

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4")			
	Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Lead Wire:	Silicone-Insulated flexible Thermocouple Wire (see Datasheet L-020)			
Wire Length „B“:	Please specify			
Termination:	Standard Thermocouple Connector (see Datasheet S-020)			
Accessories:	Article	Datasheet		
	Compression Fitting	T – 190		

Ordering Code:

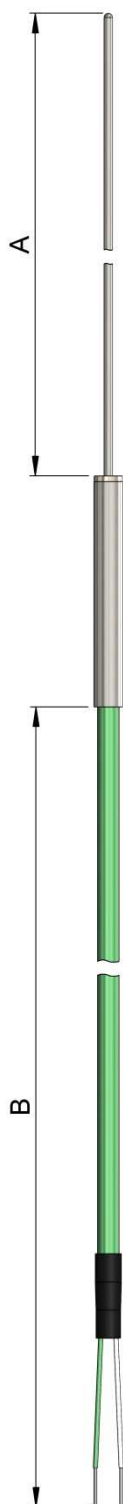
T – 023 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 023 – K – 1,5 – 100 – 1500



Technical Features:

Thermocouple (①):	<u>Thermocouple</u>	<u>Plus</u>	<u>Minus</u>	<u>Norm</u>
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4")			
	Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Lead Wire:	Fiberglass/Silicone-Insulated flexible Thermocouple Wire (see Datasheet L-028)			
Wire Length „B“:	Please specify			
Termination:	Bare ends			
Accessories:	<u>Article</u>	<u>Datasheet</u>		
	Compression Fitting	T – 190		

Ordering Code:

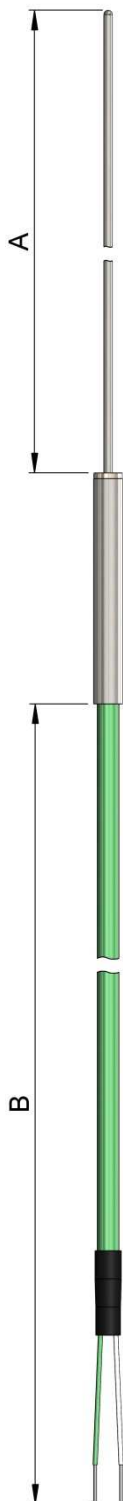
T – 028 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 028 – K – 1,5 – 100 – 1500



Technical Features:

Thermocouple (①):	<table><tr><th>Thermocouple</th><th>Plus</th><th>Minus</th><th>Norm</th></tr><tr><td>Type K</td><td>NiCr</td><td>NiAl</td><td>IEC 584</td></tr><tr><td>Type J</td><td>Fe</td><td>CuNi</td><td>IEC 584</td></tr><tr><td>Type L</td><td>Fe</td><td>CuNi</td><td>DIN 43710</td></tr><tr><td>Type T</td><td>Cu</td><td>CuNi</td><td>IEC 584</td></tr><tr><td>Type N</td><td>NiCrSi</td><td>NiSi</td><td>IEC 584</td></tr></table>	Thermocouple	Plus	Minus	Norm	Type K	NiCr	NiAl	IEC 584	Type J	Fe	CuNi	IEC 584	Type L	Fe	CuNi	DIN 43710	Type T	Cu	CuNi	IEC 584	Type N	NiCrSi	NiSi	IEC 584
Thermocouple	Plus	Minus	Norm																						
Type K	NiCr	NiAl	IEC 584																						
Type J	Fe	CuNi	IEC 584																						
Type L	Fe	CuNi	DIN 43710																						
Type T	Cu	CuNi	IEC 584																						
Type N	NiCrSi	NiSi	IEC 584																						
Tolerance:	Class 1 acc. to DIN IEC 584																								
Insulation Material:	Densely packed MgO																								
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816																								
Hot Junction:	Insulated																								
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC																								
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4") Additional versions or swaged constructions on request																								
Probe Length „A“:	Please specify																								
Lead Wire:	Teflon-Insulated flexible Thermocouple Wire (see Datasheet L-030)																								
Wire Length „B“:	Please specify																								
Termination:	Bare ends																								
Accessories:	<table><tr><th>Article</th><th>Datasheet</th></tr><tr><td>Compression Fitting</td><td>T – 190</td></tr></table>	Article	Datasheet	Compression Fitting	T – 190																				
Article	Datasheet																								
Compression Fitting	T – 190																								

Ordering Code:

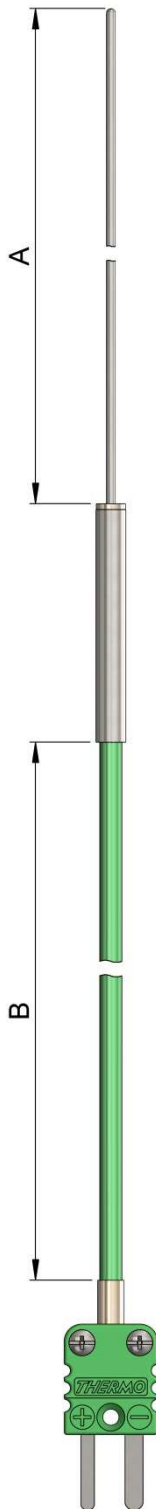
T – 030 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 030 – K – 1,5 – 100 – 1500



Technical Features:

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4")			
	Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Lead Wire:	Teflon-Insulated flexible Thermocouple Wire (see Datasheet L-030)			
Wire Length „B“:	Please specify			
Termination:	Miniature Thermocouple Connector (see Datasheet S-010)			
Accessories:	Article	Datasheet		
	Compression Fitting	T – 190		

Ordering Code:

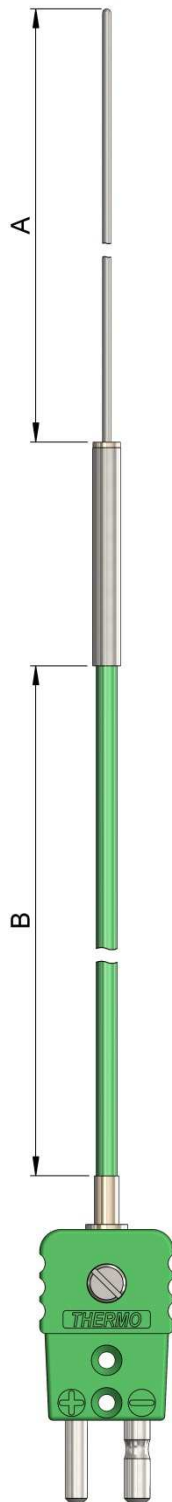
T – 031 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 031 – K – 1,5 – 100 – 1500



Technical Features:

Thermocouple (①):	<table><tr><th>Thermocouple</th><th>Plus</th><th>Minus</th><th>Norm</th></tr><tr><td>Type K</td><td>NiCr</td><td>NiAl</td><td>IEC 584</td></tr><tr><td>Type J</td><td>Fe</td><td>CuNi</td><td>IEC 584</td></tr><tr><td>Type L</td><td>Fe</td><td>CuNi</td><td>DIN 43710</td></tr><tr><td>Type T</td><td>Cu</td><td>CuNi</td><td>IEC 584</td></tr><tr><td>Type N</td><td>NiCrSi</td><td>NiSi</td><td>IEC 584</td></tr></table>				Thermocouple	Plus	Minus	Norm	Type K	NiCr	NiAl	IEC 584	Type J	Fe	CuNi	IEC 584	Type L	Fe	CuNi	DIN 43710	Type T	Cu	CuNi	IEC 584	Type N	NiCrSi	NiSi	IEC 584
Thermocouple	Plus	Minus	Norm																									
Type K	NiCr	NiAl	IEC 584																									
Type J	Fe	CuNi	IEC 584																									
Type L	Fe	CuNi	DIN 43710																									
Type T	Cu	CuNi	IEC 584																									
Type N	NiCrSi	NiSi	IEC 584																									
Tolerance:	Class 1 acc. to DIN IEC 584																											
Insulation Material:	Densely packed MgO																											
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816																											
Hot Junction:	Insulated																											
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC																											
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4") Additional versions or swaged constructions on request																											
Probe Length „A“:	Please specify																											
Lead Wire:	Teflon-Insulated flexible Thermocouple Wire (see Datasheet L-030)																											
Wire Length „B“:	Please specify																											
Termination:	Standard Thermocouple Connector (see Datasheet S-020)																											
Accessories:	<table><tr><th>Article</th><th>Datasheet</th></tr><tr><td>Compression Fitting</td><td>T – 190</td></tr></table>				Article	Datasheet	Compression Fitting	T – 190																				
Article	Datasheet																											
Compression Fitting	T – 190																											

Ordering Code:

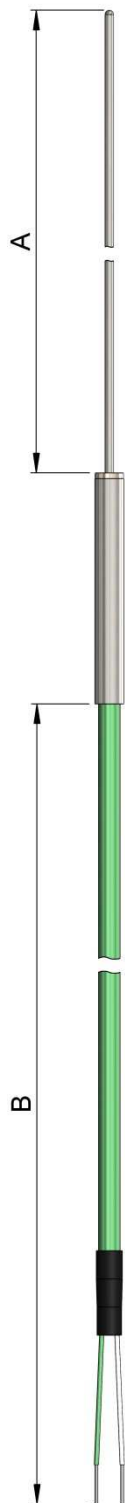
T – 033 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 033 – K – 1,5 – 100 – 1500



Technical Features:

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4")			
	Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Lead Wire:	Teflon-Insulated flexible Thermocouple Wire with Copper Screen (see Datasheet L-035)			
Wire Length „B“:	Please specify			
Termination:	Bare ends			
Accessories:	Article			Datasheet
	Compression Fitting			T – 190

Ordering Code:

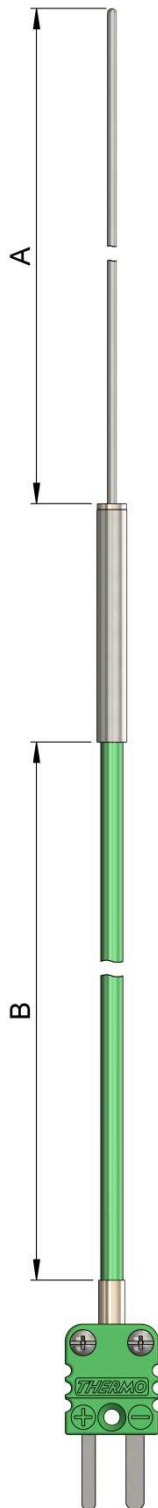
T – 035 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 035 – K – 1,5 – 100 – 1500



Technical Features:

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4")			
	Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Lead Wire:	Teflon-Insulated flexible Thermocouple Wire with Copper Screen (see Datasheet L-035)			
Wire Length „B“:	Please specify			
Termination:	Miniature Thermocouple Connector (see Datasheet S-010)			
Accessories:	Article	Datasheet		
	Compression Fitting	T – 190		

Ordering Code:

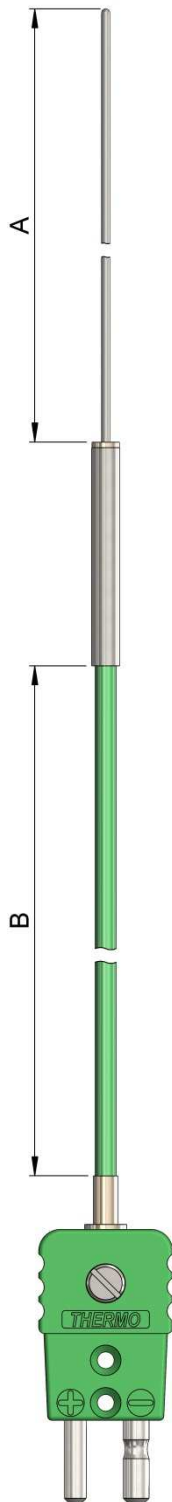
T – 036 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 036 – K – 1,5 – 100 – 1500



Technical Features:

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4")			
	Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Lead Wire:	Teflon-Insulated flexible Thermocouple Wire with Copper Screen (see Datasheet L-035)			
Wire Length „B“:	Please specify			
Termination:	Standard Thermocouple Connector (see Datasheet S-020)			
Accessories:	Article	Datasheet		
	Compression Fitting	T – 190		

Ordering Code:

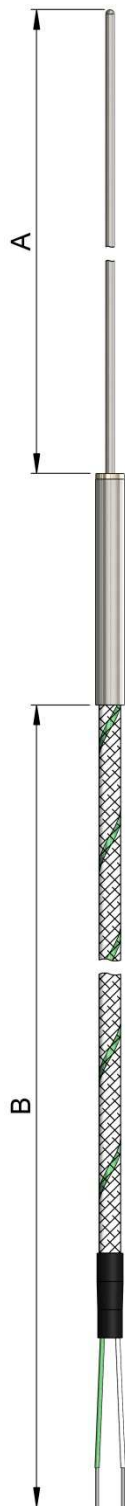
T – 038 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 038 – K – 1,5 – 100 – 1500



Technical Features:

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4") Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Lead Wire:	Fiberglass-Insulated flexible Thermocouple Wire (see Datasheet L-050)			
Wire Length „B“:	Please specify			
Termination:	Bare ends			
Accessories:	Article		Datasheet	
	Compression Fitting		T – 190	

Ordering Code:

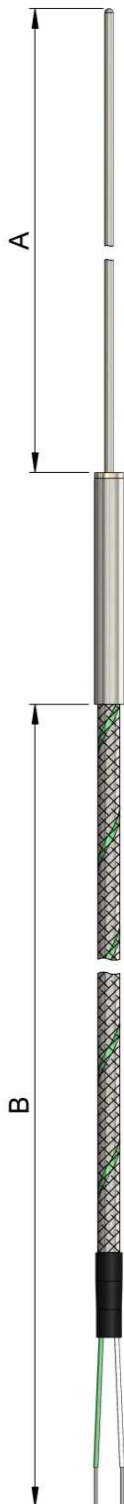
T – 050 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 050 – K – 3,0 – 250 – 1000



Technical Features:

Thermocouple (①):	<table><tr><th>Thermocouple</th><th>Plus</th><th>Minus</th><th>Norm</th></tr><tr><td>Type K</td><td>NiCr</td><td>NiAl</td><td>IEC 584</td></tr><tr><td>Type J</td><td>Fe</td><td>CuNi</td><td>IEC 584</td></tr><tr><td>Type L</td><td>Fe</td><td>CuNi</td><td>DIN 43710</td></tr><tr><td>Type T</td><td>Cu</td><td>CuNi</td><td>IEC 584</td></tr><tr><td>Type N</td><td>NiCrSi</td><td>NiSi</td><td>IEC 584</td></tr></table>	Thermocouple	Plus	Minus	Norm	Type K	NiCr	NiAl	IEC 584	Type J	Fe	CuNi	IEC 584	Type L	Fe	CuNi	DIN 43710	Type T	Cu	CuNi	IEC 584	Type N	NiCrSi	NiSi	IEC 584
Thermocouple	Plus	Minus	Norm																						
Type K	NiCr	NiAl	IEC 584																						
Type J	Fe	CuNi	IEC 584																						
Type L	Fe	CuNi	DIN 43710																						
Type T	Cu	CuNi	IEC 584																						
Type N	NiCrSi	NiSi	IEC 584																						
Tolerance:	Class 1 acc. to DIN IEC 584																								
Insulation Material:	Densely packed MgO																								
Sheath Material:	Type J, L and T: Stainless Steel, M. -No. 1.4571 or Stainless Steel, M. -No. 1.4541 Type K, N: Inconel 600, M. -No. 2.4816																								
Hot Junction:	Insulated																								
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC																								
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4") Additional versions or swaged constructions on request																								
Probe Length „A“:	Please specify																								
Lead Wire:	Fiberglass-Insulated Stainless Steel-braided flexible Thermocouple Wire (see Datasheet L-055)																								
Wire Length „B“:	Please specify																								
Termination:	Bare ends																								
Accessories:	<table><tr><th>Article</th><th>Datasheet</th></tr><tr><td>Compression Fitting</td><td>T – 190</td></tr></table>	Article	Datasheet	Compression Fitting	T – 190																				
Article	Datasheet																								
Compression Fitting	T – 190																								

Ordering Code:

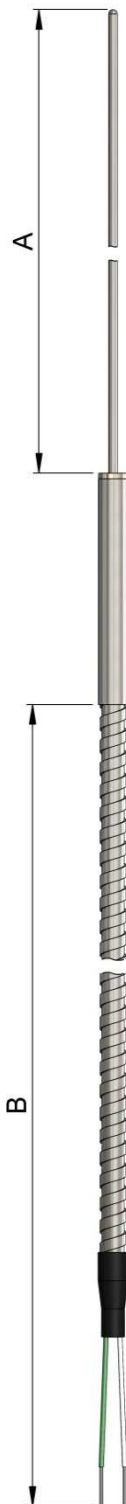
T – 055 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 055 – K – 3,0 – 250 – 1000



Technical Features:

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M. -No. 1.4571 or Stainless Steel, M. -No. 1.4541 Type K, N: Inconel 600, M. -No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4")			
	Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Lead Wire:	Teflon-Insulated flexible Thermocouple Wire with Stainless Steel Armour			
Wire Length „B“:	Please specify			
Termination:	Bare ends			
Accessories:	Article	Datasheet		
	Compression Fitting	T – 190		

Ordering Code:

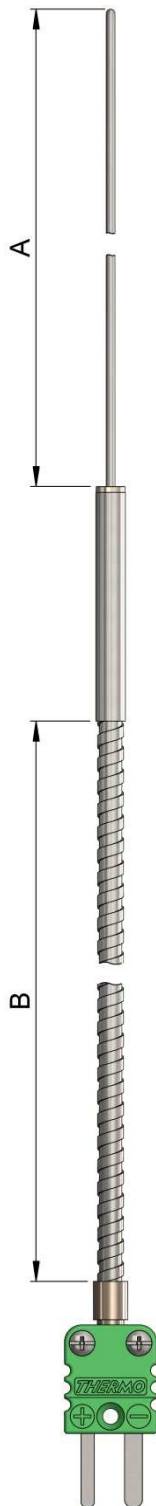
T – 060 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 060 – K – 1,5 – 100 – 1500



Technical Features:

Thermocouple (①):	<table><tr><th>Thermocouple</th><th>Plus</th><th>Minus</th><th>Norm</th></tr><tr><td>Type K</td><td>NiCr</td><td>NiAl</td><td>IEC 584</td></tr><tr><td>Type J</td><td>Fe</td><td>CuNi</td><td>IEC 584</td></tr><tr><td>Type L</td><td>Fe</td><td>CuNi</td><td>DIN 43710</td></tr><tr><td>Type T</td><td>Cu</td><td>CuNi</td><td>IEC 584</td></tr><tr><td>Type N</td><td>NiCrSi</td><td>NiSi</td><td>IEC 584</td></tr></table>	Thermocouple	Plus	Minus	Norm	Type K	NiCr	NiAl	IEC 584	Type J	Fe	CuNi	IEC 584	Type L	Fe	CuNi	DIN 43710	Type T	Cu	CuNi	IEC 584	Type N	NiCrSi	NiSi	IEC 584
Thermocouple	Plus	Minus	Norm																						
Type K	NiCr	NiAl	IEC 584																						
Type J	Fe	CuNi	IEC 584																						
Type L	Fe	CuNi	DIN 43710																						
Type T	Cu	CuNi	IEC 584																						
Type N	NiCrSi	NiSi	IEC 584																						
Tolerance:	Class 1 acc. to DIN IEC 584																								
Insulation Material:	Densely packed MgO																								
Sheath Material:	Type J, L and T: Stainless Steel, M. -No. 1.4571 or Stainless Steel, M. -No. 1.4541 Type K, N: Inconel 600, M. -No. 2.4816																								
Hot Junction:	Insulated																								
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC																								
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4") Additional versions or swaged constructions on request																								
Probe Length „A“:	Please specify																								
Lead Wire:	Teflon-Insulated flexible Thermocouple Wire with Stainless Steel Armour																								
Wire Length „B“:	Please specify																								
Termination:	Miniature Thermocouple Connector (see Datasheet S-010)																								
Accessories:	<table><tr><th>Article</th><th>Datasheet</th></tr><tr><td>Compression Fitting</td><td>T – 190</td></tr></table>	Article	Datasheet	Compression Fitting	T – 190																				
Article	Datasheet																								
Compression Fitting	T – 190																								

Ordering Code:

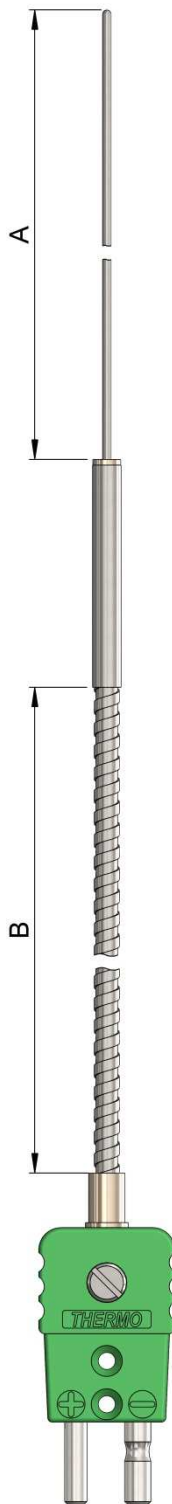
T – 061 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 061 – K – 1,5 – 100 – 1500



Technical Features:

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M. -No. 1.4571 or Stainless Steel, M. -No. 1.4541 Type K, N: Inconel 600, M. -No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm 6.0 mm 6.4 mm (1/4")			
	Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Lead Wire:	Teflon-Insulated flexible Thermocouple Wire with Stainless Steel Armour			
Wire Length „B“:	Please specify			
Termination:	Standard Thermocouple Connector (see Datasheet S-020)			
Accessories:	Article	Datasheet		
	Compression Fitting	T – 190		

Ordering Code:

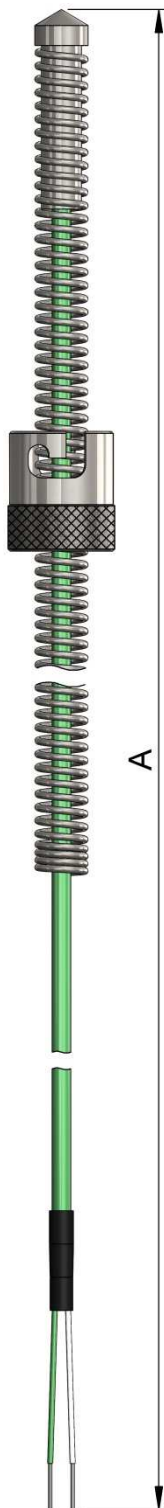
T – 063 – ① – ② – A – B

①: Thermocouple (K, J, L, T, N)

②: Probe Diameter

Example:

T – 063 – K – 1,5 – 100 – 1500



Technical Features:

Thermocouple (①):	<u>Thermocouple</u>	<u>Plus</u>	<u>Minus</u>	<u>Norm</u>
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
Tolerance:	Class 1 acc. to DIN IEC 584			
Hot Junction:	galvanical connected with Protection Sheath			
Max. Probe Temp.:	up to 400°C			
Probe Diameter (②):	6.0 mm	8.0 mm	Additional versions on request	
Spring:	Stainless Steel, same diameter as probe, length approx. 200 mm			
Prozess connection:	adjustable Bayonet Cap			
Lead Wire:	Fiberglass-Insulated Stainless Steel-braided flexible Thermocouple Wire (see Datasheet L-055)			
Wire Length „A“:	Please specify			
Termination:	Bare ends			
Accessories:	<u>Article</u>	<u>Datasheet</u>		
	Stud Bolt	T – 197		

Ordering Code:

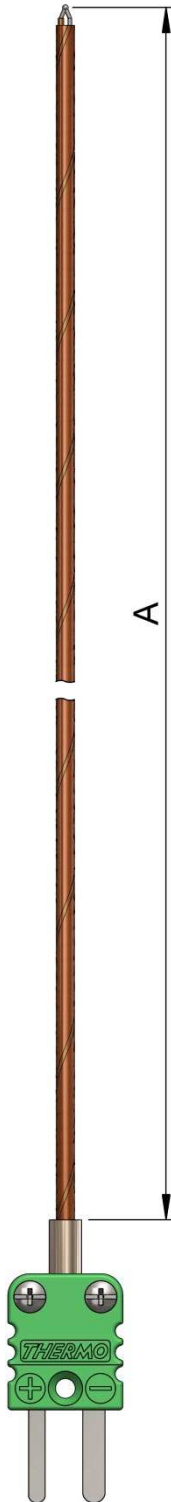
T – 070 – ① – ② – A

①: Thermocouple (K, J, L)

②: Probe Diameter

Example:

T – 070 – K – 6,0 – 2000



Technical Features:

Thermocouple (①):	<u>Thermocouple</u>	<u>Plus</u>	<u>Minus</u>	<u>Norm</u>
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
Tolerance:	Class 1 acc. to DIN IEC 584			
Hot Junction:	Exposed			
Max. Probe Temp.:	285°C, temporarily up to 400°C			
Lead Wire:	Kapton-Insulated solid Thermocouple Wire (see Datasheet L-040)			
Probe Diameter:	< 1.0 mm			
	Additional versions on request			
Wire Length „A“:	Please specify			
Termination:	Miniature Thermocouple Connector (see Datasheet S-010)			
Accessories:	<u>Article</u>	<u>Datasheet</u>		
	Compression Fitting	T – 190		

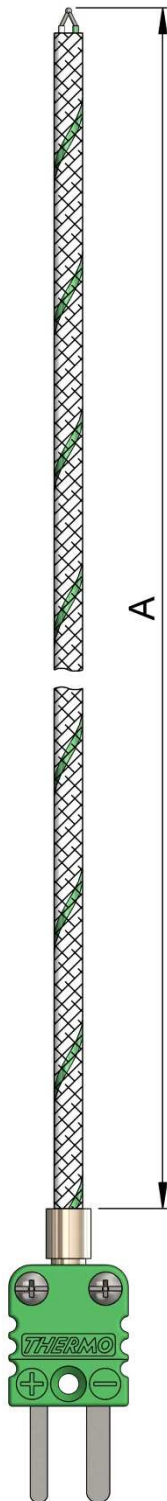
Ordering Code:

T – 080 – ① – A

①: Thermocouple (K, J, L)

Example:

T – 080 – K – 500



Technical Features:

Thermocouple (①):	<u>Thermocouple</u>	<u>Plus</u>	<u>Minus</u>	<u>Norm</u>
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
Tolerance:	Class 1 acc. to DIN IEC 584			
Hot Junction:	Exposed			
Max. Probe Temp.:	400°C, temporarily up to 500°C			
Lead Wire:	Fiberglass-Insulated solid Thermocouple Wire (see Datasheet L-050)			
Probe Measurements:	ca. 1.0 mm x 1.7 mm			
	Additional versions on request			
Wire Length „A“:	Please specify			
Termination:	Miniature Thermocouple Connector (see Datasheet S-010)			
Accessories:	<u>Article</u>	<u>Datasheet</u>		
	Compression Fitting	T – 190		

Ordering Code:

T – 085 – ① – A

①: Thermocouple (K, J, L)

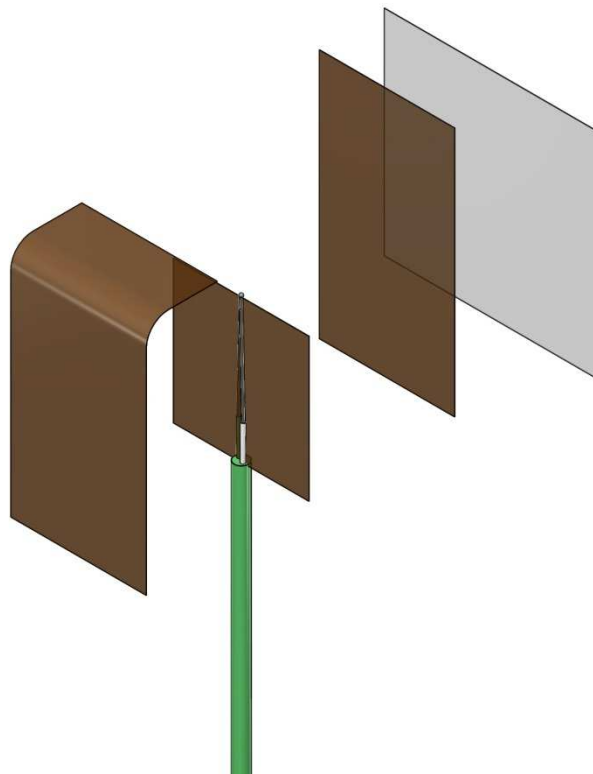
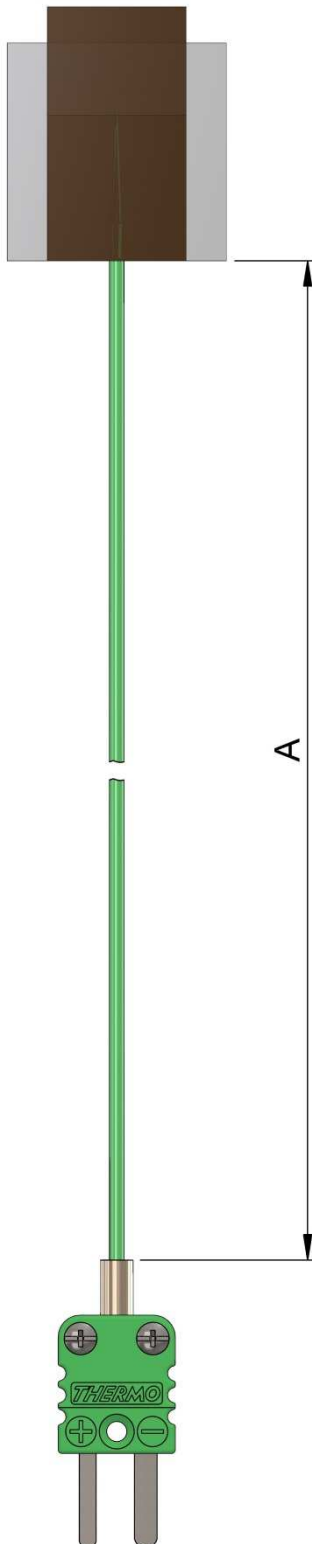
Example:

T – 085 – K – 500

Technical Features:

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710

Tolerance:	Class 1 acc. to DIN IEC 584
Hot Junction:	Protected with adhesive Kapton Tape
Lead Wire:	Teflon-Insulated flexible Thermocouple Wire
	Additional versions on request
Wire Length „A“:	Please specify
Termination:	Miniature Thermocouple Connector (see Datasheet S-010)



Ordering Code:

T – 090 – ① – A

①: Thermocouple (K, J, L)

Example:

T – 090 – J – 1000



Technical Features:

Thermocouple (①):	<u>Thermocouple</u>	<u>Plus</u>	<u>Minus</u>	<u>Norm</u>
Type K		NiCr	NiAl	IEC 584
Type J		Fe	CuNi	IEC 584
Colour Code (②):	<u>Thermocouple</u>	<u>IEC</u>	<u>ANSI</u>	<u>DIN</u>
Type K		green	yellow	green
Type J		black	black	–
Tolerance:	Class 1 acc. to DIN IEC 584			
Housing Material:	PVC			
Termination:	Connector Style similar to Miniature plug acc. to Datasheet S-010			
	Additional versions on request			

Ordering Code:

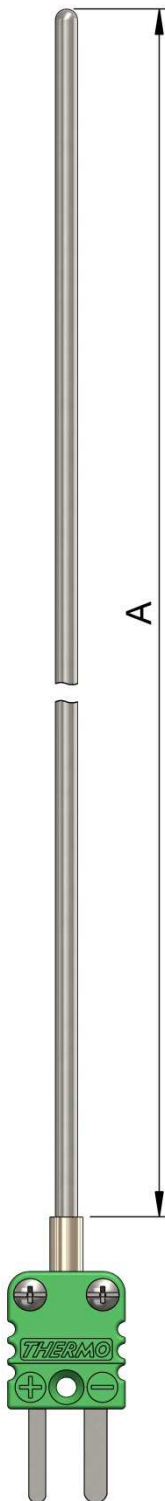
T – 100 – ① – ②

①: Thermocouple (K, J)

②: Colour Code

Example:

T – 100 – K – A



Technical Features:

Thermocouple (①):	<u>Thermocouple</u>	<u>Plus</u>	<u>Minus</u>	<u>Norm</u>
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm (1/16") 2.0 mm 3.0 mm 3.2 mm (1/8") 4.8 mm			
	Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Termination:	Miniature Thermocouple Connector (see Datasheet S-010)			
Accessories:	<u>Article</u>	<u>Datasheet</u>		
	Compression Fitting	T – 190		

Ordering Code:

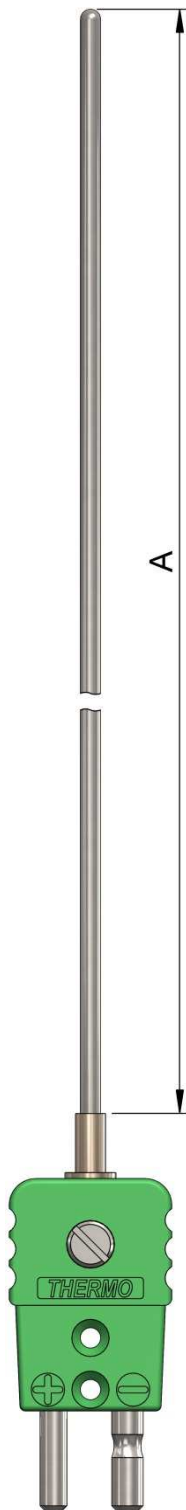
T – 110 – ① – ② – A

①: Thermocouple (K, J, L)

②: Probe Diameter

Example:

T – 110 – K – 1,5 – 1500



Technical Features:

Thermocouple (①):	<u>Thermocouple</u>	<u>Plus</u>	<u>Minus</u>	<u>Norm</u>
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm 2.0 mm 3.0 mm 3.2 mm 4.8 mm 6.0 mm 6.4 mm			
	Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Termination:	Standard Thermocouple Connector (see Datasheet S-020)			
Accessories:	<u>Article</u>	<u>Datasheet</u>		
	Compression Fitting	T – 190		

Ordering Code:

T – 120 – ① – ② – A

①: Thermocouple (K, J, L)

②: Probe Diameter

Example:

T – 120 – L – 3,0 – 1000



Technical Features:

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Tolerance: Class 1 acc. to DIN IEC 584

Insulation Material: Densely packed MgO

Sheath Material: Type J, L and T: Stainless Steel, M.-No. 1.4571 or
Stainless Steel, M.-No. 1.4541
Type K, N: Inconel 600, M.-No. 2.4816

Hot Junction: Insulated

Insulation Resistance: > 50 MΩ at 20°C and 250 V DC

Termination: Lemo-plug 2-pin

Connector Size (③): Size 0 Size 1 Size 2

Probe Diameter (②):	0.15 mm	0.15 mm	0.15 mm (only Type K)
	0.25 mm	0.25 mm	0.25 mm (only Type K)
	0.5 mm	0.5 mm	0.5 mm (only Type K, J)
	1.0 mm	1.0 mm	1.0 mm
	1.5 mm	1.5 mm	1.5 mm
	1.6 mm	1.6 mm	1.6 mm
	2.0 mm	2.0 mm	2.0 mm
	3.0 mm	3.0 mm	3.0 mm
	3.2 mm	3.2 mm	3.2 mm
		4.8 mm	4.8 mm
		6.0 mm	6.0 mm
			6.4 mm

Additional versions or swaged constructions on request

Probe Length „A“: Please specify

Accessories:	Article	Datasheet
	Compression Fitting	T – 190

Ordering Code:

T – 130 – ① – ② – A – ③

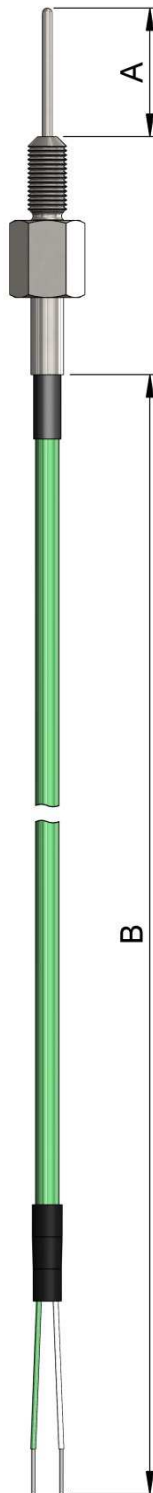
①: Thermocouple (K, J, L)

②: Probe Diameter

③: Connector Size

Example:

T – 130 – K – 1,5 – 500 – 1



Technical Features:

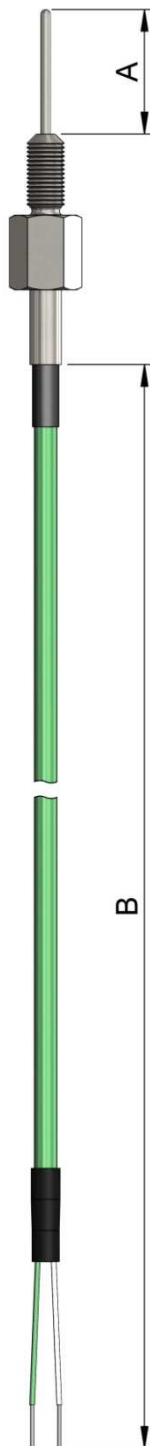
Thermocouple (①):	<u>Thermocouple</u>	<u>Plus</u>	<u>Minus</u>	<u>Norm</u>
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M. -No. 1.4571 or Stainless Steel, M. -No. 1.4541 Type K, N: Inconel 600, M. -No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm 2.0 mm 3.0 mm 3.2 mm Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Lead Wire:	Silicone-Insulated flexible Thermocouple Wire (see Datasheet L-020)			
Wire Length „B“:	Please specify			
Termination:	Bare ends			
Process Connection (③):	Please specify thread			

Ordering Code:

T – 162 – ① – ② – ③ – A – B
 ①: Thermocouple (K, J, L)
 ②: Probe Diameter
 ③: Thread

Example:

T – 162 – K – 1,5 – M6x1 – 11 – 500



Technical Features:

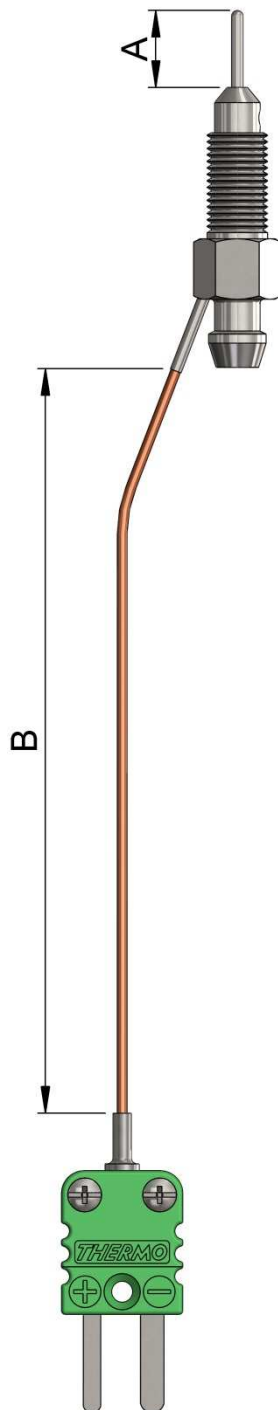
Thermocouple (①):	<u>Thermocouple</u>	<u>Plus</u>	<u>Minus</u>	<u>Norm</u>
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M. -No. 1.4571 or Stainless Steel, M. -No. 1.4541 Type K, N: Inconel 600, M. -No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (②):	0.15 mm (only Type K) 0.25 mm (only Type K) 0.5 mm (only Type K and J) 1.0 mm 1.5 mm 1.6 mm 2.0 mm 3.0 mm 3.2 mm Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Lead Wire:	Teflon-Insulated flexible Thermocouple Wire with Copper Screen (see Datasheet L-035)			
Wire Length „B“:	Please specify			
Termination:	Bare ends			
Process Connection (③):	Please specify thread			

Ordering Code:

T – 163 – ① – ② – ③ – A – B
 ①: Thermocouple (K, J, L)
 ②: Probe Diameter
 ③: Thread

Example:

T – 163 – K – 1,6 – M8x1,25 – 15 – 500



Technical Features:

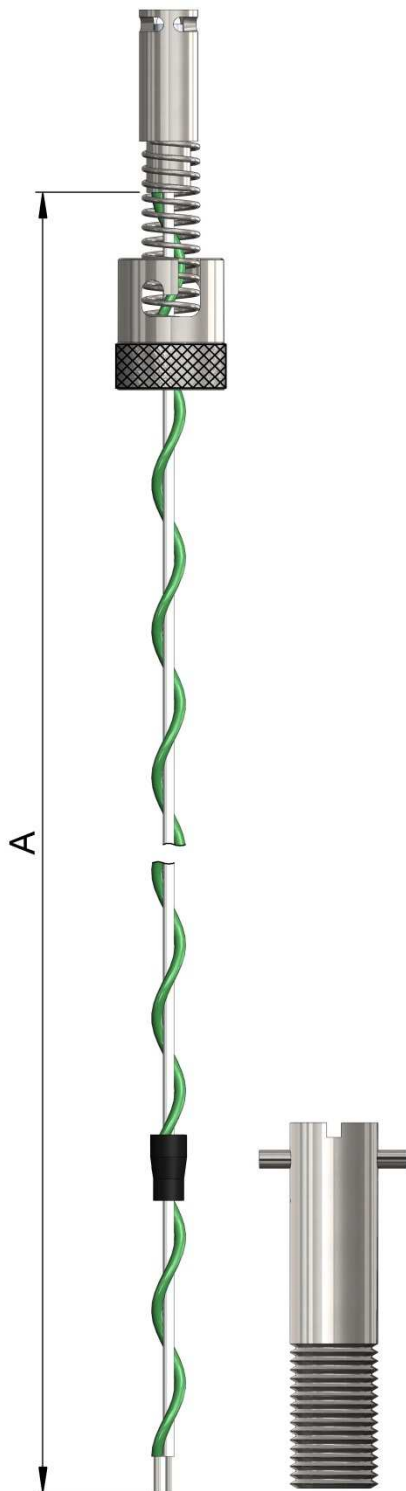
Thermocouple (①):	<u>Thermocouple</u>	<u>Plus</u>	<u>Minus</u>	<u>Norm</u>
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M. -No. 1.4571 or Stainless Steel, M. -No. 1.4541 Type K, N: Inconel 600, M. -No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (②):	1.5 mm 2.0 mm	1.6 mm 3.0 mm	2.0 mm 3.2 mm	
	Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Lead Wire:	Kapton-Insulated solid Thermocouple Wire (see Datasheet L-040)			
Wire Length „B“:	Please specify			
Termination:	Miniature Thermocouple Connector (see Datasheet S-010)			
Process Connection (③):	Please specify thread			

Ordering Code:

T – 164 – ① – ② – ③ – A – B
 ①: Thermocouple (K, J, L)
 ②: Probe Diameter
 ③: Thread

Example:

T – 164 – K – 1,6 – M8x1 – 10 – 1000



Technical Features:

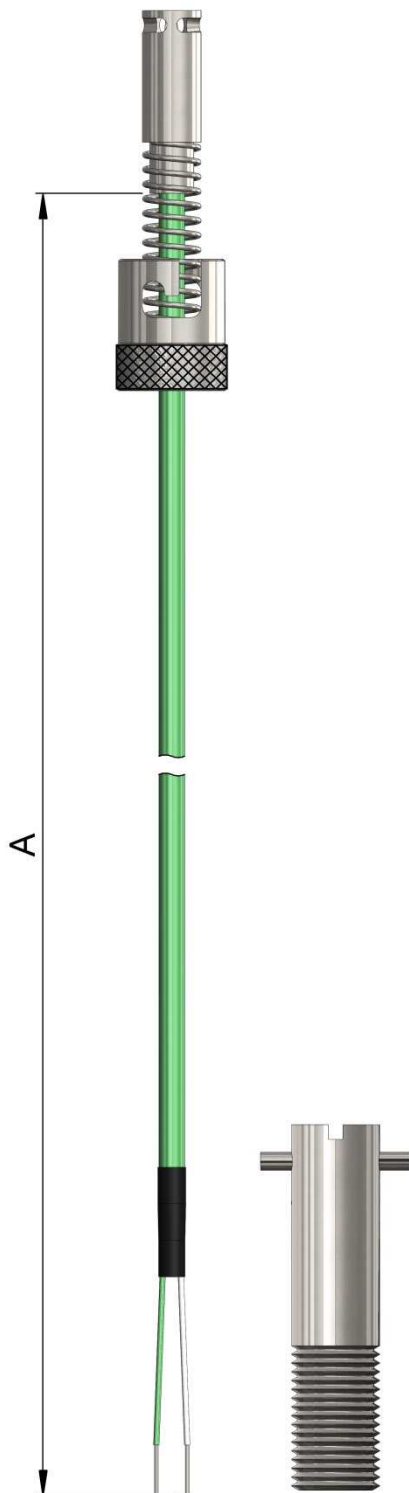
Thermocouple (Ⓢ):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Hot Junction:	made of Nickel, attached to Ceramic carrier plate			
Probe Diameter:	7.0 mm			
	Additional versions on request			
Lead Wire:	Kapton-Insulated flexible Thermocouple Wire			
Wire Length „A“:	Please specify			
Termination:	Bare ends			
Process Connection:	Bayonet-Cap			
Accessories:	Article			Datasheet
	Stud Bolt			T – 197

Ordering Code:

T – 173 – A
A : Wire Length

Example:

T – 173 – 1000



Technical Features:

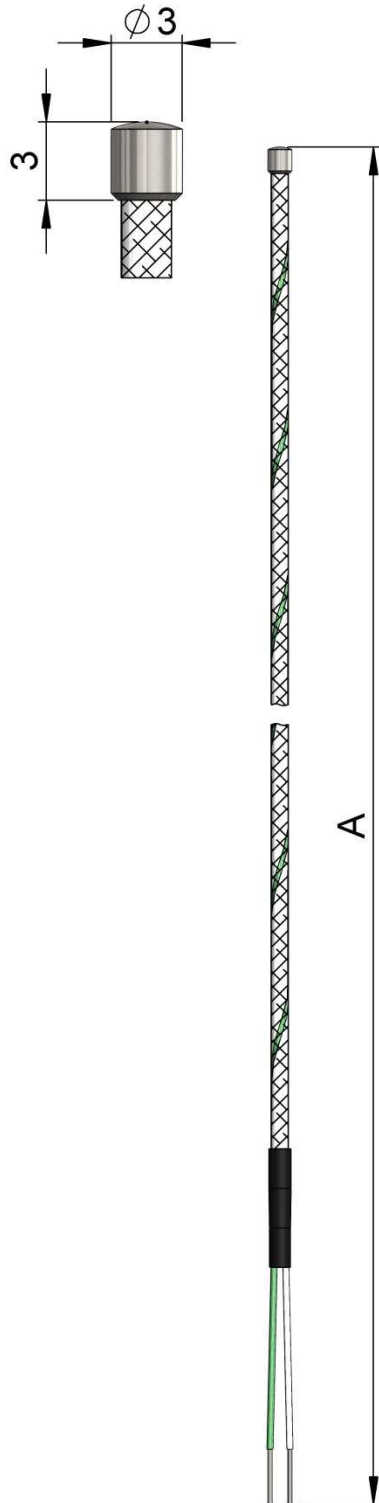
Thermocouple (Ⓢ):	<u>Thermocouple</u>	<u>Plus</u>	<u>Minus</u>	<u>Norm</u>
	Type K	NiCr	NiAl	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Hot Junction:	made of Nickel, attached to Stainless Steel plate, isolated with ceramic			
Probe Diameter:	8.0 mm			
	Additional versions on request			
Lead Wire:	Silicone-Insulated flexible Thermocouple Wire (see Datasheet L-020)			
Wire Length „A“:	Please specify			
Termination:	Bare ends			
Process Connection:	Bayonet-Cap			
Accessories:	<u>Article</u>			<u>Datasheet</u>
	Stud Bolt			T – 197

Ordering Code:

T – 174 – A
A : Wire Length

Example:

T – 174 – 1000



Technical Features:

Thermocouple (Ⓢ):	<u>Thermocouple</u>	<u>Plus</u>	<u>Minus</u>	<u>Norm</u>
	Type K	NiCr	NiAl	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Hot Junction:	galvanically connected			
Probe Diameter:	3.0 mm			
	Additional versions on request			
Lead Wire:	Fiberglass-Insulated solid Thermocouple Wire (see Datasheet L-050)			
Probe Length „A“:	Please specify			
Termination:	Bare ends			

Ordering Code:

T – 175 – A
A : Wire Length

Example:

T – 175 – 1000

Technical Features:

Body Material:	Stainless Steel
Process Connection (①):	Please specify thread
Thread runout (②):	(1) undercut, (2) conical
Bore Diameter (③):	Please specify
Ferrule Material (④):	Stainless Steel or Teflon

Ferrule Type (⑤):	Type	Bore Diameter
	V1	Ø 0.6 mm, Ø 1.1 mm, Ø 1.6 mm
	V2	Ø 0.6 mm, Ø 1.1 mm, Ø 1.6 mm, Ø 2.1 mm, Ø 3.1 mm, Ø 3.3 mm, Ø 3.4 mm, Ø 3.6 mm, Ø 4.1 mm, Ø 4.6 mm
	V3	Ø 3.3 mm, Ø 4.1 mm, Ø 4.6 mm, Ø 4.9 mm, Ø 5.1 mm, Ø 6.1 mm
	Y1	Ø 0.6 mm, Ø 0.8 mm, Ø 1.1 mm, Ø 1.6 mm, Ø 2.1 mm
	Y2	Ø 0.6 mm, Ø 0.9 mm, Ø 1.1 mm, Ø 1.6 mm, Ø 1.7 mm, Ø 2.1 mm, Ø 8.1 mm
	M1	Ø 1.6 mm, Ø 3.1 mm
	M2	Ø 1.6 mm
	M3	Ø 0.6 mm, Ø 0.9 mm, Ø 1.1 mm, Ø 1.6 mm

Ordering Code:

T – 190 - ① - ② - ③ - ④ - ⑤

- ①: Thread
- ②: Thread runout
- ③: Bore Diameter
- ④: Ferrule Material
- ⑤: Ferrule Type

Example:

T – 190 – M6x1 – 1 – 3,0 – E – Y2



Technical Features:

Model:	Type „R“
Material:	Stainless Steel
Process Connection (①):	Please specify thread
Height (②):	Please specify
Bore Diameter (③):	Please specify



Model:	Type „S“
Material:	Stainless Steel
Process Connection (①):	Please specify thread
Height (②):	Please specify
Bore Diameter (③):	Please specify

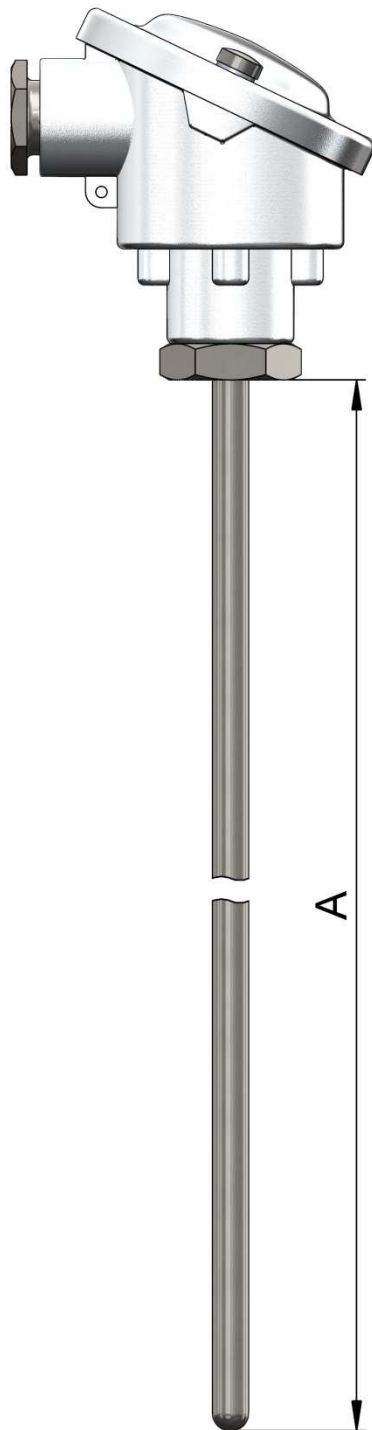
Ordering Code:

T – 197 – R – ① – ② – ③
 ①: Thread
 ②: Height
 ③: Bore Diameter

T – 197 – S – ① – ②
 ①: Thread
 ②: Bore Diameter

Example:

T – 197 – R – M12x1 – 50 – 8
 T – 197 – S – R1/4" – 8



Technical Features:

Model:	Mineral-Insulated Thermocouple with Connection Head Form B acc. to DIN 43729				
Thermocouple (①):	Thermocouple	Plus	Minus	Norm	
	Type K	NiCr	NiAl	IEC 584	
	Type J	Fe	CuNi	IEC 584	
	Type L	Fe	CuNi	DIN 43710	
	Type T	Cu	CuNi	IEC 584	
	Type N	NiCrSi	NiSi	IEC 584	
Tolerance:	Class 1 acc. to DIN IEC 584				
Number of Thermocouples (②):	Please specify				
Insulation Material:	Densely packed MgO				
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816				
Hot Junction:	Insulated				
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC				
Probe Diameter (③):	3.0 mm 6.0 mm	3.2 mm 6.4 mm	4.8 mm	Additional versions or swaged constructions on request	
Probe Length „A“:	Please specify				
Termination:	Ceramic terminal Block				
Accessories:	Article		Datasheet		
	Compression Fitting		T – 190		

Ordering Code:

T – 220 – ① – ② – ③ – A

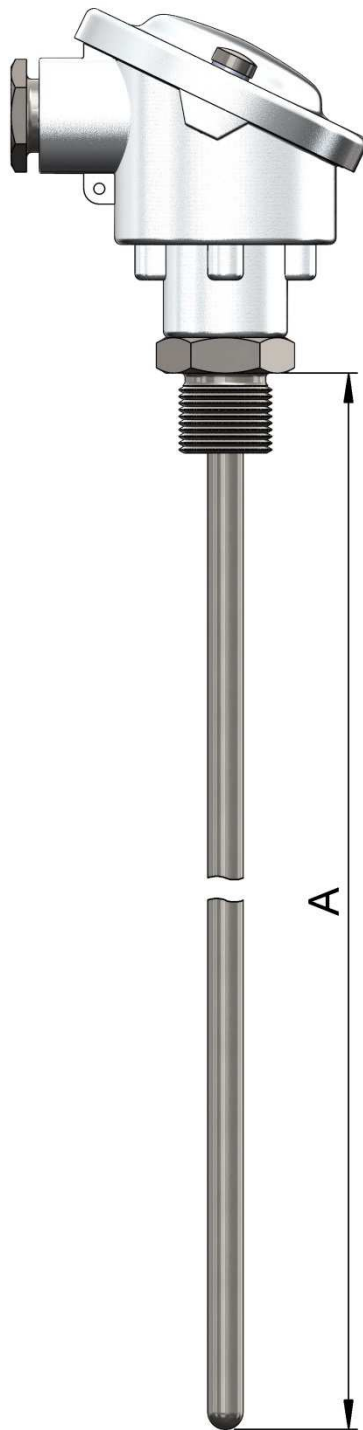
①: Thermocouple (K, J, L, T, N)

②: Number of Thermocouples (1 or 2)

③: Probe Diameter

Example:

T – 220 – K – 1 – 6,0 – 350



Technical Features:

Model:	Mineral-Insulated Thermocouple with Connection Head Form B acc. to DIN 43729			
Thermocouple (①):	<u>Thermocouple</u>	<u>Plus</u>	<u>Minus</u>	<u>Norm</u>
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Number of Thermocouples (②):	Please specify			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M.-No. 1.4571 or Stainless Steel, M.-No. 1.4541 Type K, N: Inconel 600, M.-No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (④):	3.0 mm 6.0 mm	3.2 mm 6.4 mm	4.8 mm	Additional versions or swaged constructions on request
Probe Length „A“:	Please specify			
Termination:	Ceramic terminal Block			
Process Connection (③):	Please specify thread			

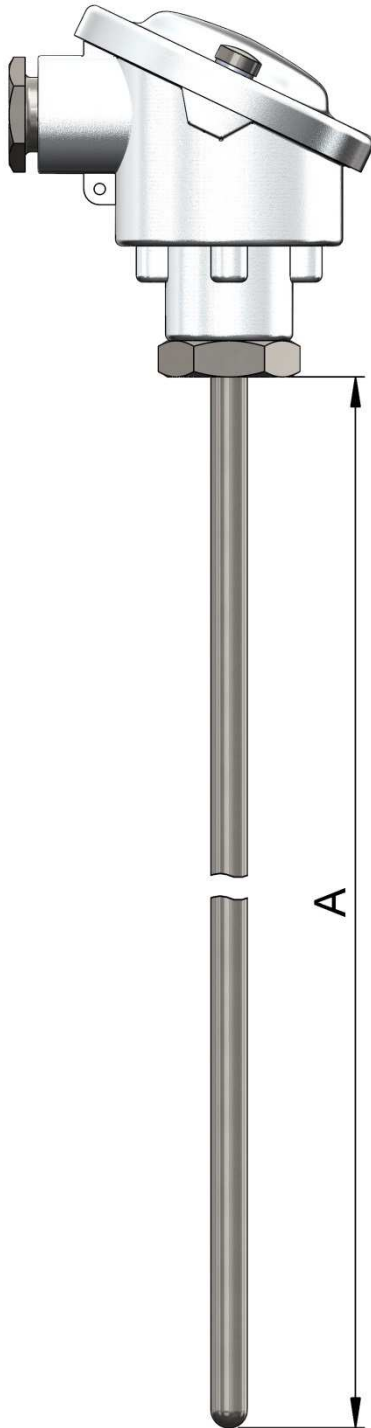
Ordering Code:

T – 222 – ① – ② – ③ – ④ – A

- ①: Thermocouple (K, J, L, T, N)
- ②: Number of Thermocouples (1 or 2)
- ③: Process Connection
- ④: Probe Diameter

Example:

T – 222 – K – 1 – R1/2" – 6,0 – 350



Technical Features:

Type: Vibration-proof Thermocouple in Stainless Steel-Tube (M.-No. 1.4571) with Connection Head Form B acc. to DIN IEC 43729

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Tolerance: Class 1 acc. to DIN IEC 584

Number of Thermocouples (②): Please specify

Hot Junction: Insulated

Insulation Resistance: > 50 MΩ at 20°C and 250 V DC

Probe Diameter (③): 3.0 mm 3.2 mm 4.8 mm
6.0 mm 6.4 mm 8.0 mm

Additional versions or swaged constructions on request

Probe Length „A“: Please specify

Termination: Ceramic terminal Block

Accessories:	Article	Datasheet
Compression Fitting		T – 190

Ordering Code:

T – 225 – ① – ② – ③ – A

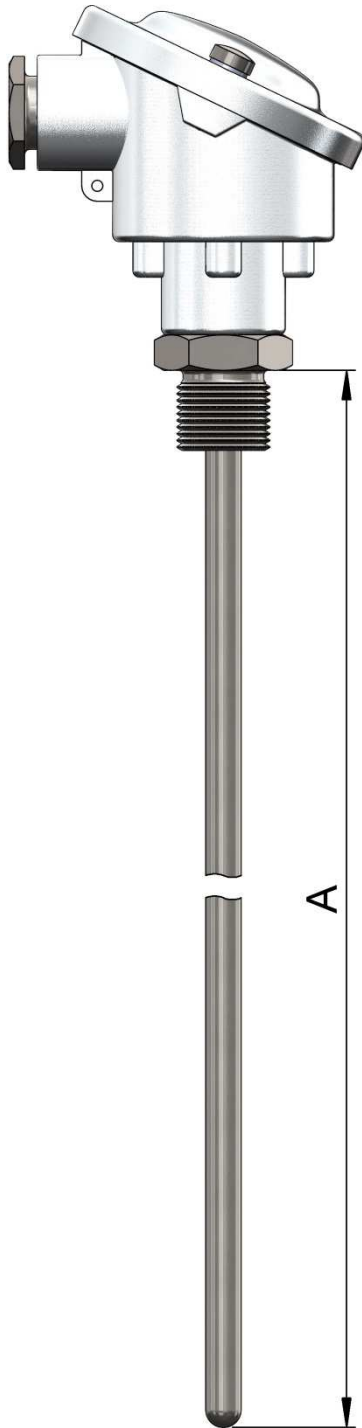
①: Thermocouple (K, J, L, T, N)

②: Number of Thermocouples (1 or 2)

③: Probe Diameter

Example:

T – 225 – K – 2 – 8,0 – 250



Technical Features:

Type: Vibration-proof Thermocouple in Stainless Steel-Tube (M.-No. 1.4571) with Connection Head Form B acc. to DIN IEC 43729

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Tolerance: Class 1 acc. to DIN IEC 584

Number of Thermocouples (②): Please specify

Hot Junction: Insulated

Insulation Resistance: > 50 MΩ at 20°C and 250 V DC

Probe Diameter (③): 3.0 mm 3.2 mm 4.8 mm
6.0 mm 6.4 mm 8.0 mm

Additional versions or swaged constructions on request

Probe Length „A“: Please specify

Termination: Ceramic terminal Block

Process Connection (④): Please specify thread

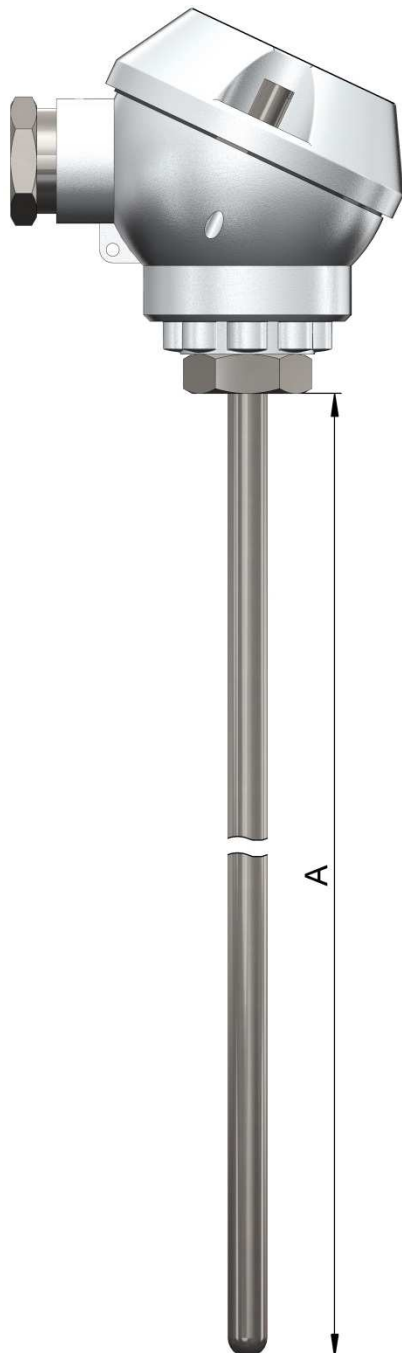
Ordering Code:

T – 227 – ① – ② – ③ – ④ – A

- ①: Thermocouple (K, J, L, T, N)
- ②: Number of Thermocouples (1 or 2)
- ③: Probe Diameter
- ④: Process Connection

Example:

T – 227 – K – 1 – M24x1,5 – 8,0 – 250



Technical Features:

Type:	Mineral-Insulated Thermocouple with Connection Head Form MA			
Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Number of Thermocouples (②):	Please specify			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M. -No. 1.4571 or Stainless Steel, M. -No. 1.4541 Type K, N: Inconel 600, M. -No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (③):	3.0 mm 6.0 mm	3.2 mm 6.4 mm	4.8 mm	
	Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Termination:	Ceramic terminal Block			
Accessories:	<u>Article</u>		<u>Datasheet</u>	
	Compression Fitting		T – 190	

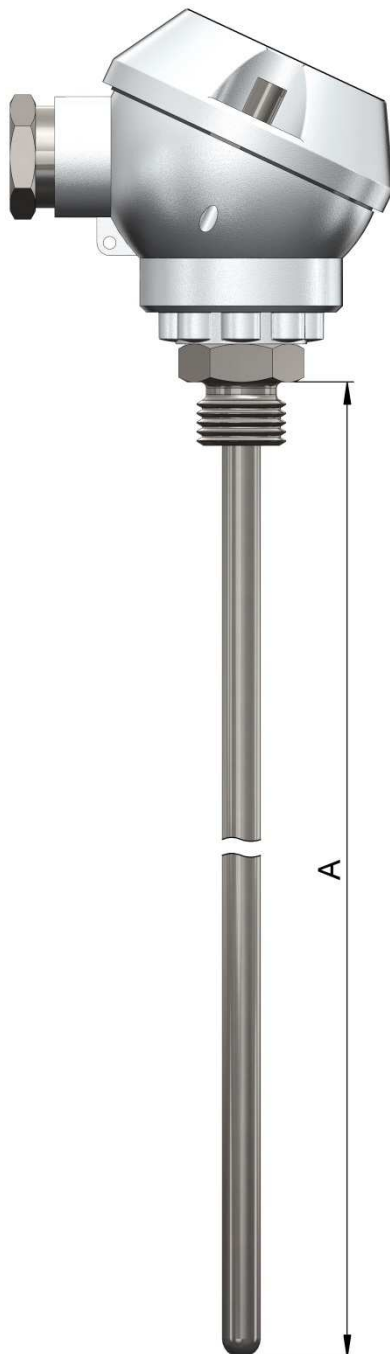
Ordering Code:

T – 230 – ① – ② – ③ – A

- ①: Thermocouple (K, J, L, T, N)
- ②: Number of Thermocouples (1 or 2)
- ③: Probe Diameter

Example:

T – 230 – K – 1 – 6,0 – 350



Technical Features:

Type:	Mineral-Insulated Thermocouple with Connection Head Form MA			
Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Number of Thermocouples (②):	Please specify			
Insulation Material:	Densely packed MgO			
Sheath Material:	Type J, L and T: Stainless Steel, M. -No. 1.4571 or Stainless Steel, M. -No. 1.4541 Type K, N: Inconel 600, M. -No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (④):	3.0 mm 6.0 mm	3.2 mm 6.4 mm	4.8 mm	Additional versions or swaged constructions on request
Probe Length „A“:	Please specify			
Termination:	Ceramic terminal Block			
Process Connection (③):	Please specify thread			

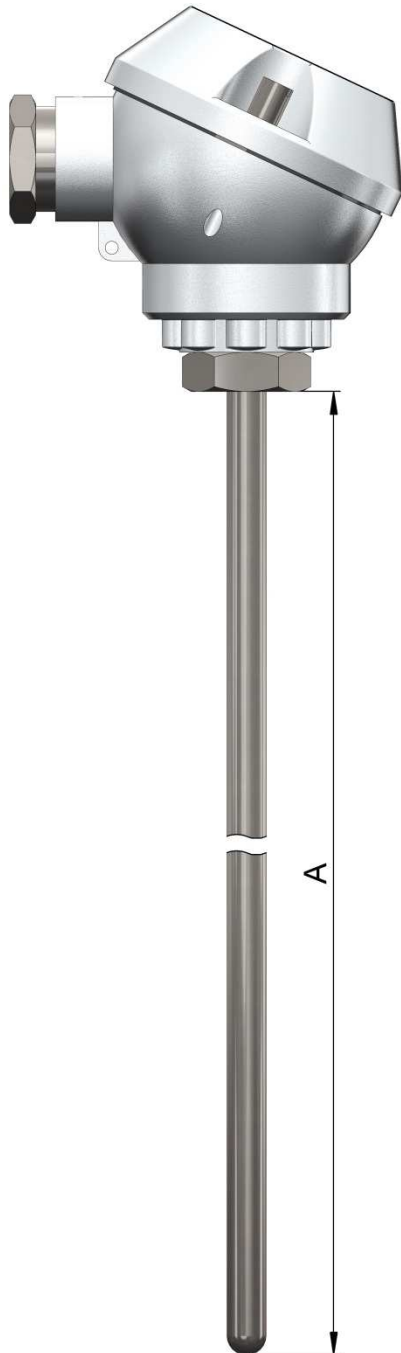
Ordering Code:

T – 232 – ① – ② – ③ – ④ – A

- ①: Thermocouple (K, J, L, T, N)
- ②: Number of Thermocouples (1 or 2)
- ③: Process Connection
- ④: Probe Diameter

Example:

T – 232 – K – 1 – R1/2" – 6,0 – 350



Technical Features:

Type: Vibration-proof Thermocouple in Stainless Steel-Tube (M.-No. 1.4571) with Connection Head Form MA

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Tolerance: Class 1 acc. to DIN IEC 584

Number of Thermocouples (②): Please specify

Hot Junction: Insulated

Insulation Resistance: > 50 MΩ at 20°C and 250 V DC

Probe Diameter (③): 3.0 mm 3.2 mm 4.8 mm
6.0 mm 6.4 mm 8.0 mm

Additional versions or swaged constructions on request

Probe Length „A“: Please specify

Termination: Ceramic terminal Block

Accessories:	Article	Datasheet
Compression Fitting		T – 190

Ordering Code:

T – 235 – ① – ② – ③ – A

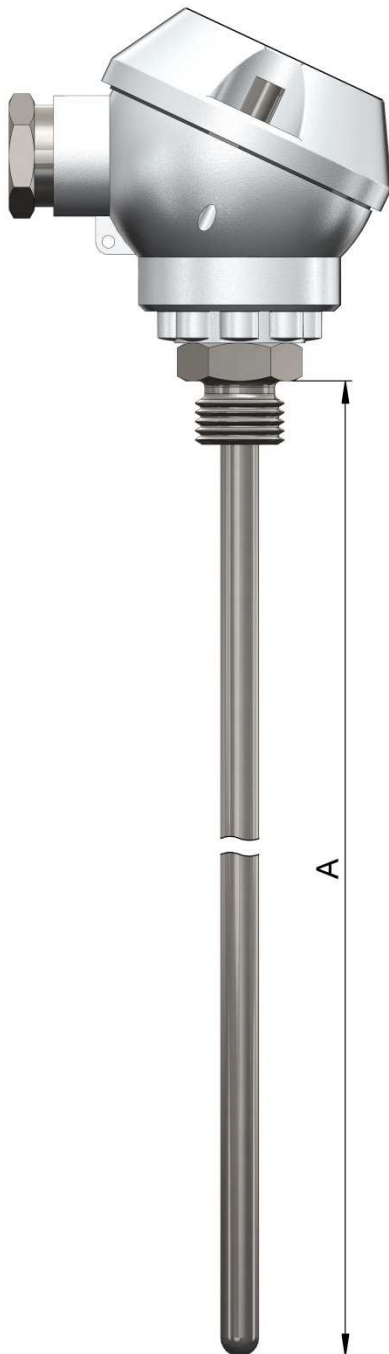
①: Thermocouple (K, J, L, T, N)

②: Number of Thermocouples (1 or 2)

③: Probe Diameter

Example:

T – 235 – K – 2 – 8,0 – 250



Technical Features:

Type: Vibration-proof Thermocouple in Stainless Steel-Tube (M.-No. 1.4571) with Connection Head Form MA

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Tolerance: Class 1 acc. to DIN IEC 584

Number of Thermocouples (②): Please specify

Hot Junction: Insulated

Insulation Resistance: > 50 MΩ at 20°C and 250 V DC

Probe Diameter (③): 3.0 mm 3.2 mm 4.8 mm
6.0 mm 6.4 mm 8.0 mm

Additional versions or swaged constructions on request

Probe Length „A“: Please specify

Termination: Ceramic terminal Block

Process Connection (④): Please specify thread

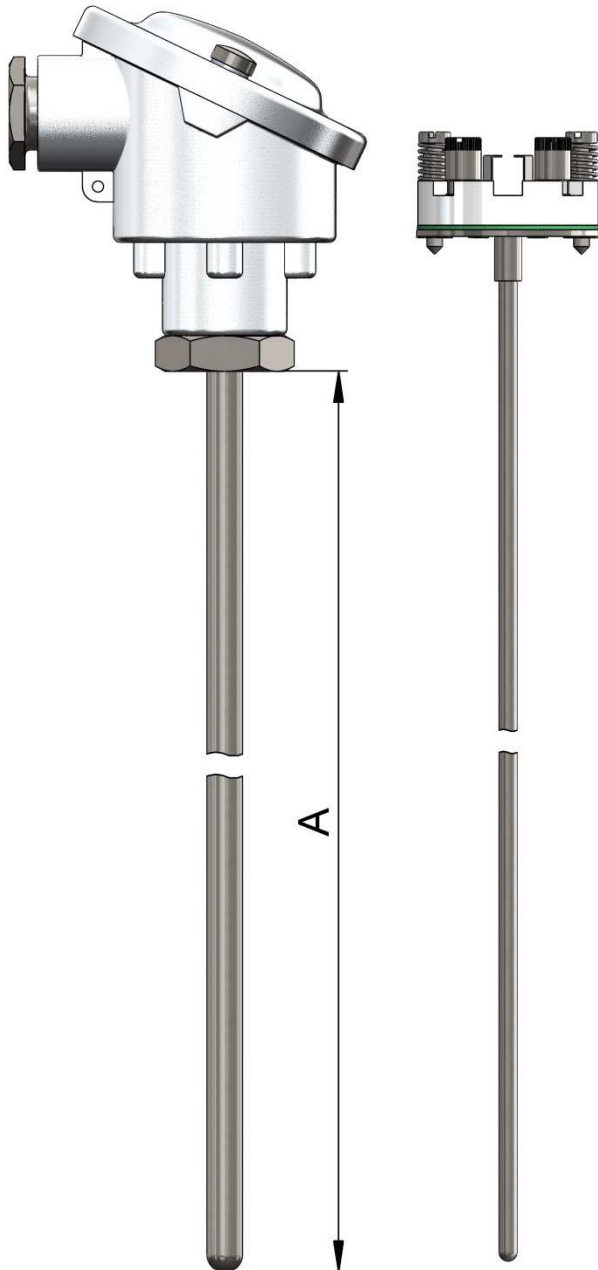
Ordering Code:

T – 237 – ① – ② – ③ – ④ – A

- ①: Thermocouple (K, J, L, T, N)
- ②: Number of Thermocouples (1 or 2)
- ③: Process Connection
- ④: Probe Diameter

Example:

T – 237 – K – 1 – R1/2" – 6,0 – 350



Technical Features:

Type:	Thermocouple in Stainless Steel-Tube (M.-No. 1.4571) with Thermocouple Insert and Connection Head Form B acc. to DIN IEC 43729		
Thermocouple (①):	<u>Thermocouple</u>	<u>Plus</u>	<u>Minus</u> <u>Norm</u>
	Type K	NiCr	NiAl IEC 584
	Type J	Fe	CuNi IEC 584
	Type L	Fe	CuNi DIN 43710
	Type T	Cu	CuNi IEC 584
	Type N	NiCrSi	NiSi IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584		
Number of Thermocouples (②):	Please specify		
Insulation Material:	Densely packed MgO		
Sheath Material: (Thermocouple Insert)	Type J, L and T: Stainless Steel, M. -No. 1.4571 or Stainless Steel, M. -No. 1.4541 Type K, N: Inconel 600, M. -No. 2.4816		
Hot Junction:	Insulated		
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC		
Probe Diameter (③):	3.0 mm 6.0 mm	3.2 mm 6.4 mm	4.8 mm 8.0 mm
Thermocouple Insert:	1.5 mm 3.0 mm	1.6 mm 3.2 mm	2.0 mm 4.8 mm
	Additional versions or swaged constructions on request		
Probe Length „A“:	Please specify		
Termination:	Ceramic terminal Block		
Accessories:	<u>Article</u>	<u>Datasheet</u>	
	Compression Fitting	T – 190	

Ordering Code:

T – 240 – ① – ② – ③ – A

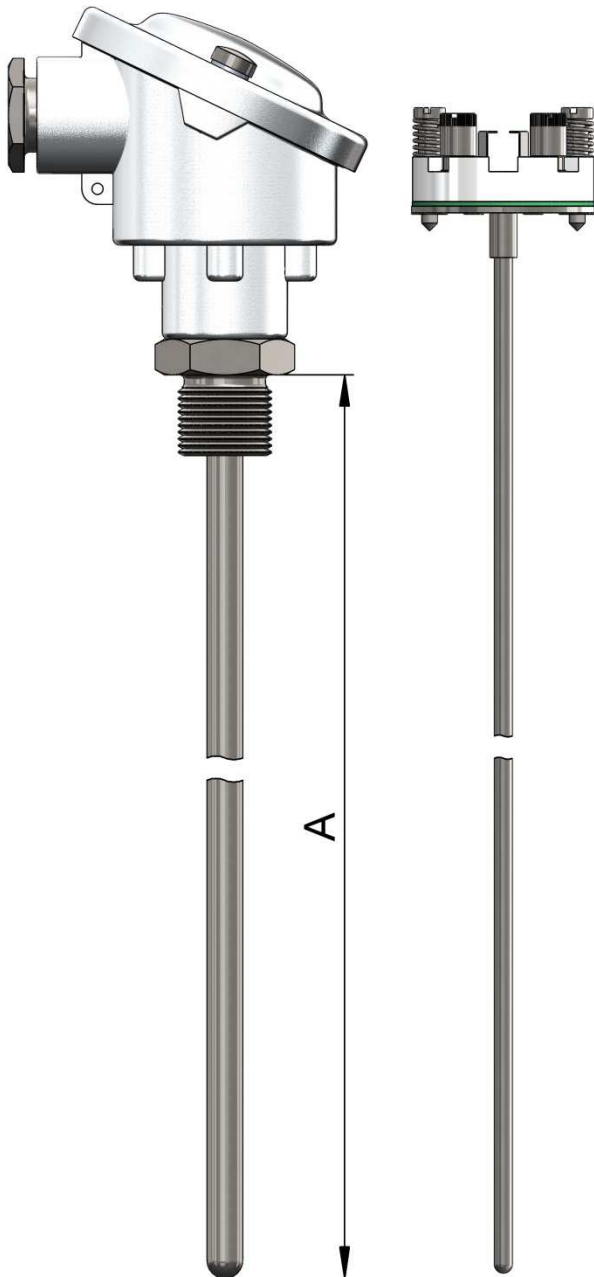
①: Thermocouple (K, J, L, T, N)

②: Number of Thermocouples (1 or 2)

③: Probe Diameter

Example:

T – 240 – K – 1 – 6,0 – 350



Technical Features:

Type:	Thermocouple in Stainless Steel-Tube (M.-No. 1.4571) with Thermocouple Insert and Connection Head Form B acc. to DIN IEC 43729			
Thermocouple (①):	<u>Thermocouple</u>	<u>Plus</u>	<u>Minus</u>	<u>Norm</u>
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584
Tolerance:	Class 1 acc. to DIN IEC 584			
Number of Thermocouples (②):	Please specify			
Insulation Material:	Densely packed MgO			
Sheath Material: (Thermocouple Insert)	Type J, L and T: Stainless Steel, M. -No. 1.4571 or Stainless Steel, M. -No. 1.4541 Type K, N: Inconel 600, M. -No. 2.4816			
Hot Junction:	Insulated			
Insulation Resistance:	> 50 MΩ at 20°C and 250 V DC			
Probe Diameter (④):	3.0 mm 6.0 mm	3.2 mm 6.4 mm	4.8 mm 8.0 mm	
Thermocouple Insert:	1.5 mm 3.0 mm	1.6 mm 3.2 mm	2.0 mm 4.8 mm	
	Additional versions or swaged constructions on request			
Probe Length „A“:	Please specify			
Termination:	Ceramic terminal Block			
Process Connection (③):	Please specify thread			

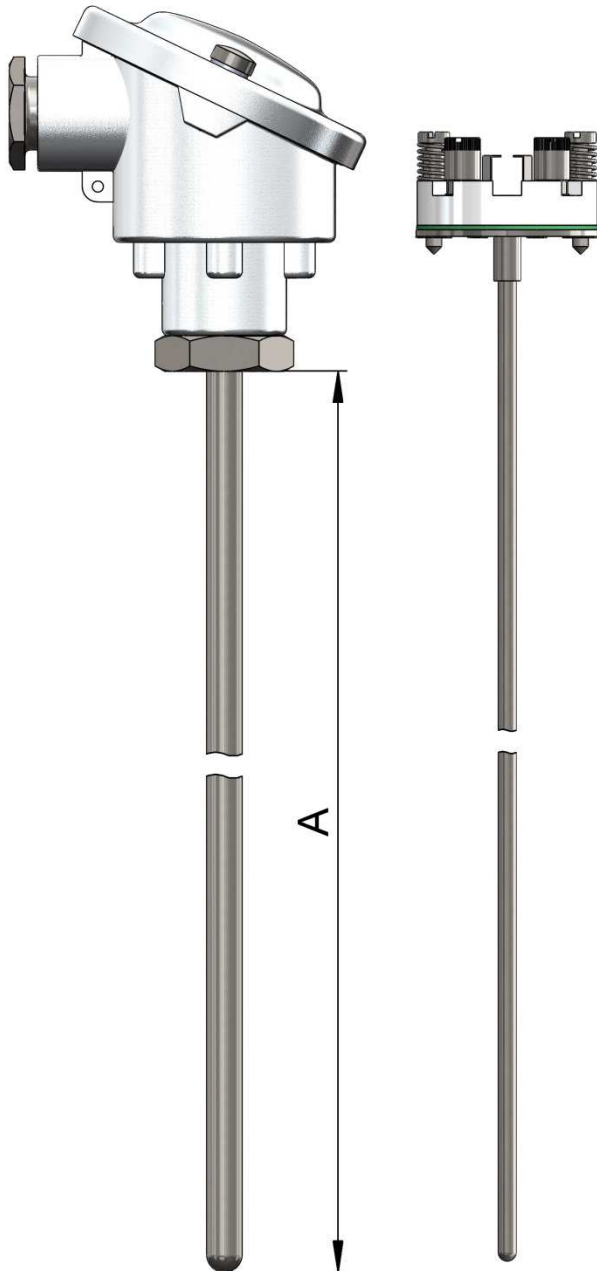
Ordering Code:

T – 242 – ① – ② – ③ – ④ – A

- ①: Thermocouple (K, J, L, T, N)
- ②: Number of Thermocouples (1 or 2)
- ③: Process Connection
- ④: Probe Diameter

Example:

T – 242 – K – 1 – R1/2" – 6,0 – 350



Technical Features:

Type: Vibration-proof Thermocouple in Stainless Steel-Tube (M.-No. 1.4571) with Thermocouple Insert and Connection Head Form B acc. to DIN IEC 43729

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Tolerance: Class 1 acc. to DIN IEC 584

Number of Thermocouples (②): Please specify

Hot Junction: Insulated

Insulation Resistance: > 50 MΩ at 20°C and 250 V DC

Probe Diameter (③): 6.0 mm 6.4 mm 8.0 mm

Thermocouple Insert: 3.0 mm

Additional versions or swaged constructions on request

Probe Length „A“: Please specify

Termination: Ceramic terminal Block

Accessories:	Article	Datasheet
Compression Fitting		T – 190

Ordering Code:

T – 245 – ① – ② – ③ – A

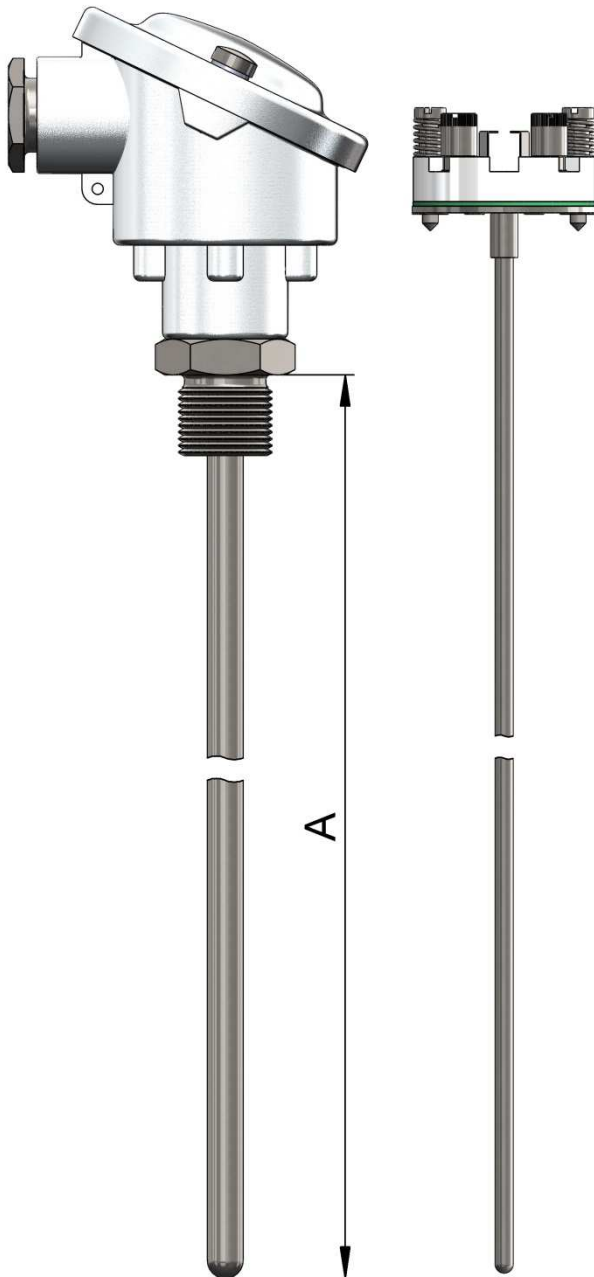
①: Thermocouple (K, J, L, T, N)

②: Number of Thermocouples (1 or 2)

③: Probe Diameter

Example:

T – 245 – K – 2 – 8,0 – 250



Technical Features:

Type: Vibration-proof Thermocouple in Stainless Steel-Tube (M.-No. 1.4571) and with Thermocouple Insert and Connection Head Form B acc. to DIN IEC 43729

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Tolerance: Class 1 acc. to DIN IEC 584

Number of Thermocouples (②): Please specify

Hot Junction: Insulated

Insulation Resistance: > 50 MΩ at 20°C and 250 V DC

Probe Diameter (③): 6.0 mm 6.4 mm 8.0 mm

Thermocouple Insert: 3.0 mm

Additional versions or swaged constructions on request

Probe Length „A“: Please specify

Termination: Ceramic terminal Block

Process Connection (④): Please specify thread

Ordering Code:

T – 247 – ① – ② – ③ – ④ – A

- ①: Thermocouple (K, J, L, T, N)
- ②: Number of Thermocouples (1 or 2)
- ③: Process Connection
- ④: Probe Diameter

Example:

T – 247 – K – 1 – R1/2" – 6,0 – 350

Technical Features:

Type: Stainless Steel-Protection-Tube (M.-No. 1.4571)
with Supporting Tube and Connection Head Form B acc. to DIN 43719 and Thermocouple Insert

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Tolerance: Class 1 acc. to DIN IEC 584

Number of Thermocouples (②): Please specify

Hot Junction: Insulated

Insulation Resistance: > 50 MΩ at 20°C and 250 V DC

Probe Diameter F1: 9 mm 11 mm

Additional versions or swaged constructions on request

Measuring Insert: 6 mm 8 mm

Additional versions or swaged constructions on request

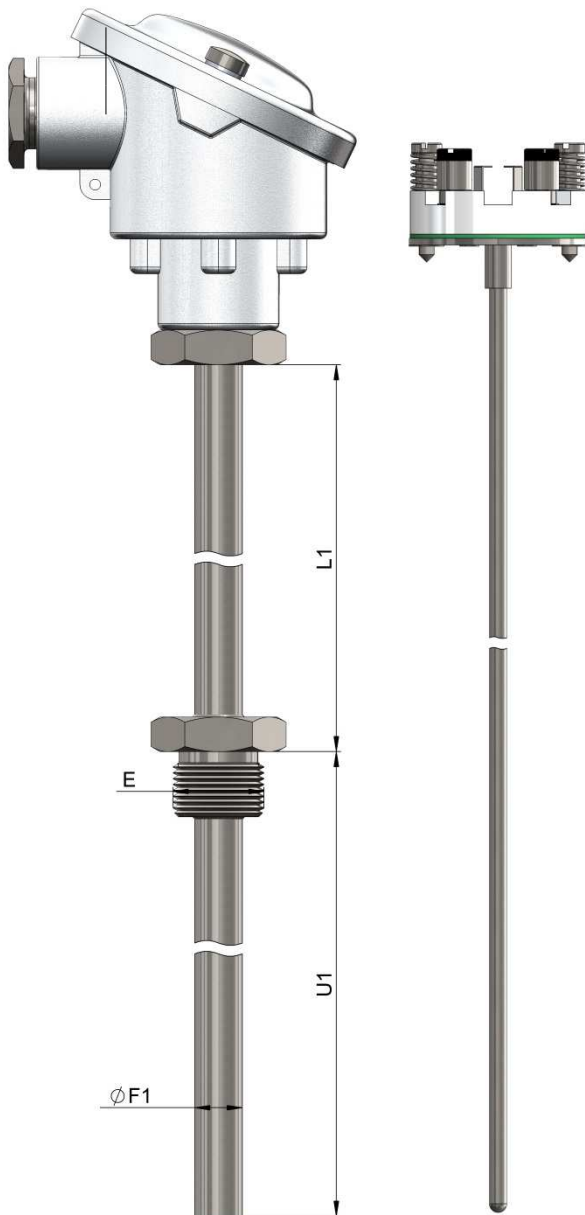
Probe Length U1: Please specify

Supporting Tube Length L1: Please specify

Termination: Ceramic terminal Block

Process Connection E: G 1/2" (Standard)

Additional versions on request



Ordering Code:

T – 252 – ① – ② – E – F1 – U1 – L1

①: Thermocouple (K, J, L, T, N)

②: Number of Thermocouples (1 or 2)

E: Process Connection

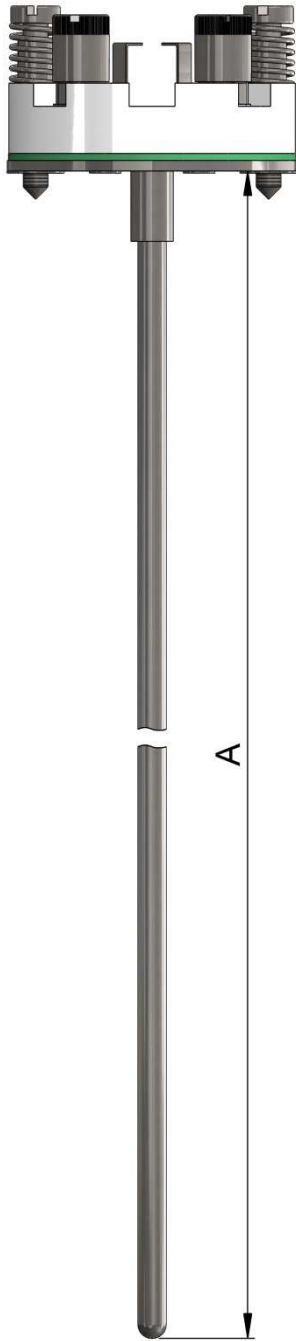
F1: Probe Diameter

U1: Probe Length

L1: Supporting Tube Length

Example:

T – 252 – K – 1 – R1/2" – 9,0 – 350 – 120



Technical Features:

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Tolerance: Class 1 acc. to DIN IEC 584

Number of Thermocouples (②): Please specify

Hot Junction: Insulated

Insulation Resistance: > 50 MΩ at 20°C and 250 V DC

Probe Diameter (④):

1.0 mm	1.5 mm	1.6 mm (1/16")
2.0 mm	3.0 mm	3.2 mm (1/8")
4.8 mm	6.0 mm	6.4 mm (1/4")

Additional versions or swaged constructions on request

Probe Length „A“: Please specify

Termination: Ceramic terminal Block

Construction (③): please specify type of connection head

Ordering Code:

T – 280 – ① – ② – ③ – ④ – A

- ①: Thermocouple (K, J, L, T, N)
- ②: Number of Thermocouples (1 or 2)
- ③: Type of Connection Head (MA, B oder A)
- ④: Probe Diameter
- A: Probe Length

Example:

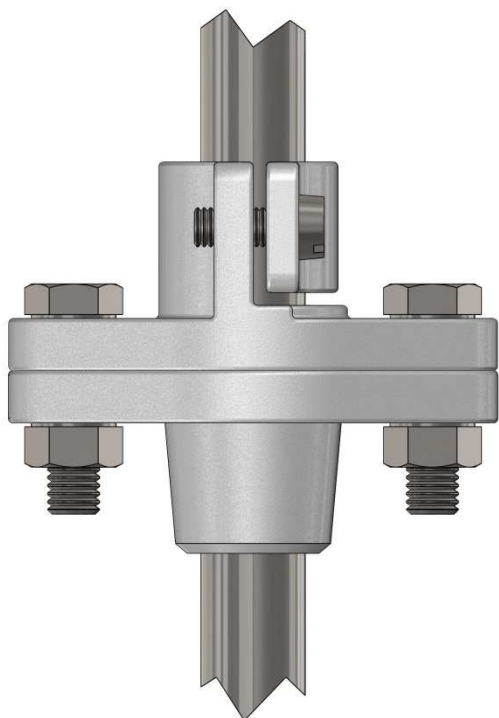
T – 280 – K – 1 – A – 1,5 – 340

Technical Features:

Material: Cast Iron

Nominal Width (①): 15 mm, 22 mm, 24 mm or 32 mm

Type (②): A: Flange
G: Counterflange



Ordering Code:

T – 293 – ① – ②

①: Nominal Width

②: Type

Example:

T – 293 – 15 – A



Technical Features:

Material: 1.0718

Connection Thread (①): G 1", G 1 ¼", G 1 ½"

Probe Diameter (②): 22 mm, 26 mm, 32 mm

Ordering Code:

T – 294 – ① – ②

①: Connection Thread

②: Probe Diameter

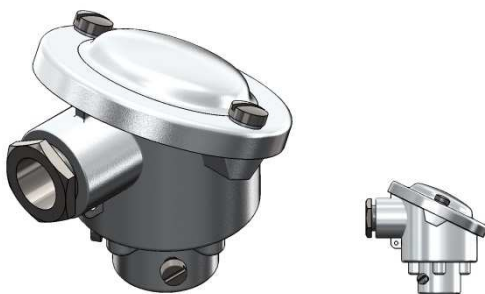
Example:

T – 294 – G 1" – 22 mm



Technical Features:

Type:	Connection Head Form A acc. to DIN 43729
Material:	die-cast aluminium
Wire Insert:	cable gland PG 16
Protection Class:	IP 43
Process Connection:	22.5 mm 32.5 mm



Type:	Connection Head Form B acc. to DIN 43729
Material:	die-cast aluminium
Wire Insert:	cable gland PG 16
Protection Class:	IP 43
Process Connection:	15.5 mm M24x1.5



Type:	Connection Head Form MA
Material:	die-cast aluminium
Wire Insert:	cable gland PG 9
Protection Class:	IP 43
Process Connection:	M10x1

Ordering Code:

T – 295 – ① – A

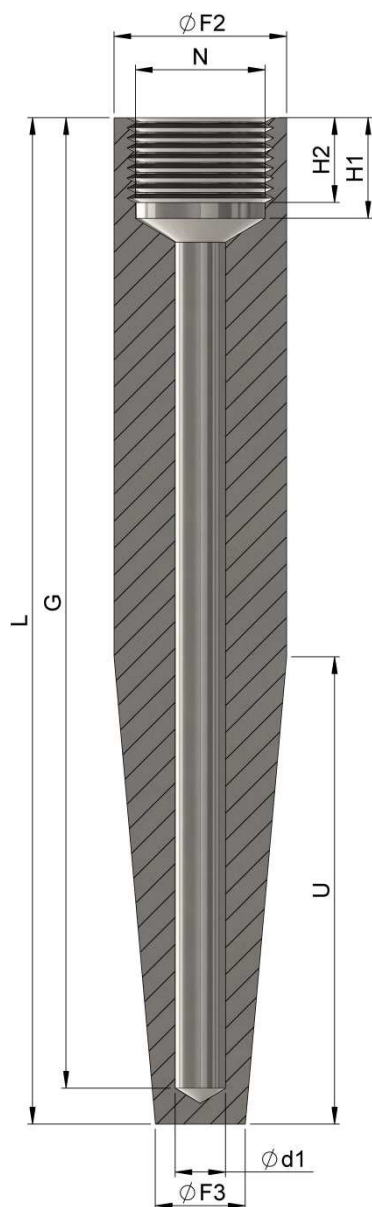
①: Connection Head Type

A: Process Connection

Example:

T – 295 – B – 15,5

Technical Features:



Type: Protection-Tube for weld-in

Length:	DIN 43763	L	G	U
		110	105	65
		110	105	73
	Form D1	140	135	65
		170	165	133
	Form D4	200	195	65
	Form D2	200	195	125
	Form D5	260	255	125
		410	405	275

Diameter:	d1	F2	N	F3	H1	H2
	7	24 h7	M18 x 1,5	12.5	19	15
	7	26 h7	G 1/2	12.5	19	15
	9	26 h7	G 1/2	15	19	15
	11	32 h11	G 3/4	17	22	17
	13	32 h11	G 3/4	19	22	17
	14	32 h11	G 3/4	20	22	17

Material:

- 1.5415 (16 Mo 3)
- 1.7335 (13 Cr Mo 4-5)
- 1.7380 (10 Cr Mo 9-10)
- 1.4571 (X6 Cr Ni Mo Ti 17-12-2)

Additional versions on request

Types acc. to DIN 43763:

Form	L	U	F2	F3	d1
D1	140	65	24 h7	12.5	7
D2	200	125	24 h7	12.5	7
D4	200	65	24 h7	12.5	7
D5	260	125	24 h7	12.5	7

Ordering Code:

T – 400 – d1 – N – L – U – W

d1: inner Diameter

N: Connection Thread

W: Material

Example:

T – 400 – 7 – M18 x 1,5 – 200 – 65 – 16Mo3

Technical Features:

Type: Protection-Tube for weld-in, fast-responding

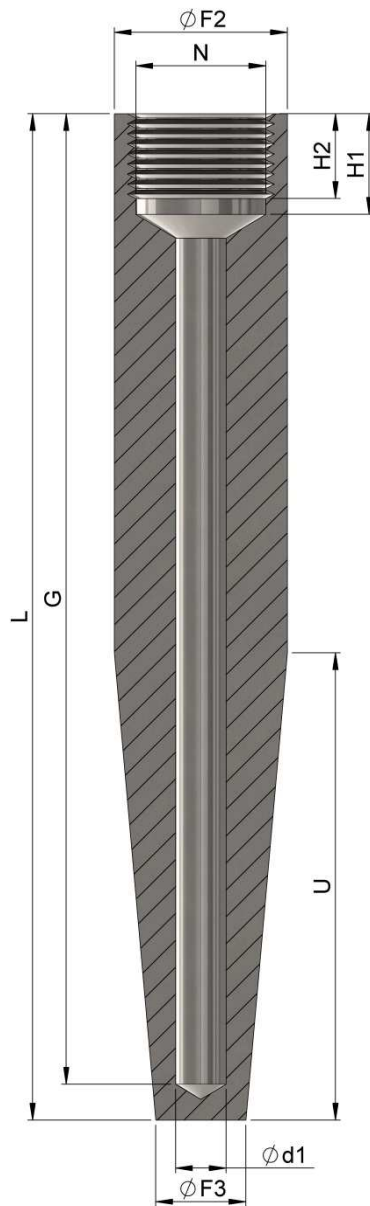
Measurements:

	L	G	U
Form DS 1	115	111	40
Form DS 2	140	136	65
Form DS 3	200	196	65
Form DS 4	200	196	125
Form DS 5	260	256	125

Connection Thread N: M14 x 1.5
Inner Diameter d1: 3.5 mm
Outer Diameter F2: 18 h7
Outer Diameter, swaged F3: 9 mm
Inside Thread Length H2: 13 mm

Materials:
1.5415 (16 Mo 3)
1.7335 (13 Cr Mo 4-5)
1.7380 (10 Cr Mo 9-10)
1.4571 (X6 Cr Ni Mo Ti 17-12-2)

Additional versions on request



Ordering Code:

T – 410 – d1 – N – L – U – W

d1: inner Diameter

N: Connection Thread

W: Material

Example:

T – 410 – 3,5 – M14 x 1,5 – 140 – 65 – 1.4571

Technical Features:

Connection Thread P: M18 x 1,5 (for T-400)
M14 x 1,5 (for T-410)

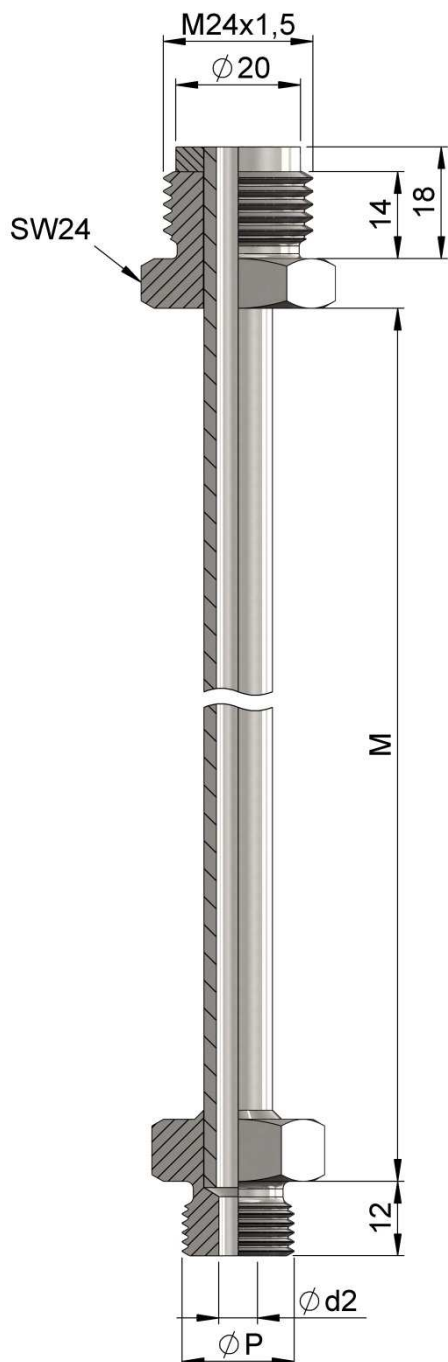
Additional versions on request

Inner Diameter d2: 9 mm (Standard)

Supporting-Tube Length M: 120 mm (Standard)

Material: Stainless Steel, M.-No. 1.4571

Additional versions on request



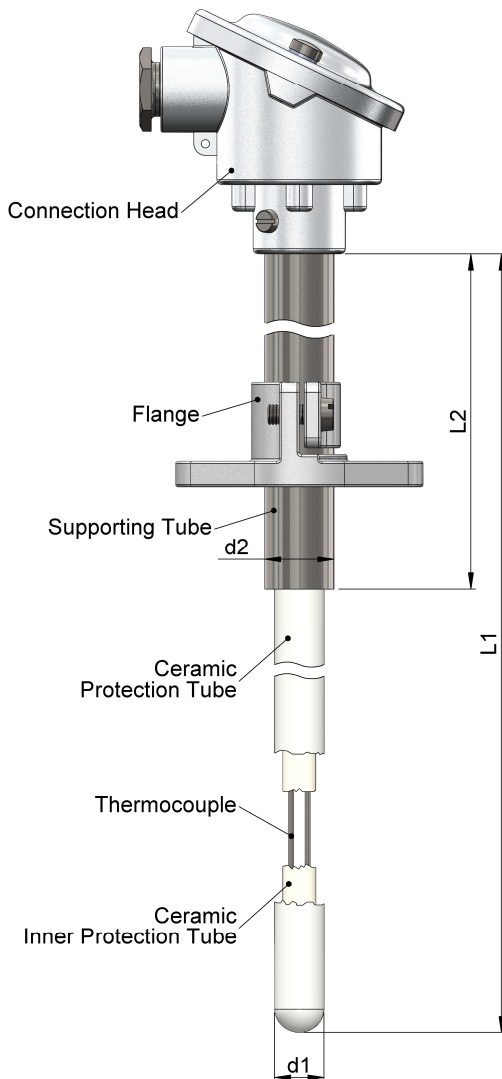
Ordering Code:

T – 420 – P – d2 – M (– W)
P: Connection Thread
d2: Probe Diameter
W: Material

Example:

T – 420 – M18 x 1,5 – 9 – 165

Technical Features:



Type: Vibration-proof Ceramic-Insulated Thermocouple in Ceramic Protection Tube with Connection Head Form A acc. to DIN IEC 43729

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	Ni	EN 60584
	Type S	Pt10Rh	Pt	EN 60584

Additional versions on request

Number of Thermocouples (②): Please specify

Wire Diameter (③):

Type K:	1.38 mm	3.00 mm
Type S:	0.35 mm	0.50 mm

Inner Protection Tube (④):

Ceramic C799 or C610	
15 x 2.5 mm (C799)	15 x 2.0 mm (C610)
10 x 2.0 mm (C799)	10 x 1.5 mm (C610)

Outer Protection Tube (⑤):

Ceramic C799 or C610	
24 x 3 mm (C799)	24 x 2,5 mm (C610)
15 x 2,5 mm (C799)	15 x 2,0 mm (C610)

Additional versions on request

Nominal Length „L1“: 500 mm, 710 mm, 1000 mm, 1400 mm
(Standard lengths acc. to DIN 43733)

Additional versions on request

Stay Tube: 1.0305 or on request

Length of Stay Tube “L2”:

200 mm (if Probe Diameter is 24 mm),
150 mm (if Probe Diameter is 15 mm)
(Standard lengths acc. to DIN 43733)

Additional versions on request

Termination: Ceramic terminal Block

Operating Temp.: max. 1500°C (C610) or 1600°C (C799)

Accessories:	Article	Datasheet
flange		T – 293
gas tight threaded sleeve		T – 294

Ordering Code:

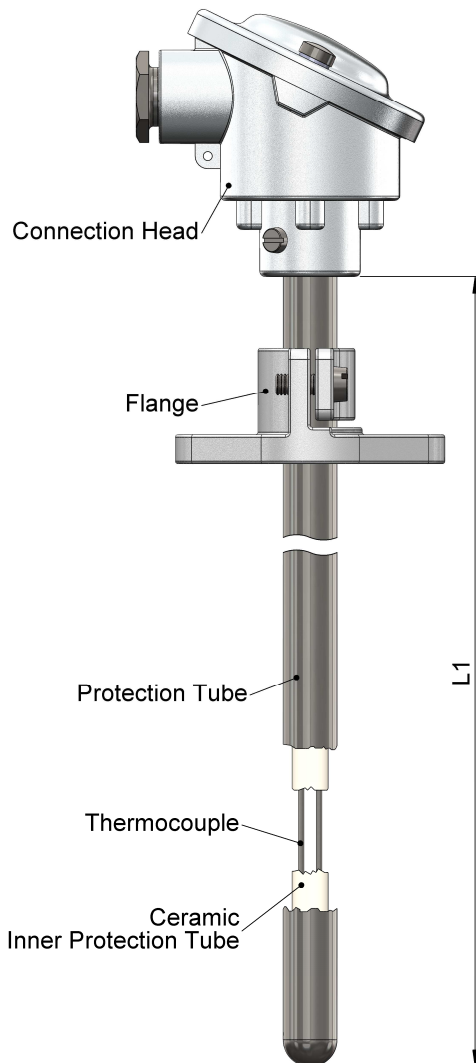
T – 510 – ① – ② – ③ – ④ – ⑤ – L1 – L2

- ①: Thermocouple (K, S)
- ②: Number of Thermocouples (1 or 2)
- ③: Wire Diameter
- ④: Inner Tube (without, C799, C610; Dimensions)
- ⑤: Outer Tube (C799, C610; Dimensions)

Example:

T – 510 – K – 1 – 3,0 – C799 15x2,5 – C799 24x3 – 710 – 200

Technical Features:



Type:	Vibration-proof Ceramic-Insulated Thermocouple in Stainless Steel Tube (M.-No.: 1.4571) with Connection Head Form A acc. to DIN IEC 43729			
Thermocouple (①):	<u>Thermocouple</u>	<u>Plus</u>	<u>Minus</u>	<u>Norm</u>
	Type K	NiCr	Ni	EN 60584
	Type S	Pt10Rh	Pt	EN 60584
	Additional versions on request			
Number of Thermocouples (②):	Please specify			
Wire Diameter (③):	Type K:	1.38 mm	3.00 mm	
	Type S:	0.35 mm	0.50 mm	
Inner Protection Tube (④):	Ceramic C799 or C610			
	15 x 2.5 mm (C799)	15 x 2.0 mm (C610)		
	10 x 2.0 mm (C799)	10 x 1.5 mm (C610)		
Outer Protection Tube (⑤):	heat resistant Steel, M. -No. 1.4762, 1.4841, 1.4749 22 x 2 mm 15 x 2 mm			
	Additional versions on request			
Nominal Length „L1“:	180 mm, 250 mm, 355 mm, 500 mm, 710 mm, 1000 mm, 1400 mm, 2000 mm (Standard lengths acc. to DIN 43733)			
	Additional versions on request			
Termination:	Ceramic terminal Block			
Operating Temp.:	max. 1200°C (1.4762, 1.4841) or 1100°C (1.4749)			
Accessories:	<u>Article</u>	<u>Datasheet</u>		
	flange	T – 293		
	gas tight threaded sleeve	T – 294		

Ordering Code:

T – 520 – ① – ② – ③ – ④ – ⑤ – L1

- ①: Thermocouple (K, S)
- ②: Number of Thermocouples (1 or 2)
- ③: Wire Diameter
- ④: Inner Tube (C799, C610; Dimensions)
- ⑤: Outer Tube (1.4762, 1.4841, 1.4749; Dimensions)

Example:

T – 520 – S – 1 – 0,5 – C799 15x2 – 1.4762 22 x 2 – 1000

Technical Features:

Type: Multiplex Thermocouple Extension
with 8 or 16 Measure Circuits
with Miniature- or Micro-Plugs

Thermocouple:	Thermocouple	Plus	Minus	Norm
Type K		NiCr	Ni	EN 60584

Additional versions on request

Measure Circuits: 8 or 16

Additional versions on request

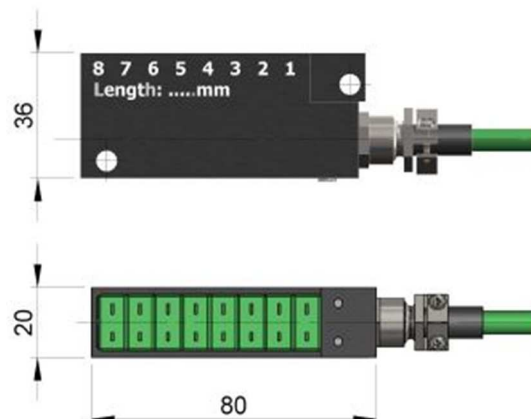
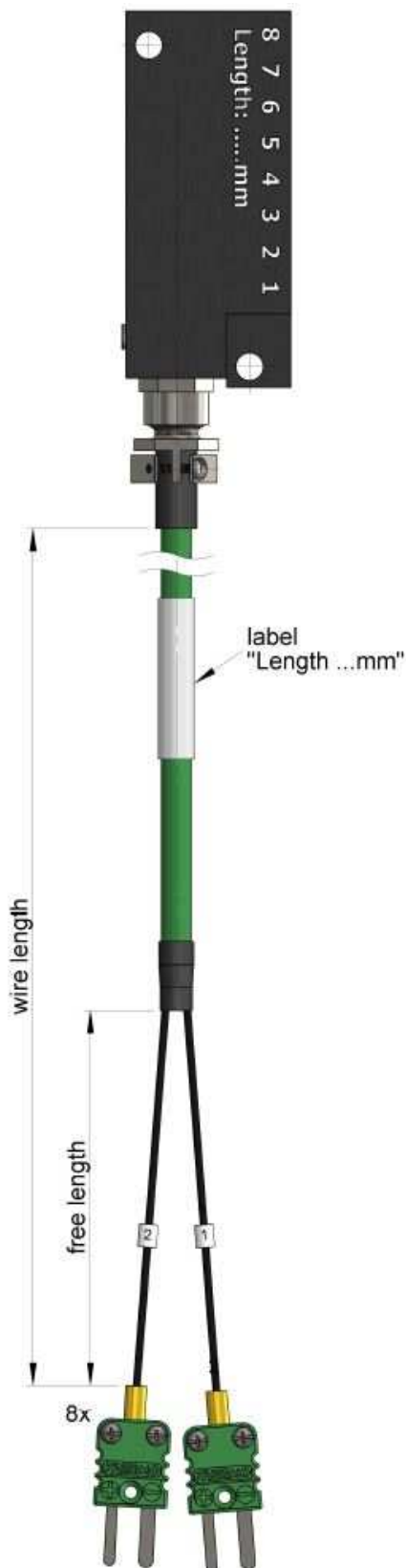
Dimensions:	Miniature	
	8 Measure Cicuits	16 Measure Cicuits
A:	36 mm	49 mm
B:	80 mm	145.5 mm
C:	20 mm	29 mm
	Micro	
	8 Measure Cicuits	16 Measure Cicuits
A:	36 mm	36 mm
B:	62 mm	64,5 mm
C:	14 mm	26 mm

Lead Wire: Teflon-Insulated flexible Thermocouple Wire
with Copper Screen
Outer Diameter approx. 6.5 mm (8 circuits)
or approx. 9.5 mm (16 circuits)

Additional versions on request

Wire Length L: Please specify

Termination: According to specification (e.g. labeled
miniature thermocouple plugs or -jacks,
Lemo – plug)



Technical Features:

Sensor:	PT100, acc. to DIN IEC 751
Tolerance:	Class B
Construction:	Stainless Steel-Tubing, M.No.: 1.4571
Insulation Resistance:	>50 MΩ at 20°C and 100V DC
Lead Wire:	Flexible Wire, individually and overall insulated with teflon (see Datasheet L132)
Termination:	Bare ends
Probe Diameter (①):	1.5 mm 3.0 mm 6.0 mm 1.0 mm (limited Temperature Range!)
Probe Length „A“:	Please specify
Wire Length „B“:	Please specify
Circuits (②):	2-, 3- or 4-wire
Temperature Range:	-50°C to +500°C -50°C to +250°C (for Probe Diameter 1 mm)

All Resistance Thermometers are also available according to the Tolerances of Class A, 1/3 B and 1/10 B.



Ordering Code:

W - 030 - ① - A - B - ②

① : Probe Diameter

② : Circuits (2-, 3- or 4-wire)

Example:

W - 030 - 1,0 - 150 - 2000 - 2

Technical Features:

Sensor:	PT100, acc. to DIN IEC 751
Tolerance:	Class B
Construction:	Stainless Steel-Tubing, W.Nr.: 1.4571
Lead Wire:	Flexible Wire, individually and overall insulated with teflon (see Datasheet L132)
Termination:	Bare ends
Probe Diameter (①):	1.5 mm 3.0 mm 6.0 mm 1.0 mm (limited Temperature Range!)
Probe Length „A“:	Please specify
Wire Length „B“:	Please specify
Circuits (②):	2-, 3- or 4-wire
Temperature Range:	-50°C to +500°C -50°C to +250°C (for Probe Diameter 1 mm)
Compression Fitting:	See Datasheet T190

All Resistance Thermometers are also available according to the Tolerances of Class A, 1/3 B and 1/10 B.



Ordering Code:

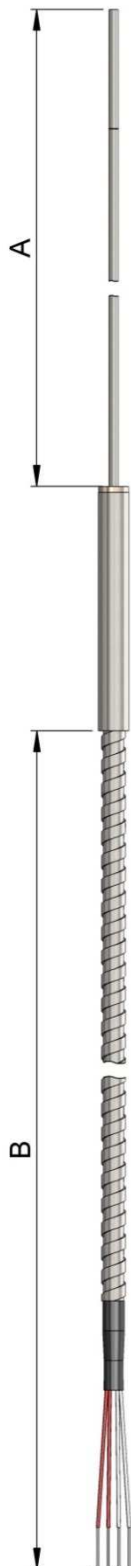
W - 032 - ① - A - B - ②

① : Probe Diameter

② : Circuits (2-, 3- or 4-wire)

Example:

W - 032 - 3,0 - 500 - 2000 - 2



Technical Features:

Sensor:	PT100, acc. to DIN IEC 751
Tolerance:	Class B
Construction:	Mineral-Insulated Probe, bendable
Insulation Resistance:	>50 MΩ at 20°C and 100V DC
Lead Wire:	Flexible Wire, individually and overall insulated with Teflon, with Stainless Steel Armour
Termination:	Bare ends
Probe Diameter (①):	1.5 mm 3.0 mm 6.0 mm 1.0 mm (limited Temperature Range!)
Probe Length „A“:	Please specify
Wire Length „B“:	Please specify
Circuits (②):	2-, 3- or 4-wire
Temperature Range:	-50°C to +500°C -50°C to +250°C (for Probe Diameter 1 mm)
Compression Fitting:	See Datasheet T190

All Resistance Thermometers are also available according to the Tolerances of Class A, 1/3 B and 1/10 B.

Ordering Code:

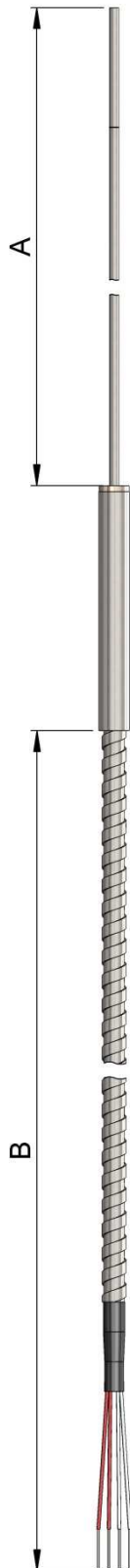
W - 060 - ① - A - B - ②

① : Probe Diameter

② : Circuits (2-, 3- or 4-wire)

Example:

W - 060 - 6,0 - 300 - 1000 - 4



Technical Features:

Sensor:	PT100, acc. to DIN IEC 751
Tolerance:	Class B
Construction:	Stainless Steel-Tubing, M.No.: 1.4571
Lead Wire:	Flexible Wire, individually and overall insulated with Teflon, with Stainless Steel Armour
Termination:	Bare ends
Probe Diameter (①):	1.5 mm 3.0 mm 6.0 mm
Probe Length „A“:	Please specify
Wire Length „B“:	Please specify
Circuits (②):	2-, 3- or 4-wire
Temperature Range:	-40°C to +300°C
Compression Fitting:	See Datasheet T190

All Resistance Thermometers are also available according to the Tolerances of Class A, 1/3 B and 1/10 B.

Ordering Code:

W - 062 - ① - A - B - ②

① : Probe Diameter

② : Circuits (2-, 3- or 4-wire)

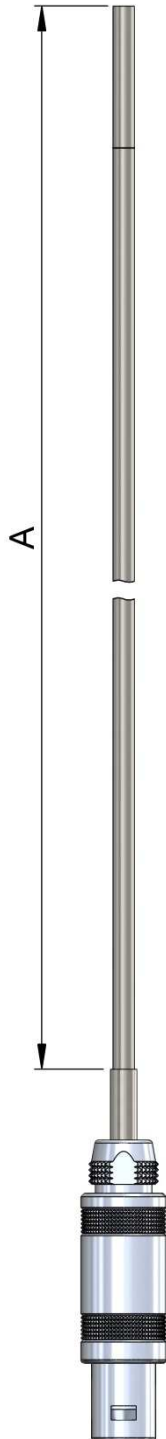
Example:

W - 062 - 1,5 - 500 - 2000 - 2

Technical Features:

Sensor:	PT100, acc. to DIN IEC 751
Tolerance:	Class B
Construction:	Mineral-Insulated Probe, bendable
Insulation Resistance:	> 50 MΩ at 20°C and 100 V DC
Probe Diameter (①):	1.5 mm 3.0 mm 6.0 mm 1.0 mm (limited Temperature Range!)
Probe Length „A“:	Please specify
Circuits (②):	2-, 3- or 4-wire
Termination:	Lemosa-Plug, Gr. 1
Temperature Range:	-50°C bis +500°C -50°C bis +250°C (for Probe Diameter 1 mm)
Compression Fitting:	See Datasheet T190

All Resistance Thermometers are also available according to the Tolerances of Class A, 1/3 B and 1/10 B.



Ordering Code:

W - 130 - ① - A - ②

① : Probe Diameter

② : Circuits (2-, 3- or 4-wire)

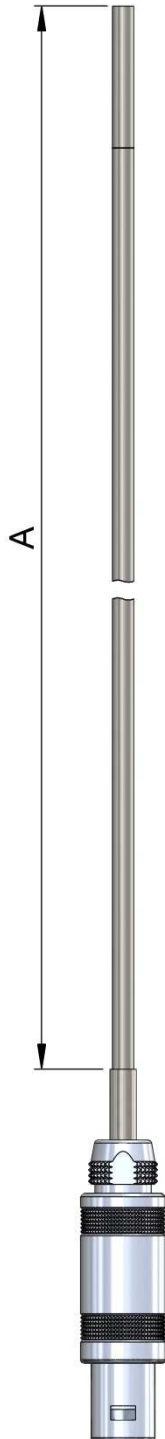
Example:

W - 130 - 3,0 - 150 - 2

Technical Features:

Sensor:	PT100, acc. to DIN IEC 751
Tolerance:	Class B
Construction:	Stainless Steel Tubing M.-No.: 1.4571, bendable
Probe Diameter (①):	1.5 mm 3.0 mm 6.0 mm
Probe Length „A“:	Please specify
Circuits (②):	2-, 3- or 4-wire
Termination:	Lemoso-Plug, Gr. 1
Temperature Range:	-40°C to +300°C
Compression Fitting:	See Datasheet T190

All Resistance Thermometers are also available according to the Tolerances of Class A, 1/3 B and 1/10 B.



Ordering Code:

W - 132 - ① - A - ②

① : Probe Diameter

② : Circuits (2-, 3- or 4-wire)

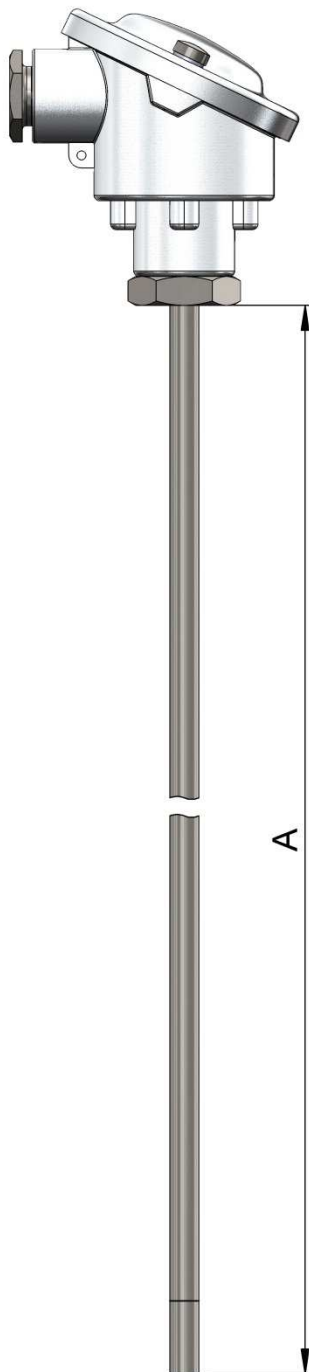
Example:

W - 132 - 1,5 - 200 - 3

Technical Features:

Type:	light weight Connection Head Form B acc. to DIN 43729
Sensor:	PT100, acc. to DIN IEC 751
Tolerance:	Class B
Construction:	Mineral-Insulated Probe
Insulation Resistance:	> 50 MΩ at 20°C and 100V DC
Termination:	Ceramic terminal Block
Probe Diameter (①):	1.5 mm 3.0 mm 6.0 mm
Probe Length „A“:	Please specify
Circuits (②):	2-, 3- or 4-wire
Temperature Range:	-50°C to +500°C
Compression Fitting:	See Datasheet T190

All Resistance Thermometers are also available according to the Tolerances of Class A, 1/3 B and 1/10 B.



Ordering Code:

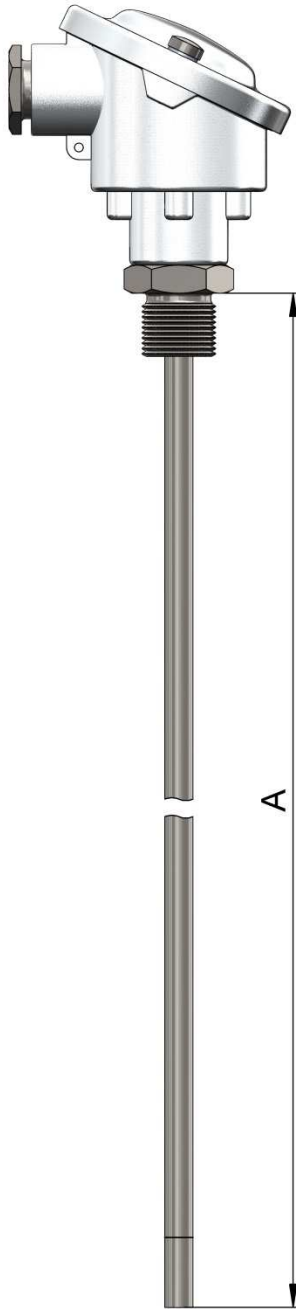
W - 220 - ① - A - ②

① : Probe Diameter

② : Circuits (2-, 3- or 4-wire)

Example:

W - 220 - 6,0 - 150 - 3



Technical Features:

Type:	light weight Connection Head Form B acc. to DIN 43729
Sensor:	PT100, acc. to DIN IEC 751
Tolerance:	Class B
Construction:	Mineral-Insulated Probe
Insulation Resistance:	> 50 MΩ at 20°C and 100V DC
Termination:	Ceramic terminal Block
Probe Diameter (①):	1.5 mm 3.0 mm 6.0 mm
Probe Length „A“:	Please specify
Circuits (②):	2-, 3- or 4-wire
Process Connection(③):	Please specify thread
Temperature Range:	-50°C to +500°C

All Resistance Thermometers are also available according to the Tolerances of Class A, 1/3 B and 1/10 B.

Ordering Code:

W - 222 - ① - A - ② - ③

- ① : Probe Diameter
- ② : Circuits (2-, 3- or 4-wire)
- ③ : Process Connection

Example:

W - 222 - 6,0 - 150 - 3 - R1/2"

Technical Features:



Type:	Resistance Thermometer in Stainless Steel Tube, M.-No.: 1.4571, shock-proof construction with connection Head Form B acc. to DIN 43729		
Sensor:	PT100, acc. to DIN IEC 751		
Tolerance:	Class B		
Insulation Resistance:	> 50 MΩ at 20°C and 100V DC		
Termination:	Ceramic terminal Block		
Probe Diameter (①):	1.5 mm	3.0 mm	6.0 mm
Probe Length „A“:	Please specify		
Circuits (②):	2-, 3- or 4-wire		
Temperature Range:	-50°C to +500°C		
Compression Fitting:	See Datasheet T190		

All Resistance Thermometers are also available according to the Tolerances of Class A, 1/3 B and 1/10 B.

Ordering Code:

W - 225 - ① - A - ②

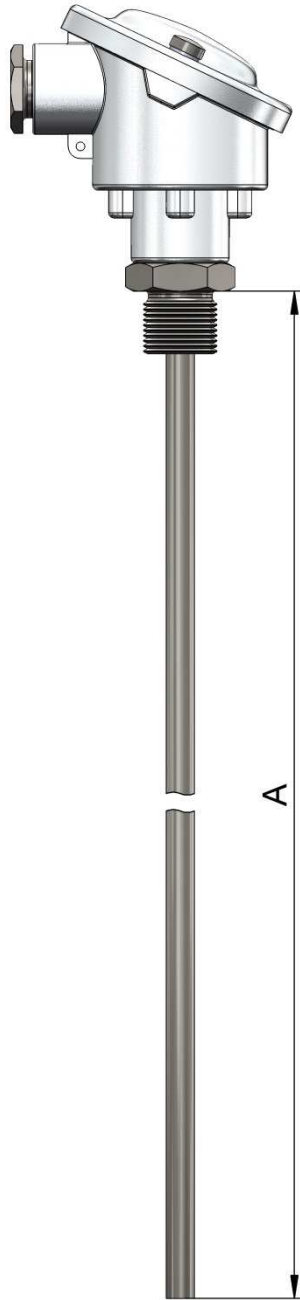
① : Probe Diameter

② : Circuits (2-, 3- or 4-wire)

Example:

W - 225 - 6,0 - 150 - 3

Technical Features:



Type: Resistance Thermometer in Stainless Steel Tube, M.-No.: 1.4571, shock-proof construction with light weight Connection Head Form B acc. to DIN 43729

Sensor: PT100, acc. to DIN IEC 751

Tolerance: Class B

Insulation Resistance: > 50 MΩ at 20°C and 100V DC

Termination: Ceramic terminal Block

Probe Diameter (①): 1.5 mm 3.0 mm 6.0 mm

Probe Length „A“: Please specify

Circuits (②): 2-, 3- or 4-wire

Process Connection(③): Please specify thread

Temperature Range: -50°C to +260°C

All Resistance Thermometers are also available according to the Tolerances of Class A, 1/3 B and 1/10 B.

Ordering Code:

W - 227 - ① - A - ② - ③

① : Probe Diameter

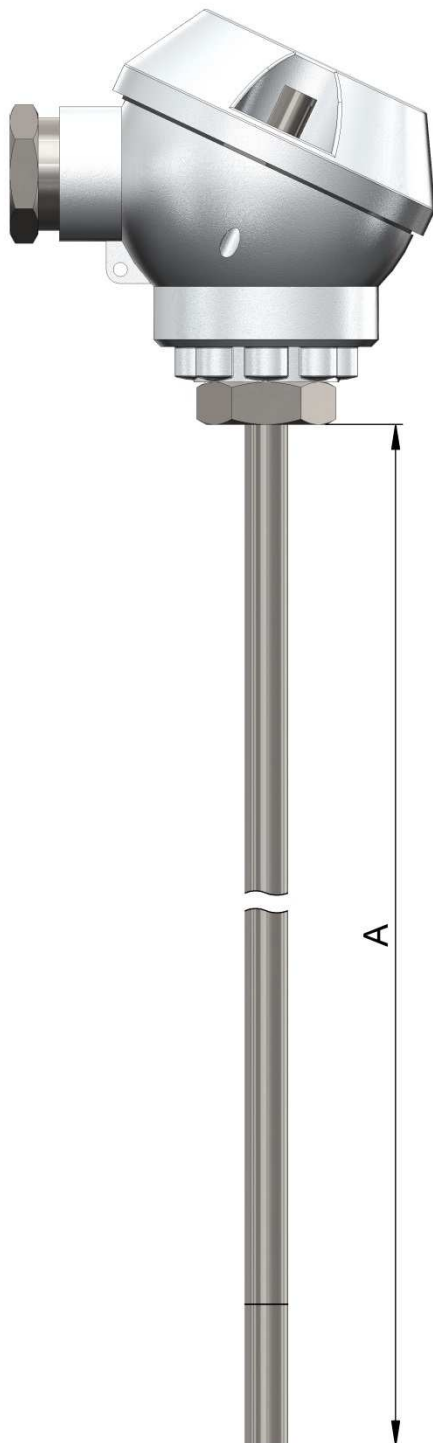
② : Circuits (2-, 3- or 4-wire)

③ : Process Connection

Example:

W - 227 - 6,0 - 250 - 4 - M24x1,5

Technical Features:



Type:	Resistance Thermometer in Stainless Steel Tube (M.-No. 1.4571), shock-proof construction with light weight Connection Head Form MA acc. to DIN 43729		
Sensor:	PT100, according to DIN IEC 751		
Tolerance:	Class B		
Construction:	Mineral-Insulated Probe, bendable		
Insulation Resistance:	> 50 MΩ at 20°C and 100V DC		
Termination:	Ceramic terminal Block		
Probe Diameter (①):	1.5 mm	3.0 mm	6.0 mm
Probe Length „A“:	Please specify		
Circuits (②):	2-, 3- or 4-wire		
Temperature Range:	-50°C to +500°C		
Compression Fitting:	See Datasheet T190		

All Resistance Thermometers are also available according to the Tolerances of Class A, 1/3 B and 1/10 B.

Ordering Code:

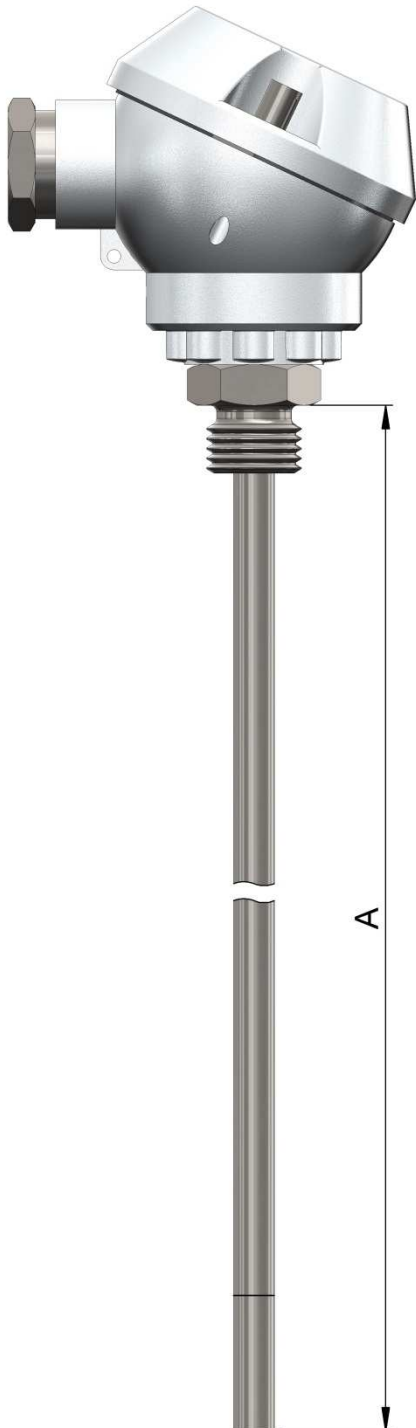
W - 230 - ① - A - ②

① : Probe Diameter

② : Circuits (2-, 3- or 4-wire)

Example:

W - 230 - 1,5 - 350 - 4



Technical Features:

Type:	Resistance Thermometer in Stainless Steel Tube (M.-No. 1.4571), shock-proof construction with light weight Connection Head Form MA acc. to DIN 43729		
Sensor:	PT100, according to DIN IEC 751		
Tolerance:	Class B		
Construction:	Mineral-Insulated Probe, bendable		
Insulation Resistance:	> 50 MΩ at 20°C and 100V DC		
Termination:	Ceramic terminal Block		
Probe Diameter (①):	1.5 mm	3.0 mm	6.0 mm
Probe Length „A“:	Please specify		
Circuits (②):	2-, 3- or 4-wire		
Process Connection (③):	Please specify thread		
Temperature Range:	-50°C to +500°C		

All Resistance Thermometers are also available according to the Tolerances of Class A, 1/3 B and 1/10 B.

Ordering Code:

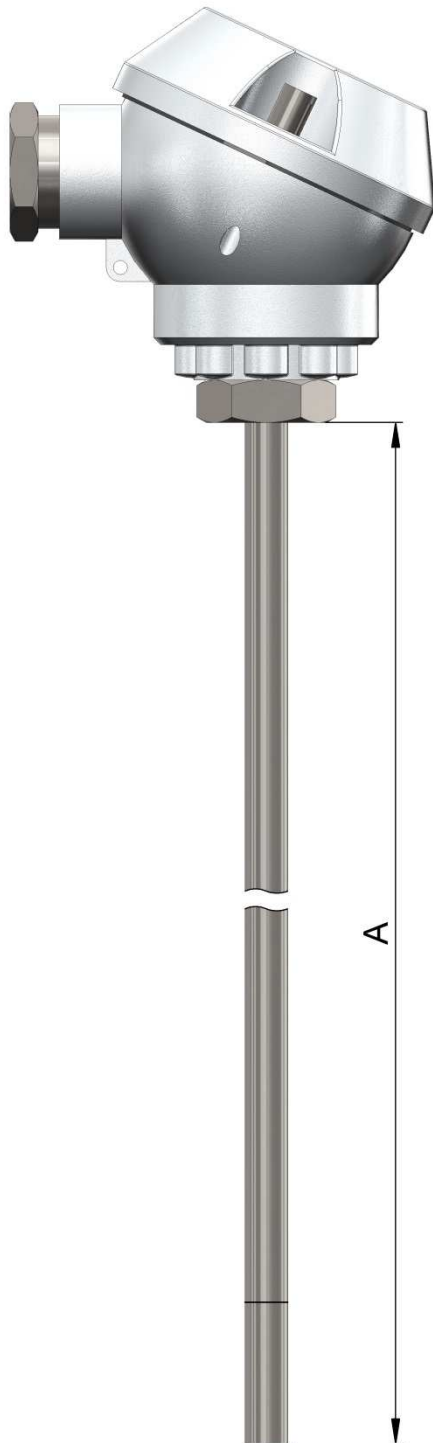
W - 232 - ① - A - ② - ③

- ① : Probe Diameter
- ② : Circuits (2-, 3- or 4-wire)
- ③ : Process Connection

Example:

W - 232 - 6,0 - 200 - 2 - R1"

Technical Features:



Type:	Resistance Thermometer in Stainless Steel Tube (M.-No. 1.4571), shock-proof construction with light weight Connection Head Form MA acc. to DIN 43729		
Sensor:	PT100, according to DIN IEC 751		
Tolerance:	Class B		
Construction:	Mineral-Insulated Probe, bendable		
Insulation Resistance:	> 50 MΩ at 20°C and 100V DC		
Termination:	Ceramic terminal Block		
Probe Diameter (①):	1.5 mm	3.0 mm	6.0 mm
Probe Length „A“:	Please specify		
Circuits (②):	2-, 3- or 4-wire		
Temperature Range:	-50°C to +500°C		
Compression Fitting:	See Datasheet T19		

All Resistance Thermometers are also available according to the Tolerances of Class A, 1/3 B and 1/10 B.

Ordering Code:

W - 235 - ① - A - ②

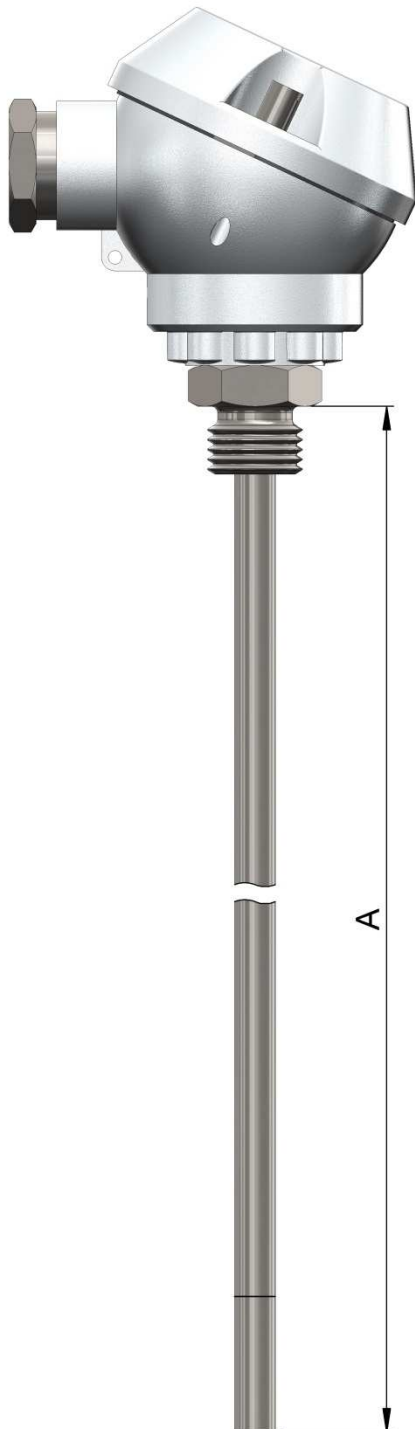
① : Probe Diameter

② : Circuits (2-, 3- or 4-wire)

Example:

W - 235 - 3,0 - 150 - 3

Technical Features:



Type:	Resistance Thermometer in Stainless Steel Tube, M.-No.: 1.4571, shock-proof construction with light weight Connection Head Form MA acc. to DIN 43729		
Sensor:	PT100, acc. to DIN IEC 751		
Tolerance:	Class B		
Insulation Resistance:	> 50 MΩ at 20°C and 100V DC		
Termination:	Ceramic terminal Block		
Probe Diameter (①):	1.5 mm	3.0 mm	6.0 mm
Probe Length „A“:	Please specify		
Circuits (②):	2-, 3- or 4-wire		
Process Connection(③):	Please specify thread		
Temperature Range:	-50°C to +500°C		

All Resistance Thermometers are also available according to the Tolerances of Class A, 1/3 B and 1/10 B.

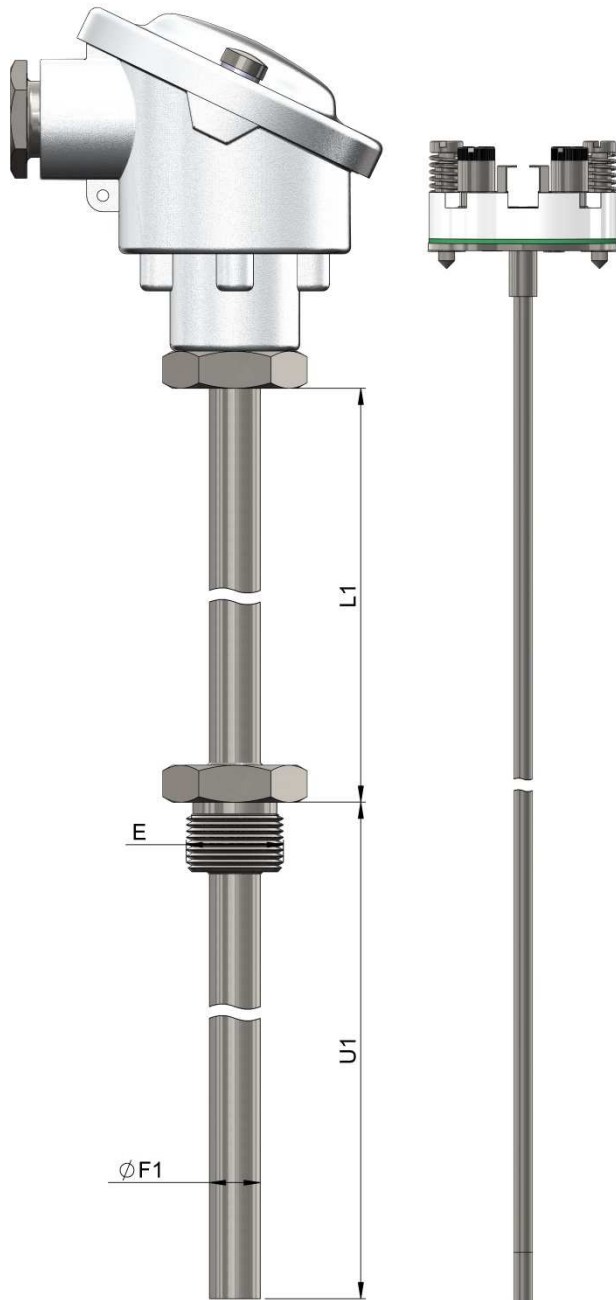
Ordering Code:

W - 237 - ① - A - ② - ③

- ① : Probe Diameter
- ② : Circuits (2-, 3- or 4-wire)
- ③ : Process Connection

Example:

W - 237 - 6,0 - 300 - 3 - R1/2"



Technical Features:

Type:	Stainless Steel-Protection-Tube (M. -No. 1.4571) with Supporting Tube, light weight Connection Head Form B acc. to DIN 43719 and Mineral Insulated Measuring Insert
Sensor (①):	Pt100 or Pt1000 acc. to DIN IEC 60751
Tolerance:	Class B
Measure circuits (②):	Please specify number of sensors
Circuits (③):	2-, 3- or 4-wire
Insulation Resistance:	> 50 MΩ at 20°C and 100 V DC
Probe Diameter (④):	9 mm 11 mm Additional versions on request
Measuring Insert:	6 mm 8 mm Additional versions on request
Probe Length U1:	Please specify
Supporting Tube Length L1:	Please specify
Termination:	Ceramic terminal Block
Process Connection:	Standard G ½"
	Additional versions on request

All Resistance Thermometers are also available according to the Tolerances of Class A, 1/3 B and 1/10 B.

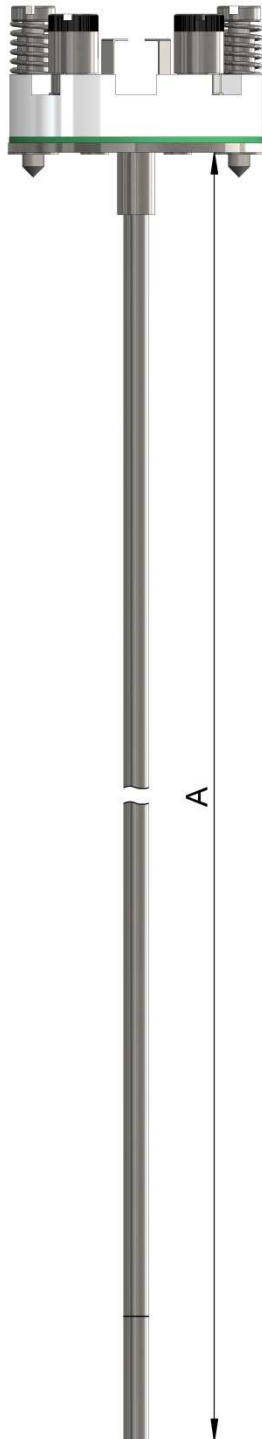
Ordering Code:

W – 252 – ① – ② – ③ – ④ – U1 – L1

①:	Sensor
②:	Measure circuits
③:	Circuits (2-, 3- or 4-wire)
④:	Probe Diameter
U1:	Probe Length
L1:	Neck-Tube Length

Example:

W – 252 – Pt100 – 2 – 4 – 9,0 – 350 – 120



Technical Features:

Sensor:	PT100, according to DIN IEC 751		
Tolerance:	Class B		
Construction:	Stainless Steel-Mineral-Insulated Probe, bendable		
Insulation Resistance:	> 50 MΩ at 20°C and 100V DC		
Termination:	Ceramic terminal Block		
Terminal Block Diameter (①):	Form A	= 56mm	
	Form B	= 42mm	
	Form MA	= 25mm	
Probe Diameter (②):	1.5 mm	3.0 mm	6.0 mm
Probe Length „A“:	Please specify		
Circuits (③):	2-, 3- or 4-wire		
Temperature Range:	-50°C to +500°C		
Spring Deflection:	10mm		
	Additional versions on request		

All Resistance Thermometers are also available according to the Tolerances of Class A, 1/3 B and 1/10 B.

Ordering Code:

W – 280 – ① – ② – A – ③

- ①: Ceramic Block
- ②: Probe Diameter
- ③: Circuits (2-, 3- or 4-wire)

Example:

W – 280 – MA – 3,0 – 150 – 3

Mineral-Insulated-Resistance Thermometer

Measuring Insert in Stainless Steel Tube

W - 285

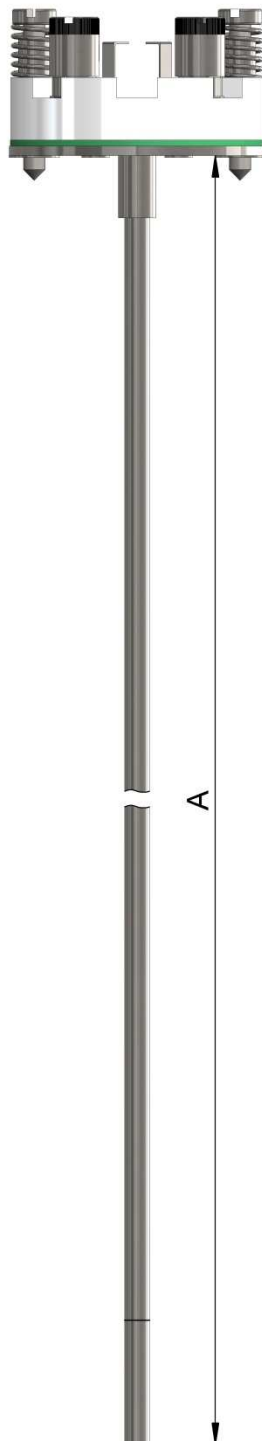
Rev. 01 - 05/02

1 / 1

Technical Features:

Sensor:	PT100, according to DIN IEC 751
Tolerance:	Class B
Construction:	Resistance-Thermometer in Stainless Steel Tube M.No.: 1.4571
Insulation Resistance:	> 50 MΩ at 20°C and 100V DC
Termination:	Ceramic terminal Block
Diameter Terminal Block (①):	Form A = 56mm Form B = 42mm Form MA = 25mm
Probe Diameter (②)::	3.0 mm 6.0 mm
Probe Length „A“:	Please specify
Circuits (③):	2-, 3- or 4-wire
Temperature Range:	-50°C to +500°C
Spring Deflection:	10mm
	Additional versions on request

All Resistance Thermometers are also available according to the Tolerances of Class A, 1/3 B and 1/10 B.



Ordering Code:

W - 285 - ① - ② - A - ③

- ①: Ceramic Block
- ②: Probe Diameter
- ③: Circuits (2-, 3- or 4-wire)

Example:

W - 280 - MA - 3,0 - 150 - 3



Technical Features:

Thermocouple: NiCr/Ni, Type "K", acc. to DIN IEC 584
 Fe/CuNi, Type "J", acc. to DIN IEC 584
 Fe/CuNi, Type "L", acc. to DIN 43710

Tolerance: Acc. to DIN IEC 584/DIN 43710

Colour Coding:	„K“	„J“	„L“
Plus:	green	black	red
Minus:	white	white	blue
Sheath Material:	green	black	blue

Conductors: flexible, 2x0.22 mm²

Insulation: PVC

Construction: Twisted Conductors

Jacket: PVC

Diameter: approx. Ø 3.7 mm

Temperature Range: -15°C to +105°C

Ordering Code:

L-010 - ☐
 K
 J
 L

Example:

Thermocouple Wire
 Type: L-010-K



Technical Features:

Thermocouple:	NiCr/Ni, Type "K", Fe/CuNi, Type "J", Fe/CuNi, Type "L",	acc. to DIN IEC 584 acc. to DIN IEC 584 acc. to DIN 43710	
Tolerance:	Acc. to DIN IEC 584/DIN 43710		
Colour Coding:	„K“	„J“	„L“
Plus:	green	black	red
Minus:	white	white	blue
Sheath Material:	green	black	blue
Conductors:	flexible, 2x0.22 mm ²		
Insulation:	PVC		
Screen:	Tinned Copper (min. 80% coverage)		
Construction:	Twisted Conductors		
Jacket:	PVC		
Diameter:	approx Ø 4.6 mm		
Temperature Range:	-15°C to +105°C		

Ordering Code:

L-015 - ☐
K
J
L

Example:

Thermocouple Wire
Type: L-015-K



Technical Features:

Thermocouple: NiCr/Ni, Type "K", acc. to DIN IEC 584
 Fe/CuNi, Type "J", acc. to DIN IEC 584
 Fe/CuNi, Type "L", acc. to DIN 43710
 Cu/CuNi, Type "T", acc. to IEC 584

Tolerance: Acc. to DIN IEC 584/DIN 43710

Colour Coding:	„K“	„J“	„L“	„T“
Plus:	yellow	white	red	brown
Minus:	red	red	blue	white
Sheath Material:	yellow	black	blue	brown

Conductors: solid, 2x0.8 mm

Insulation: PVC

Screen: Aluminium

Construction: Twisted Conductors

Jacket: PVC

Diameter: approx. Ø 4.4 mm

Temperature Range: -15°C to +105°C

Ordering Code:

L-017 - □
 K
 J
 L
 T

Example:

Thermocouple Wire
 Type: L-017-K



Technical Features:

Thermocouple: NiCr/Ni, Type "K", acc. to DIN IEC 584
Fe/CuNi, Type "J", acc. to DIN IEC 584
Fe/CuNi, Type "L", acc. to DIN 43710

Tolerance: Acc. to DIN IEC 584/DIN 43710

Colour Coding:	„K“	„J“	„L“
Plus:	green	black	red
Minus:	white	white	blue
Sheath Material:	green	black	blue

Conductors: flexible, 2x0.22 mm²

Insulation: Silicone

Construction: Parallel Conductors

Jacket: Silicone

Diameter: approx. Ø 4.2 mm

Temperature Range: -40°C to +200°C

Ordering Code:

L-020 - ☐
K
J
L

Example:

Thermocouple Wire
Type: L-020-K



Technical Features:

Thermocouple: NiCr/Ni, Type "K", acc. to DIN IEC 584
 Fe/CuNi, Type "J", acc. to DIN IEC 584
 Fe/CuNi, Type "L", acc. to DIN 43710

Tolerance: Acc. to DIN IEC 584/DIN 43710

Colour Coding:	„K“	„J“	„L“
Plus:	green	black	red
Minus:	white	white	blue
Sheath Material:	green	black	blue

Conductors: flexible, 2x0.22 mm²

Insulation: individually and overall insulated with fiberglass

Construction: Parallel Conductors

Jacket: Silicone

Diameter: approx. Ø 3.2 mm

Temperature Range: -4°C to +200°C

Ordering Code:

L-028 - ☐
 K
 J
 L

Example:

Thermocouple Wire
 Type: L-028-K



Technical Features:

Thermocouple: NiCr/Ni, Type "K", acc. to DIN IEC 584
 Fe/CuNi, Type "J", acc. to DIN IEC 584
 Fe/CuNi, Type "L", acc. to DIN 43710

Tolerance: Acc. to DIN IEC 584/DIN 43710

Colour Coding:	„K“	„J“	„L“
Plus:	green	black	red
Minus:	white	white	blue
Sheath Material:	green	black	blue

Conductors: flexible, 2x0.22 mm²

Insulation: Teflon, FEP

Construction: Twisted Conductors

Jacket: Teflon, FEP

Diameter: approx. Ø 2.8 mm

Temperature Range: -40°C to +205°C

Ordering Code:

L-030 - ☐
 K
 J
 L

Example:

Thermocouple Wire
 Type: L-030-K

Technical Features:

Thermocouple: NiCr/Ni, Type "K", acc. to DIN IEC 584
 Fe/CuNi, Type "J", acc. to DIN IEC 584
 Fe/CuNi, Type "L", acc. to DIN 43710

Tolerance: Acc. to DIN IEC 584/DIN 43710

Colour Coding:	„K“	„J“	„L“
Plus:	green	black	red
Minus:	white	white	blue
Sheath Material:	green	black	blue

Conductors: flexible, 2x0.22 mm²

Insulation: Teflon, FEP

Screen: Tinned Copper
 (min. 80% coverage)

Construction: Twisted Conductors

Jacket: Teflon, FEP

Diameter: approx. Ø 3.3 mm

Temperature Range: -40°C to +205°C



Ordering Code:

L-035 - ☐
 K
 J
 L

Example:

Thermocouple Wire
 Type: L-035-K



Technical Features:

Thermocouple:	NiCr/Ni, Type "K", Fe/CuNi, Type "J", Fe/CuNi, Type "L",	acc. to DIN IEC 584 acc. to DIN IEC 584 acc. to DIN 43710
Tolerance:	Acc. to DIN IEC 584/DIN 43710	
Colour Coding:	None	
Plus:	Blank Conductor	
Minus:	with Tracer	
Sheath Material:	Brown	
Conductors:	solid, Ø 0.25 mm, (AWG 30)	
Insulation:	Negative Wire wrapped with Kapton	
Construction:	Parallel Conductors	
Jacket:	Wrapped with Kapton	
Diameter:	approx. 0.8 mm x 0.9 mm	
Temperature Range:	-265°C to +285°C, temporarily +400°C	

Ordering Code:

L-040 - ☐
K
J
L

Example:

Thermocouple Wire
Type: L-040-L

Technical Features:

Thermocouple: NiCr/Ni, Type "K", acc. to DIN IEC 584
 Fe/CuNi, Type "J", acc. to DIN IEC 584
 Fe/CuNi, Type "L", acc. to DIN 43710

Tolerance: Acc. to DIN IEC 584/DIN 43710

Colour Coding:	„K“	„J“	„L“
Plus:	green	black	red
Minus:	white	white	blue
Sheath Material:	green	black	blue

Conductors: Solid

Conductor-Ø in mm:	0.8	0.5	0.25
Conductor-Ø in AWG:	20	24	30

Diameter:	1.6x2.7 mm	1.0x1.7 mm	0.8x1.2 mm
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Insulation: Braided with Fiberglass

Construction: Parallel Conductors

Jacket: Braided with Fiberglass

Temperature Range: up to 400°C, temporarily 500°C



Ordering Code:

L-050 - □ - AWG □
 K 20
 J 24
 L 30

Example:

Thermocouple Wire
 Type: L-050-K-AWG24

Technical Features:

Thermocouple: NiCr/Ni, Type "K", acc. to DIN IEC 584
 Fe/CuNi, Type "J", acc. to DIN IEC 584
 Fe/CuNi, Type "L", acc. to DIN 43710

Tolerance: Acc. to DIN IEC 584/DIN 43710

Colour Coding:	„K“	„J“	„L“
Plus:	green	black	red
Minus:	white	white	blue
Sheath Material:	green	black	blue

Conductors: flexible, 2x0.22 mm²

Diameter: approx. 3.5 mm

Insulation: individually and overall insulated with fiberglass

Construction: Twisted Conductors

Sheath Material: Stainless Steel Braiding

Temperature Range: up to 400°C, temporarily 500°C



Ordering Code:

L-055 - □
 K
 J
 L

Example:

Thermocouple Wire
 Type: L-055-K

Technical Features:

Thermocouple: NiCr/Ni, Type "K", acc. to DIN IEC 584
 Fe/CuNi, Type "J", acc. to DIN IEC 584
 Fe/CuNi, Type "L", acc. to DIN 43710

Tolerance: Acc. to DIN IEC 584/DIN 43710

Colour Coding:	„K“	„J“	„L“
Plus:	green	black	red
Minus:	white	white	blue
Sheath Material:	green	black	blue

Conductors: Solid

Conductor-Ø in mm:	0.8	0.5
Conductor-Ø in AWG:	20	24

Diameter:	Ø 3.4mm	Ø 2.1 mm
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Insulation: Braided with Fiberglass

Construction: Parallel Conductors

Sheath Material: Braided with Fiberglass

Temperature Range: up to 650°C, temporarily 1000°C



Ordering Code:

L-057 - □ - AWG □
 K 20
 J 24
 L

Example:

Thermocouple Wire
 Type: L-057-K-AWG24



Technical Features:

Thermocouple:	NiCr/Ni, Type "K", Fe/CuNi, Type "J", Fe/CuNi, Type "L", Cu/CuNi, Type „T“,	acc. to DIN IEC 584 acc. to DIN IEC 584 acc. to DIN 43710 acc. to IEC 584
Tolerance:	Acc. to DIN IEC 584/DIN 43710	
Colour Coding:	„K“ yellow	„J“ white brown
Plus:		„L“ rot
Minus:	red	red white
Sheath Material:	yellow	black brown
Conductors:	solid, 2 x 0.8	
Insulation:	PVC	
Screen	Aluminium Screen	
Construction:	Twisted Conductors	
Jacket:	PVC	
Conductor quantity:	Please specify	
Temperature Range:	-15°C to 105°C	

Ordering Code:

L-117 - □ - □
2 3
4 6
MA

Example:

Thermocouple Extension Cable
Type: L-117-2-K



Technical Features:

Conductor Material:	Tinned Copper
Colour Coding:	
Pair 1:	white
Pair 2:	red
Sheath Material:	black ① / white ②
Conductors:	flexibel, 4 x 0.22 mm ²
Insulation:	Teflon, FEP
Construction:	Twisted Conductors
Jacket:	Teflon, FEP
Conductor quantity:	Please specify
Diameter	approx. Ø 3.0 mm
Temperature Range:	-60°C to 200°C

Ordering Code:

L-132 - ①
②

Example:

L-132-1

Thermocouple Connectors provide a convenient and secure way of connecting components made of thermocouple material. They can be found anywhere in applications where thermocouples are installed, extended or replaced.

To receive an unaltered signal when measuring temperature with thermocouples, it is important that in the entire chain -from measuring tip to evaluation unit- only thermocouple material is utilized. This applies not only to the use of extension cables but also to every potential connection and transition point. Thermocouple connectors offer the safest connection possible, because at Thermo Sensor, the connector contacts are always made of original thermocouple material. This means the contacts consist of the same material from which the actual thermocouple is manufactured, whereby a distortion of the measurement signal is excluded.

The identification of the connectors is achieved by the different housing colours. The colour is adapted according to the different national and international standards. Furthermore, the housings are marked with the polarity. This identification of polarity, in combination with the contact layout which prevents a reversed polarity, guarantees a safe and proper connection. All other parts which come into contact with thermocouple material (e.g. screws and washers) are made of stainless steel in order to prevent oxidation and thus generating a falsification of the measurement signals.

The connectors' housings are made of various materials according to the working temperature requirements. There are designs available for temperatures of up to 220°C (430°F), up to 320°C (610°F – High-Temp) and up to 450°C (840°F – Ceramic).

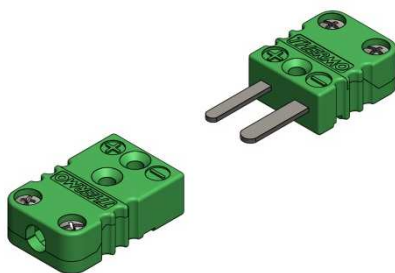
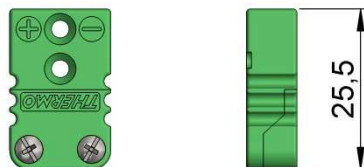
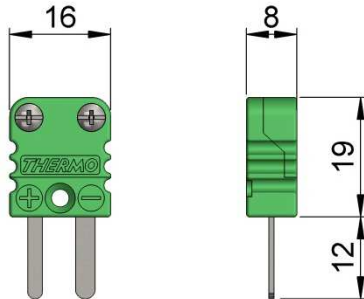
Thermo Sensor offers an extensive program of accessories for connectors, which comprises -for example- strain reliefs for cables, bend protection components and items for securing connections and for fastening connectors.

The following schedule gives an overview about the articles in this catalogue.

For simplifications reasons, thermocouple Connectors are shown in type K. All available types can be found in the technical features.

Bezeichnung	Bauform	Datasheet	Revision
Connectors, up to 220°C	Mini	S – 010	01 – 05/01
Connectors, 3-pole, up to 220°C	Mini	S – 013	01 – 05/01
Connectors, up to 220°C	Std	S – 020	01 – 05/01
Connectors with quick wiring, up to 220°C	Std	S – 021	01 – 10/01
Connectors, 3-pole, up to 220°C	Std	S – 023	01 – 05/01
Connectors, up to 450°C	Std	S – 027	01 – 05/01
Connectors, up to 220°C	Mikro	S – 060	01 – 04/08
Wire clamp bracket	Mini / Std	S – 090	01 – 05/01
Bend protection	Mini / Std	S – 091	03 – 10/01
Neoprene grommet	Mini / Std	S – 092	01 – 05/01
Crimp bushing	Mini / Std / Micro	S – 095	01 – 05/01
Safety Clip	Mini / Std	S – 098	01 – 05/01
Panel-Intert Multiple Circuits	Mini	S – 100	01 – 05/01
Panel Cutouts	Mini	S – 101	01 – 05/01
Connectors for Board mounting, up to 220°C	Mini	S – 110	01 – 05/01
Panel Insert round, up to 220°C	Mini	S – 120	01 – 05/01
Panel Insert round with mountingholes, up to 220°C	Mini	S – 125	01 – 05/01
Panel Insert Basic, up to 220°C	Mini	S – 126	01 – 05/01
Panel Insert squared, up to 220°C	Mini	S – 130	01 – 05/01
Panel Insert squared with mountingholes, bis 220°C	Mini	S – 135	01 – 05/01
Panel Insert with flange, up to 220°C	Mini	S – 140	01 – 05/01
Paneleinsatz rectangular, up to 220°C	Mini	S – 145	01 – 05/01
Paneleinsatz with eye, bis 220°C	Mini	S – 150	01 – 05/01
Brass Nut	Mini	S – 190	01 – 05/01
Assembly Set	Mini	S – 191	01 – 05/01
Spring Clip	Mini	S – 195	01 – 05/01
Panel Insert, Multiple Circuits	Std	S – 200	01 – 05/01
Panel Insert round, up to 220°C	Std	S – 220	01 – 05/01
Panel Insert round with mountingholes, up to 220°C	Std	S – 225	01 – 05/01
Panel Insert Basic, up to 220°C	Std	S – 226	01 – 05/01
Panel Insert squared, up to 220°C	Std	S – 230	01 – 05/01
Panel Insert with mountingholes, up to 220°C	Std	S – 235	01 – 05/01
Panel Insert rectangular (short), up to 220°C	Std	S – 240	01 – 05/01
Panel Insert rectangular (long), up to 220°C	Std	S – 245	01 – 05/01
Panel Insert rectangular with mountingholes, up to 220°C	Std	S – 250	01 – 05/01
Assembly Set Standard	Std	S – 290	01 – 05/01
Assembly Set	Std	S – 291	01 – 05/01
Spring Clip	Std	S – 295	01 – 05/01
Molded Connector	Mini	S – 300	01 – 05/01
Connector for Board mounting, up to 220°C	Micro	S – 610	01 – 05/08
Micro Panel Insert Basic, up to 220°C	Micro	S – 626	01 – 05/08
Micro Panel Insert with Flange, up to 220°C	Micro	S – 640	01 – 05/08

Technical Features:



Thermocouple (①):	Thermocouple	Plus	Minus	Norm
Type K	NiCr	NiAl	IEC 584	
Type J	Fe	CuNi	IEC 584	
Type L	Fe	CuNi	DIN 43710	
Type T	Cu	CuNi	IEC 584	
Type R/S	Cu	Cu11	IEC 584	
Type E	NiCr	CuNi	IEC 584	
Type N	NiCrSi	NiSi	IEC 584	

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
Type K	green	yellow	green	
Type J	black	black	–	
Type L	–	–	blue	
Type T	brown	blue	brown	
Type R/S	orange	green	white	
Type E	violet	violet	–	
Type N	pink	orange	–	

Additional versions on request

Body Material:	break- and hitproof thermoplastic compound												
Operating Temp.:	permanent 200°C, temporarily up to 250°C												
Contacts:	Thermocouple Material, Reverse polarity protected, plugs with solid and coded flat contacts, jacks with springloaded contacts												
Connection:	Stainless Steel screws and stainless steel plates												
Identification:	indicators for polarity molded in body												
Type:	acc. to EN 50212												
Accessories:	<table border="1"> <thead> <tr> <th>Article</th><th>Datasheet</th></tr> </thead> <tbody> <tr> <td>Wire clamp bracket</td><td>S – 090</td></tr> <tr> <td>Bend protection</td><td>S – 091</td></tr> <tr> <td>Neoprene grommet</td><td>S – 092</td></tr> <tr> <td>Crimp bushing</td><td>S – 095</td></tr> <tr> <td>Safety Clip</td><td>S – 098</td></tr> </tbody> </table>	Article	Datasheet	Wire clamp bracket	S – 090	Bend protection	S – 091	Neoprene grommet	S – 092	Crimp bushing	S – 095	Safety Clip	S – 098
Article	Datasheet												
Wire clamp bracket	S – 090												
Bend protection	S – 091												
Neoprene grommet	S – 092												
Crimp bushing	S – 095												
Safety Clip	S – 098												

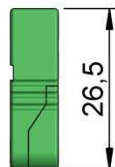
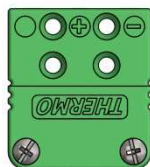
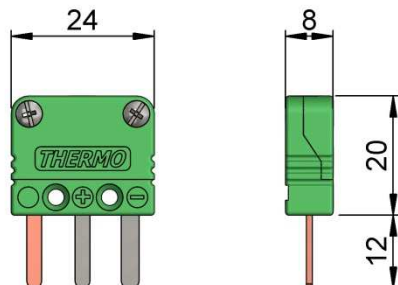
Ordering Code:

Plug: S – 010 – S – ① – ② Jack: S – 010 – K – ① – ②
 ①: Thermocouple (K, J, L, T, R/S, E, N)
 ②: Colour Coding according to IEC, ANSI oder DIN (I, A, D)

Example:

S – 010 – S – T – I: Miniature plug, Thermocouple Type T (Cu-CuNi), brown
 S – 010 – K – N – A: Miniature jack, Thermocouple Type N (NiCrSi-NiSi), orange

Technical Features:



Thermocouple (①):

Thermocouple	Plus	Minus	Norm
Type K	NiCr	NiAl	IEC 584
Type J	Fe	CuNi	IEC 584
Type L	Fe	CuNi	DIN 43710
Type T	Cu	CuNi	IEC 584
Type R/S	Cu	Cu11	IEC 584
Type E	NiCr	CuNi	IEC 584
Type N	NiCrSi	NiSi	IEC 584

Colour Coding (②):

Thermocouple	IEC	ANSI	DIN
Type K	green	yellow	green
Type J	black	black	–
Type L	–	–	blue
Type T	brown	blue	brown
Type R/S	orange	green	white
Type E	violet	violet	–
Type N	pink	orange	–

Additional versions on request

Body Material:

break- and hitproof thermoplastic compound

Operating Temp.:

permanent 200°C, temporarily up to 250°C

Contacts:

Thermocouple Material,
Reverse polarity protected,
plugs with solid and coded flat contacts,
jacks with springloaded contacts

Connection:

Stainless Steel screws and stainless steel plates

Identification:

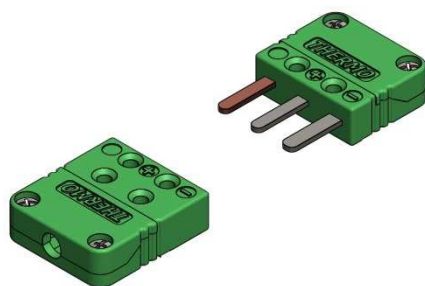
indicators for polarity molded in body

Type:

acc. to EN 50212

Accessories:

Article	Datasheet
Wire clamp bracket	S – 090
Bend protection	S – 091
Neoprene grommet	S – 092
Crimp bushing	S – 095



Ordering Code:

Plug: S – 013– S – ① – ② Jack: S – 013 – K – ① – ②

①: Thermocouple (K, J, L, T, R/S, E, N)

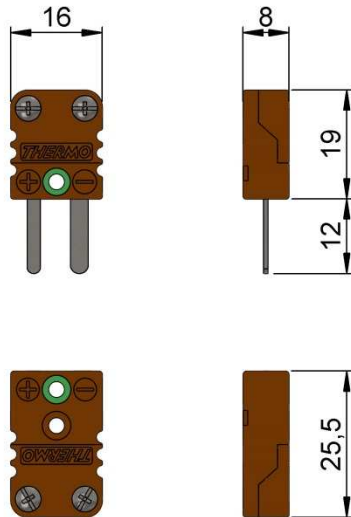
②: Colour Coding according to IEC, ANSI or DIN (I, A, D)

Example:

S – 013 – S – K – D: 3-pole Miniature Plug, Thermocouple Type K (NiCr-NiAl), green

S – 013 – K – J – A: 3-pole Miniature Jack, Thermocouple Type J (Fe-CuNi), black

Technical Features:



Thermocouple (①):

Thermocouple	Plus	Minus	Norm
Type K	NiCr	Ni	IEC 584
Type J	Fe	CuNi	IEC 584
Type L	Fe	CuNi	DIN 43710
Type T	Cu	CuNi	IEC 584
Type R/S	Cu	Cu11	IEC 584
Type E	NiCr	CuNi	IEC 584
Type N	NiCrSi	NiSi	IEC 584

Colour Coding (②):

body colour brown, marked with coloured dot:

Thermocouple	IEC	ANSI	DIN
Type K	green	yellow	green
Type J	black	black	–
Type L	–	–	blue
Type T	brown	blue	brown
Type R/S	orange	green	white
Type E	violet	violet	–
Type N	pink	orange	–

Additional versions on request

Body Material:

Epoxy

Operating Temp.:

permanent 320°C

Contacts:

Thermocouple Material,
Reverse polarity protected,
plugs with solid and coded flat contacts,
jacks with springloaded contacts

Connection:

Stainless Steel screws and stainless steel plates

Identification:

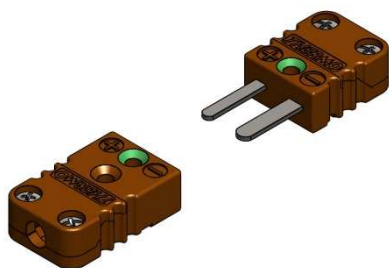
indicators for polarity molded in body

Type:

acc. to EN 50212

Accessories:

Article	Datasheet
Wire clamp bracket	S – 090
Crimp bushing	S – 095



Ordering Code:

Plug: S – 015 – S – ① – ② Jack: S – 015 – K – ① – ②

①: Thermocouple (K, J, L, T, R/S, E, N)

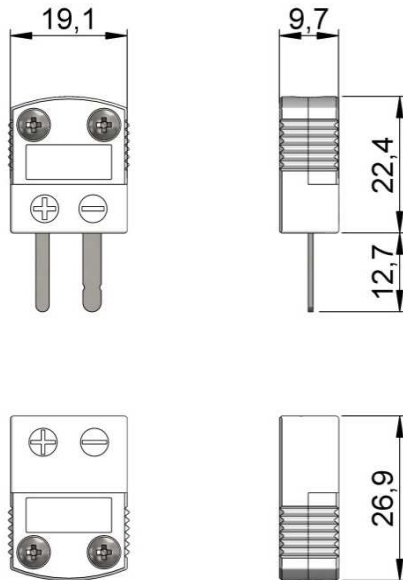
②: Colour Coding according to IEC, ANSI or DIN (I, A, D)

Example:

S – 015 – S – T – I: High Temperature Miniature Plug, Thermocouple Type T (Cu-CuNi), brown

S – 015 – K – N – A: High Temperature Miniature Jack, Thermocouple Type N (NiCrSi-NiSi), orange

Technical Features:



Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	Ni	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type R/S	Cu	Cu11	IEC 584
	Type E	NiCr	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Colour Coding (②): Body colour grey, marked with coloured dot:

Thermocouple	IEC	ANSI	DIN
Type K	green	yellow	green
Type J	black	black	–
Type L	–	–	blue
Type T	brown	blue	brown
Type R/S	orange	green	white
Type E	violet	violet	–
Type N	pink	orange	–

Additional versions or swaged constructions on request

Body material: Ceramic

Operating Temp.: Max. 450°C

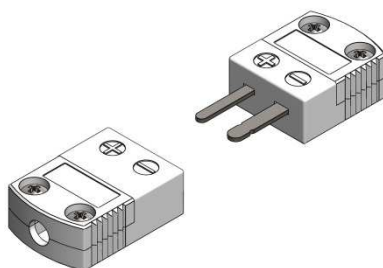
Contacts: Thermocouple Material,
Reverse polarity protected,
plugs with solid and coded flat contacts,
jacks with springloaded contacts

Connection: Stainless Steel screws and stainless steel plates

Identification: indicators for polarity

Type: acc. to EN 50212

Accessories:	Article	Datasheet
	Wire clamp bracket	S – 090
	Crimp bushing	S – 095



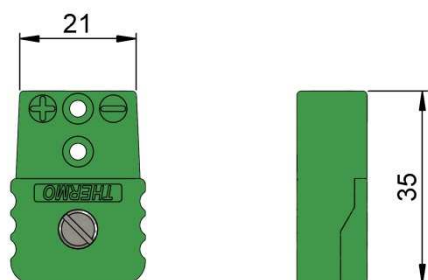
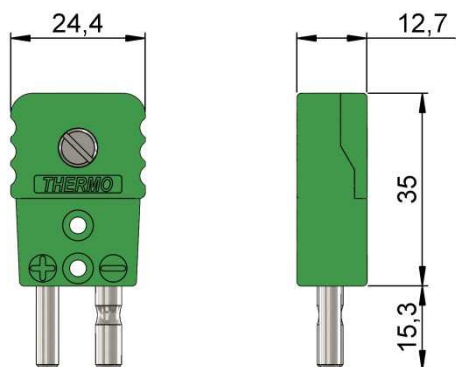
Ordering Code:

Plug: S – 017 – S – ① – ② Jack: S – 017 – K – ① – ②
 ①: Thermocouple (K, J, L, T, R/S, E, N)
 ②: Colour Coding according to IEC, ANSI or DIN (I, A, D)

Example:

S – 017 – S – T – I: Ceramic Miniature Plug, Thermocouple Type T (Cu-CuNi), brown
 S – 017 – K – K – A: Ceramic Miniature Jack, Thermopaar Type K (NiCr-CuNi), yellow

Technical Features:

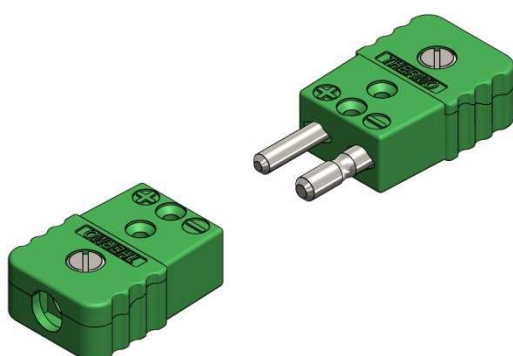


Thermocouple (①):	Thermocouple	Plus	Minus	Norm
Type K	NiCr	NiAl	IEC 584	
Type J	Fe	CuNi	IEC 584	
Type L	Fe	CuNi	DIN 43710	
Type T	Cu	CuNi	IEC 584	
Type R/S	Cu	Cu11	IEC 584	
Type E	NiCr	CuNi	IEC 584	
Type N	NiCrSi	NiSi	IEC 584	

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
Type K	green	yellow	green	
Type J	black	black	–	
Type L	–	–	blue	
Type T	brown	blue	brown	
Type R/S	orange	green	white	
Type E	violet	violet	–	
Type N	pink	orange	–	

Additional versions on request

Body Material:	break- and hitproof thermoplastic compound										
Operating Temp.:	permanent 200°C, temporarily up to 250°C										
Contacts:	Thermocouple Material, Reverse polarity protected, plugs with solid and coded round contacts, jacks with springloaded contacts										
Connection:	Stainless Steel screws and stainless steel plates										
Identification:	indicators for polarity molded in body										
Type:	acc. to EN 50212										
Accessories:	<table border="1"> <thead> <tr> <th>Article</th><th>Datasheet</th></tr> </thead> <tbody> <tr> <td>Wire clamp bracket</td><td>S – 090</td></tr> <tr> <td>Bend protection</td><td>S – 091</td></tr> <tr> <td>Neoprene grommet</td><td>S – 092</td></tr> <tr> <td>Crimp bushing</td><td>S – 095</td></tr> </tbody> </table>	Article	Datasheet	Wire clamp bracket	S – 090	Bend protection	S – 091	Neoprene grommet	S – 092	Crimp bushing	S – 095
Article	Datasheet										
Wire clamp bracket	S – 090										
Bend protection	S – 091										
Neoprene grommet	S – 092										
Crimp bushing	S – 095										



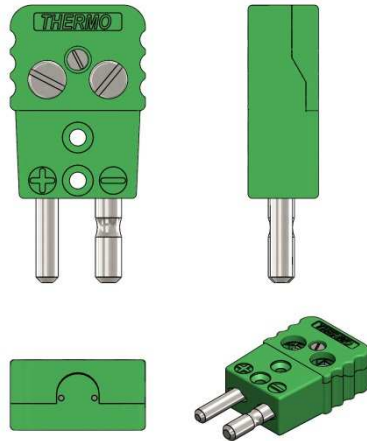
Ordering Code:

Plug: S – 020 – S – ① – ② Jack: S – 020 – K – ① – ②
 ①: Thermocouple (K, J, L, T, R/S, E, N)
 ②: Colour Coding according to IEC, ANSI or DIN (I, A, D)

Example:

S – 020 – S – L – D: Standard Plug, Thermocouple Type L (Fe-CuNi), blue
 S – 020 – K – N – A: Standard Jack, Thermocouple Type N (NiCrSi-NiSi), orange

Technical Features:



Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type R/S	Cu	Cu11	IEC 584
	Type E	NiCr	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
	Type K	green	yellow	green
	Type J	black	black	–
	Type L	–	–	blue
	Type T	brown	blue	brown
	Type R/S	orange	green	white
	Type E	violet	violet	–
	Type N	pink	orange	–

Additional versions on request

Body Material: break- and hitproof thermoplastic compound

Operating Temp.: permanent 200°C, temporarily up to 250°C

Contacts: Thermocouple Material,
Reverse polarity protected,
plugs with solid and coded round contacts,
jacks with springloaded contacts

Connection: Stainless Steel screws and stainless steel plates
Insertion and fixing of the wires possible with
screwed cover.

Identification: indicators for polarity molded in body

Type: acc. to EN 50212

Accessories:	Article	Datasheet
	Wire clamp bracket	S – 090

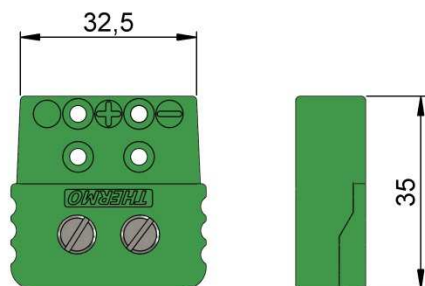
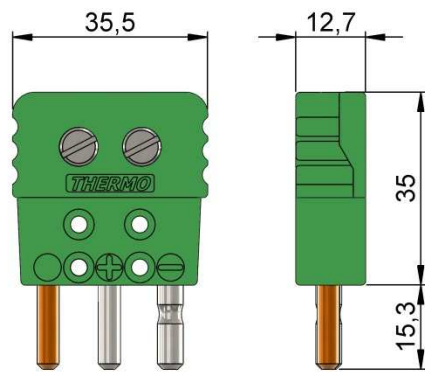
Ordering Code:

Plug: S – 021 – S – ① – ② Jack: S – 021 – K – ① – ②
 ①: Thermocouple (K, J, L, T, R/S, E, N)
 ②: Colour Coding according to IEC, ANSI or DIN (I, A, D)

Example:

S – 021 – S – L – D: Standard Plug, Thermocouple Type L (Fe-CuNi), blue
 S – 021 – K – N – A: Standard Jack, Thermocouple Type N (NiCrSi-NiSi), orange

Technical Features:



Thermocouple (①):

Thermocouple	Plus	Minus	Norm
Type K	NiCr	NiAl	IEC 584
Type J	Fe	CuNi	IEC 584
Type L	Fe	CuNi	DIN 43710
Type T	Cu	CuNi	IEC 584
Type R/S	Cu	Cu11	IEC 584
Type E	NiCr	CuNi	IEC 584
Type N	NiCrSi	NiSi	IEC 584

Colour Coding (②):

Thermocouple	IEC	ANSI	DIN
Type K	green	yellow	green
Type J	black	black	–
Type L	–	–	blue
Type T	brown	blue	brown
Type R/S	orange	green	white
Type E	violet	violet	–
Type N	pink	orange	–

Additional versions on request

Body Material:

break- and hitproof thermoplastic compound

Operating Temp.:

permanent 200°C, temporarily up to 250°C

Contacts:

Thermocouple Material,
Reverse polarity protected,
plugs with solid and coded round contacts,
jacks with springloaded contacts

Connection:

Stainless Steel screws and stainless steel plates

Identification:

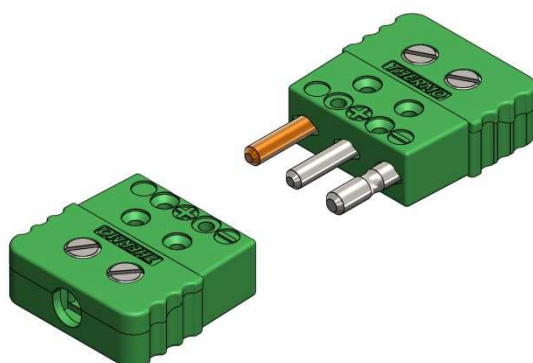
indicators for polarity molded in body

Type:

acc. to EN 50212

Accessories:

Article	Datasheet
Wire clamp bracket	S – 090
Bend protection	S – 091
Neoprene grommet	S – 092
Crimp bushing	S – 095



Ordering Code:

Plug: S – 023– S – ① – ② Jack: S – 023 – K – ① – ②

①: Thermocouple (K, J, L, T, R/S, E, N)

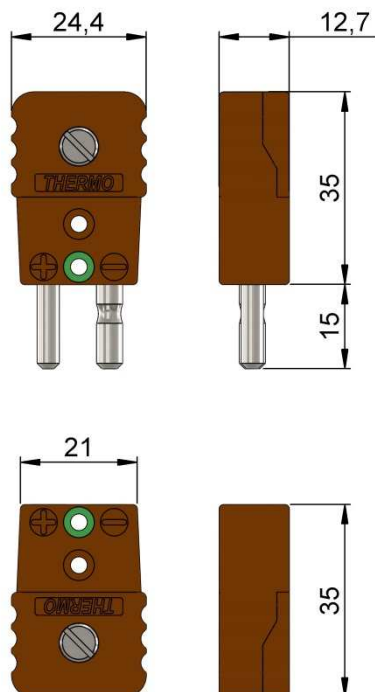
②: Colour Code according to IEC, ANSI or DIN (I, A, D)

Example:

S – 023 – S – K – D: 3-pin Standard Plug, Thermocouple Type K (NiCr-NiAl), green

S – 023 – K – J – A: 3-pin Standard Jack, Thermocouple Type J (Fe-CuNi), black

Technical Features:



Thermocouple (①):

Thermocouple	Plus	Minus	Norm
Type K	NiCr	NiAl	IEC 584
Type J	Fe	CuNi	IEC 584
Type L	Fe	CuNi	DIN 43710
Type T	Cu	CuNi	IEC 584
Type R/S	Cu	Cu11	IEC 584
Type E	NiCr	CuNi	IEC 584
Type N	NiCrSi	NiSi	IEC 584

Colour Coding (②):

body colour brown marked with coloured dot:

Thermocouple	IEC	ANSI	DIN
Type K	green	yellow	green
Type J	black	black	–
Type L	–	–	blue
Type T	brown	blue	brown
Type R/S	orange	green	white
Type E	violet	violet	–
Type N	pink	orange	–

Additional versions on request

Body Material:

Epoxy

Operating Temp.:

permanent 320°C

Contacts:

Thermocouple Material,
Reverse polarity protected,
plugs with solid and coded round contacts,
jacks with springloaded contacts

Connection:

Stainless Steel screws and stainless steel plates

Identification:

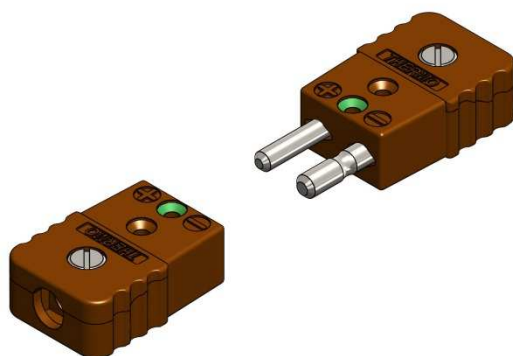
indicators for polarity molded in body

Type:

acc. to EN 50212

Accessories:

Article	Datasheet
Wire clamp bracket	S – 090
Crimp bushing	S – 095



Ordering Code:

Plug: S – 025 – S – ① – ② Jack: S – 025 – K – ① – ②

①: Thermocouple (K, J, L, T, R/S, E, N)

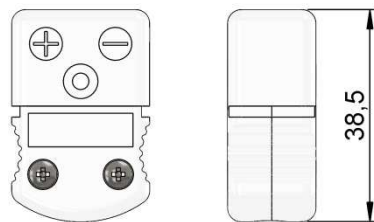
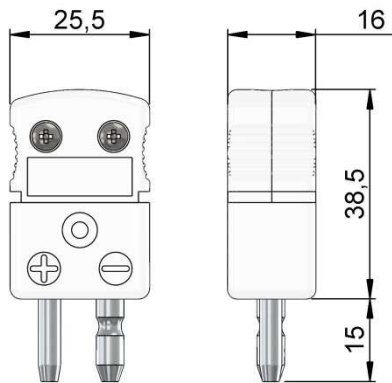
②: Colour Coding according to IEC, ANSI or DIN (I, A, D)

Example:

S – 025 – S – E – I: High Temperature Standard Plug, Thermopcouple Type E (NiCr-CuNi), violet

S – 025 – K – J – I: High Temperature Standard Jack, Thermopcouple Type J (Fe-CuNi), black

Technical Features:



Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type R/S	Cu	Cu11	IEC 584
	Type E	NiCr	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Colour Coding (②): body colour grey, marked with coloured dot:

Thermocouple	IEC	ANSI	DIN
Type K	green	yellow	green
Type J	black	black	–
Type L	–	–	blue
Type T	brown	blue	brown
Type R/S	orange	green	white
Type E	violet	violet	–
Type N	pink	orange	–

Additional versions on request

Body Material: ceramic

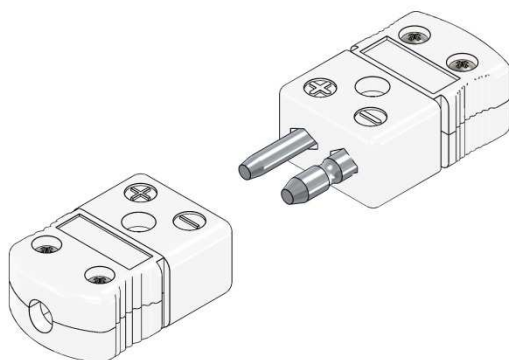
Max. Operating Temp.: 450°C

Contacts: Thermocouple Material,
Reverse polarity protected,
plugs with solid and coded round contacts,
jacks with springloaded contacts

Connection: Stainless Steel screws and stainless steel plates

Identification: indicators for polarity

Type: acc. to EN 50212

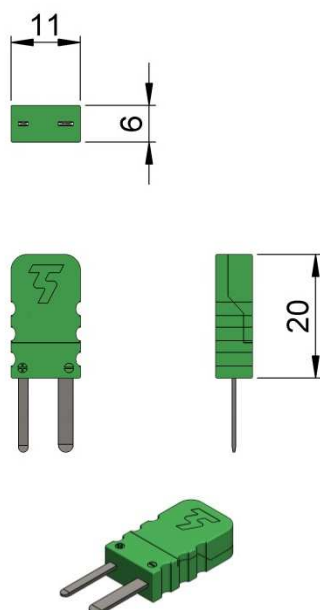


Ordering Code:

Plug: S – 027 – S – ① – ② Jack: S – 027 – K – ① – ②
①: Thermocouple (K, J, L, T, R/S, E, N)
②: Colour Coding acc. IEC, ANSI or DIN (I, A, D)

Example:

S – 027 – S – T – I: Ceramic High Temperature Standard Plug, Thermopcouple Type T (Cu-CuNi), brown
S – 027 – K – K – A: Ceramic High Temperature Standard Jack, Thermopcouple Type K (NiCr-NiAl), yellow



Technical Features:

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
Type K		NiCr	NiAl	IEC 584

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
Type K		green	yellow	green

Additional versions on request

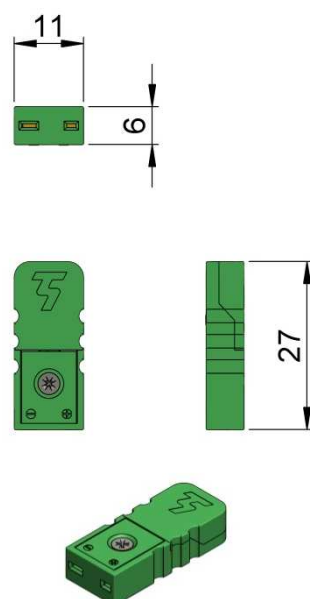
Body Material: break- and hitproof thermoplastic compound

Operating Temp.: permanent 200°C, temporarily up to 250°C

Contacts: Thermocouple Material,
Reverse polarity protected,
plugs with solid and coded flat contacts
jacks with springloaded contacts

Connection: Stainless Steel screws and stainless steel plates

Identification: indicators for polarity molded in body



Ordering Code:

Plug: S – 060 – S – ① – ② Jack: S – 060 – K – ① – ②

①: Thermocouple (K)

②: Colour Coding acc. IEC, ANSI or DIN (I, A, D)

Example:

S – 060 – S – K – I: Micro Plug, Thermocouple Typ K (NiCr-Ni), green

S – 060 – K – K – I: Micro Jack, Thermocouple Typ K (NiCr-Ni), green

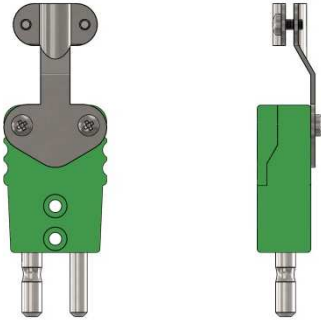
Technical Features:

Type: for Standard Plugs and Jacks

Material: Stainless Steel

Projection after assembly measured from rear edge of connector: 27 mm

Screws for assembly are contained within delivery.

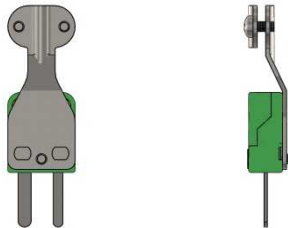


Type: for Miniature Plugs and Jacks

Material: Stainless Steel

Projection after assembly measured from rear edge of connector: 16 mm

Screws for assembly are contained within delivery.



Ordering Code:

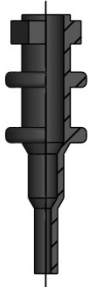
S – 090 – ①

①: S for Standard, M for Miniature

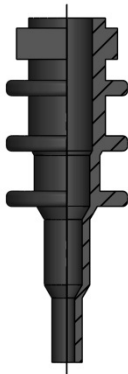
Example:

S – 090 – S Wire Clamp Bracket in Standard Design

Technical Features:



Type:	for Miniature-Plugs and -Jacks
Material:	TPE
Operating Temp.:	approx. 90°C
Hexagon:	6 mm
Inner Diameter:	By cutting the Bend Protection internal diameters of 3.2 mm, 2.2 mm and 1.0 mm are feasible.
Application:	Bend protection of Thermocouples, Wires and Connection Wires.



Type:	for Standard-Plugs and -Jacks
Material:	TPE
Operating Temp.:	approx. 90°C
Square:	10 mm
Inner diameter:	By cutting the Bend Protection internal diameters of 5.0 mm, 4.5 mm, 3.0 mm and 1.5 mm are feasible.
Application:	Bend protection of Thermocouples, Wires and Connection Wires.

Ordering Code:

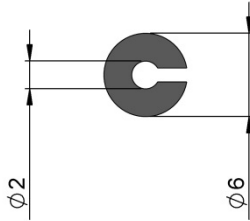
S – 091 – ①

①: S for Standard; M for Miniature

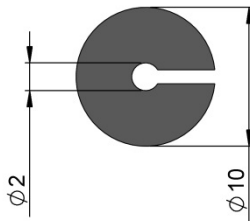
Example:

S – 091 – M Miniature-Bend Protection

Technical Features:



Type: for Miniature-Plugs and -Jacks
Material: Neoprene
Application: Strain-relief of Mineral-Insulated-Cables, Thermocouples and Connection wires.



Type: for Standard-Plugs and -Jacks
Material: Neoprene
Application: Strain-relief of Mineral-Insulated-Cables, Thermocouples and Connection wires.

Ordering Code:

S – 092 – ①

①: S for Standard; M for Miniature

Example:

S – 092 – M Miniature-Neopren-Grommet

Technical Features:



Type: for Miniature-Plugs and -Jacks

Material: Brass, MS 58

Hexagon: 6 mm

Application: Strain-relief of Mineral-Insulated-Cables, Thermocouples and Connection wires.

Typical Diameters: 1.1 mm, 1.7 mm, 2.1 mm, 3.1 mm, 3.3 mm, 3.5 mm, 4.0 mm, 5.2 mm

Additional versions on request



Type: for Standard-Plugs and -Jacks

Material: Brass, MS 58

Square: 10 mm

Application: Strain-relief of Mineral-Insulated-Cable, Thermocouples and Connection wires.

Typical Diameters: 1.1 mm, 1.7 mm, 2.1 mm, 3.1 mm, 3.3 mm, 3.5 mm, 4.0 mm, 5.2 mm

Additional versions on request



Type: for Micro-Plugs and -Jacks

Material: Brass, MS 58

Hexagon: 5 mm

Application: Strain-relief of Mineral-Insulated-Cable, Thermocouples and Connection wires.

Typical Diameters:: 1.1 mm, 1.7 mm, 2.1 mm, 3.1 mm

Additional versions on request

Ordering Code:

S – 095 – ① – ②

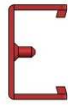
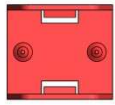
①: "S" for Standard; "M" for Miniature; „Micro" for Micro

②: Drilling Hole

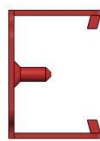
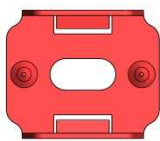
Example:

S – 095 – Micro – 2.1: Micro-Crimp Bushing with drilling hole Ø2.1 mm

Technical Features:



Type:	for Miniature-Plugs and -Jacks
Material:	break- and hitproof thermoplastic compound
Application:	Protection of Plug-Jacket-Connections



Type:	for Standard-Plugs and -Jacks
Material:	break- and hitproof thermoplastic compound
Application:	Protection of Plug-Jacket-Connections

Ordering Code:

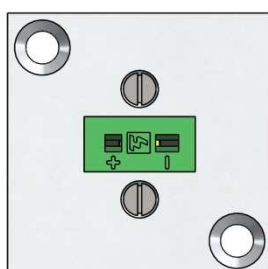
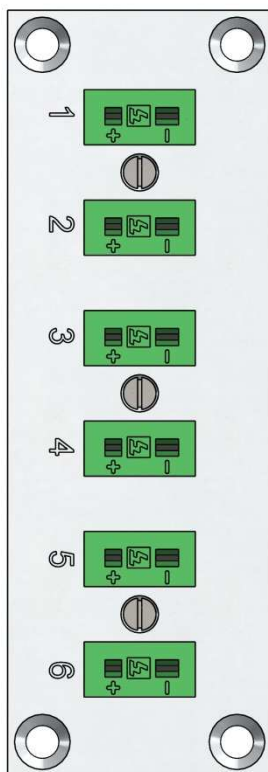
S – 098 – ①

①: S for Standard; M for Miniature

Example:

S – 098 – S Standard-Safety-Clip

Technical Features:



Thermocouple (②):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type R/S	Cu	Cu11	IEC 584
	Type E	NiCr	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Colour Coding (③):	Thermocouple	IEC	ANSI	DIN
	Type K	green	yellow	green
	Type J	black	black	–
	Type L	–	–	blue
	Type T	brown	blue	brown
	Type R/S	orange	green	white
	Type E	violet	violet	–
	Type N	pink	orange	–

Additional versions on request

Body Material:	break- and hitproof thermoplastic compound
Panel Material:	Aluminium, anodized, thickness 2.5 mm
Operating Temp.:	permanent 200°C, temporarily up to 250°C
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts
Connection:	Stainless Steel screws and stainless steel plates
Identification:	Indicators for polarity molded in body
Type:	acc. to to EN 50212

Dimensions: (①)	1-circuit Panel:	38 x 38 mm
	6-circuits Panel:	111 x 38 mm
	12-circuits Panel:	206 x 38 mm
	18-circuits Panel:	302 x 38 mm
	24-circuits Panel:	206 x 76 mm

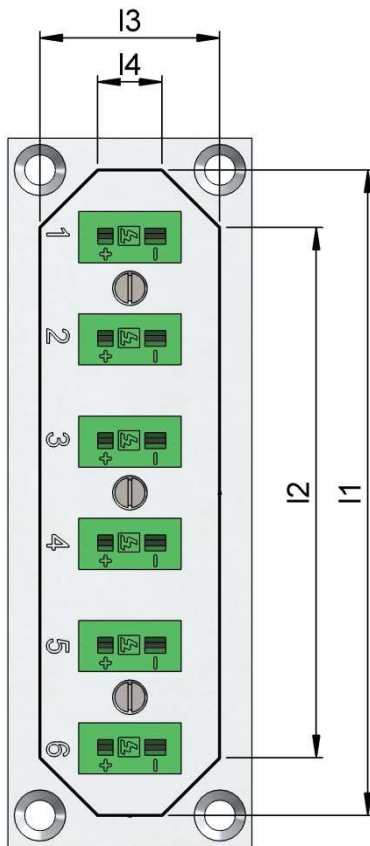
Ordering Code:

S – 100 – S – ① – ② – ③

- ①: Dimensions
- ②: Thermocouple (K, J, L, T, R/S, E, N)
- ③: Colour Coding acc. to IEC, ANSI or DIN (I, A, D)

Example:

S – 100 – S – 06 – S – I: Miniature-Panel, 6-circuit, Thermocouple Type S (Cu-Cu11), orange

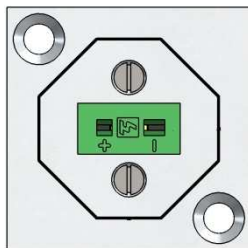


Miniature:

	Height	Width	I1	I2	I3	I4
1- circuit	38 mm	38 mm	28 mm	10 mm	28 mm	10 mm
6- circuits	38 mm	111 mm	101 mm	83 mm	28 mm	10 mm
12- circuits	38 mm	206 mm	196 mm	178 mm	28 mm	10 mm
18- circuits	38 mm	302 mm	292 mm	274 mm	28 mm	10 mm
24- circuits	76 mm	206 mm	196 mm	178 mm	66 mm	48 mm

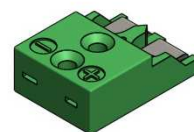
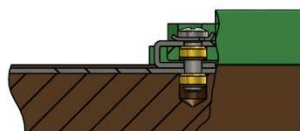
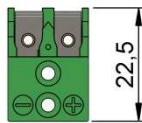
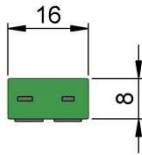
Standard:

	Height	Width	I1	I2	I3	I4
1- circuit	38 mm	38 mm	28 mm	10 mm	28 mm	10 mm
6- circuits	67 mm	146 mm	126 mm	109 mm	47 mm	30 mm
12- circuits	67 mm	260 mm	240 mm	223 mm	47 mm	30 mm
24- circuits	115 mm	260 mm	240 mm	223 mm	95 mm	78 mm
30- circuits	115 mm	375 mm	355 mm	338 mm	95 mm	78 mm



Technical Features:

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
Type K		NiCr	NiAl	IEC 584
Cu-Cu		Cu	Cu	–
Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
Type K		green	yellow	green
Cu-Cu		–	–	white
Body Material:	break- and hitproof thermoplastic compound			
Operating Temp.:	permanent 200°C, temporarily up to 250°C			
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts			
Connection:	Stainless Steel screws and stainless steel plates			
Identification:	indicators for polarity molded in body			
Type:	acc. to EN 50212			
Fastening:	by means of screws			



Ordering Code:

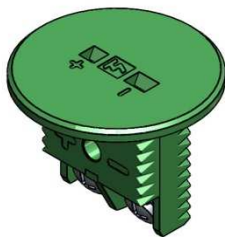
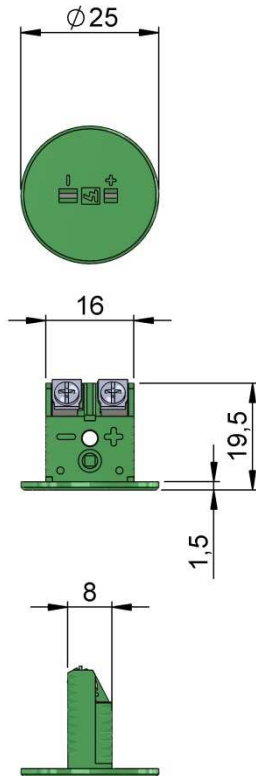
S – 110 – ① – ②

- ①: Thermocouple (K) or Contactmaterial (Cu)
②: Colour Coding acc. to IEC, ANSI or DIN (I, A, D) or „white“

Example:

S – 110 – Cu – white: Miniature-Connector, Copper Contacts, white

Technical Features:



Thermocouple (①):	Thermocouple	Plus	Minus	Norm
Type K	NiCr	NiAl	IEC 584	
Type J	Fe	CuNi	IEC 584	
Type L	Fe	CuNi	DIN 43710	
Type T	Cu	CuNi	IEC 584	
Type R/S	Cu	Cu11	IEC 584	
Type E	NiCr	CuNi	IEC 584	
Type N	NiCrSi	NiSi	IEC 584	

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
Type K	green	yellow	green	
Type J	black	black	–	
Type L	–	–	blue	
Type T	brown	blue	brown	
Type R/S	orange	green	white	
Type E	violet	violet	–	
Type N	pink	orange	–	

Additional versions on request

Body Material:	break- and hitproof thermoplastic compound
Operating Temp.:	permanent 200°C, temporarily up to 250°C
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts
Connection:	Stainless Steel screws and stainless steel plates
Identification:	indicators for polarity molded in body
Type:	acc. to EN 50212
Fastening:	round brass nut or stainless steel clip on rear side
Panel Cutout:	16.5 x 8.5 mm

Accessories:	Article	Datasheet
	Brass Nut	S – 190
	Spring Set	S – 195

Ordering Code:

S – 120 – ① – ②

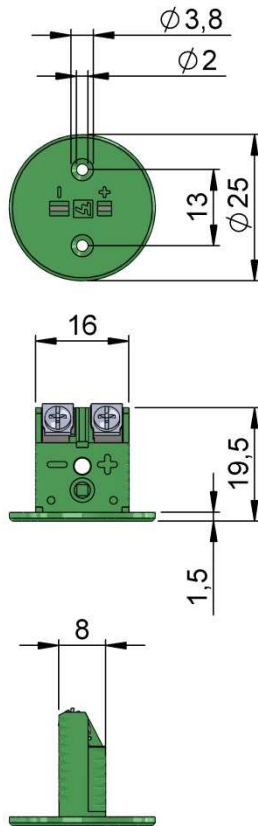
①: Thermocouple (K, J, L, T, R/S, E, N)

②: Colour Coding acc. to IEC, ANSI or DIN (I, A, D)

Example:

S – 120 – K – I: Miniature Panel-Insert, Thermocouple Type K (NiCr-NiAl), green

Technical Features:

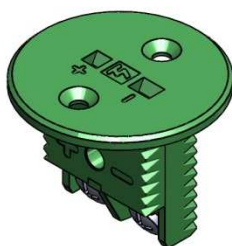


Thermocouple (①):	Thermocouple	Plus	Minus	Norm
Type K	NiCr	NiAl	IEC 584	
Type J	Fe	CuNi	IEC 584	
Type L	Fe	CuNi	DIN 43710	
Type T	Cu	CuNi	IEC 584	
Type R/S	Cu	Cu11	IEC 584	
Type E	NiCr	CuNi	IEC 584	
Type N	NiCrSi	NiSi	IEC 584	

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
	Type K	green	yellow	green
	Type J	black	black	—
	Type L	—	—	blue
	Type T	brown	blue	brown
	Type R/S	orange	green	white
	Type E	violet	violet	—
	Type N	pink	orange	—

Additional versions on request

Body Material:	break- and hitproof thermoplastic compound
Operating Temp.:	permanent 200°C, temporarily up to 250°C
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts
Connection:	Stainless Steel screws and stainless steel plates
Identification:	indicators for polarity molded in body
Type:	acc. to EN 50212
Fastening:	screw on front side
Panel Cutout:	16.5 x 8.5 mm



Ordering Code:

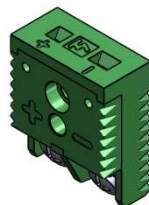
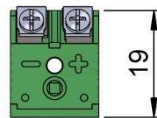
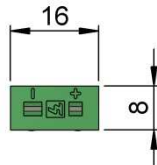
S – 125 – ① – ②

- ①: Thermocouple (K, J, L, T, R/S, E, N)
②: Colour Coding acc. to IEC, ANSI or DIN (I, A, D)

Example:

S – 125 – K – I: Miniature Panel-Insert, Thermocouple Type K (NiCr-NiAl), green

Technical Features:



Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type R/S	Cu	Cu11	IEC 584
	Type E	NiCr	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
	Type K	green	yellow	green
	Type J	black	black	–
	Type L	–	–	blue
	Type T	brown	blue	brown
	Type R/S	orange	green	white
	Type E	violet	violet	–
	Type N	pink	orange	–

Additional versions on request

Body Material:	break- and hitproof thermoplastic compound				
Operating Temp.:	permanent 200°C, temporarily up to 250°C				
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts				
Connection:	Stainless Steel screws and stainless steel plates				
Identification:	indicators for polarity molded in body				
Type:	acc. to EN 50212				
Fastening:	assembly set				
Panel Cutout:	16.5 x 8.5 mm				
Accessories:	<table border="1"> <thead> <tr> <th>Article</th><th>Datasheet</th></tr> </thead> <tbody> <tr> <td>assembly set</td><td>S – 191</td></tr> </tbody> </table>	Article	Datasheet	assembly set	S – 191
Article	Datasheet				
assembly set	S – 191				

Ordering Code:

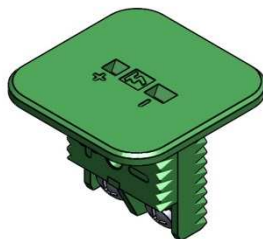
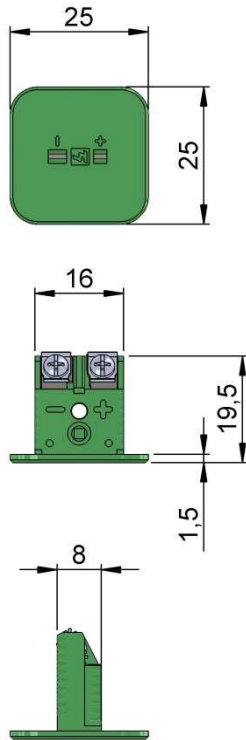
S – 126 – ① – ②

- ①: Thermocouple (K, J, L, T, R/S, E, N)
②: Colour Coding acc. to IEC, ANSI or DIN (I, A, D)

Example:

S – 126 – K – I: Miniature Panel-Insert, Thermocouple Type K (NiCr-NiAl), green

Technical Features:



Thermocouple (①):	Thermocouple	Plus	Minus	Norm
Type K	NiCr	NiAl	IEC 584	
Type J	Fe	CuNi	IEC 584	
Type L	Fe	CuNi	DIN 43710	
Type T	Cu	CuNi	IEC 584	
Type R/S	Cu	Cu11	IEC 584	
Type E	NiCr	CuNi	IEC 584	
Type N	NiCrSi	NiSi	IEC 584	

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
Type K	green	yellow	green	
Type J	black	black	–	
Type L	–	–	blue	
Type T	brown	blue	brown	
Type R/S	orange	green	white	
Type E	violet	violet	–	
Type N	pink	orange	–	

Additional versions on request

Body Material:	break- and hitproof thermoplastic compound
Operating Temp.:	permanent 200°C, temporarily up to 250°C
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts
Connection:	Stainless Steel screws and stainless steel plates
Identification:	indicators for polarity molded in body
Type:	acc. to EN 50212
Fastening:	round brass nut or stainless steel clip on rear side
Panel Cutout:	16.5 x 8.5 mm

Accessories:	Article	Datasheet
	Brass Nut	S – 190
	Spring Set	S – 195

Ordering Code:

S – 130 – ① – ②

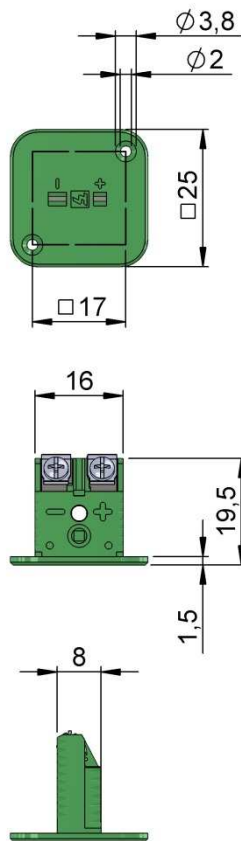
①: Thermocouple (K, J, L, T, R/S, E, N)

②: Colour Coding acc. to IEC, ANSI or DIN (I, A, D)

Example:

S – 130 – L – D: Miniature Panel Insert, Thermocouple Typ L (Fe-CuNi), blue

Technical Features:

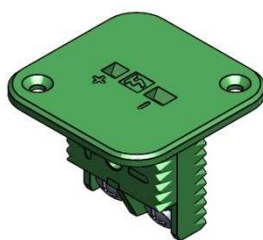


Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type R/S	Cu	Cu11	IEC 584
	Type E	NiCr	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
	Type K	green	yellow	green
	Type J	black	black	–
	Type L	–	–	blue
	Type T	brown	blue	brown
	Type R/S	orange	green	white
	Type E	violet	violet	–
	Type N	pink	orange	–

Additional versions on request

Body Material:	break- and hitproof thermoplastic compound
Operating Temp.:	permanent 200°C, temporarily up to 250°C
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts
Connection:	Stainless Steel screws and stainless steel plates
Identification:	indicators for polarity molded in body
Type:	acc. to EN 50212
Fastening:	screws on front side
Panel Cutout:	16.5 x 8.5 mm



Ordering Code:

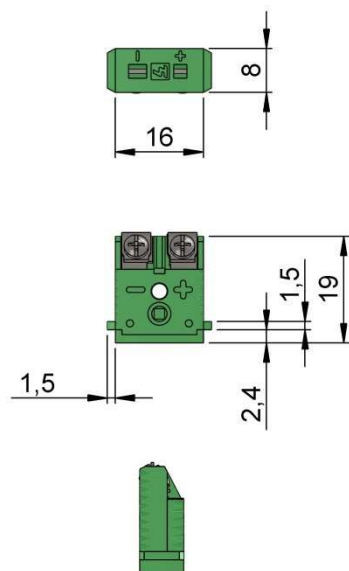
S – 135 – ① – ②

- ①: Thermocouple (K, J, L, T, R/S, E, N)
②: Colour Coding acc. to IEC, ANSI or DIN (I, A, D)

Example:

S – 135 – J – I: Miniature Panel Insert, Thermocouple Type J (Fe-CuNi), black

Technical Features:



Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type R/S	Cu	Cu11	IEC 584
	Type E	NiCr	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
	Type K	green	yellow	green
	Type J	black	black	–
	Type L	–	–	blue
	Type T	brown	blue	brown
	Type R/S	orange	green	white
	Type E	violet	violet	–
	Type N	pink	orange	–

Additional versions on request

Body Material: break- and hitproof thermoplastic compound

Operating Temp.: permanent 200°C, temporarily up to 250°C

Contacts: Thermocouple Material,
Reverse polarity protected,
with springloaded contacts

Connection: Stainless Steel screws and stainless steel plates

Identification: indicators for polarity molded in body

Type: acc. to EN 50212

Panel Cutout: 16.5 x 8.5 mm

Accessories:	Article	Datasheet
	Assembly Set	S – 191



Ordering Code:

S – 140 – ① – ②

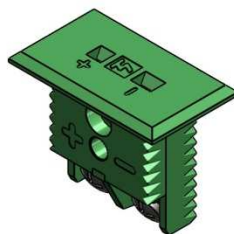
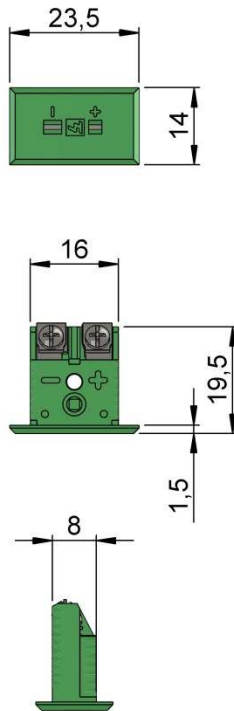
①: Thermocouple (K, J, L, T, R/S, E, N)

②: Colour Coding acc. to IEC, ANSI or DIN (I, A, D)

Example:

S – 140 – S – I: Miniature Panel Insert, Thermocouple Type S (Cu-Cu11), orange

Technical Features:



Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type R/S	Cu	Cu11	IEC 584
	Type E	NiCr	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
	Type K	green	yellow	green
	Type J	black	black	–
	Type L	–	–	blue
	Type T	brown	blue	brown
	Type R/S	orange	green	white
	Type E	violet	violet	–
	Type N	pink	orange	–

Additional versions on request

Body Material:	break- and hitproof thermoplastic compound
Operating Temp.:	permanent 200°C, temporarily up to 250°C
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts
Connection:	Stainless Steel screws and stainless steel plates
Identification:	indicators for polarity molded in body
Type:	acc. to EN 50212
Fastening:	round brass nut or stainless steel clip
Panel Cutout:	16.5 x 8.5 mm

Accessories:	Article	Datasheet
	Brass Nut	S – 190
	Spring Set	S – 195

Ordering Code:

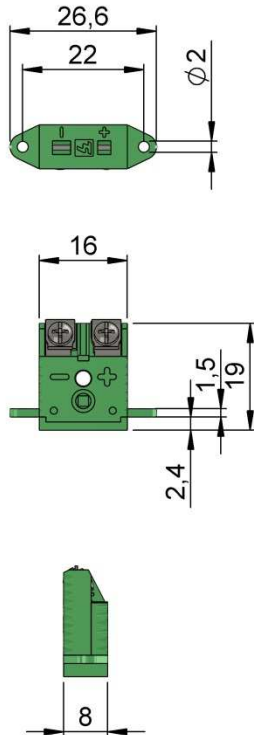
S – 145 – ① – ②

- ①: Thermocouple (K, J, L, T, R/S, E, N)
②: Colour Coding acc. to IEC, ANSI or DIN (I, A, D)

Example:

S – 145 – N – I: Miniature Panel Insert, Thermocouple Type N (NiCrSi-NiCr), pink

Technical Features:



Thermocouple (①):	Thermocouple	Plus	Minus	Norm
Type K	NiCr	NiAl	IEC 584	
Type J	Fe	CuNi	IEC 584	
Type L	Fe	CuNi	DIN 43710	
Type T	Cu	CuNi	IEC 584	
Type R/S	Cu	Cu11	IEC 584	
Type E	NiCr	CuNi	IEC 584	
Type N	NiCrSi	NiSi	IEC 584	

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
Type K	green	yellow	green	
Type J	black	black	–	
Type L	–	–	blue	
Type T	brown	blue	brown	
Type R/S	orange	green	white	
Type E	violet	violet	–	
Type N	pink	orange	–	

Additional versions on request

Body Material:	break- and hitproof thermoplastic compound
Operating Temp.:	permanent 200°C, temporarily up to 250°C
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts
Connection:	Stainless Steel screws and stainless steel plates
Identification:	indicators for polarity molded in body
Type:	acc. to EN 50212
Fastening:	screws on front side
Panel Cutout:	16.5 x 8.5 mm



Ordering Code:

S – 150 – ① – ②

- ①: Thermocouple (K, J, L, T, R/S, E, N)
②: Colour Coding acc. to IEC, ANSI or DIN (I, A, D)

Example:

S – 150 – S – I: Miniature Panel Insert, Thermocouple Type S (Cu-Cu11), orange

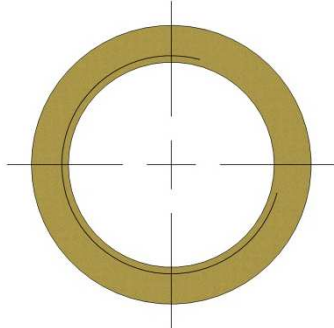
Brass Nut

for Thermocouple Panel Inserts in Miniature Design

S – 190
Rev. 01 – 05/01
1 / 1

Technical Features:

Usage:	For backside mounting of Miniature Panel Inserts acc. to Datasheet S-120, S-125, S-130, S-135 and S-145
Material:	Brass
Thread:	M18 x 1.5
Steel Sheet Thickness:	Please specify



Ordering Code:

S – 190

Technical Features:

Usage: For fastening Miniature Panels Inserts acc. to Datasheets S-126 and S-140



Depending on the number of Panel Inserts, the number of Blocks and Screws and the length of the Rod must be calculated.

The following table shows the combinations for the different multiple measuring circuits acc. to Datasheet S-100

Type	Blocks (①)	Rod (②)
S-100-S-01-...	2 Piece	1 Piece (30 mm)
S-100-S-06-...	3 Pieces	1 Piece (95 mm)
S-100-S-12-...	6 Pieces	1 Piece (190 mm)
S-100-S-18-...	9 Pieces	1 Piece (285 mm)
S-100-S-24-...	12 Pieces	2 Pieces (190 mm each)

Material: Brass, Stainless Steel

Steel Sheat Thickness: 2.5 mm

Ordering Code:

S – 191 – ① – ②

①: Number of Blocks

②: Number and length of rods

Example:

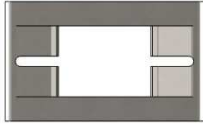
S – 191 – 9 – 1x285: Assembly Set for 18 circuit Miniature Panel Insert

Technical Features:

Utilization: For backside assembly of Miniature Panel Inserts
acc. to Datasheet S-120, S-130 and S-145

Material: Stainless Steel

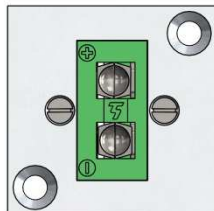
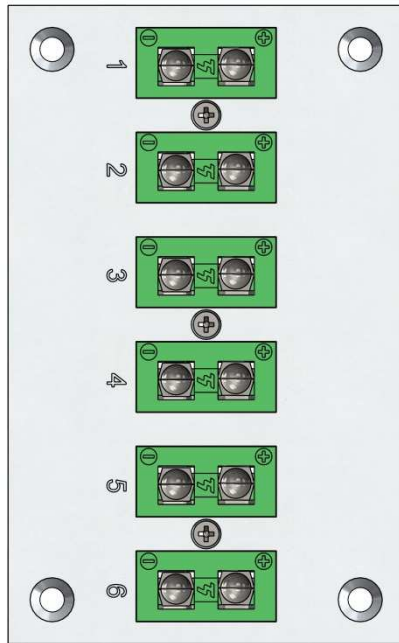
Steel Sheet Thickness: 2.5 mm



Ordering Code:

S – 195

Technical Features:



Thermocouple (②):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type R/S	Cu	Cu11	IEC 584
	Type E	NiCr	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Colour Coding (③):	Thermocouple	IEC	ANSI	DIN
	Type K	green	yellow	green
	Type J	black	black	—
	Type L	—	—	blue
	Type T	brown	blue	brown
	Type R/S	orange	green	white
	Type E	violet	violet	—
	Type N	pink	orange	—

Additional versions on request

Body Material:	break- and hitproof thermoplastic compound
Panel Material:	Aluminium, anodized, thickness 2.5 mm
Operating Temp.:	permanent 200°C, temporarily up to 250°C
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts
Connection:	Stainless Steel screws and stainless steel plates
Identification:	indicators for polarity molded in body
Type:	acc. to EN 50212
Measures (①)	1-circuit Panel: 38 x 38 mm 6-circuits Panel: 146 x 67 mm 12-circuits Panel: 260 x 67 mm 24-circuits Panel: 260 x 115 mm 30-circuits Panel: 375 x 115 mm

Ordering Code:

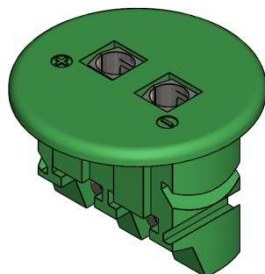
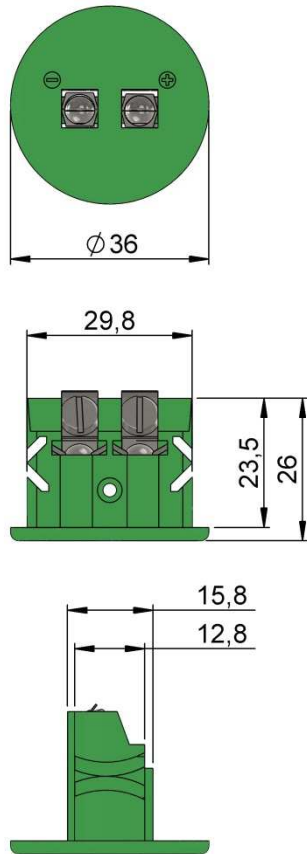
S – 200 – S – ① – ② – ③

- ①: Dimensions
- ②: Thermocouple (K, J, L, T, R/S, E, N)
- ③: Colour Coding acc. to IEC, ANSI or DIN (I, A, D)

Example:

S – 200 – S – 01 – J – I: Standard-Panel-Insert, Thermocouple Type J (Fe-CuNi), black

Technical Features:



Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type R/S	Cu	Cu11	IEC 584
	Type E	NiCr	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
	Type K	green	yellow	green
	Type J	black	black	–
	Type L	–	–	blue
	Type T	brown	blue	brown
	Type R/S	orange	green	white
	Type E	violet	violet	–
	Type N	pink	orange	–

Additional versions on request

Body Material:	break- and hitproof thermoplastic compound						
Operating Temp.:	permanent 200°C, temporarily up to 250°C						
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts						
Connection:	Stainless Steel screws and stainless steel plates						
Identification:	indicators for polarity molded in body						
Type:	acc. to EN 50212						
Fastening:	assembly set or stainless steel clip						
Panel Cutout:	30 x 16 mm or 30 mm round						
Accessories:	<table border="1"> <thead> <tr> <th>Article</th><th>Datasheet</th></tr> </thead> <tbody> <tr> <td>Assembly set</td><td>S – 290</td></tr> <tr> <td>Spring Set</td><td>S – 295</td></tr> </tbody> </table>	Article	Datasheet	Assembly set	S – 290	Spring Set	S – 295
Article	Datasheet						
Assembly set	S – 290						
Spring Set	S – 295						

Ordering Code:

S – 220 – ① – ②

- ①: Thermocouple (K, J, L, T, R/S, E, N)
②: Colour Coding acc. to IEC, ANSI or DIN (I, A, D)

Example:

S – 220 – S – I: Standard Panel Insert, Thermocouple Type S (Cu-Cu11), orange

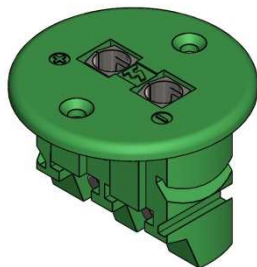
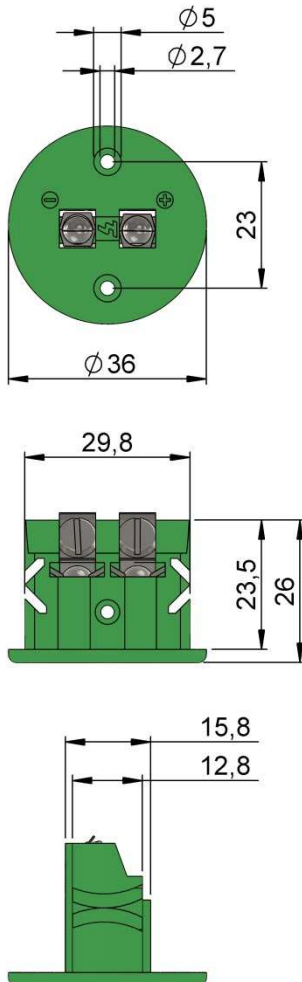
Technical Features:

Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type R/S	Cu	Cu11	IEC 584
	Type E	NiCr	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
	Type K	green	yellow	green
	Type J	black	black	–
	Type L	–	–	blue
	Type T	brown	blue	brown
	Type R/S	orange	green	white
	Type E	violet	violet	–
	Type N	pink	orange	–

Additional versions on request

Body Material:	break- and hitproof thermoplastic compound
Operating Temp.:	permanent 200°C, temporarily up to 250°C
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts
Connection:	Stainless Steel screws and stainless steel plates
Identification:	indicators for polarity molded in body
Type:	acc. to EN 50212
Fastening:	screws or assembly set screws with lugs
Panel Cutout:	30 x 16 mm or 30 mm round



Ordering Code:

S – 225 – ① – ②

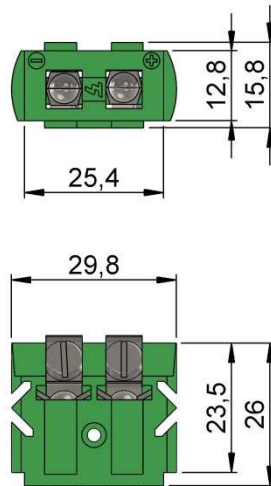
①: Thermocouple (K, J, L, T, R/S, E, N)

②: Colour Coding acc. to IEC, ANSI or DIN (I, A, D)

Example:

S – 225 – L – D: Standard-Panel-Insert, Thermocouple Type L (Fe-CuNi), blue

Technical Features:

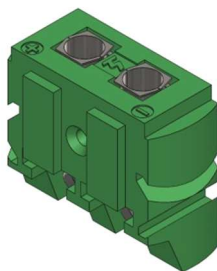


Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type R/S	Cu	Cu11	IEC 584
	Type E	NiCr	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
	Type K	green	yellow	green
	Type J	black	black	–
	Type L	–	–	blue
	Type T	brown	blue	brown
	Type R/S	orange	green	white
	Type E	violet	violet	–
	Type N	pink	orange	–

Additional versions on request

Body Material:	break- and hitproof thermoplastic compound						
Operating Temp.:	permanent 200°C, temporarily up to 250°C						
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts						
Connection:	Stainless Steel screws and stainless steel plates						
Identification:	indicators for polarity molded in body						
Type:	acc. to EN 50212						
Fastening:	assembly set						
Panel Cutout:	25.5 x 12.9 mm (H x B)						
Accessories:	<table border="1"> <thead> <tr> <th>Article</th><th>Datasheet</th></tr> </thead> <tbody> <tr> <td>Standard Assembly Set</td><td>S – 290</td></tr> <tr> <td>Assembly Set</td><td>S – 291</td></tr> </tbody> </table>	Article	Datasheet	Standard Assembly Set	S – 290	Assembly Set	S – 291
Article	Datasheet						
Standard Assembly Set	S – 290						
Assembly Set	S – 291						



Ordering Code:

S – 226 – ① – ②

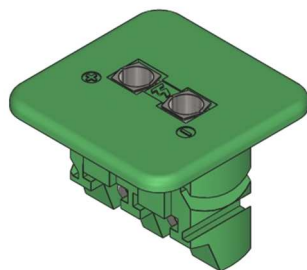
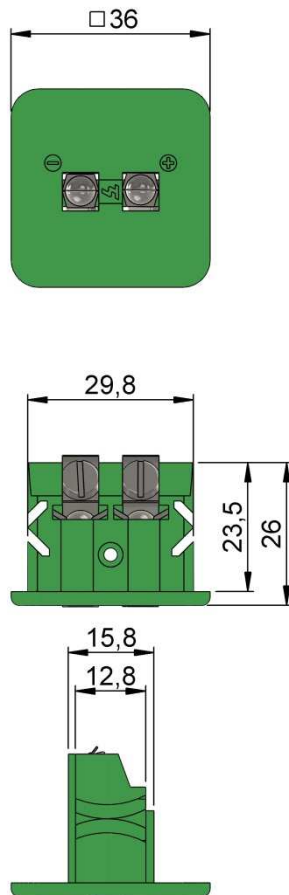
①: Thermocouple (K, J, L, T, R/S, E, N)

②: Colour Coding acc. to IEC, ANSI or DIN (I, A, D)

Example:

S – 226 – K – I: Standard Panel Insert, Thermocouple Type K (NiCr-NiAl), green

Technical Features:



Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type R/S	Cu	Cu11	IEC 584
	Type E	NiCr	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
	Type K	green	yellow	green
	Type J	black	black	–
	Type L	–	–	blue
	Type T	brown	blue	brown
	Type R/S	orange	green	white
	Type E	violet	violet	–
	Type N	pink	orange	–

Additional versions on request

Body Material:	break- and hitproof thermoplastic compound
Operating Temp.:	permanent 200°C, temporarily up to 250°C
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts
Connection:	Stainless Steel screws and stainless steel plates
Identification:	indicators for polarity molded in body
Type:	acc. to EN 50212
Fastening:	assembly set or clip
Panel Cutout:	30 x 16 mm or 30 mm round

Accessories:	Article	Datasheet
	assembly set	S – 290
	Spring Clip	S – 295

Ordering Code:

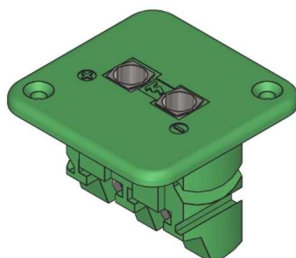
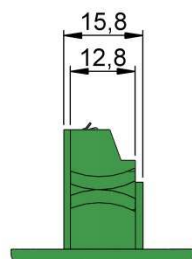
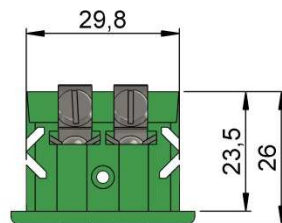
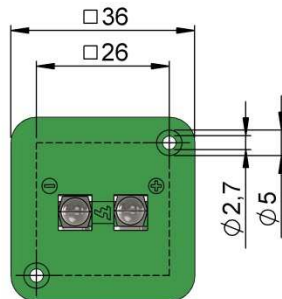
S – 230 – ① – ②

- ①: Thermocouple (K, J, L, T, R/S, E, N)
②: Colour Coding acc. to IEC, ANSI or DIN (I, A, D)

Example:

S – 230 – K – I: Standard-Panel-Insert, Thermocouple Type K (NiCr-NiAl), green

Technical Features:



Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type R/S	Cu	Cu11	IEC 584
	Type E	NiCr	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
	Type K	green	yellow	green
	Type J	black	black	–
	Type L	–	–	blue
	Type T	brown	blue	brown
	Type R/S	orange	green	white
	Type E	violet	violet	–
	Type N	pink	orange	–

Additional versions on request

Body Material:	break- and hitproof thermoplastic compound
Operating Temp.:	permanent 200°C, temporarily up to 250°C
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts
Connection:	Stainless Steel screws and stainless steel plates
Identification:	indicators for polarity molded in body
Type:	acc. to EN 50212
Fastening:	screws on the front side
Panel Cutout:	30 x 16 mm or 30 mm round

Ordering Code:

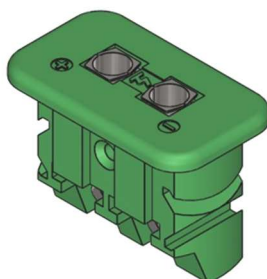
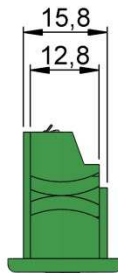
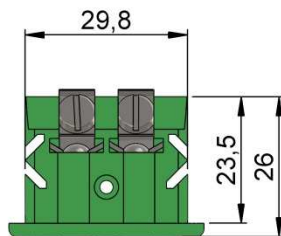
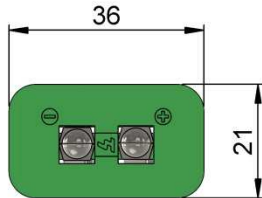
S – 235 – ① – ②

- ①: Thermocouple (K, J, L, T, R/S, E, N)
②: Colour Coding acc. to IEC, ANSI or DIN (I, A, D)

Example:

S – 235 – J – I: Standard-Panel-Insert, Thermocouple Type J (Fe-CuNi), black

Technical Features:



Thermocouple (①):	Thermocouple	Plus	Minus	Norm
Type K	NiCr	NiAl	IEC 584	
Type J	Fe	CuNi	IEC 584	
Type L	Fe	CuNi	DIN 43710	
Type T	Cu	CuNi	IEC 584	
Type R/S	Cu	Cu11	IEC 584	
Type E	NiCr	CuNi	IEC 584	
Type N	NiCrSi	NiSi	IEC 584	

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
Type K	green	yellow	green	
Type J	black	black	–	
Type L	–	–	blue	
Type T	brown	blue	brown	
Type R/S	orange	green	white	
Type E	violet	violet	–	
Type N	pink	orange	–	

Additional versions on request

Body Material:	break- and hitproof thermoplastic compound						
Operating Temp.:	permanent 200°C, temporarily up to 250°C						
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts						
Connection:	Stainless Steel screws and stainless steel plates						
Identification:	indicators for polarity molded in body						
Type:	acc. to EN 50212						
Fastening:	assembly set or stainless steel clip						
Panel Cutout:	30 x 16 mm						
Accessories:	<table border="1"> <thead> <tr> <th>Article</th><th>Datasheet</th></tr> </thead> <tbody> <tr> <td>Assembly set</td><td>S – 290</td></tr> <tr> <td>Spring Clip</td><td>S – 295</td></tr> </tbody> </table>	Article	Datasheet	Assembly set	S – 290	Spring Clip	S – 295
Article	Datasheet						
Assembly set	S – 290						
Spring Clip	S – 295						

Ordering Code:

S – 240 – ① – ②

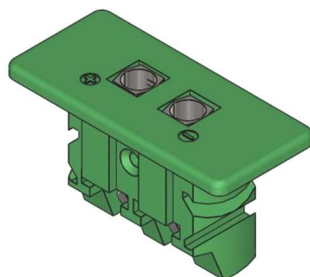
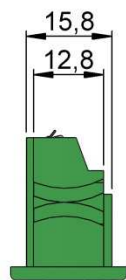
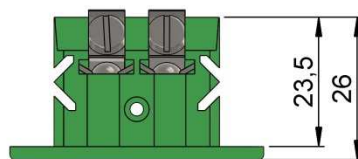
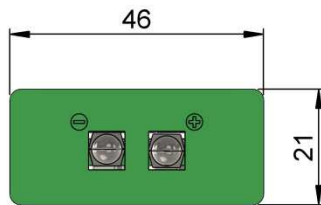
①: Thermocouple (K, J, L, T, R/S, E, N)

②: Colour Coding acc. to IEC, ANSI or DIN (I, A, D)

Example:

S – 240 – J – I: Standard-Panel-Insert, Thermocouple Type J (Fe-CuNi), black

Technical Features:



Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type R/S	Cu	Cu11	IEC 584
	Type E	NiCr	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
	Type K	green	yellow	green
	Type J	black	black	–
	Type L	–	–	blue
	Type T	brown	blue	brown
	Type R/S	orange	green	white
	Type E	violet	violet	–
	Type N	pink	orange	–

Additional versions on request

Body Material:	break- and hitproof thermoplastic compound						
Operating Temp.:	permanent 200°C, temporarily up to 250°C						
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts						
Connection:	Stainless Steel screws and stainless steel plates						
Identification:	indicators for polarity molded in body						
Type:	acc. to EN 50212						
Fastening:	assembly set or stainless steel clip						
Panel Cutout:	30 x 16 mm						
Accessories:	<table border="1"> <thead> <tr> <th>Article</th><th>Datasheet</th></tr> </thead> <tbody> <tr> <td>Assembly set</td><td>S – 290</td></tr> <tr> <td>Spring Clip</td><td>S – 295</td></tr> </tbody> </table>	Article	Datasheet	Assembly set	S – 290	Spring Clip	S – 295
Article	Datasheet						
Assembly set	S – 290						
Spring Clip	S – 295						

Ordering Code:

S – 245 – ① – ②

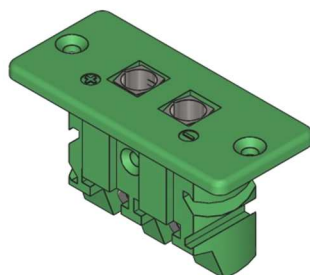
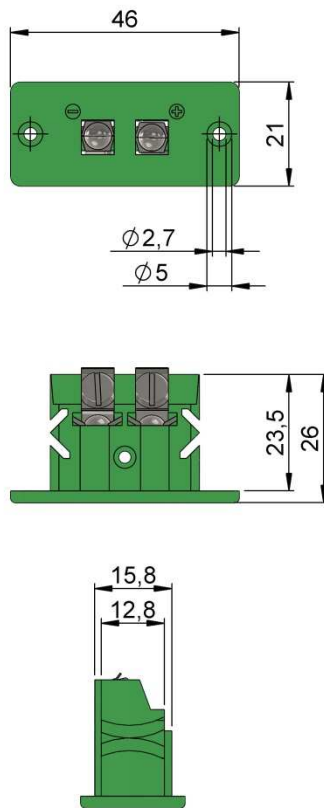
①: Thermocouple (K, J, L, T, R/S, E, N)

②: Colour Coding acc. to IEC, ANSI or DIN (I, A, D)

Example:

S – 245 – T – I: Standard-Panel-Insert, Thermocouple Type T (Cu-CuNi), brown

Technical Features:



Thermocouple (①):	Thermocouple	Plus	Minus	Norm
	Type K	NiCr	NiAl	IEC 584
	Type J	Fe	CuNi	IEC 584
	Type L	Fe	CuNi	DIN 43710
	Type T	Cu	CuNi	IEC 584
	Type R/S	Cu	Cu11	IEC 584
	Type E	NiCr	CuNi	IEC 584
	Type N	NiCrSi	NiSi	IEC 584

Colour Coding (②):	Thermocouple	IEC	ANSI	DIN
	Type K	green	yellow	green
	Type J	black	black	–
	Type L	–	–	blue
	Type T	brown	blue	brown
	Type R/S	orange	green	white
	Type E	violet	violet	–
	Type N	pink	orange	–

Additional versions on request

Body Material:	break- and hitproof thermoplastic compound
Operating Temp.:	permanent 200°C, temporarily up to 250°C
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts
Connection:	Stainless Steel screws and stainless steel plates
Identification:	indicators for polarity molded in body
Type:	acc. to EN 50212
Fastening:	screws on frontside
Panel Cutout:	30 x 16 mm

Ordering Code:

S – 250 – ① – ②

①: Thermocouple (K, J, L, T, R/S, E, N)

②: Colour Coding acc. to IEC, ANSI or DIN (I, A, D)

Example:

S – 250 – T – I: Standard-Panel-Insert, Thermocouple Type T (Cu-CuNi), brown

Technical Features:

Utilization: For assembly of Standard-Panel-Inserts acc. to Datasheets S-225 to S-250.

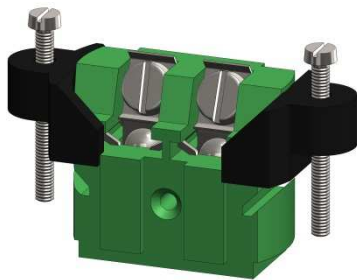
Dependent on the panel design, the set ist differently mounted:

Frontfastening Panels are mounted by clamping the screw from behind against the aluminium sheet.

For Panels Type S-226 the screws are guided through drill holes in the aluminium sheet and pull the panel from behind against the sheet

Material: break- and hitproof thermoplastic compound

Steel Sheat Thickness: Please specify



Ordering Code:

S – 290

Technical Features:

Utilization:

For fastening of Miniature Panels Interts acc to Datasheet S-226.



Dependent on the number of Panel Inserts, the numbers of Blocks and Screws and the length of the Rod must be calculated.

The following table shows the combinations for the different multiple measuring circuits acc. to Datasheet S-200.

Type	Blocks (①)	Rods (②)
S-200-S-01-...	2 pieces	1 piece (30 mm)
S-200-S-06-...	3 pieces	1 piece (115 mm)
S-200-S-12-...	6 pieces	1 piece (225 mm)
S-200-S-24-...	12 pieces	2 pieces (225 mm each)
S-200-S-30-...	12 pieces	2 pieces (285 mm each)

Material:

Brass, Stainless Steel

Steel Sheet Thickness:

2.5 mm

Ordering Code:

S – 291 – ① – ②

①: Number of Blocks

②: Number of Rods

Example:

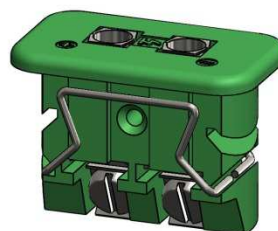
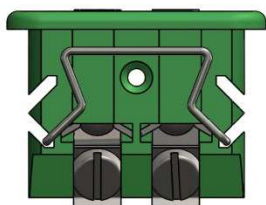
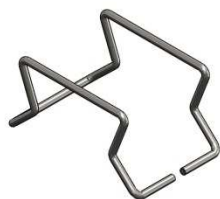
S – 291 – 12 – 2x285: Standard-Assembly Set for 30 circuit Panel Insert

Technical Features:

Utilization: For backside mounting of Standard Panel Inserts acc. to Datasheets S-225 and S-230 to S-250.

Material: Stainless Steel

Steel Sheet Thickness: 2.5 mm

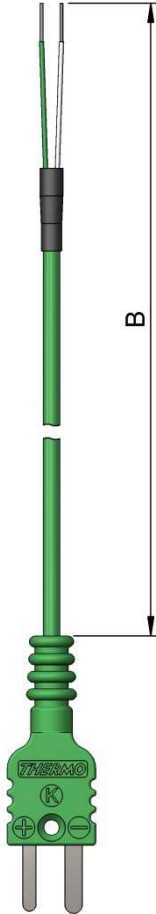


Ordering Code:

S – 295

Technical Features:

Thermocouple:	NiCr-NiAl, Type K acc. to IEC 584				
Tolerance:	acc. to DIN IEC 584, Part 2				
Jacket:	PVC				
Operating Temp.:	-15° C up to +105° C				
Connection:	similar to Miniature Plug acc. to Datasheet S-010				
Lead Wire:	PUR-insulated flexible Thermowire				
Wire Length (①):	Please specify				
Colour Coding (②):	<table> <tr> <td>Jack:</td><td>green acc. to IEC yellow acc. to ANSI</td></tr> <tr> <td>Wire:</td><td>+ green, - white, Sheath black</td></tr> </table>	Jack:	green acc. to IEC yellow acc. to ANSI	Wire:	+ green, - white, Sheath black
Jack:	green acc. to IEC yellow acc. to ANSI				
Wire:	+ green, - white, Sheath black				
Additional versions on request					



Ordering Code:

S – 300 – ① – ②

①: Lead Length in mm

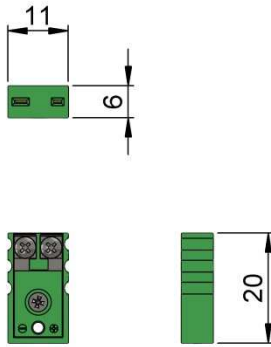
②: Colour Coding acc. to IEC, ANSI or DIN (I, A, D)

Example:

S – 300 – 1500 – A: molded Connector, Lead Wire Length 1500 mm, yellow

Technical Features:

Thermocouple (①):	<u>Thermocouple</u>	<u>Plus</u>	<u>Minus</u>	<u>Norm</u>
	Type K	NiCr	NiAl	IEC 584
Colour Coding (②):	<u>Thermocouple</u>	<u>IEC</u>	<u>ANSI</u>	<u>DIN</u>
	Type K	green	yellow	green
Body Material:	break- and hitproof thermoplastic compound			
Operating Temp.:	permanent 200°C, temporarily up to 250°C			
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts			
Connection:	Stainless Steel screws and stainless steel plates			
Identification:	indicators for polarity molded in body			
Fastening:	by means of screws			



Ordering Code:

S – 610 – ① – ②

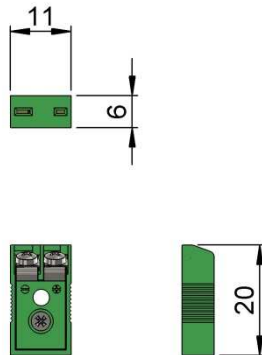
①: Thermocouple (K)

②: Colour Coding, green acc. to IEC (I)

Example:

S – 610 – K – I: Micro-Panel-Insert, Thermocouple Type K (NiCr-Ni), green

Technical Features:



Thermocouple (①):	Thermocouple Type K	Plus NiCr	Minus NiAl	Norm IEC 584
Colour Coding (②):	Thermocouple Type K	IEC green	ANSI yellow	DIN green
Body Material:	break- and hitproof thermoplastic compound			
Operating Temp.:	permanent 200°C, temporarily up to 250°C			
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts			
Connection:	Stainless Steel screws and stainless steel plates			
Identification:	indicators for polarity molded in body			



Ordering Code:

S – 626 – ① – ②

①: Thermocouple (K)

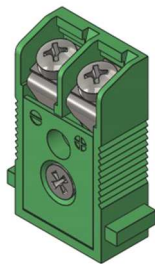
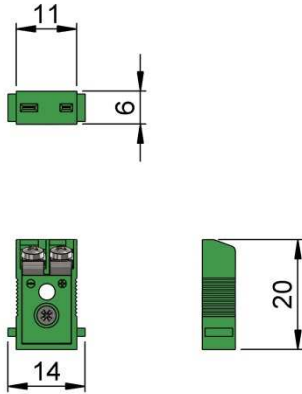
②: Colour Coding, green acc. to IEC (I)

Example:

S – 626 – K – I: Mikro-Panel-Insert Thermocouple Type K (NiCr-Ni), green

Technical Features:

Thermocouple (①):	<u>Thermocouple</u>	<u>Plus</u>	<u>Minus</u>	<u>Norm</u>
	Type K	NiCr	NiAl	IEC 584
Colour Coding (②):	<u>Thermocouple</u>	<u>IEC</u>	<u>ANSI</u>	<u>DIN</u>
	Type K	green	yellow	green
Body Material:	break- and hitproof thermoplastic compound			
Operating Temp.:	permanent 200°C, temporarily up to 250°C			
Contacts:	Thermocouple Material, Reverse polarity protected, with springloaded contacts			
Connection:	Stainless Steel screws and stainless steel plates			
Identification:	indicators for polarity molded in body			



Ordering Code:

S – 640 – ① – ②

①: Thermocouple (K)

②: Colour Coding, green acc. to IEC (I)

Example:

S – 640 – K – I: Mikro-Panel-Insert, Thermocouple Type K (NiCr-Ni), green

1 Digital-Thermometer TM 100 Type K

1.1 Description

The TM 100 K is a measuring device for the determination of temperatures within the range of 200°C up to +1350°C. It is built into an aluminium die cast housing and shows a socket for the connection of thermos sensors.

1.2 Warranty

Opening the device by unauthorized users will lead to the loss of warranty. Furthermore, the only device allowed for recharging the battery is the one supplied with the instrument.

1.3 In-built battery

The measuring device is powered by an in-built battery which allows the use of the instrument for about 40 hours. This battery can be recharged by the applicable device supplied with the instrument by connecting it to the socket at the bottom of the instrument. For the protection of the instrument the ambient temperature should not exceed 30°C and the humidity should not exceed 80 percent when recharging the battery.



As soon as the battery is down to 10 percent, the instrument shuts off automatically about six seconds after it is switched on. This is long enough for performing one measuring, but it also indicates that the battery is low.



1.4 Connecting the Sensor

The various temperature sensors are applied into the socket at the top of the instrument. The display will show "OPEN" when there is no sensor connected to the instrument or if the sensor should be defect.



1.5 Using the Instrument

The instrument is switched on and off by pressing the button labeled "On / Off". When switching it on, this button must be held down until the display shows "S". Thereafter the instrument is ready for measuring.

1.6 Safety Requirements



The sensor must not be touched by items being connected to voltage!

The instrument should not be exposed to high-frequency electromagnetic oscillations.

Otherwise the measuring could be wrong or even the instrument could suffer from internal damage.

Furthermore the instrument should not be kept in temperatures below the freezing point (e.g. refrigerator), because the electronic components inside the instrument are very sensitive against low temperatures.

1.7 Leaving the Range

As long as the instrument is used for measuring temperatures outside the range of -200°C to $+1350^{\circ}\text{C}$ the display shows "OPEN".

1.8 Technical Data

Temperature Range:	-200°C bis $+1350^{\circ}\text{C}$
Response Time:	approx. 0,5 s
Accuracy:	$\pm 0,1^{\circ}\text{C}$
Resolution:	$0,1^{\circ}\text{C}$
Operating Temperature:	$+5^{\circ}\text{C}$ bis $+45^{\circ}\text{C}$
Dimensions:	approx. 175 · 80 · 40 mm
Power Supply:	In-built Battery, Power Device

Fe/CuNi, Type L, acc. to DIN 43710

Basic values from -200°C up to 750°C in steps of 10°C, details in mV

°C	0	10	20	30	40	50	60	70	80	90
-200	-8,15									
-100	-4,75									
0	0,000	0,52	1,05	1,58	2,11	2,65	3,19	3,73	4,27	4,82
100	5,37	5,92	6,47	7,03	7,59	8,15	8,71	9,27	9,83	10,39
200	10,95	11,51	12,07	12,63	13,19	13,75	14,31	14,88	15,44	16,00
300	16,56	17,12	17,68	18,24	18,80	19,36	19,92	20,48	21,04	21,60
400	22,16	22,72	23,29	23,86	24,43	25,00	25,57	26,14	26,71	27,28
500	27,85	28,43	29,01	29,59	30,17	30,75	31,33	31,91	32,49	33,08
600	33,67	34,26	34,85	35,44	36,04	36,64	37,25	37,85	38,47	39,09
700	39,72	40,35	40,98	41,62	42,27	42,92				

Fe/CuNi, Type J, acc. to DIN IEC 584-1

Basic values from -200°C up to 750°C in steps of 10°C, details in mV

°C	0	10	20	30	40	50	60	70	80	90
-200	-7,890									
-100	-4,632									
0	0,000	0,507	1,019	1,536	2,058	2,585	3,115	3,649	4,186	4,725
100	5,268	5,812	6,359	6,907	7,457	8,008	8,560	9,113	9,667	10,222
200	10,777	11,332	11,887	12,442	12,998	13,553	14,108	14,663	15,217	15,771
300	16,325	16,879	17,432	17,984	18,537	19,089	19,640	20,192	20,743	21,295
400	21,846	22,397	22,949	23,501	24,054	24,607	25,161	25,716	26,272	26,829
500	27,388	27,949	28,511	29,075	29,642	30,210	30,782	31,356	31,933	32,513
600	33,096	33,683	34,273	34,867	35,464	36,066	36,671	37,280	37,893	38,510
700	39,130	39,754	40,382	41,013	41,647	42,283				

NiCr/Ni Type K, acc. to DIN IEC 584-1

Basic values from -200°C up to 1370°C in steps of 10°C, details in mV

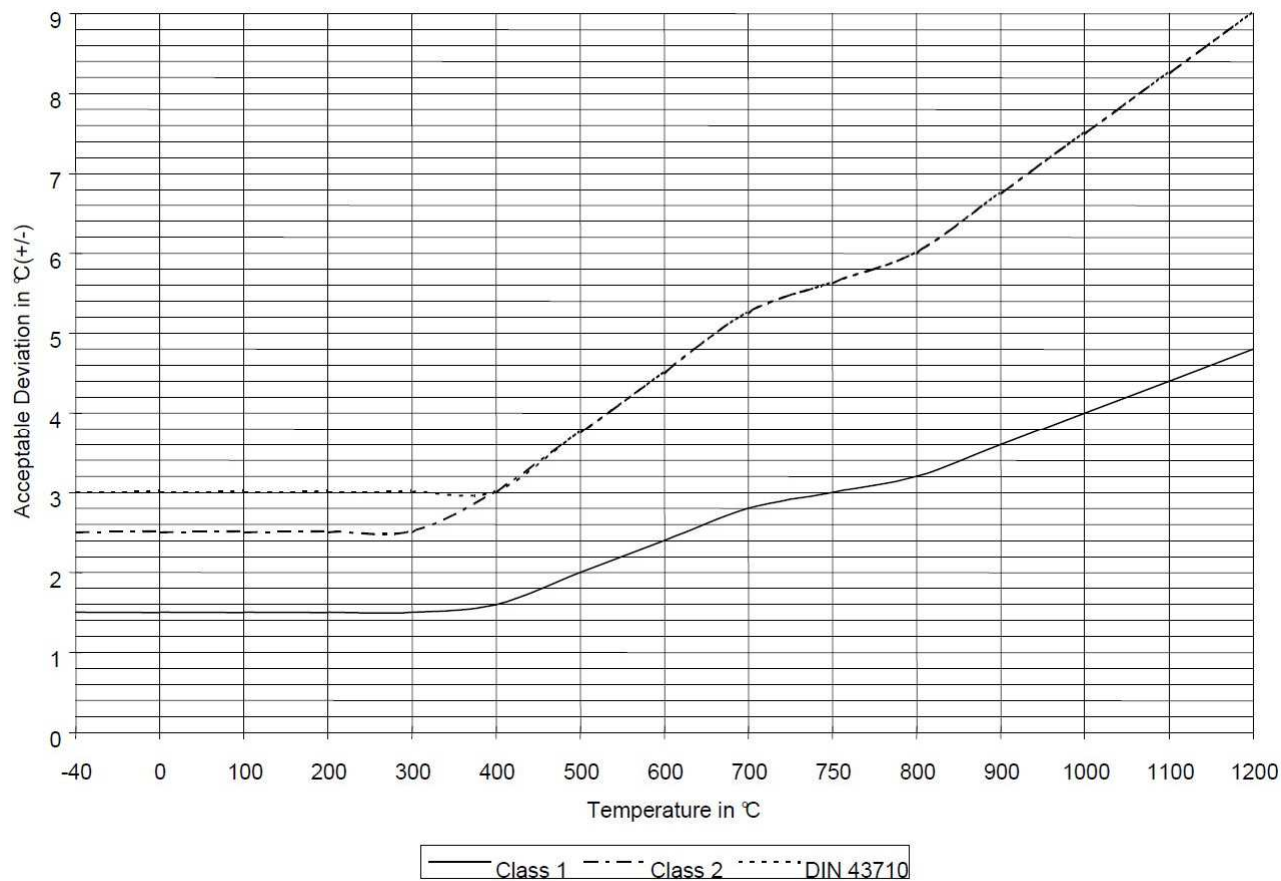
°C	0	10	20	30	40	50	60	70	80	90
-200	-5,891									
-100	-3,553									
0	0,000	0,397	0,798	1,203	1,611	2,022	2,436	2,850	3,266	3,681
100	4,095	4,508	4,919	5,327	5,733	6,137	6,539	6,939	7,338	7,737
200	8,137	8,537	8,938	9,341	9,745	10,151	10,560	10,969	11,381	11,793
300	12,207	12,623	13,039	13,456	13,874	14,292	14,712	15,132	15,552	15,974
400	16,395	16,818	17,241	17,664	18,088	18,513	18,938	19,363	19,788	20,214
500	20,640	21,066	21,493	21,919	22,346	22,772	23,198	23,624	24,050	24,476
600	24,902	25,327	25,751	26,176	26,599	27,022	27,445	27,867	28,288	28,709
700	29,128	29,547	29,965	30,383	30,799	31,214	31,629	32,042	32,455	32,866
800	33,277	33,686	34,095	34,502	34,909	35,314	35,718	36,121	36,524	36,925
900	37,325	37,724	38,122	38,519	38,915	39,310	39,703	40,096	40,488	40,879
1000	41,269	41,657	42,045	42,432	42,817	43,202	43,585	43,968	44,349	44,729
1100	45,108	45,486	45,863	46,238	46,612	46,985	47,356	47,726	48,095	48,462
1200	48,828	49,192	49,555	49,916	50,276	50,633	50,990	51,344	51,697	52,049
1300	52,398	52,747	53,093	53,439	54,125	54,125	54,466	54,807		

Thermocouples acc. to DIN IEC 584

Type	Temperature Range in °C	Tolerance
Class 1		
NiCr/Ni, K	-40 up to 1000	$\pm 1,5^{\circ}\text{C}$ or $\pm 0,004 \cdot t$
Fe/CuNi, J	-40 up to 750	$\pm 1,5^{\circ}\text{C}$ or $\pm 0,004 \cdot t$
Class 2		
NiCr/Ni, K	-40 up to 1200	$\pm 2,5^{\circ}\text{C}$ or $\pm 0,0075 \cdot t$
Fe/CuNi, J	-40 up to 750	$\pm 2,5^{\circ}\text{C}$ or $\pm 0,0075 \cdot t$
Class 3		
NiCr/Ni, K	-200 up to 40	$\pm 2,5^{\circ}\text{C}$ or $\pm 0,015 \cdot t$

Thermocouples acc. to DIN 43710

Type	Temperature Range in °C	Tolerance
Fe/CuNi, L	0 up to 900	$\pm 3,0^{\circ}\text{C}$ or $\pm 0,0075 \cdot t$



Basic Values from 0°C up to 400°C in steps of 1°C, details in Ω

°C	0	1	2	3	4	5	6	7	8	9
0	100,00	100,39	100,78	101,17	101,56	101,95	102,34	102,73	103,12	103,51
10	103,90	104,29	104,68	105,07	105,46	105,85	106,24	106,63	107,02	107,40
20	107,79	108,18	108,57	108,96	109,35	109,73	110,12	110,51	110,90	111,28
30	111,67	112,06	112,45	112,83	113,22	113,61	113,99	114,38	114,77	115,15
40	115,54	115,93	116,31	116,70	117,08	117,47	117,85	118,24	118,62	119,01
50	119,40	119,78	120,16	120,55	120,93	121,32	121,70	122,09	122,47	122,86
60	123,24	123,62	124,01	124,39	124,77	125,16	125,54	125,92	126,31	126,69
70	127,07	127,45	127,84	128,22	128,60	128,98	129,37	129,75	130,13	130,51
80	130,89	131,27	131,66	132,04	132,42	132,80	133,18	133,56	133,94	134,32
90	134,70	135,08	135,46	135,84	136,22	136,60	136,98	137,36	137,74	138,12
100	138,50	138,88	139,26	139,64	140,02	140,39	140,77	141,15	141,53	141,91
110	142,29	142,66	143,04	143,42	143,80	144,17	144,55	144,93	145,31	145,68
120	146,06	146,44	146,81	147,19	147,57	147,94	148,32	148,70	149,07	149,45
130	149,82	150,20	150,57	150,95	151,33	151,70	152,08	152,45	152,83	153,20
140	153,58	153,95	154,32	154,70	155,07	155,45	155,82	156,19	156,57	156,94
150	157,31	157,69	158,06	158,43	158,81	159,18	159,55	159,93	160,30	160,67
160	161,04	161,42	161,79	162,16	162,53	162,90	163,27	163,65	164,02	164,39
170	164,76	165,13	165,50	165,87	166,24	166,61	166,98	167,35	167,72	168,09
180	168,46	168,83	169,20	169,57	169,94	170,31	170,68	171,05	171,42	171,79
190	172,16	172,53	172,90	173,26	173,63	174,00	174,37	174,74	175,10	175,47
200	175,84	176,21	176,57	176,94	177,31	177,68	178,04	178,41	178,78	179,14
210	179,51	179,88	180,24	180,61	180,97	181,34	181,71	182,07	182,44	182,80
220	183,17	183,53	183,90	184,26	184,63	184,99	185,36	185,72	186,09	186,45
230	186,82	187,18	187,54	187,91	188,27	188,63	189,00	189,36	189,72	190,09
240	190,45	190,81	191,18	191,54	191,90	192,26	192,63	192,99	193,35	193,71
250	194,07	194,44	194,80	195,16	195,52	195,88	196,24	196,60	196,96	197,33
260	197,69	198,05	198,41	198,77	199,13	199,49	199,85	200,21	200,57	200,93
270	201,29	201,65	202,01	202,36	202,72	203,08	203,44	203,80	204,16	204,52
280	204,88	205,23	205,59	205,95	206,31	206,67	207,02	207,38	207,74	208,10
290	208,45	208,81	209,17	209,52	209,88	210,24	210,59	210,95	211,31	211,66
300	212,02	212,37	212,73	213,09	213,44	213,80	214,15	214,51	214,86	215,22
310	215,57	215,93	216,28	216,64	216,99	217,35	217,70	218,05	218,41	218,76
320	219,12	219,47	219,82	220,18	220,53	220,88	221,24	221,59	221,94	222,29
330	222,65	223,00	223,35	223,70	224,06	224,41	224,76	225,11	225,46	225,81
340	226,17	226,52	226,87	227,22	227,57	227,92	228,27	228,62	228,97	229,32
350	229,67	230,02	230,37	230,72	231,07	231,42	231,77	232,12	232,47	232,82
360	233,17	233,52	233,87	234,22	234,56	234,91	235,26	235,61	235,96	236,31
370	236,65	237,00	237,35	237,70	238,04	238,39	238,74	239,09	239,43	239,78
380	240,13	240,47	240,82	241,17	241,51	241,86	242,20	242,55	242,90	243,24
390	243,59	243,93	244,28	244,62	244,97	245,31	245,66	246,00	246,35	246,69
400	247,04									

Basic Values from 400°C up to 800°C in Steps of 1°C, details in Ω

°C	0	1	2	3	4	5	6	7	8	9
400	247,04	247,38	247,73	248,07	248,41	248,76	249,10	249,45	249,79	250,13
410	250,48	250,82	251,16	251,50	251,85	252,19	252,53	252,88	253,22	253,56
420	253,90	254,24	254,59	254,93	255,27	255,61	255,95	256,29	256,64	256,98
430	257,32	257,66	258,00	258,34	258,68	259,02	259,36	259,70	260,04	260,38
440	260,72	261,06	261,40	261,74	262,08	262,42	262,76	263,10	263,43	263,77
450	264,11	264,45	264,79	265,13	265,47	265,80	266,14	266,48	266,82	267,15
460	267,49	267,83	268,17	268,50	268,84	269,18	269,51	269,85	270,19	270,52
470	270,86	271,20	271,53	271,87	272,20	272,54	272,88	273,21	273,55	273,88
480	274,22	274,55	274,89	275,22	275,56	275,89	276,23	276,56	276,89	277,23
490	277,56	277,90	278,23	278,56	278,90	279,23	279,56	279,90	280,23	280,56
500	280,90	281,23	281,56	281,89	282,23	282,56	282,89	283,22	283,55	283,89
510	284,22	284,55	284,88	285,21	285,54	285,87	286,21	286,54	286,87	287,20
520	287,53	287,86	288,19	288,52	288,85	289,18	289,51	289,84	290,17	290,50
530	290,83	291,16	291,49	291,81	292,14	292,47	292,80	293,13	293,46	293,79
540	294,11	294,44	294,77	295,10	295,43	295,75	296,08	296,41	296,74	297,06
550	297,39	297,72	298,04	298,37	298,70	299,02	299,35	299,68	300,00	300,33
560	300,65	300,98	301,31	301,63	301,96	302,28	302,61	302,93	303,26	303,58
570	303,91	304,23	304,56	304,88	305,20	305,53	305,85	306,18	306,50	306,82
580	307,15	307,47	307,79	308,12	308,44	308,76	309,09	309,41	309,73	310,05
590	310,38	310,70	311,02	311,34	311,67	311,99	312,31	312,63	312,95	313,27
600	313,59	313,92	314,24	314,56	314,88	315,20	315,52	315,84	316,16	316,48
610	316,80	317,12	317,44	317,76	318,08	318,40	318,72	319,04	319,36	319,68
620	319,99	320,31	320,63	320,95	321,27	321,59	321,91	322,22	322,54	322,86
630	323,18	323,49	323,81	324,13	324,45	324,76	325,08	325,40	325,72	326,03
640	326,35	326,66	326,98	327,30	327,61	327,93	328,25	328,56	328,88	329,19
650	329,51	329,82	330,14	330,45	330,77	331,08	331,40	331,71	332,03	332,34
660	332,66	332,97	333,28	333,60	333,91	334,23	334,54	334,85	335,17	335,48
670	335,79	336,11	336,42	336,73	337,04	337,36	337,67	337,98	338,29	338,61
680	338,92	339,23	339,54	339,85	340,16	340,48	340,79	341,10	341,41	341,72
690	342,03	342,34	342,65	342,96	343,27	343,58	343,89	344,20	344,51	344,82
700	345,13	345,44	345,75	346,06	346,37	346,68	346,99	347,30	347,60	347,91
710	348,22	348,53	348,84	349,15	349,45	349,76	350,07	350,38	350,69	350,99
720	351,30	351,61	351,91	352,22	352,53	352,83	353,14	353,45	353,75	354,06
730	354,37	354,67	354,98	355,28	355,59	355,90	356,20	356,51	356,81	357,12
740	357,42	357,73	358,03	358,34	358,64	358,95	359,25	359,55	359,86	360,16
750	360,47	360,77	361,07	361,38	361,68	361,98	362,29	362,59	362,89	363,19
760	363,50	363,80	364,10	364,40	364,71	365,01	365,31	365,61	365,91	366,22
770	366,52	366,82	367,12	367,42	367,72	368,02	368,32	368,63	368,93	369,23
780	369,53	369,83	370,13	370,43	370,73	371,03	371,33	371,63	371,93	372,22
790	372,52	372,82	373,12	373,42	373,72	374,02	374,32	374,61	374,91	375,21
800	375,51	375,81	376,10	376,40	376,70	377,00	377,29	377,59	377,89	378,19

Temp. in °C	Acceptable Deviation			
	Class A		Class B	
	Ω	°C	Ω	°C
-200	$\pm 0,24$	$\pm 0,55$	$\pm 0,56$	$\pm 1,3$
-100	$\pm 0,14$	$\pm 0,35$	$\pm 0,32$	$\pm 0,8$
0	$\pm 0,06$	$\pm 0,15$	$\pm 0,12$	$\pm 0,3$
100	$\pm 0,13$	$\pm 0,35$	$\pm 0,30$	$\pm 0,8$
200	$\pm 0,20$	$\pm 0,55$	$\pm 0,48$	$\pm 1,3$
300	$\pm 0,27$	$\pm 0,75$	$\pm 0,64$	$\pm 1,8$
400	$\pm 0,33$	$\pm 0,95$	$\pm 0,79$	$\pm 2,3$
500	$\pm 0,38$	$\pm 1,15$	$\pm 0,93$	$\pm 2,8$
600	$\pm 0,43$	$\pm 1,35$	$\pm 1,06$	$\pm 3,3$
650	$\pm 0,46$	$\pm 1,45$	$\pm 1,13$	$\pm 3,6$
700			$\pm 1,17$	$\pm 3,8$
800			$\pm 1,28$	$\pm 4,3$
850			$\pm 1,34$	$\pm 4,6$

