



**GUENTHER Polska**

member of the **GÜNTHER Group**

Data sheet



## Product group FT-FireTECH

Thermocouples and accessories

**Temperature Measurement Technology**  
Reliable . Precise . Certified

# Product group FT-FireTECH

**The temperature sensors of the FT-FireTECH series are designed for temperature measurements in and on fire test furnaces.** Sensors in this product group include measurement on hot surfaces as well as of the air or the temperature of fire gases.

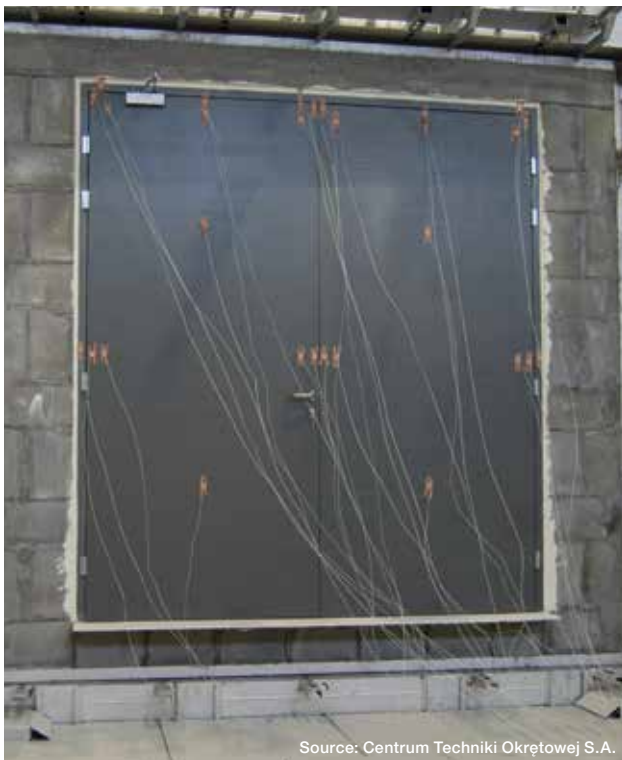
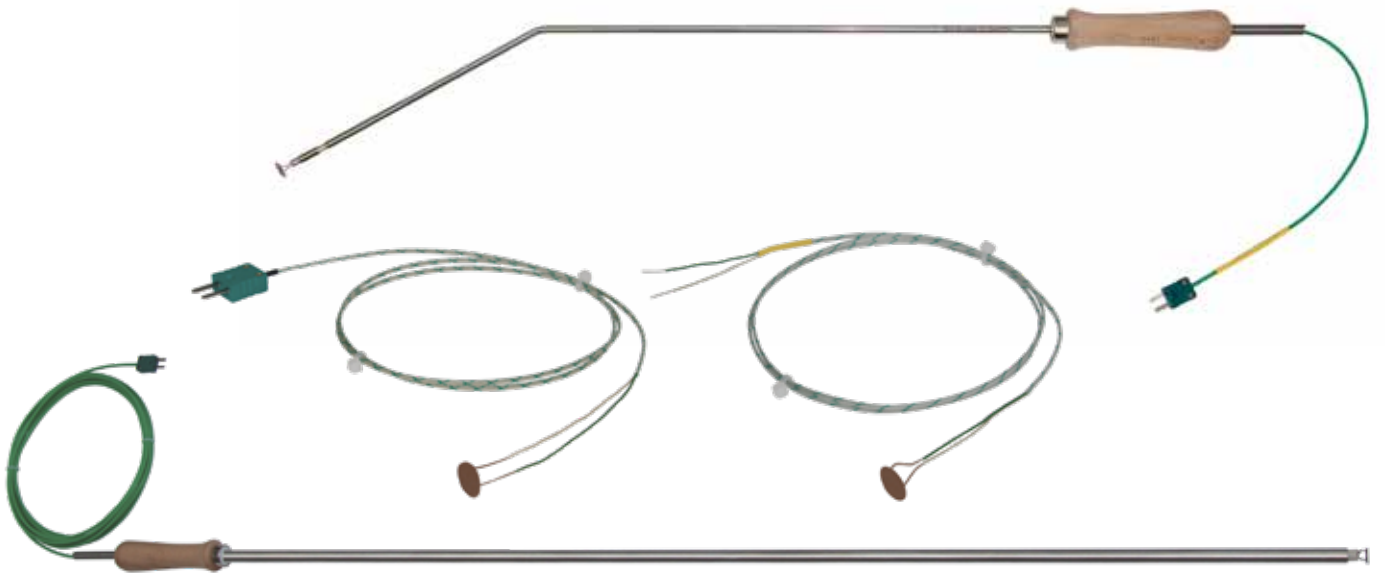
The series include:

- Furnace thermocouples (plate thermocouples)
- Surface thermocouples (with copper disc)
- Sheathed thermocouples with cables
- Roving thermocouples (with handle)
- Protective pipes
- Plates, insulators
- Accessories

Thermocouples and accessories are made in accordance with the requirements of EN 1363-1. As part of individual requirements, they are delivered with a calibration certificate at the temperature points agreed customer requirements.

A wide range of mounting accessories and electrical connectors (plugs, sockets etc.) allows for quick and reliable connection of temperature sensors with meters.





# Product group FT-FireTECH

## Furnace thermocouples with plate and insulation

The measuring element here is a class 1 thermocouple type K.

The measuring point is placed on a plate and protected by an insulating insert from direct contact with fire.

The construction of the thermocouple is resistant to vibrations and the special protective tube material ensures a long service life with consistent measuring characteristics.

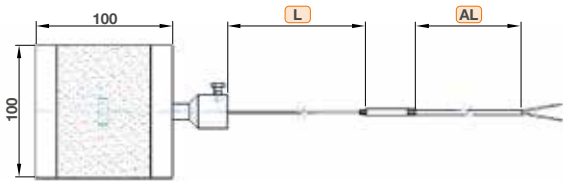
Versions with straight or bent protective pipe are available. The connection between the plate and pipe is usually realized by a specially designed swivel connector or by a cotter pin.

Both solutions allow the plate to be repositioned relative to the measurement location.

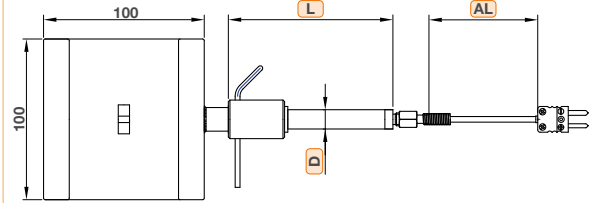
Other non-standard connection configurations are also available, if required by the customer's specific needs.



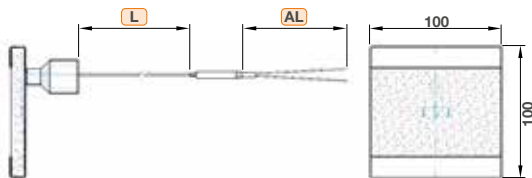
**Construction without straight protective tube, plate mounted on swivel connection. Example with free ends.**



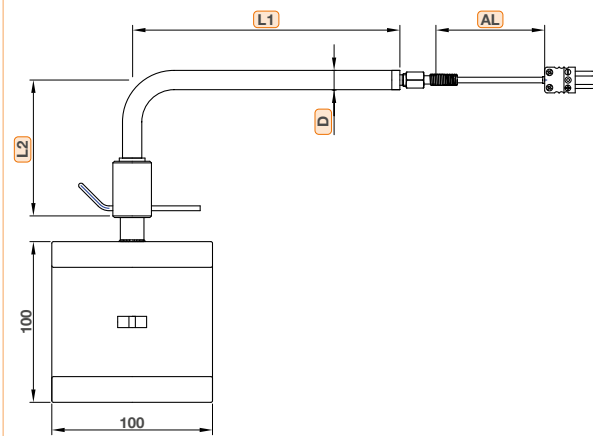
**Construction with straight protective tube, plate mounted on a cotter pin. Example with mini plug.**



**Construction without straight protective tube, plate mounted on swivel connection. Example with free ends.**



**Construction with a bent protective tube, plate mounted on cotter pin. Example with mini plug.**



## Furnace thermocouples with plate and insulation – Article number key

Product group	F	T	-	A	1	2	0	1	1	1	0	-	0	1	5	0	.	1	0	0	0	.	S	1	5	0
<b>Construction</b>																										
Thermocouple + exposition plate + straight pipe				A																						
Thermocouple + exposition plate + bent pipe				B																						
Straight pipe + exposition plate, no thermocouple, no insulator				C																						
Bent pipe + exposition plate, no thermocouple, no insulator				D																						
Thermocouple + exposition plate + insulator, no pipe				E																						
Other version				S																						
<b>Thermocouple type</b>																										
Sheathed thermocouple NiCr-Ni / Type K					1																					
<b>Thermocouple diameter or positioner size</b>																										
in mm, one decimal place						2	0																			
no thermocouple / no positioner						0	0																			
<b>Pipe diameter (D)</b>																										
Ø 15 x 2 mm, Mat. 1.4841																								1		
Ø 22 x 2 mm, Mat. 1.4841																								2		
Ø 16 x 2 mm, Mat. 2.4816 (Iconel)																								3		
Other																								9		
<b>Connection of the pipe with the plate</b>																										
See table below, standard typical version: 1																								1		
<b>Thermocouple cable end</b>																										
Free ends 50/10 mm																									1	
Ceramic standard plug																									2	
Ferrules																									4	
Standard plug																									5	
Mini plug																									6	
Free ends ready for Mini plug assembly																									A	
Free ends ready for Standard plug assembly																									B	
Other																									9	
<b>Thermocouple sheath length</b>																										
Length 500 mm																										0
Length 1000 mm																										1
Length 1500 mm																										2
Length 2000 mm																										3
Length 2500 mm																										4
Length 3000 mm																										5
Length 3500 mm																										6
Thermocouple length matched to pipe length																										8
Other version, agreed with the manufacturer																										9
<b>Cable length (AL)</b>																										
Specified in meter with 2 decimal places e.g.: 1.5 m → 0150																										0 1 5 0
<b>Pipe length or TC length</b> (version FT-E only)																										
Total length L or length L1 in case of bent version in mm, e.g. 1000 mm																										1 0 0 0
<b>Cable insulation material</b>																										
Silicone / Silicone (T <sub>max</sub> +180°C)																										S
<b>Pipe length L2</b> (in case of bent version only)																										
Specified in mm (L2) e.g. 150 mm																										1 5 0

## Connection of the pipe with the plate

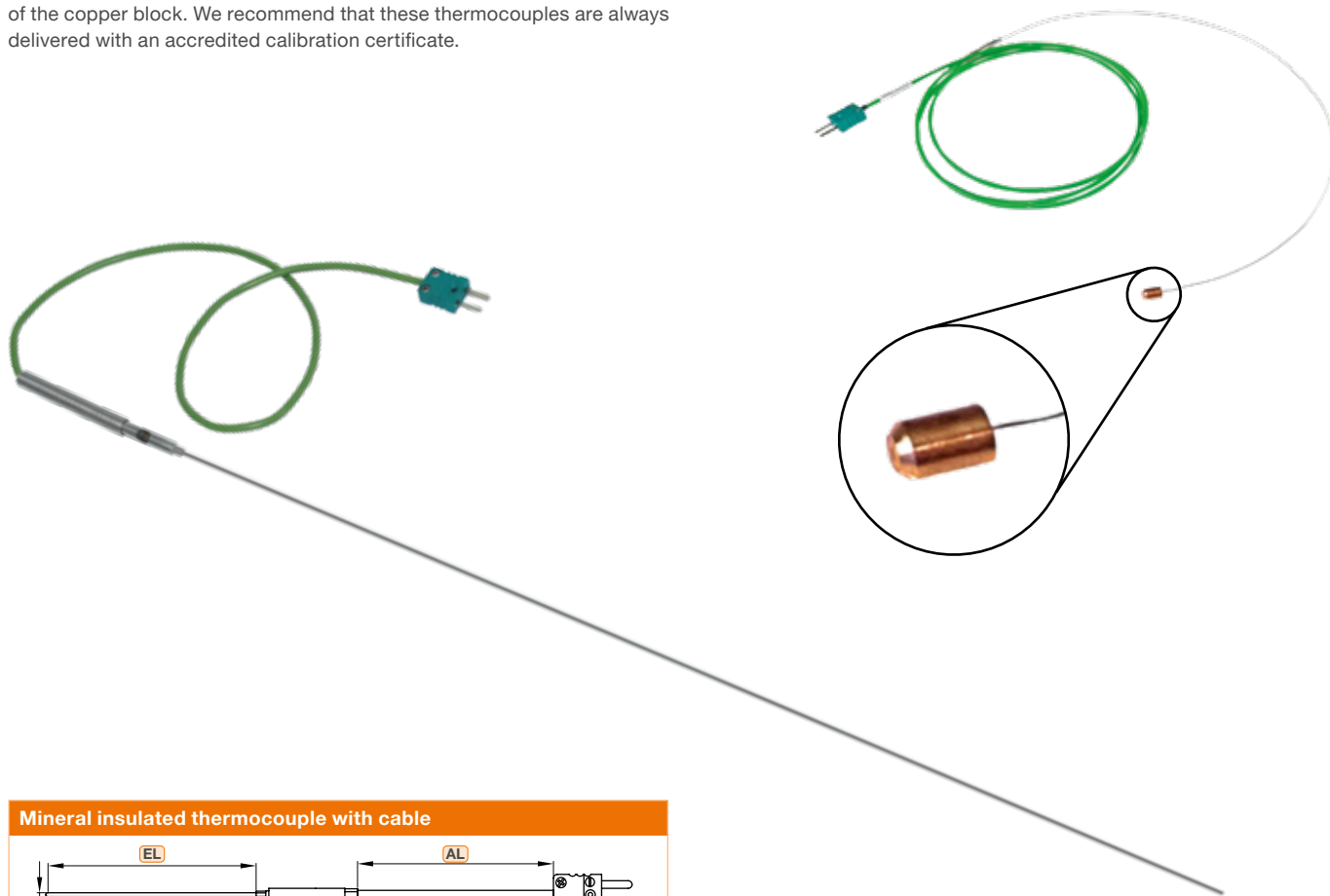
Type of connection	Location of the connector on the plate			
	Standard	Side	Back	Other
Rotating connector 0°/90°/180°/270° for cotter pin U	1	2	3	
Rotating connector 360° for cotter pin U	4	5	6	
Thread connector	7	8	9	
Other	X	Y	Z	S

# Product group FT-FireTECH

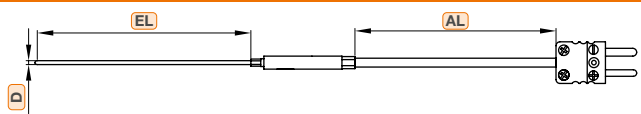
## Sheathed thermocouple with cable

Sheathed thermocouples are made with a connection cable ended with free ends or with an electrical connector, e.g. a socket or plug. These thermocouples are made of a thermocouple compensating cable as standard, on request of a thermocouple extension cable.

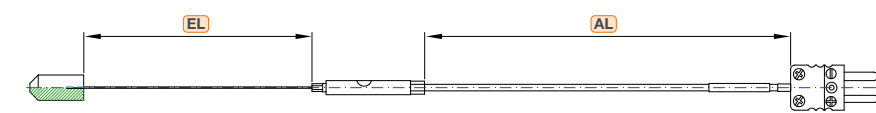
Execution a thermocouple with copper block: mineral insulated, sheathed thermocouple with an insulated junction is used for measuring the temperature of the copper block. We recommend that these thermocouples are always delivered with an accredited calibration certificate.



Mineral insulated thermocouple with cable



Mineral insulated thermocouple with copper block



### Note:

FT-FireTECH series sheathed thermocouples are most often delivered with a calibration certificate. Calibration is performed at agreed temperature points in an Accredited Measurement Laboratory that meets the requirements of ISO / IEC 17025.

## Sheathed thermocouple with cable – Article number key

Product group	F	T	-	7	1	1	0	1	0	0	1	-	0	1	5	0	.	1	8	0	0	.	S	0	0	
<b>Thermocouple</b>																										
Sheathed thermocouple type K with cable				7	1																					
Sheathed thermocouple type S with cable				7	2																					
Sheathed thermocouple type N with cable				7	3																					
Sheathed thermocouple type K with copper block				7	5																					
Sheathed thermocouple type N with copper block				7	6																					
Other				7	9																					
<b>Thermocouple diameter (D)</b>																										
Ø 0,5 mm																										
Ø 1.0 mm																										
Ø 1.5 mm																										
Ø 2.0 mm																										
Ø 3.0 mm																										
Others on request																										
<b>Cable ends</b>																										
Free ends																										
Ceramic standard plug																										
Ferrules																										
Standard plug																										
Mini plug																										
Free ends ready for Mini plug assembly																										
Free ends ready for Standard plug assembly																										
Others																										
<b>Calibration certificate</b>																										
Without																										
Included, please specify the number of calibration points, e.g.: 3																										
<b>Version number</b>																										
Standard, catalogue version																										
Modified version (number is given by producer)																										
<b>Cable length (AL)</b>																										
Specified in meter with 2 decimal places e.g.: 1.5 m → 0150																										
<b>Thermocouple length (EL)</b>																										
Specified in mm, e.g. 1800 mm																										
<b>Cable insulation material</b>																										
Silicone / Silicone (T <sub>max</sub> +180°C)																										
Teflon (T <sub>max</sub> +260°C)																										
Others on request																										
<b>Following number (in case of calibration)</b>																										
Without calibration																										
Specified by producer																										

### Code sample: FT-71201001-0300.1900.S00

Thermocouple 1xNiCr-Ni/K. Sheathed thermocouple 2 mm diameter, length 1900 mm, silicone/silicone cable length 3.0 m with free ends.

### Code sample: FT-75056202-0150.0500.T01

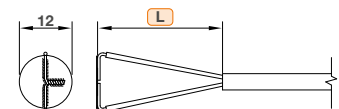
Thermocouple type 1xNiCr-Ni/K. Sheathed thermocouple 0,5 mm diameter with copper block Cu ETP 9x16,14 mm, sheath length 500 mm, teflon cable length 1,5 m with mini plug.

# Product group FT-FireTECH

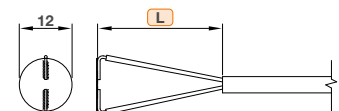
## Surface thermocouple

Surface thermocouples with a copper disc are made of a cable with a mini, standard plug or free ends. The shape and method of connecting the measurement joint is made in accordance with the requirements of the standard.

### Thermocouple hot junction Version A (twisted)



### Thermocouple hot junction Version B (through the disc)

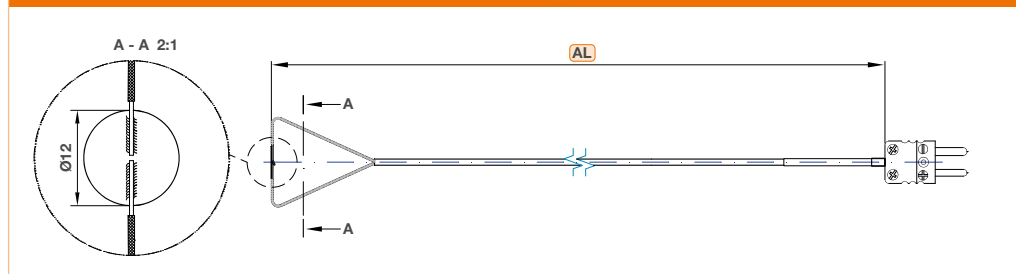


### Note:

FT-FireTECH surface thermocouples are most often delivered with a calibration certificate. Calibration is performed at agreed temperature points in an Accredited Measurement Laboratory that meets the requirements of ISO / IEC 17025.



### Surface thermocouple with a copper disc and mini plug



## Surface thermocouple – Article number key

Product group	F	T	-	5	0	5	0	1	1	0	1	-	0	4	0	0	.	1	2	.	G	0	5	0	
<b>Surface thermocouple</b>																									
Thermocouple with copper disc				5																					
<b>Thermocouple wire diameter (D)</b>																									
Ø 0.5 mm					0	5																			
Ø 0.8 mm					0	8																			
Others																									
<b>Cable ends termination</b>																									
Free Ends 50/10 mm							0	1																	
Free Ends 15/10 mm ready for standard plug assembly							3	1																	
Free Ends 10/7 mm ready for mini plug assembly							3	2																	
Standard plug							1	1																	
Mini plug							1	2																	
HT standard plug							1	3																	
HT mini plug							1	4																	
Ceramic standard plug							1	5																	
<b>Thermocouple hot-junction</b>																									
Version A (twisted)									1																
Version B (through the disc - standard version)									2																
<b>Version number</b>																									
Standard catalogue version										0	1														
Modified version (number given by producer)																									
<b>Cable length (AL)</b>																									
Specified in meter with 2 decimal places e.g.: 4.0 m → 0400													0	4	0	0									
<b>Disc diameter</b>																									
Ø 12 mm																					1	2			
<b>Cable insulation material</b>																									
G-Fiberglass / G-Fiberglass / PFA (T <sub>max</sub> +260 °C)																							A		
G-Fiberglass / G-Fiberglass (T <sub>max</sub> +400 °C)																							G		
R-Fiberglass / R-Fiberglass (T <sub>max</sub> +650 °C)																							R		
GS-Fiberglass / GS-Fiberglass (T <sub>max</sub> +400 °C)																							GS		
Others																							X		
<b>Length of leads to the copper disc (L)</b>																									
Specified in mm, e.g.: 50 mm																							0	5	0

### Code sample: FT-50532101-0400.12.G050

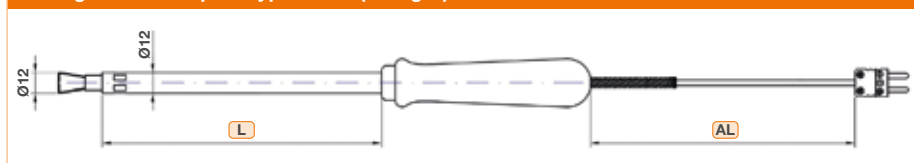
Surface thermocouple 1x NiCr-Ni/K with copper disc.  
 Thermocouple cable 4.0 m length with free ends 10/7 mm (ready to connection mini plug),  
 cable insulation G-Fiberglass (Up to +400°C), copper disc 12 mm diameter,  
 50 mm single wire insulated (distance to copper disc).

# Product group FT-FireTECH

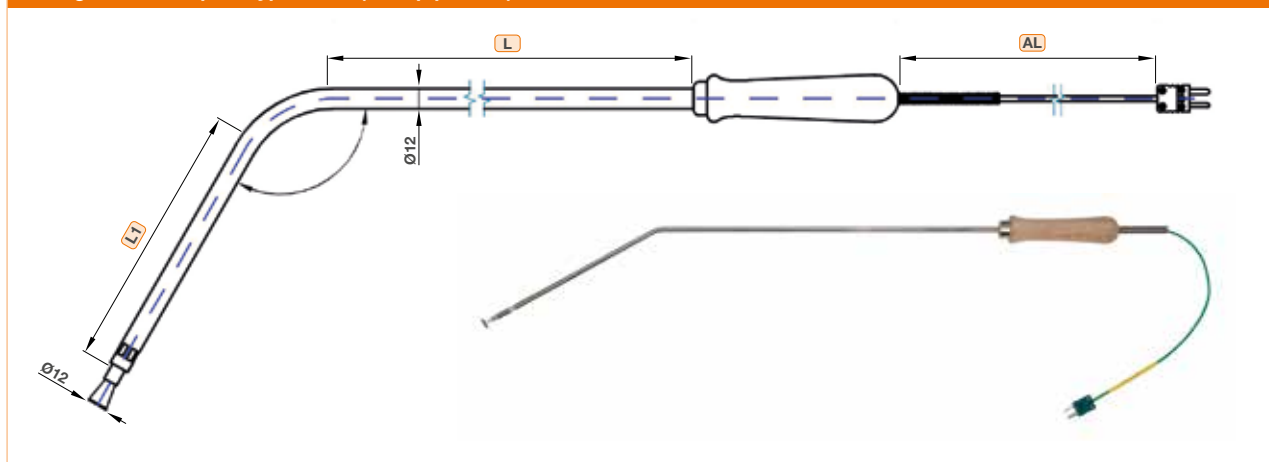
## Roving thermocouple with handle

Roving thermocouples, dedicated for instantaneous measurements are made of thermocouple wire with a diameter of 1.0 mm. They have a protection tube, a cable and a thermally insulating profiled handle. The contact element is a copper plate with a diameter of 12 mm and a thickness of 0.5 mm. Whole construction is made in accordance with the guidelines included in the standard EN1363. These thermocouples are made in class 1 acc. to EN60584-1 and we recommend delivery with accredited calibration at points according to the user's needs.

### Roving thermocouple - type FT-61 (straight)



### Roving thermocouple - type FT-62 (bent pipe 120°)



## Roving thermocouple with handle – Article number key

Product group	F	T	-	6	1	1	1	6	0	0	1	-	0	2	0	0	.	0	5	0	0	0	1	5	0	.	S	0	0
<b>Construction</b>																													
Roving thermocouple (straight)				6	1																								
Roving thermocouple (bent pipe 120°)				6	2																								
<b>Handle</b>																													
Profiled wooden handle						1																							
<b>Lead-out of the measuring tip</b>																													
Ceramic insulator, Ø 8 mm							1																						
<b>Cable ends</b>																													
Free ends																													
Ferrules																													
Standard plug																													
Mini plug																													
<b>Calibration certificate</b>																													
None, without																													
Included, please specify the number of calibration points, e.g.: 3																													
<b>Version number</b>																													
Standard version																													
Modified version (number given by producer)																													
<b>Cable length (AL)</b>																													
Specified in meter with 2 decimal places e.g.: 2.0 m → 0200																													
<b>Immersion length (L)</b>																													
Specified in mm, e.g.: 500 mm																													
<b>Length (L1) (for FT-62 version only)</b>																													
Specified in mm, e.g.: 150 mm																													
<b>Cable insulation material</b>																													
Silicone / Silicone (T <sub>max</sub> +180°C)																													
Others on request																													
<b>Following number (in case of calibration)</b>																													
Without calibration																													
Specified by producer																													

### Code sample: FT-61116001-0150.0500.0000.S00

Roving thermocouple 1x NiCr-Ni/K with profiled handle and cable.

Immersion length 500 mm. Cable length 1500 mm, insulation silicone / silicone with mini plug at the end.

### Code sample: FT-62116301-0100.0850.0150.S01

Roving thermocouple 1x NiCr-Ni/K with profiled handle, bent version with cable

L= 850 mm, L1=150 mm, Cable length: 1000 mm + mini plug, calibration certificate in 3 points.

# Product group FT-FireTECH

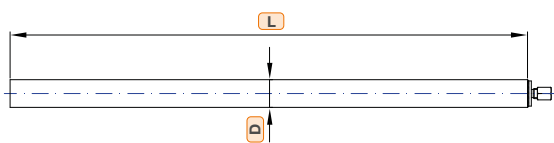
## Protective pipes

Based on many years of experience, we have specified materials for protective pipes that can handle high temperatures and we ensure their availability in stock. We can make pipes of the length and ends according to the customer's needs.



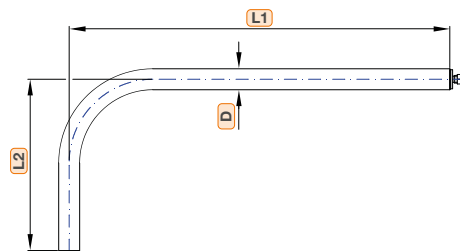
### Straight pipe

End 1: open connection to the plate  
End 2: compression fitting



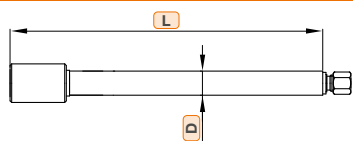
### Bent pipe

End 1: open connection to the plate  
End 2: compression fitting



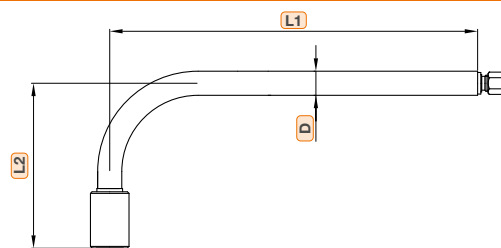
### Straight pipe

End 1: connection on cotter pin  
End 2: compression fitting



### Bent pipe

End 1: connection on cotter pin  
End 2: compression fitting



## Protective pipes – Article number key

Product group	F	T	-	8	0	1	5	1	A	0	1	-	1	8	0	0	.	0	1	5	0
<b>Protection pipe</b>																					
Straight pipe				8	0																
Bent pipe				8	1																
Other construction																					
<b>Pipe diameter (D)</b>																					
Ø 15 mm						1	5														
Ø 16 mm (Mat. Inconel 600 - 2.4816 only)						1	6														
Ø 22 mm						2	2														
<b>Material</b>																					
Steel 1.4841								1													
Inconel								2													
Other								9													
<b>Connection to the plate</b>																					
Swivel connector 0°/90°/180°/270° with U cotter pin									A												
Swivel connector 360° with U cotter pin									B												
Swivel connector with inbus screw, old version, discontinued*									C												
Threaded connector									D												
Swivel connector with Beta cotter pin, old version, discontinued*									E												
Open									O												
Other									S												
<b>Pipe end</b>																					
Open										0											
Compression fitting for thermocouples Ø 1 mm										1											
Compression fitting for thermocouples Ø 2 mm										2											
Compression fitting for thermocouples Ø 3 mm										3											
Compression fitting for thermocouples Ø 1.5 mm										4											
Compression fitting for transition sleeve (Ø 5 mm)										5											
<b>Version number</b>																					
Standard catalogue version											1										
Modified version																					
<b>Pipe length (L - straight pipe / L1 - bent pipe)</b>																					
Specified in mm e.g.: 1800 mm													1	8	0	0					
<b>Pipe length L2 (only bent version)</b>																					
In mm, e.g. 150 mm																				0	1
Others (specified in mm)																				5	0

### Notes:

L2 minimum length 150 mm in case of 15 mm diameter bent pipe

L2 minimum length 180 mm in case of 22 mm diameter bent pipe

\* old, discontinued version. Available on demand only for existing, used on-site connection systems.

### Code sample: FT-80151A21-2000

Protective pipe diameter 15 mm, Mat. 1.481

End 1: swivel connector 0°/90°/180°/270° for cotter pin form U

End 2: compression fitting on thermocouple diameter 2 mm

Pipe length L: 2000 mm

### Code sample: FT-80221S01-1500.0000

Protective pipe diameter 15 mm, Mat. 1.4841

End 1: open pipe

End 2: open pipe

Pipe length L: 1500 mm

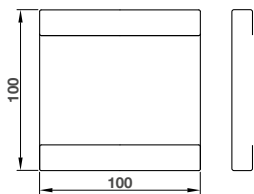
# Product group FT-FireTECH

## Exposition plates

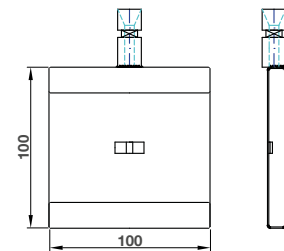
Exposition plate has a connection for mounting the tube.  
The connector can be placed on either side of the plate.  
The replaceable insulating insert is adjusted  
to the size of the plate.



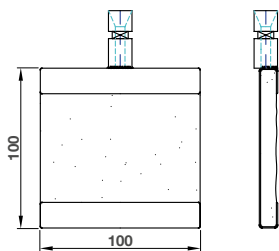
Version without connector



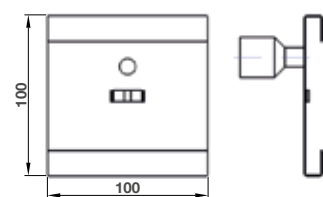
Version with standard connection



Version with standard connection with insulator



Version with connection on the back



## Exposition plates – Article number key

Product group	F	T	-	0	0	1	0	1	1	0	1	-	0	0	0	0	
<b>Versions</b>																	
Plate without insulator				0	0												
Plate with insulator				0	1												
<b>Positioner for thermocouple</b>																	
Without						0	0										
For thermocouple diameter 1 mm - 1.5 mm						1	0										
For thermocouple diameter 2 mm						2	0										
For thermocouple diameter 3 mm						3	0										
<b>Plate dimensions</b>																	
100 mm x 100 mm x 10 mm									1								
Other									9								
<b>Connector to protective pipe</b>																	
Without										0							
Standard version										1							
Side connection (on request)										2							
Back connection										3							
Other construction on request										9							
<b>Version number</b>																	
Standard version, annealed plate											0	1					
Standard version, non-annealed plate											0	2					
Other modified version, no. given by manufacturer																	
<b>Type of connection to the pipe</b>																	
None, without connector														0	0	0	0
Swivel connector, version with inbus screw, discontinued*														0	1	0	0
Locking screw														0	1	0	1
Connector on the beta cotter pin														0	2	0	0
U-type cotter pin connector (rotation 0°/90°/180°/270°)														0	2	0	1
U-type cotter pin connector (rotation 0°... 360°)														0	2	0	2
Through hole														0	2	0	3
Thread e.g. 1/4-NPT male														N	0	1	4
Other														9	9	9	9

### Notes:

\* old, discontinued version. Available on demand only for existing, used on-site connection systems.

### Accessories and standard stock versions

Exposition plate for TC 1-1.5 mm dia., with connector 0°/90°/180°/270°, heated, cotter pin form U connection system	FT-00101101-0201
Exposition plate for TC 2 mm dia., with connector 0°/90°/180°/270°, heated, cotter pin form U connection system	FT-00201101-0201
Cotter pin form U, 3 mm diameter	FT-02300101-0000
Insulated plate 97x97x10 mm with Atest 2.2 (dimensions, density), bulk pack, 10 pieces per box	FT-08001101-0000

More information related to accessories can be found in the catalogue FT-FireTECH Series – Accessories and Spare Parts for Fire Test Institutes.



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