

Product category 30-WTE Angled Thermocouple Assemblies with Threaded Elbow Tubing



Recommended Protection Tube Materials in Salt Baths

Smelter	Maximum Temperature	Materials
Tenifer®	600°C	Titanium NT
Saltpetre-, Chloride- & Cyanogen containing	1000°C	Pure Iron
Annealing, Tempering and Hardening Baths	1300°C	1.4821

Recommended Protection Tube Materials in Metal Smelting:

Aluminium	700°C	SiN SiC
Magnesium Al/Mg-Alloys	700°C	Pure Iron SiN
Lead	600°C	Grey cast iron
Zinc	600°C	Pure Iron / Steel / SiN
Copper	1200°C	1.4762 Graphite
Brass	900°C	1.4762 / Graphite / SiN

30-WTE

Angular Thermocouple Assemblies with Threaded Elbow Tubing

Angular thermocouple assemblies with threaded elbow tubing (30-WTE) are primarily used for temperature measurement in metal smelting and salt baths.

The angular shape allows for placement of the connector head away from the actual bath/smelt in order to avoid direct exposure to high temperatures and aggressive vapours.

Angular thermocouple assemblies with threaded elbow tubing offer the advantages of an exchangeable immersion tube and the possibility of using more economic material for the supporting tube due to reduced ambient stress factors.

GÜNTHER GmbH has all prevalent angular thermocouples used in smelting and foundry technology. Standard assemblies with immersion tubes made of steel, pure iron, heat-resistant steels and special alloys are applied, as well as silicon nitride, graphite, SIC or special metal ceramics.

Optionally, these thermocouple assemblies may be fitted with in an internal ceramic tube, which significantly increases the long-term stability and electrical insulation in many application scenarios. As an alternative to the installed thermocouple, numerous angular thermocouple assemblies may be fitted with a mineral-insulated gauge slide, which yields several crucial advantages, such as optimal protection of the inner conductors from corrosion, oxidation, physical damage, and chemical contamination due to the enclosed structure of the outer insulation.

In order to ensure functionality of the thermocouple assembly during a suitable timeframe, careful consideration should be used when selecting the materials for thermocouple and protective tube depending on the operating conditions.

Thermoelectric voltages and tolerances of our thermocouples and mineral-insulated gauge slides are pursuant to DIN EN 60584, class 1, for thermocouples and mineral-insulated gauge slides of type L pursuant to DIN 43710.



1 Connection Head

А	В
AUS	BUS
AUZ	BUZ
AUZH	BUZH
AUSH	BBK

2 Supporting Tube (Materials)

ST 35.8	

1.4571

3 Insertion Tube

	Pure Iron (Techn. Pure)	with Prot. Sleeve
	Steel SL 25	Tapered Tip
	Cast Iron GG-22	
	Graphite	
	Titanium	
	Enamelled Steel	
Materi	als:	
	High-Grade Steel	1.4541
	X10CrAl24	1.4762
	X15CrNiSi 25 20	1.4841
	Inconel	2.4816
	SiN (Silicon Nitride)	
	SiC (Silicon Carbide)	
	Metal-Ceramic	
	Quartz Glass	

4 Inner Tube

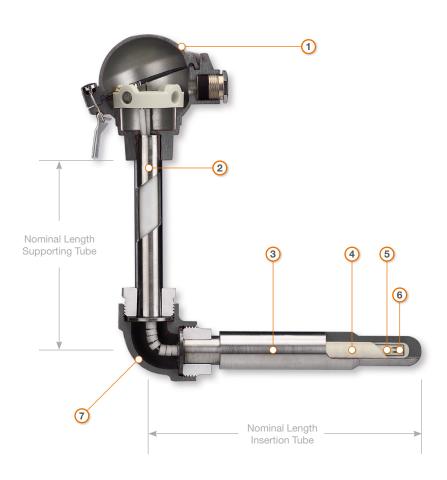
C610	
C799	

5 Mineral-Insulated Gauge Slide

NiCr-Ni	Тур КІ
Fe-CuNi	Typ LV
Fe-CuNi	Typ JV
Nicrosil-Nisil	Тур NI
Mantle Diameter:	3,0 - 8,0 mm
Single or Double	

Further technical information for this product line is available on our website: http://www.guenther.eu/en/products/ thermocouples/30-wte/angle-thermocoupleswith-bolted-central-angle

Example of a common implementation in this product line



6 Ceramic Insulated Thermocouple

NiCr-Ni/K
Fe-CuNi/L
Fe-CuNi/J
Nicrosil-Nisil/N
PtRh10-Pt/S
PtRh13-Pt/R
PtRh30-PtRh6/B
Single or Double

Angular Section

Elbow Pipe	3/4"
	3/8"
	1 1/4"
	1/2"

Carrier tube (material / dimensions) Head	St 35.8		mm mm mm mm	1 2 3				Nominal length Carrier tube (mm)	Nominal length Dip tube (mm)
Head		22 x 2	mm mm	4 5 6					
	А	1	В		6				
	AUS AUZ	2 3	BUS		7				
	AUZH	4	BUZ	ZH	9				
	AUSH	5	BBł	<	0				
Thermocou ceramic ins	•	Sheath me	easurement	insert					
ceramic ins	73	NiCr	-Ni Fe-Cu			I.			
	Standard Double	Туре		_V Type JV					
NiCr-Ni/K	が ロ 11 21	Standard	Double Standard	Standard	Standard Double				
Fe-CuNi/J	12 22	Stan Stan	Double Standar	Standar Double	Standar				
Fe-CuNi/L Nicrosil-Nisil	13 23 I/N 14 24	3.0 31			91 94				\bigcirc
PtRh10-Pt/S	5 15 25	4.5 32	42 52 6	2 72 82	92 95				
PtRh13-Pt/F PtRh30-PtRl	8 16 26 h6/B 17 27	6.0 33 8.0 34			93 96				
Dip tube (m	aterial / dimen	sions)							
None, therm	ocouples freely	protruding				0 0			
		22 x 5 mm, seam				11			GÜNTHER GmbH
		22 x 5 mm, with a point tapered (ø				12			Temperaturmesstec
Grey cast irc	on GG-22, ø = 3		2 1/ 10 00 11			14			Bauhofstraße 12
	= 40 x 11 mm = 50 x 25 mm					15 16			D-90571 Schwaig
Titanium ø =	18 x 1.5 mm p	ressed and welde				17			
	= 18 x 1.0 mm, v el ø = 22 x 2 mr	with a welded rou n	nd base			18			Tel.
									+49 (0)911 / 50 69 95
Material	Numbe	er Dimensio	ons in mm						Fax
Stainless ste	el 1.4541	15 x 2	17 x 2 3 1	22 x 2 4 1	22 x 2.5	22 x 4			+49 (0)911 / 50 69 95
Stainless ste		22	32	42	5 2	62			E-Mail
X10CrAI 24	1.4762	23	33	43	-	-			info@guenther.eu
X15CrNiSi 2 Alloy 600	5 20 1.4841 2.4816	2 4 2 5	34 35	4 4 4 5	-	-			Internet
									www.guenther.eu
Inner tube									
None C610		gastight cera	amic	C 1					
C799		Aluminium o		2					
Elbow:									
							1		
Curved angle	e 3/4"						2		
	e 3/8"						3		